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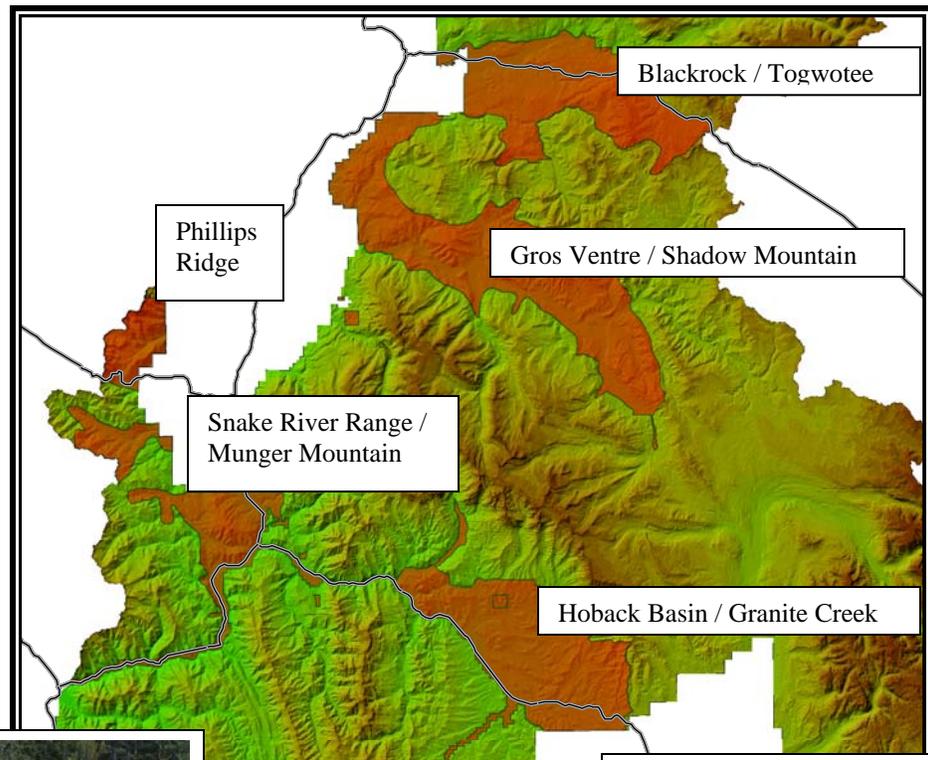
January 2009



Final Environmental Impact Statement

Off-Highway Vehicle Route Designation Project

Bridger-Teton National Forest
Buffalo, Jackson, and Big Piney Ranger Districts
Teton, Lincoln, and Sublette Counties, Wyoming



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**OHV Route Designation Project
Final Environmental Impact Statement
Bridger-Teton National Forest
Buffalo, Jackson, and Big Piney Ranger Districts**

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(North Zone Travel Plan Revision)

Abstract:

The purpose of this project is to improve management of public summer motorized use (May 1 – November 30) by designating roads and motorized trails in areas of the Bridger-Teton National Forest where motorized use is currently not restricted. Winter snowmobile use is not addressed in this project. Currently, summer motorized use within the unrestricted portions of the Forest is not being managed in a manner consistent with current travel management regulations and Forest Plan direction or in manner consistent with resource protection, public safety, and enjoyment by all Forest users. Specific project objectives are to (1) Designate roads and motorized trails to meet identified public needs, improve the quality of the system, and reduce conflicts, (2) Reduce resource impacts, and (3) Improve the ability to maintain routes and enforce travel regulations. All routes proposed for designation exist on the ground although not all are currently part of the Forest transportation system; no construction of new routes is proposed. This project will result in a summer motor vehicle use map by spring 2009. Once the motor vehicle use map is published, summer motorized will be allowed only on designated routes.

This Final Environmental Impact Statement (FEIS) serves to disclose and compare the effects of implementing alternative designated OHV route systems. Five alternatives are evaluated including the No Action alternative which would allow unrestricted motorized travel to continue.

This alternative serves as a baseline for comparing the effects of other alternatives. The four action alternatives vary in terms of the mileage of designated motorized routes, the number of routes with seasonal restrictions, and the classification of vehicle routes (e.g. full-size vehicle road, 50" or less trail, or motorcycle trail). The mileage of designated motorized routes varies from 388 miles of road and 33 miles of motorized trail in Alternative B to 445 miles of road and 102 miles of motorized trail in Alternative E. Alternatives C and D have the most miles of designated routes affected by seasonal restrictions with Alternative C having the most miles of routes that would only be available for motorized use during the summer (July 1st until September 9th). Alternative D is the initial preferred alternative. All alternatives meet the project objectives and address the seven significant issues to varying degrees.

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Date Appeals must be received:

45 days after publication of the decision in the Casper Star Tribune (refer to Record of Decision for more information)

SUMMARY

The Bridger-Teton National Forest is proposing to improve management of public summer motorized use (May 1 – November 30) by designating roads and motorized trails in certain areas of the Bridger-Teton National Forest where motorized use is currently not restricted. Winter snowmobile use is not addressed in this project. On the Bridger-Teton National Forest, there are 255,830 acres that currently allow unrestricted motorized travel by wheeled vehicles. These areas are located on the Buffalo, Jackson, and Big Piney Ranger Districts and include five geographic areas: Blackrock/Togwotee, Gros Ventre/Shadow Mountain, Phillips Ridge, Snake River Range/Munger Mountain, and Hoback Basin/Granite Creek. All routes proposed for designation exist on the ground although not all are currently part of the Forest transportation system; no construction of new routes is proposed. This project will result in publication of a summer motor vehicle use map by spring 2009. Once the motor vehicle use map is published, summer motorized use will be allowed only on designated routes.

Off-highway vehicle (OHV) use within portions of the Bridger-Teton National Forest is not being managed in a manner consistent with the 1990 Forest Plan direction and the 2005 National Forest Travel Management Rule or in a manner consistent with resource protection, public safety and enjoyment by all Forest users. The current travel plan for the north zone of the Bridger-Teton National Forest was developed in the late 1970s and 1980s prior to the technological advances that transformed truck, ATV and motorcycle use on public lands. Motorized use has a long history on the Forest and is a legitimate and appropriate way for people to enjoy the National Forest, in the right places and with proper management. Since the 1980s, motor vehicle use has changed from primarily jeep travel to a mix of passenger car, truck, ATV, and motorcycle use and the desire for motorized trail access has increased. The current system of roads and motorized trails evolved from historical use and forest management activities, thus the system was never designed with an eye towards current recreation and access needs. As a result, the current system is often confusing in terms of what is and is not allowed and does not always serve visitors well. Unrestricted motorized use has also caused resource damage, wildlife disturbance, and conflicts between motorized and non-motorized visitors, particularly during the fall hunting season. Thus, the specific project purpose is to (1) Designate roads and motorized trails to meet identified public needs, improve the quality of the system, and reduce conflicts, (2) Reduce resource impacts, and (3) Improve the ability to maintain routes and enforce travel regulations.

To help develop a proposed OHV route designation system, a series of workshops were held in May 2006 to hear from citizens. Input was received about how participants use the areas being analyzed in this project, specific concerns, desirable attributes of a designated road and motorized trail system, and ideas for balancing public use and resource values. This input was combined with resource information to develop an initial proposal. This proposal was then posted on the Forest Service website for public comment and two open houses were held. A proposed action was then developed to begin the formal environmental analysis process. The Notice of Intent (NOI) to prepare a Draft EIS was published in the Federal Register on January 5, 2007. Public events in 2007 included an educational seminar, a workshop to gather input for alternative development, and three field tours. In May 2008, a public open house was held to introduce the five alternatives, provide an opportunity for citizens to meet with resource specialists, and explain how to comment on the Draft EIS. The Draft EIS was released on June

16, 2008 with the notice of availability published in the Federal Register on June 20, 2008. Throughout this process, numerous informal meetings have occurred with agencies, non-governmental organizations, tribes, and individual citizens and information has been available on the project website. Two Wyoming State departments – Wyoming Game and Fish Department and Wyoming State Trails Program – are cooperating agencies for this project and have provided assistance. In addition to the input received during public workshops and events, a total of 1300 comments were received in response to the scoping document and 216 comments were received on the Draft EIS.

Issues

Seven significant issues emerged from input provided by the public and resource specialists. These issues include:

1. Effects on opportunities for motorized recreation
2. Effects on opportunities for non-motorized recreation
3. Effects on route sustainability and potential for sedimentation into water sources
4. Effects on wildlife including threatened, endangered, and sensitive species and management indicator species
5. Effects on the character of inventoried roadless areas, Wilderness, Wilderness Study Areas, Wild and Scenic Rivers, and National Parks
6. Effects on cultural resources
7. Effects on the agency's ability to manage the OHV system

Other issues such as effects to fisheries, wetlands and riparian areas, sensitive plants, introduction and spread of noxious weeds, and some wildlife species such as wolves, lynx, and bald eagles were also identified and are briefly discussed in the Final EIS but the alternatives were not found to have effects that help differentiate among alternatives.

Alternatives

The seven significant issues led the agency to develop five alternatives to address the issues and meet the project purpose and need.

Alternative A is the No Action alternative. While this alternative does not meet the project purpose and need, it is required to be analyzed to serve as a baseline for comparing the effects of other alternatives. Under this alternative, OHV management would be guided by the current 2002 travel plan for the Jackson, Buffalo, and a portion of Big Piney Ranger Districts. Motorized use would not be restricted to designated trails within the grey areas displayed on the travel map. Only roads and trails currently included in the Forest transportation system would be eligible for maintenance funds. Motorized routes would not have vehicle class designations, thus there would be a tendency for routes to increase in width over time as ATVs rode single-track trails or full-size vehicles drove on motorized trails.

Alternative B would minimize the number of designated OHV routes. Under this alternative, unrestricted motorized use would be eliminated and replaced with a limited system of designated motorized routes. In general, Alternative B designates roads and trails that are currently on the

Forest transportation system (except for Level 1 closed roads) and increases the miles of routes that have seasonal restrictions. It includes the least number of motorized routes compared with other action alternatives. Alternative B was developed to address environmental issues, particularly issues regarding the potential effect of motorized routes on inventoried roadless areas and Wilderness Study Areas and issues regarding potential wildlife effects in key habitat areas.

Alternative C would use seasonal restrictions more than closures for the designated OHV system. This alternative was developed to address environmental issues, particularly issues regarding the potential effect of OHV routes on wildlife habitat security and soil or watershed concerns. This alternative is intended to provide more motorized access than Alternative B with a mix of opportunities for full-size vehicle travel, vehicles 50 inches or less wide, and motorcycle travel. Motorized trail opportunities would primarily be available during the summer months of July and August.

Alternative D is the initial preferred alternative. This alternative was developed with an emphasis on retaining primary existing uses, establishing seasonal restrictions to protect wildlife habitat security particularly during the calving period, and improving the manageability of the OHV system. Alternative D is similar to Alternative C in terms of the number of routes available however Alternative D would establish fewer seasonal restrictions on OHV routes during the fall. This alternative is intended to give the public and decision-makers an initial idea of how motorized opportunities and resource concerns might be balanced. It is important to recognize that this Draft EIS is the initial disclosure of anticipated effects from implementing the alternatives including this initial preferred alternative. It is likely that information gleaned from public comments and further review by the Forest Service will result in changes to the preferred alternative.

Alternative E would maximize the number of designated OHV routes. This alternative was developed to address issues raised during public scoping that the proposed action did not offer sufficient opportunities for motorized travel. The intent of this alternative is to maximize opportunities for motorized travel while still addressing resource concerns. In general, system roads and system trails are retained under this alternative and more miles of motorized trail are proposed to be added to the system compared with other alternatives. However, this does not mean that all roads and trails that currently exist on the ground would be included as part of the designated OHV system. Many non-system roads and trails have sustainability or manageability issues that preclude adding them to the system.

Comparison of Alternatives and Environmental Effects

Table S-1 displays how the five alternatives vary in terms of miles of routes, miles managed for each class of vehicle (e.g. vehicles 50" or less, motorcycles), and seasonal restrictions. Table S-2 displays a comparison of major findings regarding the effects of implementing each alternative based on the seven significant issues.

Table S-1: Proposed System of OHV Routes – What would be available for Public Motorized Travel within Project Area (Grey Areas)

	Alternative A (1)	Alternative B	Alternative C	Alternative D	Alternative E
Miles of system road available for public motorized use	482	386	399	407	445
Miles of system trail managed for vehicles less than 50” wide	28	33	79	64	102
Miles of system trail managed for motorcycles	7	0.5	22	35	37
Miles of route with seasonal restrictions (more restrictive than summer long use) (2)	38	67	126	132	40
Miles of route with seasonal restriction that allows use only from July 1 st until Sept 9 th (most restrictive season)	0	27	81	36	0
Miles of route available all summer long – May 1 st until November 30 th	378	244	253	253	419
Acres within project area potentially available for OHV use (3)	110,273	14,786	15,099	15,335	16,683

(1) Alternative A just includes miles of route on the current Forest transportation system. These mileages do not include miles associated with non-system roads and trails. However, these miles do include closed roads that are available to vehicles less than 50” wide and motorcycles within the unrestricted motorized areas.

(2) This includes season restrictions allowing use from June 1st until Nov 30th; July 1st until Nov 30th; July 1st until Sept 9th; and Sept 10th – November 30th (i.e. seasons that are more restrictive than summer long use between May 1st and November 30th)

(3) For Alternative A, motorized vehicles can travel off system roads and trails however not every acre of the unrestricted area can actually be used due to terrain and vegetation constraints. Thus an estimate of potentially available terrain was determined through GIS analysis (see appendix for explanation of methodology). For Alternatives B-E, a designated OHV route system would be established with no motorized vehicle travel beyond designated corridors. The acres available for OHV routes for these alternatives was estimated by buffering roads with a 600 foot corridor and determining usable terrain within these corridors, buffering 50” motorized trails with a 15 foot corridor, and buffering motorcycle trails with a 3 foot corridor.

Given the purpose and need, information from the environmental analysis, and public input, the District Rangers for the Buffalo, Jackson, and Big Piney Ranger Districts will make the following decisions about public motorized use on their respective district.

1. Which roads and trails should be added to the current transportation system for public motorized use, which roads and trails should be closed to public motorized use, and which roads should be converted to motorized trails?
2. What class of vehicle should each designated motorized route be managed for?
3. What seasonal restrictions are needed on motorized routes?
4. Which roads are not appropriate for travel by vehicles less than 50” wide or unlicensed motorcycles (i.e. public safety would be compromised if mixed vehicle use occurred)?

The decision on the designated road and motorized trail system will be made in accordance with the requirements of the National Forest Travel Management Rule and within the context of the

Bridger-Teton Forest Plan. Wyoming State statute will continue to govern requirements for operating off-road vehicles. The decision for the designated road and motorized trail system will be displayed on a motor vehicle use map that conforms to a nationally consistent format and is updated annually.

Changes between the Draft EIS and the Final EIS

As noted in Appendix A “Response to Comments”, some edits were made in Chapter 1 of this FEIS to clarify points that could be misinterpreted or to correct errors. Examples of edits made include clarifying statements about the need for motorized recreation in the project area and clarifying the definition of off-highway vehicles (OHVs) used by the Forest Service versus the definition of off-road recreational vehicles (ORVs) used by the State of Wyoming. In Chapter 2, Table 4 (summary of project compliance with Forest Plan direction) in the DEIS was removed from the FEIS. Resource analysis relative to Forest Plan direction was a key component that informed modifications to the initial preferred alternative. The summary of compliance with Forest Plan direction is more appropriately documented in the Record of Decision, not the FEIS. Further information is provided in the project record. In Chapter 3, the analysis of effects on motorized recreation opportunities is updated to remove misleading ORV registration data and include updated information from a visitor survey conducted in 2008 in the relevant counties. Further explanation is provided to avoid potential misinterpretation for some of the indicators used for the effects analysis on non-motorized recreation opportunities and on special areas. In the analysis of effects on wildlife, information about habitat effectiveness for elk among the different alternatives has been updated. The analysis of effects on the management of the OHV system (issue #7) was also updated to provide additional information on projected implementation costs.

Since release of the Draft EIS, there have been a few changes relative to legal rulings that affect OHV travel planning.

- ESA protection for the northern Rocky Mountain gray wolf population was reinstated on July 18, 2008. The change in status for the gray wolf does not alter the effects analysis for this project, however it does require that the gray wolf now be discussed in the Biological Assessment. A determination as to the effects of this OHV project on the gray wolf was made in the Biological Assessment prepared to inform the decision.
- The North Fork of Spread Creek is no longer listed as an impaired or threatened stream in the 2008 Wyoming Department of Environmental Quality 305(b) report. A watershed improvement project sponsored by the Bridger-Teton National Forest has rehabilitated the stream channel and improved the ability of the stream to support aquatic life. Thus, the stream has been de-listed. This change has been noted in the Chapter 3 water quality effects analysis but the change in status does not alter the effects analysis for this project
- The status of the Roadless Area Conservation Rule continues to be in flux. On December 2, 2008, a court ruling in California appeared to limit reinstatement of the 2001 Roadless Rule to the Ninth Circuit and New Mexico, thus the rest of the country would be covered by the court ruling in Wyoming which enjoined the Roadless Rule. Current Forest Service direction

is to “pause” on projects that could be inconsistent with either court ruling. Relative to travel planning, these court rulings are relevant if the Forest Service is proposing to construct or add a non-system road to the Forest Transportation system. Motorized trails for vehicles 50” or less in width or for motorcycles are not affected by these rulings.

- On January 8, 2009, the Forest Service revised the National Travel Management Rule to make it consistent with Forest Service travel management and planning national policy and handbook direction which were finalized the same day. The change in the National Travel Management Rule allows for limited motor vehicle use for dispersed camping and for big game retrieval on National Forest System lands adjacent to roads or trails under the jurisdiction of public road authorities (e.g. county roads, State highways). The new national policy direction for travel management contains the following objectives:
 1. To provide sustainable access in a fiscally responsible manner to NFS lands for administration, protection, utilization, and enjoyment of NFS lands and resources consistent with the applicable land management plan.
 2. To manage the forest transportation system, including motor vehicle use on NFS roads, trails and areas, within the environmental capabilities of the land.
 3. To provide an appropriate range of recreation opportunities on NFS lands and to minimize conflicts among uses of NFS lands.
 4. To manage the forest transportation system to address user safety and convenience and efficiency of operations in an environmentally responsible manner and, where needed, to restore ecosystems along NFS roads and NFS trails designated for motor vehicle use within the limits of current and anticipated funding levels.
 5. To coordinate travel planning and analysis on NFS lands with federal, state, county, and other local governmental entities and tribal governments and to allow the public to participate in the designation of NFS roads, NFS trails, and areas on NFS lands for motor vehicle use.
 6. To designate those roads, trails, and areas on NFS lands open to motor vehicle use.

This OHV project is consistent with the new national travel management and planning policy and handbook direction.

Table S-2: Comparison of the Effects of Implementing Alternatives for a Designated OHV route System

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on those effects that help distinguish the differences among alternatives.

	Alternative A No Action	Alternative B Minimize the number of designated OHV routes	Alternative C Use seasonal restrictions more than closures for designated OHV routes	Alternative D Initial Preferred Alternative	Alternative E Maximize the number of designated OHV routes
Motorized Recreation: Effects on opportunities for motorized recreation including dispersed camping, OHV riding, and hunting access					
Miles of designated and managed motorized trail (spring season)	34 miles	17 miles	29 miles	30 miles	130 miles
Miles of designated and managed motorized trail (summer season)	34 miles	33 miles	100 miles	98 miles	140 miles
Miles of designated and managed motorized trail (fall season)	34 miles	20 miles	34 miles	65 miles	140 miles
Miles of designated and managed motorized trails and primitive roads open during the fall season	225 miles	163 miles	191 miles	239 miles	355 miles
% of project area accessed within 1 mile from open motorized routes during the fall season (other geographic areas do not vary more than 10% among alternatives)	* See Table Footnote	Blackrock – 82% Gros Ventre – 67% Snake/Munger 81%	Blackrock – 81% Gros Ventre – 60% Snake/Munger 84%	Blackrock – 88% Gros Ventre – 84% Snake/Munger 84%	Blackrock – 94% Gros Ventre – 93% Snake/Munger 96%
Miles of designated and managed motorized trail associated with a loop system	15	0.5	49.5	66	76.5
Non-motorized Recreation: Effects on opportunities for non-motorized recreation					
Number of acres at least ½ mile from motorized routes		100,860 acres	85,255 acres	85,289 acres	74,137 acres
Miles of non-motorized trail		95 miles	70 miles	57 miles	35 miles
% of project area that meets primitive or semi-primitive non-motorized recreation setting criteria	* See Table Footnote	39%	33%	33%	29%

Soils, Water Quality: Effects on route sustainability and potential for sedimentation into water bodies					
Miles of motorized routes within areas of unstable or marginally unstable land type	166 miles ** See Table Footnote	70 miles	102 miles	102 miles	122 miles
Wildlife: Effects on Wildlife including Threatened, Endangered, and Sensitive species and Management Indicator species					
Elk habitat security (% of management areas with more than 30% minimum threshold value)***	* See Table Footnote	18%	18%	18%	9%
Density of motorized routes within elk calving areas		0.59 miles/sq mile	0.44 miles/sq mile	0.37 miles/sq mile	1.50 miles/sq mile
Miles of motorized routes within Gros Ventre pronghorn migratory corridor		28 miles	30 miles	29 miles	36 miles
% of secure grizzly bear habitat outside primary conservation area relative to 2003 baseline ****		78%	76%	76%	76%
Miles of motorized routes within 5km of sage grouse lek complex)		39 miles	45 miles	40 miles	47 miles
Density of motorized routes within peregrine falcon nest management zone		0.64 miles/sq mile	0.87 miles/sq mile	0.96 mile/sq mile	1.55 miles/sq mile
Special Areas: Effects on the character of inventoried roadless areas, Wilderness Study Areas, Wilderness, Wild and Scenic Rivers, and National Parks					
Miles of motorized routes within ¼ mile of Parks, Wilderness, and WSAs	* See Table Footnote	46 miles	50 miles	46 miles	53 miles
Acres of non-motorized setting within inventoried roadless areas		69,878 acres	56,837 acres	55,787 acres	50,972 acres
Cultural Resources: Effects on cultural resources					
Number of eligible sites or potentially eligible sites along motorized routes	75 sites	9 sites	11 sites	16 sites	17 sites
Number of sites with potential adverse effects	75 sites	0 sites	2 sites	2 sites	3 sites
Management of Motorized System: Effects on the complexity of the system (affects cost and ability to enforce regulations)					
Number of dead-end trails not associated with a loop system	4 system trails	9 trails	13 trails	12 trails	24 trails

Number of routes with seasonal restrictions	21 routes	26 routes	46 routes	42 routes	28 routes
Number of gates and barriers necessary to provide field management of the system	92	191	206	209	211

* Indicator utilizes miles of open motorized routes to represent OHV accessibility. Unlike the action alternatives, OHVs are authorized to operate off motorized routes within the 255,830 acres of unrestricted areas. Therefore, all current and potential user-created routes and currently designated routes within unrestricted areas need to be calculated to determine an accurate numerical representation of the miles of OHV terrain available under alternative A. It is not possible to determine a linear unit such as miles of usable OHV terrain (managed and user-created) due to the volume and the dynamic nature of user created routes within the unrestricted areas.

** The number of miles of motorized route located in marginally unstable or unstable land types for the No Action alternative is based only on the miles of system roads and trails within the project area combined with the miles of known non-system trails. The actual mileage of motorized routes for Alternative A is likely higher. This mileage is provided only to give some estimate of how Alternative A compares with the other alternatives.

*** If no roads were present in the Management Areas, 64% of the MAs would provide more than 30% secure habitat. Minimum 30% threshold value is recommended by Hillis et al. (1991) to limit elk vulnerability during hunting season.

**** All action alternatives are consistent with current management direction and standards inside the primary conservation area because they all either maintain or improve secure habitat. Outside the primary conservation areas, secure habitat is improved for the Gros Ventre and Snake Bear Analysis Units under all of the action alternatives but declines for the Hoback Bear Analysis Unit. The percent of secure habitat improves at least 10% for the action alternatives compared to the No Action alternative. The percents displayed in this table represent the Snake Bear Analysis Unit. Other units do not vary among alternatives. All analysis units have greater than 70% secure habitat under the action alternatives indicative of a low level of human influence on bears and their habitat.

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CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

Document Structure

The Forest Service has prepared this Final Environmental Impact Statement (FEIS) to inform the process of designating public off-highway vehicle (OHV) routes in certain areas of the Bridger-Teton National Forest where motorized use is currently unrestricted. This document is prepared in compliance with the National Environmental Policy Act (NEPA), the National Forest Travel Management Rule (36 CFR Part 212), Forest Service national travel management policy, and other relevant Federal and State laws and regulations. This Final Environmental Impact Statement discloses the direct, indirect, and cumulative environmental effects that would result from implementing each of five alternatives. The document is organized into four chapters:

- *Chapter 1. Purpose and Need for Action:* This chapter includes introductory information, background on the history of off-highway vehicle management within the project area, the purpose of and need for the project, the scope of the project, and the Forest Service proposal for achieving that purpose and need. This section also details the decision framework for this project, how the Forest Service informed the public about the proposal and issues that emerged regarding the proposed action.
- *Chapter 2. Alternatives, including the initial Preferred Alternative:* This chapter provides a detailed description of five alternatives for a designated motorized route system to achieve the project purpose. These alternatives were developed to address the significant issues raised by the public, resource specialists and other agencies. This section contains a table comparing key elements of the alternatives and concludes with a summary table of selected environmental effects associated with the alternatives.
- *Chapter 3. Affected Environment and Environmental Consequences:* This chapter describes the environmental effects of implementing each of the five alternatives including the no action alternative. This analysis is organized by the seven significant issues.
- *Chapter 4. Consultation and Coordination:* This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the environmental impact statement. Appendix A is the Response to Public Comment, compiled from the 220 comment letters received in response to public review of the Draft EIS. A letter log is also included so that reviewers can easily find the sections that include responses to their individual comments.

Additional documentation, including detailed specialist reports and project information, may be found in the project planning record located at the Jackson Ranger District on the Bridger-Teton National Forest.

Introduction

In November 2005 the Forest Service issued a new Travel Management Rule (36 CFR Part 212). This rule prohibits unrestricted motorized travel and requires roads and trails open to summer motor vehicle use to be designated for such use. Designation of motorized routes within unrestricted areas must occur through the environmental planning process with public input. On the Bridger-Teton National Forest, there are 255,830 acres that currently allow unrestricted motorized travel by wheeled vehicles from May 1 through November 30. These areas are located on the Buffalo, Jackson, and Big Piney Ranger Districts and include five geographic areas: Blackrock/Togwotee, Gros Ventre/Shadow Mountain, Phillips Ridge, Snake River Range/Munger Mountain, and Hoback Basin/Granite Creek. Figure 1 shows the location of the five geographic areas that define the project area for this environmental analysis. Figure 2 shows the location of the project area in relation to the entire Bridger-Teton National Forest and the nearby National Parks.

In accordance with the Travel Management Rule, the goal of this project is to improve management of public summer motorized use (May 1 – November 30) by designating roads and motorized trails in certain areas of the Bridger-Teton National Forest where motorized use is currently not restricted. Winter snowmobile use is not addressed in this project. All routes proposed for designation exist on the ground although not all are currently part of the Forest transportation system; no construction of new routes is proposed. This project will result in a summer motor vehicle use map by spring 2009. Once the motor vehicle use map is published, summer motorized use will be allowed only on designated routes. This Final EIS serves to disclose and compare the effects of implementing five alternatives and gives the public an opportunity to participate in the design of the designated motorized system.

Figure 1: Project Area for Bridger-Teton National Forest OHV route designation project. Rust-colored areas are where motorized use is currently not restricted to designated routes.

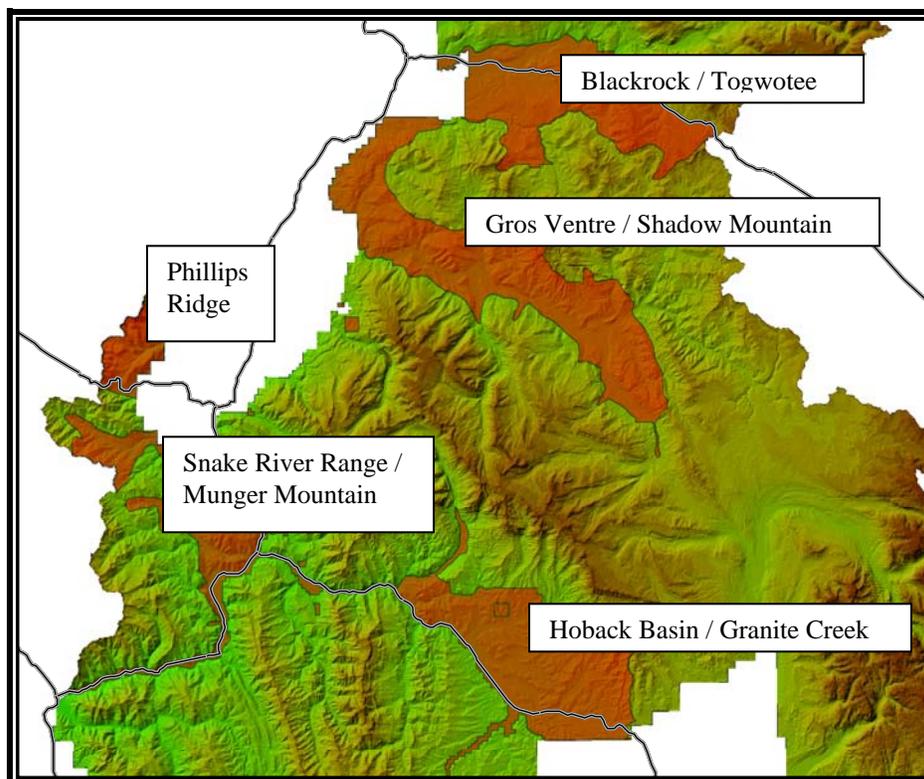
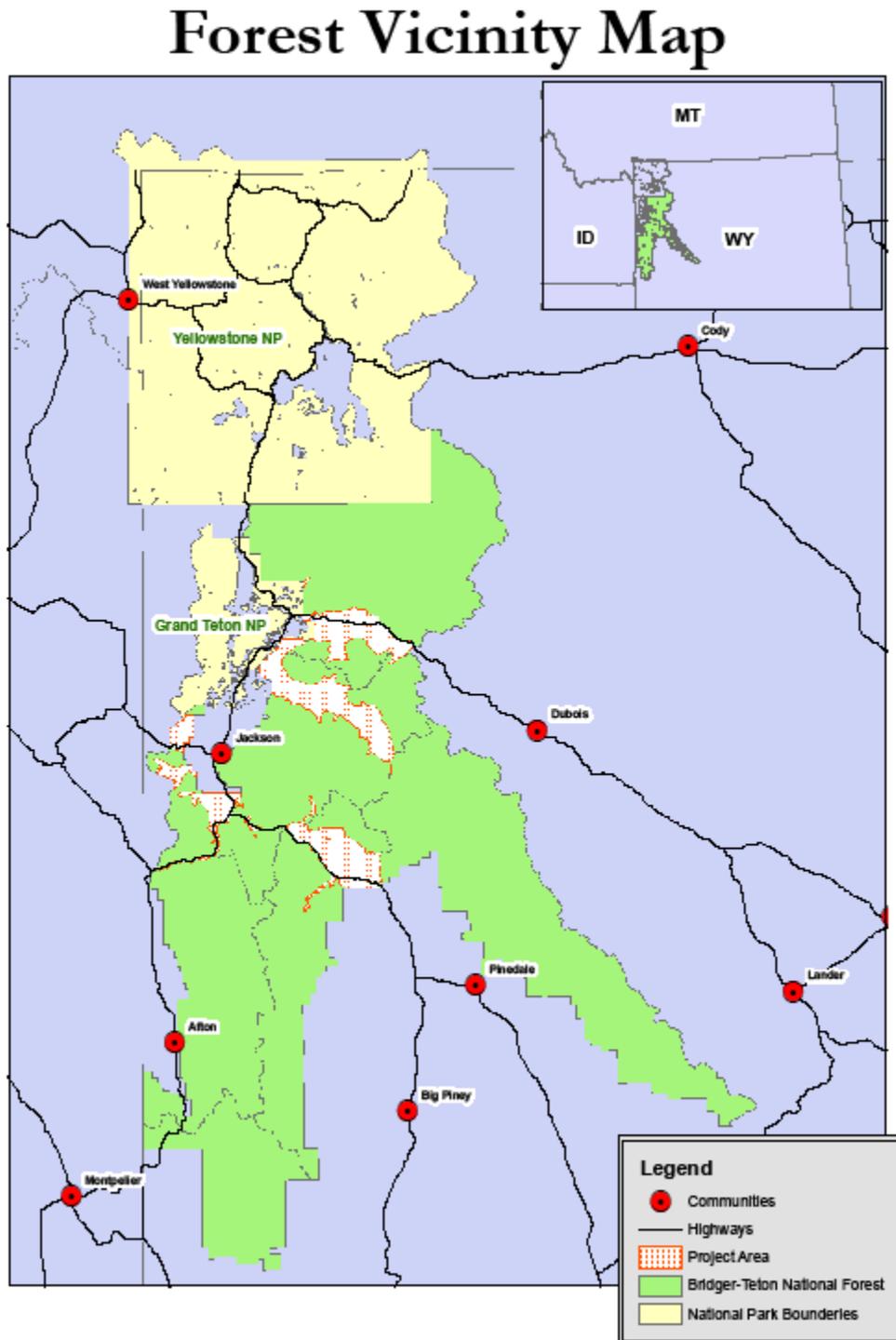


Figure 2: Project Vicinity



Background

The first official road constructed within the project area was a military road built over Togwotee Pass in 1898. Before that, crude roads over Teton Pass, along Hoback Canyon, and along the Gros Ventre River provided the only reasonable access into the Jackson Hole area. More roads were built during the homesteading era. By 1908 the Gros Ventre valley was almost entirely homesteaded. Roads at that time were generally opened only during the summer as snow often made roads impassable during the winter. Road maintenance began in the 1920s with horse drawn equipment followed by motorized maintenance equipment in the late 1920s. The early roads lacked bridges and required ferries or pull-through fords at the river crossings. One of the first bridges constructed in the region was the Red Hills Bridge across the Gros Ventre River in 1919. While some road construction occurred into the 1950s, significant road construction did not occur until the 1960s and 1970s when timber harvest and oil exploration occurred in the project area.

The first Forest Service actions to address motorized use within the project area date back to 1965 when the Forest Supervisor received approval from the Regional Forester to close three trails to motorized use within the Gros Ventre Mountains to prevent damage to soils and vegetation. These trails included Soda Creek, Cow Creek, and Alkali Creek. These individual trail closures became an area closure in 1972 to protect the high elevation area of the Gros Ventre Mountains which by this time was being considered for inclusion in the National Wilderness Preservation System. The Teton Wilderness was designated as a Primitive Area by the Forest Service in 1934 and became part of the original 1964 Wilderness Act legislation so motorized use has been prohibited in that area for at least 75 years.

The 1970s brought broader attention nationally and locally to the issue of off-road vehicle management. In 1972, President Nixon issued Executive Order 11644 – “Use of ORVs on the Public Lands” which directed the federal land management agencies to “establish policies and procedures that 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, promote the safety of users, and to minimize conflicts among the various users of those lands.” This order gave the National Forests the authority to designate “specific areas and trails on public lands where off-road vehicles may be permitted, and areas in which the use of off-road vehicles may not be permitted.” In 1977, President Carter issued Executive Order 11989 to clarify sections of the previous executive order giving the National Forest additional authority to immediately close areas and trails to off-road vehicles where such vehicles “will cause or is causing considerable adverse effects on soil, vegetation, wildlife, wildlife habitat, or cultural and historic resources.” Shortly afterwards, the Forest Service Washington Office issued direction to the field noting that the Council of Environmental Quality determined that the President’s amendment is “not intended to result in arbitrary or blanket closure of the public lands. It is designed to only affect those ORV’s actually responsible for environmental damage.”

Locally, the executive orders combined with development of the first Land Use Plans in 1974 spurred management actions on the Bridger-Teton National Forest. Additionally, the three Regional Foresters representing Forests within the Greater Yellowstone Area approved an off-road vehicle policy in 1974 stating that “the Forests are open for ORV use except where closures or restrictions are identified” and “Low cost ORV user maps will be prepared annually indicating

the areas open, restricted, or closed.” Particularly relevant to this environmental analysis is the Land Use Plan for the Spread Creek and North Gros Ventre Planning Unit. This document provided direction for the Mount Leidy area south of the Togwotee Highway and north of the Gros Ventre road. The Land Use Plan noted that “hunting pressure has increased over 100% in the past decade and the use of 4WD vehicles and trail machines to penetrate unroaded country has also increased rapidly.” Thus, one of the objectives of the Land Use Plan was to provide direction for management of both on-and-off-road vehicles to respond to resource concerns and implement the new authorities granted by the Executive Order. The central issue at the time was conflict between road access associated with timber harvest and maintenance of elk herds. The Plan also noted that outfitting was an important consideration in the conflict between road access and maintenance of elk herds. At the time, the guide service industry was a multi-million dollar business in the Jackson Hole – Dubois area and about 90 hunting camp permits were issued each year. However, “the increase in road access, both from timber sales and by other means, has been instrumental in forcing some outfitters to abandon certain camps, particularly in the more accessible areas such as Lily Lake.” In addition to the Land Use Plan, the Forest Service also released an Environmental Impact Statement in 1974 for two timber sales proposed in Moccasin Basin and Calf Creek-Papoose Creek. This proposed action resulted in multiple appeals over the issue of road access, noting that “...the construction of the access road to the timber sale sites with the accompanying additional access of larger numbers of people will have a deleterious effect upon an elk herd and some fisheries...” To resolve the appeals, the Forest Service agreed in 1975 to close the timber sale roads to public motorized travel. In the next few years, the Forest Service prepared a series of environmental analysis reports resulting in decisions to close a number of roads including three roads in the Bacon Creek area, two roads in the Ditch Creek area, three roads in the Grouse Creek/Spread Creek area, roads in the Corridor area adjacent to the Teton Wilderness, all roads leading off of constructed roads in the Jackson Front area (Flat Creek to Camp Creek), and all roads in the proposed Gros Ventre Mountains wilderness.

Not surprisingly, the road closures caused concern among citizens who used motor vehicles to access areas affected by the closures. In responding to a reporter from the Casper Star Tribune, Forest Supervisor Tom Coston noted “we are not closing any roads for the sake of closing roads – but only where closure appears the only means of preventing some form of intolerable damage.” He further noted that “Two types of ‘roads’ are being closed: (1) roads that are actually trails which have developed through ORV use over the past 20 years, and (2) roads built into timber sales in elk habitat, where unrestricted public access could, in the judgment of Forest Service and Wyoming Game and Fish biologists, cause intolerable impact upon the wildlife.” In 1976, the Regional Forester issued direction to the Forest Supervisors regarding off-road vehicle planning. Most notably this direction stated that “Forest Service policy is one of multiple use and our basic philosophy is that the National Forests are public lands which are open to the public for all legitimate uses. Restrictions are made only where or when necessary.” The direction required preparation of environmental analysis reports for off-road vehicle plans, specified that restrictions had to be based on adverse effects to resources, conflicts with users, and public safety, required regional review of off-road vehicle plans, required public involvement in the development of the plans, and specified a consistent format for all travel maps.

In 1975, the Bridger-Teton drafted an off-road vehicle plan and held a series of public meetings. This plan and off-road vehicle study was the basis for the first Bridger-Teton National Forest travel map issued January 1, 1977 covering what was then the Buffalo, Gros Ventre and Hoback

Ranger Districts. This map displayed motorized area closures for the Teton Wilderness and some adjacent lands, the core of the Gros Ventre Mountains, and ski resort permit areas. Other areas were closed to motorized use except on designated routes including the Moccasin Basin area, the Ditch Creek area, some lands adjacent to the Teton Wilderness, the Jackson Front area, Monument Ridge area, and areas within 1 mile of elk feedgrounds. All other areas on these districts remained open to motorized use, however, eight roads in the Mount Leidy area had seasonal restrictions allowing motor vehicle use only from July 1 until August 30.

May 1, 1980 saw the release of an updated travel plan for the Buffalo, Gros Ventre, and Hoback Ranger Districts with some significant changes to the 1977 travel map. Most notable was eliminating the designated roads in the Mount Leidy area and creating an area closure to protect wildlife including the elk herds. This area closure included eliminating the designated Moccasin Basin road due to numerous documented motor vehicle violations. Other changes included expanding the area closure for the Gros Ventre Mountains and removing the area closure in Ditch Creek. The 1980 travel plan was updated again in 1983 to reflect new boundaries for the Teton and Gros Ventre Wildernesses due to the pending Wyoming Wilderness Act. In addition, the Monument Ridge restricted motorized use area was expanded to include the entire Willow Creek area. In 1987, the map was re-printed with no area changes. Of interest was considerable discussion during this time about whether to close the Slate Creek trail due to the rutted meadows and muddy roads. Temporary closures were implemented however public concern and further study resulted in the area being kept open. Throughout this period, restricted areas around elk feedgrounds, within the Jackson Front area, and the ski resort permit areas did not change. It is this series of travel plans that set the stage for how motorized use is managed today.

In 1990, the Bridger-Teton National Forest released its first Forest Plan, which provided comprehensive direction for forest management including off-road vehicles. By this time, off-road vehicle use was greatly expanding due to the arrival of ATVs and more powerful motorcycles. A Forest-wide effort began in 1990 to update travel plans to comply with the new Forest Plan direction which included a standard that off-roads vehicles must be restricted to routes or open roads designated for that use, rather than just restricted to certain areas. An initial Forest-wide scoping document was released to gather public comments in 1990 with additional comments requested a year later. This effort resulted in the Kemmerer, most of the Big Piney, and the Greys River Ranger Districts completing a travel plan update. The Pinedale district then followed with a travel plan update in 1996. While the Buffalo and Jackson Ranger Districts did some initial analysis, an update of the travel plan did not move forward due to other planning priorities. However, by the late 1990s, the 1987 travel map was out of print and the northern districts had no map available to the public showing where motorized use was allowed. This resulted in an effort to develop a map that would be available to the public in a timely manner. Rather than undertake a lengthy planning effort, the Forest decided to re-print the 1987 travel map with changes based on legislation, decisions made with environmental analysis since 1987, new special orders, and changed conditions on the ground such as landslides or lack of public access. The most significant change made was restricting motorized travel within the Congressionally designated Wilderness Study Areas to allow motorized use only on National Forest system motorized routes that pre-dated passage of the Wyoming Wilderness Act. This travel map was printed in 2000 with a minor change in the special order issued in 2002. No updates have occurred since then.

Definitions

All-terrain vehicle (ATV): A type of off-highway vehicle that travels on three or more low-pressure tires; has handle-bar steering; is less than or equal to 50 inches in width; and has a seat designed to be straddled by the operator

Designated road or trail: “A National Forest system road, or National Forest System trail that is designated for motor vehicle use pursuant to the Travel Management Rule on a motor vehicle use map.”

Inventoried Roadless Area: “Areas identified in a set of inventoried roadless area maps, contained in the Forest Service Roadless Area Conservation, FEIS, Volume 2, dated November 2000, which are held at the National headquarters office of the Forest Service, or any subsequent update or revision of those maps.”

Motor vehicle: Any vehicle which is self-propelled, other than: (1) A vehicle operated on rails; and (2) Any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area.

Motor vehicle use map (MVUM): A map reflecting designated roads, trails, and areas on an administrative unit or a Ranger District of the National Forest System.

Off-highway vehicle (OHV): “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.”

Off-road recreational vehicle (ORV): Wyoming regulates the use of ORVs, rather than using the broader Forest Service definition of OHVs. Wyoming State Statute 31-1-101(k) defines a Type 1 ORV as “a recreational vehicle primarily designed for off-road use which is fifty (50) inches or less in width, has an unladen weight of 900 pounds or less and is designed to be ridden astride upon a seat or saddle and to travel on at least three low pressure tires. A Type 2 ORV is defined as “any unlicensed motorcycle which has an unladen weight of 600 pounds or less and is designed to be ridden off road with the operator astride upon a seat or saddle and travels on two tires.” A Type 3 ORV is defined as “any multi-wheeled motorized vehicle not required by law to be licensed and is designed for cross-country travel on or over land, sand, snow, ice, or other natural terrain and which has an unladen weight of more than 900 pounds.”

Road: “A motor vehicle route over 50 inches wide, unless identified and managed as a trail.”



Typical Forest Road

Road construction or reconstruction: Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a road.

Route: A road or trail.

System road or trail: “Those routes that have been determined necessary for the protection, administration and use of National Forest System land.” These are numbered National Forest roads and trails that have been included in the Forest transportation system and are eligible to receive maintenance funds. System roads and trails are a subset of all the routes that exist on the ground.

Trail: “A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.”



Typical Motorized Trails

Left – 50” or less vehicle trail
Right – Motorcycle trail

Unauthorized road or trail: “A road or trail that is not a National Forest system road or trail or a temporary road or trail and that is not included in a forest transportation atlas.” Such roads or trails are commonly referred to as “user-created” roads or trails. Unauthorized routes develop without agency authorization, environmental analysis, or public involvement and do not have the same status as NFS roads and NFS trails included in the forest transportation system.

Wilderness Study Area: A Wilderness Study Area (WSA) is a Congressional designation for an area that is being studied for possible inclusion in the National Wilderness Preservation System. The legislative direction for Wilderness Study Areas in Wyoming states that, the Secretary of Agriculture “shall administer the area so as to maintain its presently existing wilderness character and potential for inclusion in the National Wilderness Preservation System”

Purpose and Need for Action _____

Project Purpose

The purpose of this project is to improve management of public summer motorized use (May 1 – November 30) by designating roads and motorized trails in certain areas of the Bridger-Teton National Forest where motorized use is currently not restricted. By eliminating unrestricted travel and providing clear direction on where motorized use is allowed, what type of motorized use is appropriate on each designated route, and the season of use for each route, resource

damage can be reduced, forest visitors can be better served, and the ability to maintain roads and trails can be enhanced. Specific project objectives are to:

1. Designate roads and motorized trails to meet identified public access needs, improve the quality of the road and motorized trail system, and reduce conflicts:

Provide motorized access needed to accommodate roadside dispersed camping, access to hunt areas, and access to trailheads. Improve the quality of roads and motorized recreational trail riding opportunities. Reduce the potential for conflicts between motorized and non-motorized use, different classes of motorized use, and between motorized and special uses.

2. Reduce resource impacts:

Reduce the effects of motor vehicle use on wildlife, soils, vegetation including wet meadows and riparian areas, cultural resources, and roadless backcountry areas, and reduce the potential for introduction and spread of noxious weeds.

3. Improve the ability to maintain routes and enforce travel regulations:

Designate routes for motorized use that allow maintenance dollars to be more effectively used to meet identified public access needs. Improve enforcement of travel regulations by reducing the number of dead-end roads and trails, creating more trail loops, and publishing a motor vehicle use map that provides clear direction on where and when motorized use is permitted. Improve consistency of the motorized system with respect to the class of vehicle allowed on routes, not only to improve the quality of trails for motorized use but also to improve the ability to patrol the system and enforce regulations.

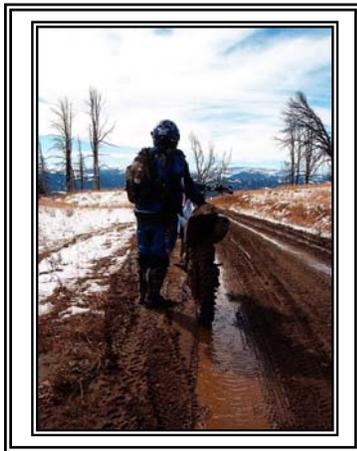
Project Need

Off-highway vehicle (OHV) use within portions of the Bridger-Teton National Forest is not being managed in a manner consistent with 1990 Forest Plan direction and the 2005 National Forest Travel Management Rule or in a manner consistent with resource protection, public safety and enjoyment by all Forest users. The current travel plan for the north zone of the Bridger-Teton National Forest was developed in the late 1970s and 1980s prior to the technological advances that transformed truck, ATV and motorcycle use on public lands. Motorized use has a long history on the Forest and is a legitimate and appropriate way for people to enjoy the National Forest, in the right places and with proper management. Since the 1980s, motor vehicle use has changed from primarily jeep travel to a mix of passenger car, truck, ATV, and motorcycle use and the desire for motorized trail access has increased. The current system of roads and motorized trails evolved from historical use and forest management activities, thus the system was never designed with an eye towards current recreation and access needs. As a result, the current system is often confusing in terms of what is and is not allowed and does not always serve visitors well. Unrestricted motorized use has also caused resource damage, wildlife disturbance, and conflicts between motorized and non-motorized visitors, particularly during the fall hunting season. There are five compelling reasons why there is a need to create a designated system for public motorized use and eliminate areas of unrestricted motorized use.

1. Unrestricted motorized travel is resulting in an ever increasing unmanaged and lower quality network of roads and trails that do not serve visitors well.

The current Forest transportation system within the project area contains 431 miles of road, 51 miles of closed road, and 35 miles of trail managed for motorized use within the project area. Since the 1980s, off-highway motor vehicle use has evolved from primarily jeep travel to a mix of full-size vehicle, ATV, and motorcycle travel. The largest increase has been in the number of ATVs and motorcycles which grew 174% in the United States between 1993 and 2003 (Cordell, et al 2005). With more use has come a stronger desire for motorized trails both during the summer for recreational riding and during the fall to facilitate access to camps and hunt areas. While the current situation of unrestricted motorized use makes more miles of road and trail available for motorized use, many of the routes used today are not part of the Forest transportation system, thus do not receive maintenance funding. This is true for many trails but also includes many short roads that access dispersed campsites. Over time, as these trails and roads deteriorate due to lack of maintenance, access becomes more difficult particularly for vehicles. Furthermore, as the overall miles of non-system roads and trails increase, the overall quality of the transportation system declines since a smaller proportion of roads and trails are managed and maintained. In addition, because system routes were developed historically for different purposes, the design and location of routes often do not serve today's recreation needs. Examples where the current situation is not adequately serving visitors well include motorized trails that dead-end at closure boundaries. Such situations invite illegal trespass into closed areas and are difficult to enforce, whereas a well-designed and managed loop trail would offer a more desirable and higher quality experience for the motorized user and reduce the potential for violations. Additionally, the lack of clear direction regarding the class of vehicle allowed on specific routes creates confusion and reduces the quality of experience for many motorized visitors. Examples include former single-track trails that have become wider with ATV use over time, reducing the challenge and type of trail motorcycle users seek. Similarly, many ATV riders desire a trail experience rather than riding on roads, thus as routes widen with vehicle use, quality declines. Clearer direction is also needed for how some roads are managed. An example is in the Blackrock/Togwotee area where some roads were gated after timber harvest operations ceased. Such gates prevent full-size vehicle access but because the road is within an unrestricted motorized area, motorized use is allowed. This situation creates conflicts between different types of motorized users, particularly during the hunting season when hunters, who park their vehicle and are on foot, encounter ATVs behind closed gates. Finally, the lack of designated system of motorized trails also reduces opportunities for family oriented riding. Wyoming State statute requires any operator of an off-highway vehicle to have a valid driver's license if traveling on roads. Thus, children under 16 years old can only legally ride with their parents on routes designated as trails.

Creating a designated system of motorized routes offers the opportunity to develop a motor vehicle system that offers a better balance between road and trail miles and improves the quality of the system by creating trail loops, providing clear direction on the type of motorized use appropriate for each route, and focusing limited maintenance funding on key access needs.



The lack of managed motorized trail loops and dead-end trails reduce the quality of the OHV system and invite trespass into closed areas

2. Unrestricted motorized travel is contributing to resource damage.

In areas where motorized use is not restricted to designated trails, there has been a proliferation of unauthorized routes. With the proliferation of routes comes increased impact on soils, riparian areas, fisheries, cultural resources, and plant communities. The complete mileage of unauthorized routes existing within the project area is unknown but a survey of routes conducted from 2003-2004 catalogued hundreds of miles of non-system roads and trails within the Gros Ventre and Munger Mountain areas. There are existing regulations that prohibit unauthorized trail construction and prohibit operating motor vehicles in a manner that damages the land, wildlife, or vegetation. However, these regulations have not been sufficient to control the creation of new routes or minimize resource damage. This is largely due to the nature of OHV travel. The first vehicle driving across a sagebrush meadow may not harm the land. However, when multiple vehicles follow the same route, a new route becomes established. Determining which vehicle caused the damage in these type of situations is an impossible task for law enforcement officers. These routes typically follow the path of least resistance thus are often not located so as to minimize impact to soil, water, vegetation, wildlife and fisheries. Poor location combined with lack of maintenance usually leads to deteriorating resource conditions over time. System roads and trails are not immune from this problem. While system trails may be able to handle low levels of horse and hiking use, they typically are not designed to handle the level and mix of motorized and non-motorized uses such trails now receive. Roads and trails located in wet meadows can impact riparian areas important to animals, birds, and amphibians. Roads and trails located on steep slopes or on particularly erosive soils can cause soil erosion which increases sedimentation into nearby water sources reducing water quality and impacting fish. Poor road and trail location can also inadvertently impact sensitive plant communities, prehistoric sites, sacred sites important to tribal people, and historic resources which are particularly prevalent in the Gros Ventre drainage. Additionally, invasive and noxious weeds have become an increasing concern throughout the entire region as many weeds have the potential to rapidly change native plant communities which then impacts wildlife habitat. All human activities can introduce and spread noxious weeds. However, there is high concern about unrestricted motorized use because of the amount of area motor vehicles can cover in a day and the inability to adequately monitor and treat weeds over such large areas.

Creating a designated system of motorized routes offers the opportunity to reduce resource impacts on wet meadows, water sources, steep slopes, and cultural resources, and limit the introduction and spread of noxious weeds. Creating a designated system of motorized routes also offers the opportunity to improve the long-term sustainability of routes by focusing maintenance dollars on priority routes.

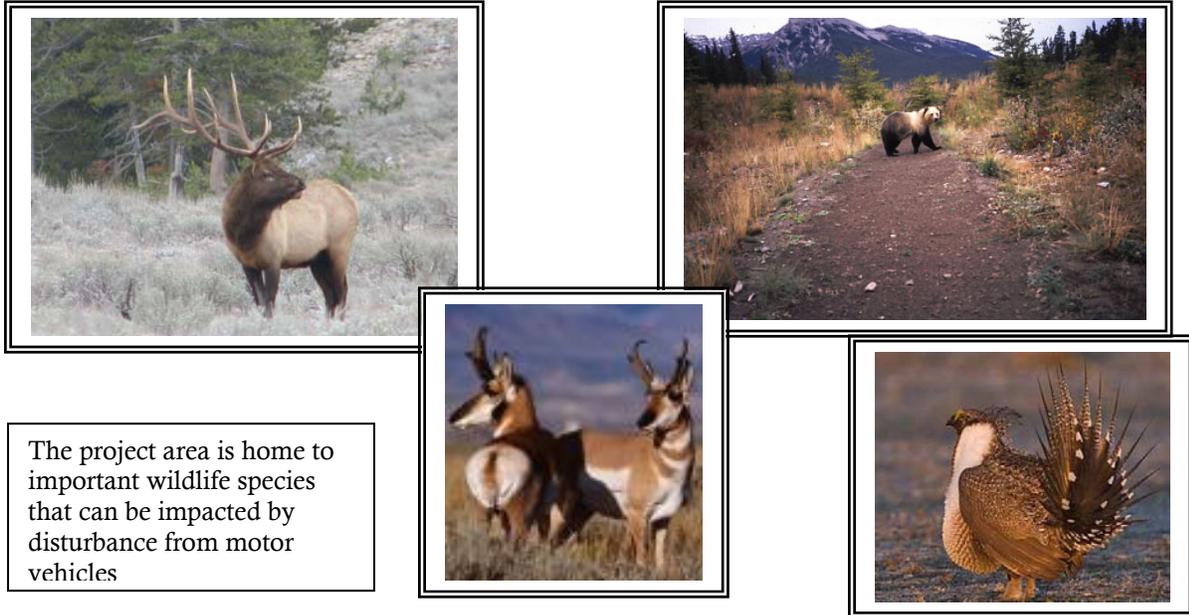


Examples of resource damage within the project area

3. Unrestricted motorized travel is contributing to wildlife disturbance.

The Bridger-Teton National Forest is known for its abundant and diverse wildlife. In particular, Jackson Hole's heritage and culture is largely defined by wildlife as evidenced by its large outfitted hunting industry, the presence of the National Wildlife Art Museum, the annual Wildlife Film Festival, and its position as a center for wildlife research and wildlife advocacy organizations. While elk hunting has long drawn residents and visitors to the area, increasingly the opportunity to simply view elk, moose, bighorn sheep, and other wildlife is a primary reason visitors come to the area and contributes to why people choose to live in the area (Kocis, et al 2003, Schechter 2002). All forms of forest-based recreation cause some wildlife disturbance, however because motor vehicles can cover much more area in a day than foot or horse travel, motorized recreation has the potential to cause more wildlife disturbance. The Western Association of Fish and Wildlife Agencies noted in a 2005 letter to the Chief of the Forest Service that, "unregulated and illegal use of OHVs has emerged as a significant threat to certain wildlife habitats and to the quality of hunting and fishing experiences." Locally, species of concern within the project area include, but are not limited to, elk, grizzly bears, bighorn sheep, pronghorn antelope, deer, moose, peregrine falcons, sage grouse, and amphibians. Disturbance to elk is a particular concern within the Gros Ventre and Munger Mountain areas. In the Gros Ventre, low bull-to-cow ratios for elk are causing concern about the long-term stability of the population which in turn is of concern to hunters. In the Munger Mountain area, elk have moved to private land where they cannot be harvested and intermixing with cattle results in a brucellosis concern. All of the Blackrock/Togwotee area is within the primary conservation area for recovery of the grizzly bear. Improving habitat security by eliminating unrestricted motorized use is key to conserving this species. The Gros Ventre area contains many significant wildlife resources, including a large portion of the migration corridor for pronghorn antelope, key habitat for bighorn sheep which have been declining in the region, and habitat for sage grouse, a species currently in decline.

Creating a designated system of motorized routes offers the opportunity to reduce wildlife disturbance by eliminating unrestricted motorized travel, establishing seasonal restrictions on routes, and closing routes that fragment especially important wildlife habitats.



The project area is home to important wildlife species that can be impacted by disturbance from motor vehicles

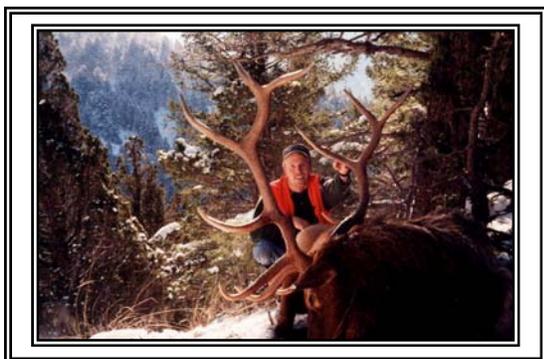
4. Unrestricted motorized use is contributing to conflicts between motorized and non-motorized use and between motorized and special uses.

As motorized and non-motorized use has increased in the project area, conflicts among different uses have increased. Conflict is not necessarily an inherent incompatibility among different uses but rather is attributable to one person's behavior interfering with the ability of another person to achieve their desired goals. Often times, the person creating the conflict is not even aware that his/her activity or behavior is causing problems for others. Conflict comes in many forms and is particularly prevalent during the hunt season when a large number of both motorized and non-motorized visitors are recreating on the Forest. Examples of the kind of conflict occurring within the project area include:

- a. Hunters pursuing elk and deer are disrupted by visitors on OHVs that cause animals to be displaced. The major source of complaint comes from those hunters who have accessed backcountry areas on foot or horseback but complaints also come from motorized users who have used a truck or ATV to access a campsite but then are pursuing game on foot and are upset about the presence of motorcycles on ridges displacing animals. The Gros Ventre and Munger Mountain are the two geographic areas where such complaints are most common but such complaints also occur in the Blackrock/Togwotee area.
- b. Recreation visitors on foot, horseback, or mountain bike typically desire trails in areas free from the noise and odor associated with motorized vehicles. While such conflict likely occurs throughout the project area, the concern is highest in the Phillips Ridge area. In this area, there is a long history of trails managed for non-motorized use and the area is heavily used by hikers, mountain bikers, and horse riders.

- c. Outfitter-guides operating under special use permits often express concern about motorized vehicles, particularly within the Gros Ventre area. The situation described in (a) is significant for outfitters who are guiding hunters; however an additional concern is client safety. Many guided hunters are relatively inexperienced with horses. The sudden appearance and noise of an ATV or motorcycle can frighten horses necessitating quick action by the rider to control the horse. Such situations can potentially result in injury to the rider and/or the horse.
- d. Permitted livestock operators and adjacent landowners also express concern about motorized vehicles, particularly in the Munger Mountain area. In this area, the combination of motorized use and trail proliferation (from all forms of recreation) has led to cattle distribution problems due to cattle being forced to move to avoid motorized use or due to gates being left open. This has resulted in cattle ending up in unscheduled pastures, on adjacent private lands, or in residential areas and riparian areas along Fall Creek road. Unrestricted motorized use has also resulted in trespass onto adjacent private lands, particularly during the hunt season.

Creating a designated system of motorized routes offers the opportunity to reduce conflict between motorized and non-motorized use particularly during the hunt season, reduce trespass onto adjacent private land, and improve coordination between motorized use and permitted special uses.



A designated OHV system can help reduce conflicts between motorized and non-motorized use particularly during the hunting season

5. Unrestricted motorized travel is not consistent with the Forest Plan and the National Forest Travel Management Rule.

The Bridger-Teton National Forest Land and Resource Management Plan (Forest Plan) approved in 1990 contains forest-wide direction that requires off-highway vehicles (OHVs) to be restricted to routes or open roads designated for that use. Similarly, the 2005 National Forest Travel Management Rule prohibits unrestricted motorized travel and requires roads and trails open to motor vehicle use to be designated for such use. The new travel regulations also require routes to be designated by vehicle class and, if appropriate, by time of year. However, neither the Forest Plan nor the National Forest Travel Management Rule are enforcement documents. Rather, travel management maps or motor vehicle use maps are the tools required to enforce travel regulations. On the North Zone of the Bridger-Teton National Forest, the current travel management map was developed in the 1980s and contains areas where motor vehicle use is not restricted to designated routes. Additionally, the current travel management map is not consistent with desired future conditions for some specific areas of the Forest. These areas are desired future

condition categories 7, 8, and 12. For desired future condition category 7, management emphasis is on enhancement of habitat and maintenance of recovered grizzly bear populations. Within these areas, Forest Plan direction states that vehicle use on roads is appropriate but motorized use off roads is not appropriate. However, the current travel management map allows use of motorized use off roads within some of these areas. For desired future condition category 8, management emphasis is on conservation and environmental education and for desired future condition category 12, management emphasis is on providing important habitat for big game such as calving areas and security areas. In both of these areas, Forest Plan direction states that vehicle use on roads is appropriate and motorized use off roads is appropriate with area restrictions. The current travel management map allows unrestricted motorized use within both desired future condition category 8 and 12, however seasonal restrictions on motorized use have not been established for some important wildlife calving and security areas.

Creating a designated system of motorized routes offers the opportunity to bring management of motor vehicle use into compliance with the 1990 Bridger-Teton National Forest Plan and the 2005 National Forest Travel Management Rule.

Project Scope

Key to this OHV Route Designation Project is an understanding of the limitations regarding what this project does and does not include. These limitations are necessary to focus on the most urgent problem (areas where summer motorized use is not currently restricted to designated roads and trails) and allow this project to be completed in a timely manner.

What this OHV Route Designation Project includes:

- Focus is on managing public, motorized travel occurring between May 1st and November 30th annually (summer motorized use). Over-snow vehicle use is not included.
- Focus is on those areas of the Bridger-Teton National Forest that currently allow unrestricted motorized travel. These unrestricted areas are the “grey” areas currently displayed on the Bridger-Teton National Forest Buffalo and Jackson Ranger Districts (and portion of Big Piney Ranger District) Travel Map. The boundary area immediately adjacent to these “grey” areas is also considered where necessary to meet the project purpose and need. Decisions made as part of this project will not preclude future consideration of additional designated routes to enhance connections between areas or removal of routes to address problems that emerge after monitoring once the initial designated OHV system is in place and the Forest Plan has been revised.
- Focus is on deciding the **location of routes** open to public motorized use, the **class of vehicle** appropriate for each route, and the **timing of use** (e.g. seasonal restrictions)
- Focus is on analyzing the changes needed to the current National Forest system of roads and motorized trails as identified in the Forest Transportation Layer. System roads and trails are numbered routes that have been determined to be necessary for management of the National Forest and are eligible to receive maintenance funds. System roads and trails are a subset of

all the routes that exist on the ground. In this project the entire system is displayed so people can see how the designated system fits together but the “decision to be made” focuses only on changes needed in the system to meet the project purpose and need.

What this OHV Route Designation Project does not include:

- This project does not address over-snow winter motorized travel. The current winter travel plan for the Teton Division was developed in 1990 so is more recent than the summer travel plan that was developed in the 1980s. In addition, the issues, environmental effects, and geographic areas associated with motorized winter travel are quite different compared with motorized summer travel. Addressing motorized winter travel along with this summer OHV Route Designation Project would lengthen the planning process significantly and would divert time and resources away from the most urgent need, which is eliminating unrestricted motorized use during the summer. There is high public interest in updating the winter travel plan, however, to do justice to the winter issues, the Forest decided that it is best from both a resource and public involvement perspective to separate the two planning efforts, especially since the Forest Plan is being revised to include desired conditions for winter settings.
- This project does not include any new construction of roads or motorized trails. Additionally, this project does not include proposals for route reconstruction or decisions about decommissioning or obliterating Forest system routes.
- This project does not address non-motorized travel. However, the project will clearly affect opportunities for non-motorized travel. The Forest recognizes that all forms of recreation have environmental and social effects. Specific non-motorized trail plans have been developed for the Greater Snow King and Teton Pass areas. In the future, there may be other areas where some non-motorized uses must be restricted to designated trails.
- In focusing on routes available for public motorized use, this project does not include motorized travel associated with established exemptions noted in the National Forest travel management regulations. Exemptions include administrative activities such as law enforcement, fire, emergencies, noxious weed control, vegetation management, and certain special use permit activities such as gathering firewood, range permittee activities, and needs outfitters may have to set up or take down camps at assigned sites. All such uses require specific authorization from the appropriate Line Officer, detailing when, where, who, and under what circumstances motorized travel is allowed.
- This project does not propose a change in the 300 feet allowable distance off designated roads to access dispersed campsites. However, not all roads would allow a 300 foot corridor. As noted in the current travel plan, motor vehicles may travel up to 300 feet off open roads to access campsites when the ground is dry, no vegetation is damaged, and when no streams or wet meadows are crossed. As the Motor Vehicle Use Map is prepared, motor vehicle travel would not be allowed in areas of known problems within the 300 foot corridors. The Bridger-Teton National Forest Travel plans have included a 300 foot corridor around designated roads since 1977. This 300 foot corridor has remained in place throughout revisions of the travel plans so as to not reduce opportunities for dispersed camping. Because this OHV Route Designation Project only includes portions of the Buffalo, Jackson, and Big Piney Ranger Districts, it would be inconsistent to change the allowable corridor only for these portions of the district while the remainder of the district had an allowable distance of 300

feet. Additionally, neighboring National Forests in Wyoming have retained the 300 foot allowable distance. The Bridger-Teton National Forest has collected location information for many but not all of the dispersed campsites on the Buffalo, Jackson, and Big Piney Ranger Districts. Over time, known problem areas within the 300 foot corridors would be excluded as Motor Vehicle Use Maps are updated and the 300 foot corridors would eventually be phased out after data has been obtained for all of the key dispersed camping areas.

- No allowable distance for motor vehicle use from designated routes is included for the purpose of game retrieval. Chapter 2 discusses options considered for game retrieval during this analysis. Additionally, no allowable distance for motor vehicle use is allowed off of designated motorized trails. However, in accordance with the National Motor Vehicle Use Map, “motor vehicle designations include parking along designated routes and at facilities associated with designated routes when it is safe to do so and when not causing damage to National Forest System resources”. This provision recognizes that from a practical standpoint, one vehicle width from the edge of the route surface may be necessary to park a vehicle, allow another party to pass, or perform a repair.

Proposed Action

To create a designated system of routes for motor vehicle use and eliminate unrestricted motorized travel, changes are being proposed to the current Forest system of roads and motorized trails. The proposed changes are described in detail in four action alternatives identified in Chapter 2. As noted earlier, no new roads or motorized trails are proposed to be constructed. All routes proposed to be designated exist on the ground although some may not currently be part of the National Forest transportation system. Likewise, some roads that currently are on the Forest transportation system are proposed to be closed or converted to trails that allow vehicles 50” or less in width. As the final designated road and motorized trail system is implemented, sections of designated routes will need to be re-constructed to improve sustainability and mitigate resource damage. Under the initial preferred alternative (Alternative D), the designated road and motorized trail system would total 506 miles within the areas where motorized use is currently unrestricted. This is roughly equivalent to the mileage that is currently on the Forest transportation system; however the proposal includes 64 more miles of motorized trail and 75 fewer miles of road. Additionally, 131 miles of motorized routes are proposed to have seasonal restrictions to protect wildlife and prevent road damage compared to 38 miles of the current system that have such restrictions.

Decision Framework

Given the purpose and need, information from the environmental analysis, and public input, the District Rangers for the Buffalo, Jackson, and Big Piney Ranger Districts will make the following decisions about public motorized use on their respective district.

1. Which roads and trails should be added to the current transportation system for public motorized use, which roads and trails should be closed to public motorized use, and which roads should be converted to motorized trails?
2. What class of vehicle should each designated motorized route be managed for?
3. What seasonal restrictions are needed on motorized routes?

4. Which roads are not appropriate for travel by vehicles less than 50" wide or motorcycles (i.e. public safety would be compromised if mixed vehicle use occurred)?

The decision on a designated road and motorized trail system will be made in accordance with the requirements of the National Forest Travel Management Rule and within the context of Bridger-Teton 1990 Forest Plan direction. Wyoming State statute will continue to govern requirements for operating off-road vehicles. Information about the Wyoming State ORV program and state statutes can be found at <http://wyotrails.state.wy.us/>. The decision for the designated road and motorized trail system will be displayed on a motor vehicle use map that conforms to a nationally consistent format and is updated annually.

Travel Analysis

Travel analysis provides a comprehensive look at the network of National Forest system roads and system trails across a broad landscape before beginning the formal environmental analysis process. Travel analysis includes consideration of the Forest's recreation niche and recreation demands, as well as initial screening of user-created routes that are candidates for inclusion in the Forest transportation system. General screening criteria for the inclusion of potential routes as part of the Forest system include considering the effects of the route on natural and cultural resources, public safety, provision of recreational opportunities, access needs, conflicts among different uses, and the availability of resources for maintenance and administration of the system.

The vision statement for the Bridger-Teton National Forest states that the Forest is home to world class headwaters, wildlife, wilderness, and wildlands. These resources provide outstanding year-round recreation opportunities with particular emphasis on opportunities that require backcountry settings and those associated with wildlife. This Forest niche is validated by various visitor surveys. The national visitor use monitoring conducted on the Forest in 2002 found that the top activities visitors participated in were viewing scenery and viewing wildlife followed by general relaxing, walking, and pleasure driving (Kocis, et al 2003). A more recent survey of 483 randomly selected residents from counties bordering the Bridger-Teton National Forest found that driving for pleasure and wildlife viewing were the top recreational activities and fish and wildlife habitat was the most important preference for management of the Forest (Clement and Cheng 2008). Within the context of sustaining the values the Bridger-Teton National Forest is known for, two key findings relative to OHV management emerge:

1. The most important motor vehicle access needs are associated with opportunities for wildlife viewing, access to scenic vistas, access necessary to support hunting and fishing activities, and access to dispersed campsites and trailheads. These types of needs are supported primarily by full-size vehicle and ATV travel.
2. There is limited need for motorized recreation solely for challenge and covering miles of terrain. The Bridger-Teton National Forest does not have a history as a motorized recreation destination nor does it have the road and trail infrastructure necessary to support being a motorized destination, especially when compared to other National Forests in the Region. However, the northern portion of the Bridger-Teton National Forest offers some potential for single-track motorcycle riding which is not commonly found in Wyoming. Thus, the designated OHV route system should consider opportunities for motorized trail riding that serve local population needs and serve visitors seeking scenic tours or the chance to view

wildlife but should not strive to become a regional or destination market for motorized recreation.

Travel analysis to support development of the proposed designated OHV route system has been an on-going activity for many years. As noted in the background section, the Forest Service began exploring an update to the North Zone summer travel map in 1990. This effort included compiling information about specific routes from resource specialists and included some public involvement. In 2003, a Landscape Scale Assessment was completed for the Teton Division. This assessment compiled information about existing and reference conditions, trends, issues and opportunities for a variety of physical and biological resources and human uses. A key finding was the need to revise the summer travel map. Another broad-scale assessment of summer and fall recreation trends across the Greater Yellowstone Area was completed in 2005. This assessment helped inform the Bridger-Teton niche in relation to other Forests and identified the need for travel planning to address areas vulnerable to unacceptable impacts from unmanaged recreation (GYCC 2006). In 2003, work to catalogue routes and evaluate route conditions was initiated in the unrestricted motorized areas within the Gros Ventre drainage and Munger Mountain. Information on the location of dispersed campsites has also been collected for some of the area. In 2004, resource specialists with extensive knowledge of on-the-ground conditions worked to develop specific objectives for management of OHV use within each of the unrestricted motorized areas. These resource specialists also compiled preliminary ideas regarding a potential designated OHV route system within these areas. At this time, informal discussions with the public began to occur. After the Forest Service issued the final national travel management regulations in November 2005, development of a designated OHV route system became a priority project on the Forest. Throughout 2006, the Forest gathered input from the public (see public involvement section below), compiled resource maps, and developed a proposed designated OHV route system.

All of this information has been used to determine which routes should be proposed as part of the designated OHV route system. Non-system roads or trails that access key dispersed campsites, scenic vistas, or provided essential access for hunting and game retrieval were considered for inclusion in the Forest transportation system. Non-system trails that offer potential to create loop opportunities were also considered. Roads and trails that have sustainability issues (e.g. erosion, major bogs) and can not be economically reconstructed were not included. Roads and trails that were located in particularly important wildlife habitat were also not included. An example of applying the route screening criteria is found in the Turpin and Atherton Creek portion of the Gros Ventre area. In this area, non-system routes were not considered for inclusion in the designated route system due to the presence of important bighorn sheep habitat, pronghorn antelope migration, peregrine falcon nesting sites, erosion and bogs. A database has been developed to catalogue information about specific routes. This information can be found in the project record located on the Jackson Ranger District on the Bridger-Teton National Forest.

Public Involvement

To help develop a proposed OHV route designation system, a series of six workshops were held in May 2006 to hear from citizens. Input was received about how participants use the areas being analyzed in this project, specific concerns, desirable attributes of a designated road and

motorized trail system, and ideas for balancing public use and resource values. Key points that came from these workshops were:

- ✓ The road system is generally adequate
- ✓ The trail system is not adequate: more trails are needed for ATV and motorcycle riding
- ✓ Loop trails are desired; an exception is if a trail accesses a vista point or campsite
- ✓ Trails that link different areas are desired, i.e. a connected, integrated system
- ✓ Trails need to be sustainable; more maintenance is needed
- ✓ Wildlife protection is essential to retain the qualities that make the Forest special
- ✓ Seasonal restrictions are acceptable (to expand opportunities and prevent trail damage)
- ✓ Better signing and education is essential; people are willing to volunteer
- ✓ Some family opportunities are desirable – kid-friendly riding

This input was combined with resource information to develop an initial proposal. The initial proposal was then posted on the Forest Service website for public comment and two open houses were held. Over 100 comments were received. This public comment was used to develop a proposed action to begin the formal environmental analysis process. The Notice of Intent (NOI) to prepare a Draft EIS was published in the Federal Register on January 5, 2007. Nearly 1300 comments were received on the proposed action. In February 2007, an informational presentation featuring a panel of diverse speakers was held to promote understanding about motorized recreation with approximately 200 people attending. In March 2007, a workshop was held to gather input for alternative development and during the summer three field tours were hosted to discuss preliminary alternatives in specific areas. In May 2008, a public open house was held to introduce the five alternatives, provide an opportunity for citizens to meet with resource specialists, and explain how to comment on the Draft EIS. The Draft EIS was released on June 16, 2008 with the notice of availability published in the Federal Register on June 20, 2008. A total of 216 comments were received on the Draft EIS. Throughout this process, numerous informal meetings have occurred with agencies, non-governmental organizations, tribal governments, and individual citizens and information has been available on the project website. Two Wyoming State departments – Wyoming Game and Fish Department and Wyoming State Trails Program – are cooperating agencies for this project and have provided assistance.

Using the comments from the public, organizations, tribes, and other agencies, the interdisciplinary team developed a list of issues to address.

Issues

The Forest Service separated the issues into two groups: significant and non-significant issues. Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Table 1 contains the significant issues that vary in terms of effects among alternatives thus are most useful in informing the decision-making process. Non-significant issues are identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations explain this delineation in Sec. 1501.7, "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)..." A list of non-significant issues and reasons regarding their categorization as non-significant may be found in the project record located at the Bridger-Teton National Forest, Jackson Ranger District.

Table 1. Significant Issues – Proposed OHV Route Designation Project

Issue	Sub-Issue	Analysis Measures
<p>Motorized recreation opportunities – Effects on opportunities for motorized recreation including dispersed camping, motorcycle riding, 4x4 jeep travel, ATV riding, and hunting access (including game retrieval)</p>	<p>The proposal may affect the quantity and quality of trails available for motorized recreation.</p>	<p>Miles of 50” or less trail available by season; Miles of motorcycle trail available by season; % of total motorized trail miles associated with a loop system</p>
	<p>The proposal may affect opportunities for motorized recreation on roads, particularly opportunities for challenging 4WD roads.</p>	<p>Miles of maintenance level 2 roads by season</p>
	<p>The proposal may concentrate motorized use on a smaller number of trails, thus lead to more congestion. This may reduce the quality of the experience, reduce safety, and limit viewing opportunities.</p>	<p>Difficulty and miles of each trail loop system Total miles of motorized routes (primitive roads and motorized trails) open during the fall season</p>
	<p>The proposal may reduce forest access reducing the ability to retrieve big game and limiting the ability of elderly and handicapped people to get out in the forest.</p>	<p>% of project area accessed within a given distance from a route by each season Acres of usable/potentially available OHV terrain</p>
<p>Non-motorized recreation opportunities - Effects on opportunities for non-motorized recreation</p>	<p>The proposal may affect opportunities for non-motorized recreation. In particular, the noise and smell associated with motorized use may disrupt the peace and quiet and experience of being out in nature that many non-motorized recreation visitors seek.</p>	<p>Degree of separation (acres at least ½ mile from motorized routes) Miles of non-motorized trails % of project area that meets physical setting criteria for the primitive or semi-primitive non-motorized recreation categories</p>
<p>Soils - Effects on route sustainability and potential for sedimentation</p>	<p>The proposal may contribute to soil damage, erosion, and sedimentation into streams and river adversely affecting water quality and reducing the long-term sustainability of routes</p>	<p>Miles of motorized routes located in marginally unstable or unstable land types</p>
<p>Wildlife - Effects on wildlife including Threatened, Endangered and Sensitive (TES) species and Management Indicator species (MIS)</p>	<p>Motorized disturbance and associated recreation activity can displace big game from seasonally important habitats, sites and ranges, and increase vulnerability to mortality</p>	<p>Big game habitat effectiveness and security (% of management areas with more than 30% minimum threshold value; density of open motorized routes within elk calving areas)</p>
	<p>Motorized access and associated recreation activity during the spring and fall in the Gros Ventre River drainage and Hoback Basin area has the potential to disrupt the annual cycle of pronghorn movements between seasonal ranges in Jackson Hole/middle Hoback Basin and</p>	<p>Seasonal big game migratory corridor connectivity and security (miles of motorized routes within the designated pronghorn migratory pathways)</p>

	the Upper Green River valley. Repeated disruption of secure passage along these migratory pathways could result in abandonment of or confinement to summer ranges in Jackson Hole and Hoback Basin and threaten survival of these pronghorn herds	
	Motorized access and associated recreation activity can displace bears from seasonally important habitats and sites, disrupt movement between habitats, and increase vulnerability to mortality from bear/human conflicts, shooting, and vehicle collisions.	Grizzly Bear habitat security and connectivity (% of secure habitat relative to current management direction and baseline)
	Motorized access and associated recreation activity can potentially adversely impact sage grouse productivity, survival, distribution and habitat quality by displacement and increased vulnerability to mortality	Greater Sage Grouse habitat security and quality (miles of motorized routes within 5km of the Breakneck Flats lek complex)
	Motorized access and associated recreation activity within suitable peregrine falcon nesting management zones may cause nest site abandonment or habitat avoidance	Peregrine Falcon habitat security (density of motorized routes within nest management zones)
Special Areas - Effects on the character of inventoried roadless areas, Wilderness Study Areas, Wilderness, Wild and Scenic Rivers, and National Parks	The proximity of proposed routes to Grand Teton Natl Park and designated Wilderness may result in illegal intrusions into these areas	Miles of motorized routes within ¼ mile of special areas such as Grand Teton National Park, Teton and Gros Ventre Wilderness
	The proposal may affect the character of inventoried roadless areas	Acres of non-motorized setting within inventoried roadless areas
Cultural resources - Effects on cultural resources	The location and use of the proposed motorized route system may affect heritage sites , other cultural properties, and traditional use areas	Number of eligible sites or potentially eligible sites along motorized routes Number of sites with potential adverse effects
Management of OHV system – Effects on the ability to manage the system (considering design and complexity of the OHV system)	The design of the proposed motorized route system may not encourage users to stay on the trails. The proposed motorized system may increase complexity thus may not be able to be adequately managed and maintained given existing funding (signing, maintenance, monitoring, enforcement)	Number of dead-end trails not associated with a loop system Number of routes with seasonal restrictions Number of gates and barriers necessary to provide basic field management of the system

Other Issues

Other significant issues were identified but the analysis found that the environmental effects did not vary enough among alternatives to be particularly useful in informing the decision process. These issues are briefly discussed in Chapter 3 with more detail provided in specialist reports found in the project record. These other issues include:

1. **Wildlife** - Effects on species associated with old growth habitats, Grey Wolf, Canada Lynx, Wolverines, and Bald Eagles
2. **Fisheries** – Effects on cutthroat trout fisheries
3. **Hydrology** - Effects on wetlands, stream banks, and water quality
4. **Noxious Weeds** – Effects on the introduction and spread of noxious weeds
5. **Sensitive and management indicator plant species** – Effects on Intermountain Region sensitive plants and management indicator species
6. **Range management** – Effects on livestock grazing operations
7. **Mixed vehicle use** – assessment of safety and engineering considerations in designating roads potentially used by both highway legal and non-highway legal off-road motor vehicles

CHAPTER 2. ALTERNATIVES

Introduction

This chapter describes and compares the alternatives considered for the Bridger-Teton North Zone OHV Route Designation Project. This chapter is presented in six sections.

Alternative Development Process: Describes the process used to develop alternatives.

Management Actions and Requirements common to all Alternatives: Actions that apply to all alternatives.

Alternatives Considered in Detail: Provides a detailed description for each alternative, including the No Action alternative. Includes a table summarizing how the alternatives compare in terms of mileage of designated OHV routes, seasonal restrictions, and acreage potentially available for OHV use. A map of each alternative is available as a separate package with this document.

Alternatives Eliminated from Detailed Study: Describes alternatives that were considered and provides rationale for not analyzing them in detail.

Comparison of Alternative Effects: Describes differences among the alternatives in terms of response to issues and environmental effects, thus providing a clear basis for comparison among options by the decision maker and the public. This section summarizes information found in Chapter 3 of this Draft EIS.

Alternative Development Process

The interdisciplinary team for the OHV Route Designation Project began developing alternatives in March 2007 after issues with the proposed action had been identified. The process began with two public workshops to gather input on what alternative designated OHV systems might look like in response to the major issues. At these workshops, a number of resource maps relevant to the issues were available to help people form ideas on what the alternatives might look like. Members of the interdisciplinary team then took the input generated from the workshops and combined it with comments received during scoping and resource knowledge to generate four alternatives to respond to issues regarding (1) wildlife, (2) opportunities for motorized recreation, (3) special areas and opportunities for non-motorized recreation, and (4) soil, weeds, and water quality. In May 2007, district rangers for the Buffalo, Jackson, and Big Piney districts reviewed the alternatives considering input from the interdisciplinary team and legal input from the Forest Service Office of General Council. This review generated the concept of developing an alternative that minimized the number of designated OHV routes with no motorized routes in the special areas (Alternative B), an alternative that maximized the use of seasonal restrictions (Alternative C), and an alternative that maximized the number of designated OHV routes (Alternative E). The decision was also made at this review to modify the original proposed action into an initial preferred alternative based on the input and information gained after the original proposed action was released (Alternative D). From June through September 2007, the interdisciplinary team developed the initial preferred alternative, developed the other alternatives based on the May decisions, spent time on the ground resolving questions about specific routes, and held three public field tours for the Blackrock/Togwotee, Gros Ventre, and Munger Mountain areas. The preliminary alternatives for these areas were presented during the field tours

and more public input was obtained. In late September, the interdisciplinary team used the information obtained over the summer to further refine the alternatives. In early October, input from cooperating agencies was obtained and on October 3, 2007, the three district rangers reviewed all of the input and finalized the alternatives. The remainder of October and November were spent translating the final alternatives into a GIS format in order to perform map-based analysis of effects.

Management Actions and Requirements common to all Alternatives

- 1. Allowable distance off designated routes:** For access to established campsites, motor vehicles may travel up to 300 feet off designated roads where allowed under the motor vehicle use map. No travel corridor is allowed off designated motorized trails however, in accordance with provisions of the motor vehicle use map, “motor vehicle designations include parking along designated routes and at facilities associated with designated routes when it is safe to do so and when not causing damage to National Forest System resources”. This provision recognizes that from a practical standpoint, one vehicle width from the edge of the route surface may be necessary to park a vehicle, allow another party to pass, or perform a repair.
- 2. State Statutes:** Roads would be available for ATV and motorcycle use where mixed vehicle use has been determined to be appropriate, however children under 16 would not be able to legally ride on the roads per State statute since a drivers license is required for operating a off-road vehicle on roads. State statutes governing operating off-road vehicles apply to all alternatives. Regulations regarding noise emissions and mufflers are also governed by the State.
- 3. Field Implementation:** Patrol coverage and on-the-ground signing with educational and enforcement visitor contacts will continue under all alternatives. Field patrol coverage and signing are essential for implementation of a designated OHV system under any action alternative. Partnerships and grant funding will be sought to implement the designated OHV route system.
- 4. Exemptions for motorized travel off designated routes:** Exemptions to off-road travel as described in 36 CFR 212.51(a) would be allowed under all alternatives. Exemptions fall into three categories – emergencies, administrative activities, and activities allowed under special use permits. Examples of emergency exemptions include fire, law enforcement, and search and rescue activities. Administrative activities include noxious weed control, wildlife management, and vegetation management (timber, fuel reduction). Activities allowed under special use permits include firewood gathering, wildlife research, livestock operations, access to private lands, and outfitter-guide operations associated with assigned campsites. This last category of exemptions allowed under special use permits requires specific authorization from the appropriate Line Officer, detailing when, where, who, and under what circumstances motorized travel is allowed.
- 5. Emergency closures:** The Forest Supervisor may continue to issue temporary, emergency closures based on a determination of considerable adverse effects pursuant to CFR 212.52(b)(2). This includes considerable adverse impacts to soil, vegetation, wildlife habitat, or cultural resources. The agency can maintain this closure until the effects are mitigated and measures are implemented to prevent future recurrence.

6. **Route maintenance and reconstruction:** For all action alternatives (B-E), maintenance and/or reconstruction may be needed on designated routes to improve their sustainability. Site-specific environmental analysis would be conducted prior to any route reconstruction. Basic maintenance would occur on all routes designated as part of the Forest transportation system. Best Management Practices would be used to control erosion and runoff on all designated motorized routes. These practices include, but are not limited to; waterbars, culverts, dips, and drainage ditches to control flow.
7. **Unauthorized routes:** Unauthorized routes that are not included in the designated OHV routes system and are not displayed on the Motor Vehicle Use Map would be closed and stabilized, rehabilitated, or obliterated as funds allow. Further site-specific environmental analysis is not needed to close the route but may be conducted to determine the appropriate method of closure.
8. **Trailheads:** A small trailhead area would be constructed in the Munger Mountain area east of Rock Creek to accommodate a few vehicles and provide area and use information. The boundaries of the trailhead would have a constructed barrier that would funnel use to the trail while preventing dispersed use. This is necessary for resource protection. A trailhead would also be constructed to clearly define the end of the road and provide access to the Holmes Cave trail. In other locations, where increased use from all forms of recreation is a concern, trailheads would be designed to accommodate limited parking.
9. **Cultural resources:** The Forest Service will continue to monitor, assess, prioritize, mitigate and/or rehabilitate routes that adversely impact cultural resources. Appropriate mitigation measures will be developed in consultation with the SHPO and the Tribes. Mitigation of effects may include barriers, fencing and signage. Site-armoring techniques could be incorporated into specific project plans to help protect sites. Trails can more easily be re-routed around sites than can roads. Installing signs or fences at prehistoric sites is generally not effective as these methods could draw attention to the site location rather than discourage use of the site area. Other forms of mitigation treatments may include detailed resource documentation or producing a relevant historic document or publication for public distribution.
10. **Noxious weeds:** Educational information regarding noxious weeds would be distributed via trailhead signing, on the motor vehicle use map and in Forest Service or Wyoming State ORV program publications. As implementation of the designated OHV system moves forward under the action alternatives, include requests for funding early detection, control and monitoring of noxious weeds. New infestations would be treated aggressively and re-vegetated areas, damaged areas, trailheads, and closed routes would be monitored for noxious weeds. Motor vehicle users, volunteers and clubs would be asked to assist with detection and reporting noxious weeds.

Alternatives Considered in Detail _____

Alternative A: No Action Alternative

Under this alternative, OHV management would be guided by the current travel plan for the North Zone of the Bridger-Teton National Forest (map dated February 2, 2000 with corrections dated April 16, 2002). Unrestricted motorized use would continue to legally occur within the grey areas displayed on the current travel map. General operating conditions regarding OHV use defined under the Code of Federal Regulations would remain in place. Under this alternative,

only roads and trails currently included in the Forest transportation system and authorized for public use would receive maintenance. Non-system roads and trails would not be added to the Forest transportation system and would not be maintained. Additionally, temporary roads built to support forest management activities but not intended for public use (Level 1 closed roads) would not be managed for public vehicle use however, ATVs and motorcycles would be able to use these roads within the unrestricted motorized area. These Level 1 roads would only be maintained when necessary to support forest management activities.

Within the project area (current grey areas), there would be 431 miles of system road open to full size vehicles, 51 miles of Level 1 closed road available to ATVs and motorcycles, and 35 miles of system trail specifically managed for motorized use. Road miles include highways and a few miles of road that cross private lands located within the project boundaries. Motorized trails would not specify whether the trail was to be managed for motorcycles or for vehicles less than 50" wide thus there would be a tendency for single-track motorized trails to increase in width over time as ATVs used the trails. There would also be 59 miles of system trail managed for non-motorized use but motorized vehicles (typically motorcycles) would legally be able to use these trails within the unrestricted motorized areas. In addition to the above miles, there would be additional miles of non-system unauthorized roads and trails available for use. The complete mileage of unauthorized routes existing within the project area is unknown but a survey of routes conducted from 2003-2004 cataloged hundreds of miles of additional roads and trails. As noted in Forest Service direction for implementing the travel regulations, a complete inventory of user-created routes is not necessary. Information should only be gathered that is necessary to evaluate proposed changes to the system of authorized roads and trails. An estimated 110,273 acres (43%) of the project area is estimated to be usable by OHVs (refer to Chapter 3 and Appendix A for methodology to determine usable OHV terrain). Over time, the miles of unauthorized road and trail would increase as people explored new areas within the unrestricted motorized areas. A total of 38 miles of OHV route would continue to have seasonal restrictions (i.e. season of use that is more restrictive than summer long use May 1st until November 30th).

This alternative serves as the baseline for comparing the effects of various proposed designated OHV route systems against the current transportation system and continuation of unrestricted motorized travel. While this alternative does not meet the National Forest Travel Management Rule and does not meet current Forest Plan direction, it is required to be analyzed under the National Environmental Policy Act.

Geographic Area Notes for Alternative A

Blackrock/Togwotee: In this area, 142 miles of system road would be managed for full size vehicles including the Togwotee Highway and Buffalo Valley road. An additional 15 miles of closed road would be available for public motorized use (ATVs and motorcycles). No trail would be specifically managed for motorized use although closed roads and many miles of non-system route would be legally available for this use. Roads would generally be open for use from May 1st until November 30th with the exception of road 30200, road 30193 and the Rosie's Ridge road which would be open for use from July 1st until November 30th. An estimated 27,192 acres would potentially be usable by OHVs (45% of the area) and over time, the number of unauthorized roads and trails would increase within this area.

Gros Ventre / Shadow Mountain: In this area, 105 miles of system road would be managed for full size vehicles. An additional 18 miles of closed road would be available for public motorized use (ATVs and motorcycles). Twenty-two miles of trail would be specifically managed for motorized use although closed roads and many miles of non-system route would be legally available for this use. Roads and trails would be open for use from May 1st until November 30th as there are currently no seasonal restrictions within this area. An estimated 40,021 acres would potentially be usable by OHVs (45% of the area) and over time, the number of unauthorized roads and trails would increase within this area.

Phillips Ridge: In this area, 10 miles of system roads would be managed for full size vehicles including the Teton Pass highway. Numerous non-system spur roads off of the BPA powerline road would remain open. All trails (e.g. Phillips Canyon, Ski Lake) would continue to be managed for non-motorized use but would be legally available for motorized use (as long as resource damage did not occur). An estimated 2,233 acres would potentially be usable by OHVs (18% of the area) and over time, the number of non-system roads and trails could potentially increase within this area.

Munger Mountain / Snake River Range: In this area, 72 miles of system road would be managed for full size vehicles, including the Fall Creek road and the Snake River Canyon highway. An additional 16 miles of closed road would be available for public motorized use (ATVs and motorcycles). Five miles of trail would be specifically managed for motorized use although closed roads and many miles of non-system route would be legally available for motorized use. Roads and trails would be open for use from May 1st until November 30th as there are currently no seasonal restrictions within this area. An estimated 9,947 acres would potentially be usable by OHVs (30% of the area) and over time, the number of unauthorized roads and trails would increase within this area.

Hoback Basin / Granite Creek: In Hoback Basin, 104 miles of system road would be managed for full size vehicles, including the Hoback highway. An additional two miles of closed road would be available for public motorized use (ATVs and motorcycles). Eight miles of trail would be specifically managed for motorized use although closed roads and many miles of non-system route would be legally available for this use. Roads and trails would be open for use from May 1st until November 30th as there are currently no seasonal restrictions within this area. An estimated 30,880 acres would potentially be usable by OHVs (51% of the area) and over time, the number of unauthorized roads and trails would increase within this area.

Alternative B: *Minimize the number of designated OHV routes*

In general, Alternative B designates roads and trails that are currently on the Forest transportation system (except for Level 1 closed roads), prohibits unrestricted motorized travel, and increases the miles of routes that have seasonal restrictions. It includes the least number of motorized routes compared with other action alternatives and as such, it is the environmentally preferred alternative. Alternative B was developed to address environmental issues, particularly issues regarding the potential effect of motorized routes on inventoried roadless areas and Wilderness Study Areas and issues regarding potential wildlife effects in key habitat areas (e.g. where current Forest Plan direction emphasizes wildlife habitat security for big game or grizzly bears).

Under this alternative, unrestricted motorized use would be eliminated and replaced with a designated system of motorized routes. A limited system of motorized routes would be designated and these routes would be located to be compatible with wildlife and other resource objectives. This alternative would provide motorized access in major drainages but access would be focused on full-size vehicle travel to dispersed campsites and for hunting opportunities. Opportunities for motorized trail riding would be limited compared with other alternatives but opportunities for non-motorized recreation would increase. Within the project area (current grey areas), the system of designated motorized routes would consist of 386 miles of road, 33 miles of motorized trail managed for vehicles 50” or less wide, and 0.5 miles of motorized trails managed for motorcycles. A total of 67 miles of OHV route would have seasonal restrictions (i.e. season of use that is more restrictive than summer long use May 1st until November 30th).

Geographic Area Notes for Alternative B

Blackrock/Togwotee: In this area, 115 miles of road would be available for public motorized use including the Togwotee Highway and Buffalo Valley road. Four miles of motorized trail would be available. Alternative B would provide full size vehicle access on the primary road system. Spur roads would generally be closed to increase wildlife habitat security as would the roads in the Wallace Draw area. The Hatchet/Flagstaff road, South Fork and North Fork of Spread Creek, and Nation Creek road would open May 1st until November 30th as would roads north of Fourmile Meadows and roads accessing Angles Trailhead, Lost Lake, and private land. Rosies Ridge road, roads 30200 and 30193, and roads accessing the Squaw Basin area would open July 1st until November 30th allowing access through the hunt season. Three secondary roads would be open July 1st until September 9th – Baldy Mountain, Diamond D road, and Burro Hill. These secondary roads would not open until July 1st to improve wildlife security during elk calving and to protect the road surface by not allowing motorized use during the spring melt-off. They would close during the hunt season to increase wildlife habitat security. The Skull Creek meadows road would be designated as a motorized trail for vehicles 50” or less wide, thus would be managed specifically as a motorized trail reflecting how this closed road is currently being used today.

Gros Ventre / Shadow Mountain: In this area, 96 miles of road would be available for public motorized use. Twenty-three miles of trail would be designated and managed specifically for motorized use, which is the same as the trail mileage formally managed for motorized use today but less than the miles of trail legally available to motorized use today. On May 1st, the Gros Ventre road would open along with roads providing access to trailheads, dispersed campsites, and roads providing access to Gunsight Pass and the Cottonwood Creek area. The Gros Ventre road would end just past the Big Cow Creek trailhead and there would be no motorized vehicle use allowed past the point. On May 1st, four trails for vehicles 50” or less wide would open in the West Fork of Horsetail, Cottonwood, and Bacon Creek areas. No trails would be specifically designated for motorcycle use. The Slate Creek trail would continue to be managed for vehicles 50” or less wide however the trail would not open until July 1st to increase wildlife security during elk calving and would close September 9th to increase wildlife habitat security during the hunting season. Slate Creek would not be managed as a loop trail but summer access (July 1st – Sept 9th) would still be provided to the lower portion of the Haystack Fork for vehicles 50” or less wide via the Dry Dallas road and motorized trail. The Ditch Creek road would be closed to motorized use beyond the landslide area to increase protection of elk calving and due to poor soils, thus allowing road maintenance dollars to focus on higher priority roads. No motorized

trails would be designated in the Ditch Creek drainage. In the Shadow Mountain area, most system roads would remain open with the exception of some roads located in the north end of this area.

Phillips Ridge: In this area, 10 miles of system roads currently open for public use would remain open. This includes the BPA powerline road from the Phillips Bench trailhead to the end of the ridge, one spur road providing access to a Snotel monitoring station and the Teton Pass highway. No non-system spur roads would be designated. All system trails would be designated as non-motorized trails, reflecting how they are currently being used and managed today.

Munger Mountain / Snake River Range: In the Mosquito Creek drainage, system roads currently open for public use would remain open however, the Mosquito Creek and Cottonwood roads would not open until June 1st to prevent road damage during spring melt. The Cottonwood road would not be open all the way to the ridge but a 3 mile motorized trail for vehicles 50" or less wide would be added to create a loop in this area. The North Fork of Fall Creek road would also not open until June 1st to prevent road damage and the Taylor Mountain road would be closed to improve the character of the Palisades Wilderness Study Area. All trails in the Munger Mountain area would be managed for non-motorized use and the road heading east towards Hoback Junction off of the Fall Creek road would be closed to improve the roadless characteristics of this area. One short ½ mile loop motorcycle trail would be designated in the Swinging Bridge area and would be available for motorized use May 1st until November 30th.

Hoback Basin / Granite Creek: In Hoback Basin, 103 miles of system road would be available for motorized use including the Hoback highway. Forest roads would be open May 1st until November 30th. One 3 mile trail for vehicles 50" or less wide would be designated in the Sled Runner area. No motorized trails would be designated in the Rasberry Ridge area to improve the roadless characteristics of this inventoried roadless area. The Porcupine Creek and North Fork of Fisherman Creek motorized trails would also be closed to improve the character of the Shoal Creek Wilderness Study Area. In the Granite Creek drainage, the road located on the south side of the creek would be closed beyond the Jackpine summer home tract but other system roads would remain open.

Alternative C: Use seasonal restrictions more than closures for designated OHV routes

This alternative was developed to address environmental issues, particularly issues regarding the potential effect of OHV routes on wildlife habitat security, the quality of hunting opportunities, and soil or water concerns. However, as opposed to Alternative B, this alternative relies on the use of seasonal restrictions rather than closures to respond to issues. This alternative is intended to provide more motorized access with a mix of opportunities for full-size vehicle travel, vehicles 50 inches or less wide, and motorcycle travel compared to Alternative B. However, motorized opportunities would be primarily available during the summer months of July and August. Seasonal restrictions starting June 1st are intended to protect soils and road/trail surfaces and reduce maintenance costs by preventing motorized use during spring melt. Seasonal restrictions starting July 1st are intended to improve wildlife habitat security particularly in ungulate calving areas and also protect road surfaces and reduce maintenance costs. Seasonal

restrictions prohibiting motorized use after September 9th are intended to improve wildlife habitat security during the hunting season.

Under this alternative, unrestricted motorized use would be eliminated and replaced with a designated system of OHV routes. Within the project area (current grey areas), the system of designated OHV routes would consist of 399 miles of road, 79 miles of motorized trail managed for vehicles 50” or less wide, and 22 miles of motorized trails managed for motorcycles. A total of 126 miles of OHV route would have seasonal restrictions (i.e. season of use that is more restrictive than summer long use May 1st until November 30th) with 81 miles of OHV route having the most restrictive seasonal closures that allow motorized use only during the summer from July 1st until September 9th.

Geographic Area Notes for Alternative C

Blackrock/Togwotee: In this area, 120 miles of road would be available for public motorized use including the Togwotee Highway and Buffalo Valley road. Ten miles of motorized trail would be available. Alternative C would provide full size vehicle access on the primary road system which would be available for use from May 1st until November 30th. Most secondary roads would have seasonal restrictions allowing use either from July 1st until November 30th or from July 1st until September 9th. Roads 30200 and 30193, Diamond D road, Rosie’s Ridge, and Squaw Basin roads are examples of roads which would allow motorized use from July 1st until November 30th. By leaving these roads open until November 30th, motorized access is provided in key hunt areas for bison and elk. Baldy Mountain road, Burro Hill road, roads east of Four-mile meadow road, and spurs off of the Blackrock road are examples of roads which would allow motorized use only during the summer from July 1st until September 9th to improve wildlife habitat security in the spring for calving and in the fall during the hunt season. The Wallace Draw roads and Skull Creek Meadows road would be designated for vehicles less than 50” wide and would be managed to provide a summer recreational riding opportunity with a seasonal restriction allowing use from July 1st until September 9th.

Gros Ventre / Shadow Mountain: In this area, 98 miles of road would be available for public motorized use. Fifty-three miles of motorized trail would be designated and managed for vehicles 50” or less or for motorcycle travel. On May 1st, the Gros Ventre road would open along with roads providing access to trailheads, dispersed campsites, and roads providing access to Gunsight Pass and the Cottonwood Creek area. On May 1st, roads would also open in the Shadow Mountain area and the Ditch Creek road would open to the landslide area where a trailhead would be provided. Forty-two miles of trail would be designated for vehicles less than 50” wide and would be managed to provide a summer recreational riding opportunity (July 1st through September 9th). Examples of such trails include the South Fork of Ditch Creek, West Fork of Horsetail Creek, Slate Creek loop including the access trail from Dallas Lake, Bacon Creek, and the “R” trail from the Gros Ventre road to a mile before the Darwin Ranch. Eleven miles of trail would be designated and managed as a summer motorcycle loop between Horsetail and Slate Creeks. Again, a seasonal restriction on this loop trail would allow summer use between July 1st and September 9th. The seasonal restriction on motorized trails is intended to improve wildlife habitat security during elk calving and during the hunt season.

Phillips Ridge: Alternative C would be the same as Alternative B in this area. Trails in this small area are heavily used by hikers, mountain bikers, and horseriders. Motorized trail use would create significant conflicts and potential safety concerns. Additionally, this area is bordered by the Jedediah Smith Wilderness on the Caribou-Targhee National Forest. Allowing motorized use on trails in this area could lead to motorized trespass into the Wilderness.

Munger Mountain / Snake River Range: In the Mosquito Creek drainage, Alternative C would be no different than what is proposed under Alternative B. Alternative C would also be the same as Alternative B in the North Fork of Fall Creek area except that under Alternative C, the Taylor Mountain road would be open during the summer (July 1st until September 9th) to provide access to this scenic vista while protecting the road surface during the spring and fall wet seasons and improving wildlife habitat security. In the Munger Mountain area, a 10 mile trail would be designated and managed as a summer motorcycle loop with a seasonal restriction allowing summer use between July 1st and September 9th. This seasonal restriction is intended to improve wildlife habitat security during elk calving and improve hunting opportunities during the fall. The access to this loop would be located east of Rock Creek. The road heading east towards Hoback Junction off of the Fall Creek road would be open between May 1st and November 30th. One short ½ mile loop motorcycle trail would be designated in the Swinging Bridge area and would be available for motorized use May 1st until November 30th.

Hoback Basin / Granite Creek: In Hoback Basin, 105 miles of system road would be available for motorized use including the Hoback highway. Forest roads would be open May 1st until November 30th. Twenty-four miles of trail would be designated and managed for vehicles less than 50" wide and would be available for use between May 1st and November 30th. This includes trails in the Raspberry Ridge area, Porcupine Creek, North Fork of Fisherman Creek, and Sled Runner area. No trails would be managed specifically for motorcycle use. In the Granite Creek drainage, the road located on the south side of the creek would be open for full size vehicles from May 1st until November 30th to provide access for fishing, dispersed camping and hunting.

Alternative D: Initial Preferred Alternative (Modified Proposed Action)

This alternative was developed with an emphasis on retaining primary existing uses, establishing seasonal restrictions to protect wildlife habitat security particularly during the calving period, and improving the manageability of the OHV system. Alternative D is similar to Alternative C in terms of the number of routes available, however Alternative D would establish fewer seasonal restrictions on OHV routes during the fall. This alternative is intended to give the public and decision-makers an initial idea of how motorized opportunities and resource concerns might be balanced.

Under this alternative, unrestricted motorized use would be eliminated and replaced with a designated system of OHV routes. Within the project area (current grey areas), the system of designated OHV routes would consist of 407 miles of road, 64 miles of motorized trail managed for vehicles 50" or less wide, and 35 miles of motorized trails managed for motorcycles. A total of 131 miles of OHV route would have seasonal restrictions (i.e. season of use that is more restrictive than summer long use May 1st until November 30th), however only 36 miles of OHV

route would have the most restrictive seasonal closure dates that allow motorized use only during the summer from July 1st until September 9th.

Geographic Area Notes for Alternative D

Blackrock/Togwotee: In this area, 122 miles of road would be available for public motorized use including the Togwotee Highway and Buffalo Valley road. Five miles of motorized trail would be available. The alternative would be similar to Alternative C in that the primary road system would be available for public use from May 1st until November 30th while secondary roads would have seasonal restrictions. Key changes in Alternative D compared with Alternative C include:

1. Spurs roads would generally be managed with a seasonal restriction that allows motorized use from July 1st until November 30th. The restriction is intended to protect wildlife habitat security during elk calving and protect road surfaces during the spring melt while allowing motorized use throughout the fall for hunting and game retrieval.
2. The Wallace Draw roads would be the only motorized trail designated in this area due to the poor soils and steep hills in this area which greatly limit the ability to manage this area for full size vehicle use. This trail is intended to provide a scenic recreational riding opportunity near the Togwotee Highway. Unlike Alternative C, the Skull Creek Meadows road would not be managed as a motorized trail but rather would be managed as a road to improve hunt season access and improve the manageability of this area. Both the Wallace Draw motorized trail and the Skull Creek Meadows road would allow use from July 1st until November 30th.

Gros Ventre / Shadow Mountain: In this area, 100 miles of road would be available for public motorized use. Forty-nine miles of motorized trail would be designated for vehicles 50” or less and for motorcycle travel. Again, this alternative would be similar to Alternative C with the following exceptions:

1. Fewer miles of motorized trail would be designated for vehicles 50” or less (33 miles as compared with 42 miles in Alternative C), while more miles of motorized trail would be designated for motorcycle travel (16 miles as compared with 11 miles in Alternative C).
2. Motorized trails designated for vehicles 50” or less would generally be available for use throughout the fall providing access during the hunt season. This includes the Slate Creek trails including the trail from Dallas Lake and trails in the Bacon Creek area. The motorized trail in the South Fork of Ditch Creek would have a special seasonal restriction allowing motorized use from September 10th until November 30th to provide hunt season access while reducing conflict with non-motorized activities and youth programs during the summer. There would be no designated motorized trail in Coal Mine Draw, however the “R” trail would be designated for vehicles 50” or less from the end of the Gros Ventre road to Lloyd Creek.
3. The motorized trail system between Horsetail and Slate Creek would be designated for summer motorcycle riding. No vehicles 50” or less would be allowed in the West Fork of Horsetail Creek. A motorcycle connector trail would be designated on the north side of the Gros Ventre River to connect Slate Creek with the Gros Ventre road. This change is intended to improve manageability of the system and manage this loop for one consistent use. Like Alternative C, this system of trails would have a seasonal restriction allowing use from July 1st until September 9th to improve wildlife habitat security.

4. The entire Ditch Creek road would be open to full size vehicles from July 1st until November 30th to provide access to non-motorized backcountry trails during the summer and provide access during the hunt season.

Phillips Ridge: Alternative D would be the same as Alternatives B and C in this area for the reasons explained under Alternative C.

Munger Mountain / Snake River Range: In the Mosquito Creek drainage, Alternative D would be no different than what is proposed under Alternatives B and C. Alternative D would also be the same as Alternative C in the North Fork of Fall Creek area except that under Alternative D, the Taylor Mountain road would be open through the fall season (July 1st until November 30th) to provide access during the hunt season while still protecting the road surface during the spring melt and protecting wildlife habitat security during the calving period. In the Munger Mountain area, 18 miles of trail would be designated as a summer motorcycle loop with a seasonal restriction allowing use between July 1st and September 9th. This provides additional miles of motorcycle trail during the summer while still protecting wildlife habitat security during elk calving, improving hunting opportunities during the fall, and reducing the potential for elk movement onto private ranch lands. The access to this loop would again be located east of Rock Creek where a trailhead would be provided. The road heading east towards Hoback Junction off of the Fall Creek road would be open between May 1st and November 30th. The designated motorcycle trail in the Swinging Bridge area would be the same as proposed under Alternatives B and C.

Hoback Basin / Granite Creek: Alternative D would be the same as Alternative C for this area.

Alternative E: Maximize the number of designated OHV routes

This alternative was developed to address issues raised during public scoping that the proposed action did not offer sufficient opportunities for motorized travel. The intent of this alternative is to maximize opportunities for motorized travel while still addressing resource concerns. In general, system roads and system trails are retained under this alternative and more miles of motorized trail are proposed to be added to the system compared with other alternatives. Compared with Alternative D, Alternative E differs primarily in that 38 more miles of motorized trail are proposed to be designated for vehicles 50" or less wide and most motorized routes would be managed to allow spring, summer and fall use (May 1st until November 30th). However, this does not mean that all roads and trails that currently exist on the ground would be included as part of the designated OHV system. Many non-system roads and trails have sustainability or manageability issues that preclude including the route in the system (e.g. erosive soils that prevent the route from being adequately maintained over time, reconstructing the route is not worth the short amount of access the route would provide, routes that do not provide access to a dispersed site or vista and do not contribute to a well-designed system that encourages responsible use).

Under this alternative, unrestricted motorized use would be eliminated and replaced with a designated system of OHV routes. Within the project area (current grey areas), the system of designated OHV routes would consist of 445 miles of road, 102 miles of motorized trail managed for vehicles 50" or less wide, and 37 miles of motorized trails managed for

motorcycles. A total of 40 miles of OHV route would have seasonal restrictions (i.e. season of use that is more restrictive than summer long use May 1st until November 30th).

Geographic Area Notes for Alternative E

Blackrock/Togwotee: In this area, 145 miles of road would be available for public motorized use including the Togwotee Highway and Buffalo Valley road. Sixteen miles of motorized trail would be available. Under this alternative, roads would generally be open for use from May 1st until November 30th with the exception of roads 30200 and 30193 and associated spurs, Rosie's Ridge road, and roads in the Squaw Basin area which would be open for use from July 1st until November 30th. Key changes in Alternative E compared with Alternative D include:

1. Secondary roads would generally be available for public motorized use throughout the spring, summer and fall season (May 1st until November 30th) with a few exceptions noted above. In general, the seasonal restrictions on roads would be the same as what exists today.
2. The Wallace Draw roads would be managed as roads under Alternative E to provide access throughout the summer and hunt season when full size vehicle access would make elk and bison carcass retrieval easier. Extensive repair and maintenance work would be necessary to make some of these roads sustainable.
3. Sixteen miles of motorized trail would be designated for vehicles 50" or less wide. These trails would be provided on Rosie's Ridge, Squaw Basin area, and on currently closed roads like Grizzly Creek. A connector trail would also be provided from the junction of the Hatchet road and Togwotee Highway to road 30200.

Gros Ventre / Shadow Mountain: In this area, 112 miles of road would be available for public motorized use. Sixty-nine miles of motorized trail would be designated for vehicles 50" or less and for motorcycle travel. This alternative differs from other alternatives in several ways:

1. More miles of motorized trail would be designated for vehicles 50" or less (45 miles) and more miles would be designated for motorcycle travel (24 miles) compared to other alternatives. Additional miles of motorized trail designated for vehicles 50" or less would be provided in Coal Mine Draw, Bacon Creek area, and the full length of the "R" trail from the end of the Gros Ventre road. The West Fork of Horsetail Creek would be designated for vehicles 50" or less to improve access for setting up camps in the head of the drainage. Additional miles of motorized trail designated for motorcycles would be provided between Horsetail and Slate Creek, and between Ditch and Horsetail Creeks.
2. Motorized trails in the Gros Ventre and South Fork of Ditch Creek would generally be available throughout the spring, summer and fall (May 1st until November 30th).
3. The entire Ditch Creek road would be open to full size vehicles with no seasonal restriction allowing use from May 1st until November 30th to provide summer and fall access to both motorized and non-motorized trails.

Phillips Ridge: Alternative E would be the same as Alternatives B, C, and D in this area for the reasons explained under Alternative C.

Munger Mountain / Snake River Range: In the Mosquito Creek drainage, Alternative E would provide an additional 3 mile motorized trail for vehicle 50" or less wide from the end of the Mosquito Creek road to the Wilderness Study Area boundary, and an additional motorized trail designated for motorcycle use in upper Mill Creek. The Cottonwood road would be opened to

the ridge allowing use from May 1st until November 30th. In the North Fork of Fall Creek area, roads would allow spring, summer and fall use from May 1st until November 30th including the Taylor Mountain road. In the Munger Mountain area, the same network of trails would be designated for motorized use as under Alternative D, however under Alternative E, the trails would be managed for a mix of ATV and motorcycle use (9 miles of trail designated for vehicles 50” or less and 12 miles of trail designated for motorcycle use) and would allow use for May 1st until November 30th. This alternative addresses the interest in having these trails available for a longer season especially during the spring and fall when temperatures are not as hot. It also addresses the interest in having some ATV access, particularly during the hunt season. A special order would be put in place to prohibit use in particularly wet springs to prevent soil and vegetation damage. The access to this loop would again be located east of Rock Creek where a trailhead would be provided. The road heading east towards Hoback Junction off of the Fall Creek road would be open between May 1st and November 30th. The designated motorcycle trail in the Swinging Bridge area would be the same as proposed under Alternatives B, C, and D.

Hoback Basin / Granite Creek: Alternative E would be the same as Alternative C and D for this area. Alternatives C, D, and E are the same for this area because the district has spent the last 15 years working with interested people, identifying suitable motorized routes, and closing roads and trails that had resource issues. The OHV route system that is now proposed to be formally designated reflects the system that has emerged from the past 15 years of work.

Comparison of Alternatives

Table 2: Proposed Changes to the Current Forest Transportation System

	Alternative A (1)	Alternative B	Alternative C	Alternative D	Alternative E
Miles of road proposed to be added to system and available to public (2)	0	16	17	26	28
Miles of system road proposed to be closed to public use	0	51	35	32	3
Miles of system road proposed to be changed to a motorized trail	0	17	28	25	32
Miles of trail proposed to be added to system (3)	0	5	43	47	71
Miles of seasonally restricted routes compared to current system (more restrictive than summer long use) (4)	0	29	88 (5)	94	2

- (1) All values are zero for Alternative A because Alt A represents the baseline condition associated with the current Forest transportation system.
- (2) Road miles are based on roads that exist on the ground but are not currently in the Forest Transportation system (i.e. are currently unauthorized) and are proposed to be added to the transportation system and managed as for public motorized use. The miles of road proposed to be added to the system is not significantly different among Alts B-E because roads proposed to be added are primarily those needed to access key features like dispersed campsites or trailheads.
- (3) Trail miles are based on trails that exist on the ground but are not currently in the Forest Transportation system (i.e. are currently unauthorized).
- (4) This includes season restrictions allowing use from June 1st until Nov 30th; July 1st until Nov 30th; July 1st until Sept 9th; and Sept 10th – November 30th (i.e. seasons that are more restrictive than summer long use between May 1st and November 30th).

- (5) While the total number of miles of route affected by seasonal restrictions under Alternative C is less than Alternative D, Alternative C has more days affected by seasonal restrictions since more miles of routes would not be open during the fall season (see Table 3 below).

Table 3: Proposed System of OHV Routes – What would be available for Public Motorized Travel within Project Area (Grey Areas)

	Alternative A (1)	Alternative B	Alternative C	Alternative D	Alternative E
Miles of system road available for public motorized use	482	386	399	407	445
Miles of system trail managed for vehicles less than 50” wide	28	33	79	64	102
Miles of system trail managed for motorcycles	7	0.5	22	35	37
Miles of route with seasonal restrictions (more restrictive than summer long use) (2)	38	67	126	132	40
Miles of route with seasonal restriction that allows use only from July 1 st until Sept 9 th (most restrictive season)	0	27	81	36	0
Miles of route available all summer long – May 1 st until November 30 th	378	244	253	253	419
Acres within project area potentially available for OHV use (3)	110,273	14,786	15,099	15,335	16,683

(1) Alternative A just includes miles of route on the current Forest transportation system. These mileages do not include miles associated with non-system roads and trails. However, these miles do include closed roads that are available to vehicles less than 50” wide and motorcycles within the unrestricted motorized areas.

(2) This includes season restrictions allowing use from June 1st until Nov 30th; July 1st until Nov 30th; July 1st until Sept 9th; and Sept 10th – November 30th (i.e. seasons that are more restrictive than summer long use between May 1st and November 30th)

(3) For Alternative A, motorized vehicles can travel off system roads and trails however not every acre of the unrestricted area can actually be used due to terrain and vegetation constraints. Thus an estimate of potentially available terrain was determined through GIS analysis (see appendix for explanation of methodology). For Alternatives B-E, a designated OHV route system would be established with no motorized vehicle travel beyond designated corridors. The acres available for OHV routes for these alternatives was estimated by buffering roads with a 600 foot corridor and determining usable terrain within these corridors, buffering 50” motorized trails with a 15 foot corridor, and buffering motorcycle trails with a 3 foot corridor.

Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of the OHV route designation project, duplicative of the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered, but dismissed from detailed consideration for the reasons summarized below.

Create motorized connections between “grey” areas to expand motorized loop opportunities

This alternative was dismissed because it is outside the project scope. As discussed in Chapter 1, Forest leaders determined that this OHV Route Designation Project should focus only on those areas where motorized use is currently not restricted to designated trails (although boundary areas immediately adjacent to the unrestricted area could be considered if necessary to meet the project purpose and need). Additionally, some of the proposed connections would conflict with current Forest Plan direction or are located on Ranger Districts and other Forests that are not engaged in travel planning now. Decisions made as part of this project will not preclude future consideration of connections once the designated OHV system is in place and the Forest Plan has been revised.

Designate all “existing” routes for motorized use

This alternative would close the “grey” areas to unrestricted motorized use but would designate all currently available motorized routes that exist on the ground. Alternative E is similar to this suggested alternative in that it would designate the maximum number of motorized routes that are currently used regularly for motorized travel. However, designating all existing routes was dismissed because it would not meet the project purpose and need. Many existing routes are dead-end spurs thus do not contribute to a well-designed, quality route system and leaving them open would compromise enforcement efforts. Additionally, many non-system routes have sustainability issues or would adversely affect wildlife, soils, water or cultural resources, thus if left open, these routes would not meet the project purpose of reducing resource impacts.

Designate only those roads and motorized trails that are currently on the Forest transportation system

Consideration of this alternative answers the question, if the Travel Management Rule was implemented to simply prohibit unrestricted motorized travel without any changes to the current system of Forest roads and trails, what would be the effect? This alternative was dismissed because it is not substantially different than Alternative B in terms of effects.

Proposed Action (from Scoping)

This alternative was dismissed because it is not substantially different than the preferred alternative (Alternative D) in terms of effects. The modifications made to the proposed action better meet the project purpose and need based on the information currently available. Most elements of the original proposed action are being analyzed in Alternative D.

Remove all motorized routes in Inventoried Roadless Areas including existing system routes

This alternative was dismissed because it is not substantially different than Alternative B in terms of effects. Additionally, neither the Roadless Rule nor National Forest policy prohibits motorized trails in inventoried roadless areas. System roads that pre-date passage of the Roadless Rule are also not required to be removed. Removing all system routes would unnecessarily restrict public access thus would compromise the ability to meet the project purpose and need.

Allow a game retrieval exemption for motorized travel

This alternative was dismissed because it would not meet the project purpose and need. Legally tagged game can be retrieved using non-motorized means. There is no consistent or enforceable means to assure that an exemption for game retrieval would not result in user conflicts and unacceptable resource impacts. In addition, not including an exemption motorized use for game retrieval is consistent with restrictions in effect for adjacent federal lands. For example, the bison hunt which occurred on the National Elk Refuge in 2007 did not permit motorized travel off designated roads for game retrieval and this restriction did not prevent hunters from taking advantage of the opportunity to harvest bison. In discussing game retrieval options, members of the interdisciplinary team noted that allowing motorized game retrieval only for bison could be viewed as discriminatory. Even though bison are much larger than elk, deer, or moose, the effort required to retrieve the carcass is dependent as much on the terrain and the hunter's abilities as it is on the size of the animal.

Allow motorized travel only 150 or 200 feet off designated roads to access dispersed campsites or do not allow any motorized travel off designated roads

While the Forest intends to eventually designate all road spurs needed to access dispersed campsites, implementing such a requirement as part of this project would unnecessarily limit opportunities for dispersed camping and compromise the enforceability of the first Motor Vehicle Use Map. A complete inventory of dispersed campsites within the project area has not been completed. Completing such an inventory along with the additional analysis needed for every road spur would substantially lengthen the planning process and would hamper the ability to focus on the more significant issues associated with addressing the large areas of unrestricted motorized use. Allowing motorized travel up to 300 feet off of designated roads to access campsites is considered adequate to capture the vast majority of existing dispersed campsites. Road spurs to campsites known to be more than 300 feet off designated roads have been included in this project. Changing the allowable distance motorized vehicles can travel off designated roads only for the project area (current grey areas on travel map) would result in a Motor Vehicle Use Map that contained two different travel corridors which would be confusing for the public and would complicate enforcement efforts.

Implement other seasonal restriction dates for OHV routes in Munger Mountain area

Motorcyclists have expressed that they value motorized trail opportunities in the spring and in the fall in the Munger Mountain area when temperatures are not as hot. Thus, the interdisciplinary team considered alternative seasonal restriction dates that would extend motorized use 1 month in the spring and 1 month in the fall allowing motorized use from June until October (rather than the July 1 – September 9 dates included as part of Alternatives C and D). This alternative was dismissed because of the importance of the Munger Mountain area for elk calving and the direction in the Forest Plan that states that human activity and disturbance will be restricted in elk calving areas until June 30. Seasonal restrictions that allow motorized use in June are not considered effective for protecting elk calving areas. The interdisciplinary team also considered requiring seasonal restrictions on both motorized and non-motorized recreation. However, this alternative was dismissed as being outside the project scope. Including proposals for restricting non-motorized uses would greatly complicate the analysis. The team determined

that restricting all human uses in the spring may have merit but it would be best addressed in a future analysis that dealt with non-motorized use more directly. Opportunities for spring and fall motorized trail riding are analyzed in Alternative E which does not include seasonal restrictions for trails in the Munger Mountain area.

Construct new motorized routes to provide additional loop opportunities

Some people requested that motorized trail connections which do not currently completely exist on the ground be included in the designated OHV system (although some segments of trail may be present). Analyzing proposed new construction of routes as part of this broader analysis would greatly increase the project complexity and lengthen the planning process. New route construction requires much more time and information to make informed decisions compared to evaluation of existing routes. Thus, the project scope was limited to consideration of only established complete routes that currently exist on the ground. Decisions made as part of this project will not preclude future consideration of connections that require some construction once the designated OHV system is in place.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on those effects that help distinguish the differences among alternatives.

Table 4: Comparison of the Effects of Implementing Alternatives for a Designated OHV route System

	Alternative A No Action	Alternative B Minimize the number of designated OHV routes	Alternative C Use seasonal restrictions more than closures for designated OHV routes	Alternative D Initial Preferred Alternative	Alternative E Maximize the number of designated OHV routes
Motorized Recreation: Effects on opportunities for motorized recreation including dispersed camping, OHV riding, and hunting access					
Miles of designated and managed motorized trail (spring season)	34 miles	17 miles	29 miles	30 miles	130 miles
Miles of designated and managed motorized trail (summer season)	34 miles	33 miles	100 miles	98 miles	140 miles
Miles of designated and managed motorized trail (fall season)	34 miles	20 miles	34 miles	65 miles	140 miles
Miles of designated and managed motorized trails and primitive roads open during the fall season	225 miles	163 miles	191 miles	239 miles	355 miles
% of project area accessed within 1 mile from open motorized routes during the fall season (other geographic areas do not vary more than 10% among alternatives)	* See Table Footnote	Blackrock – 82% Gros Ventre – 67% Snake/Munger 81%	Blackrock – 81% Gros Ventre – 60% Snake/Munger 84%	Blackrock – 88% Gros Ventre – 84% Snake/Munger 84%	Blackrock – 94% Gros Ventre – 93% Snake/Munger 96%
Miles of designated and managed motorized trail associated with a loop system	15	0.5	49.5	66	76.5
Non-motorized Recreation: Effects on opportunities for non-motorized recreation					
Number of acres at least ½ mile from motorized routes	* See Table Footnote	100,860 acres	85,255 acres	85,289 acres	74,137 acres
Miles of non-motorized trail		95 miles	70 miles	57 miles	35 miles

% of project area that meets primitive or semi-primitive non-motorized recreation setting criteria		39%	33%	33%	29%
Soils: Effects on route sustainability and potential for sedimentation into water sources					
Miles of motorized routes within areas of unstable or marginally unstable land type	166 miles ** See Table Footnote	70 miles	102 miles	102 miles	122 miles
Wildlife: Effects on Wildlife including Threatened, Endangered, and Sensitive species and Management Indicator species					
Elk habitat security (% of management areas with more than 30% minimum threshold value)***	* See Table Footnote	18%	18%	18%	9%
Density of motorized routes within elk calving areas		0.59 miles/sq mile	0.44 miles/sq mile	0.37 miles/sq mile	1.50 miles/sq mile
Miles of motorized routes within Gros Ventre pronghorn migratory corridor		28 miles	30 miles	29 miles	36 miles
% of secure grizzly bear habitat outside primary conservation area relative to 2003 baseline ****		78%	76%	76%	76%
Miles of motorized routes within 5km of sage grouse lek complex)		39 miles	45 miles	40 miles	47 miles
Density of motorized routes within peregrine falcon nest management zone		0.64 miles/sq mile	0.87 miles/sq mile	0.96 mile/sq mile	1.55 miles/sq mile
Special Areas: Effects on the character of inventoried roadless areas, Wilderness Study Areas, Wilderness, Wild and Scenic Rivers, and National Parks					
Miles of motorized routes within ¼ mile of Parks, Wilderness, and WSAs	* See Table Footnote	46 miles	50 miles	46 miles	53 miles
Acres of non-motorized setting within inventoried roadless areas		69,878 acres	56,837 acres	55,787 acres	50,972 acres
Cultural Resources: Effects on cultural resources					
Number of eligible sites or potentially eligible sites along motorized routes	75 sites	9 sites	11 sites	16 sites	17 sites
Number of sites with potential adverse effects	75 sites	0 sites	2 sites	2 sites	3 sites

Management of Motorized System: Effects on the complexity of the system (affects cost and ability to enforce regulations)					
Number of dead-end trails not associated with a loop system	4 system trails	9 trails	13 trails	12 trails	24 trails
Number of routes with seasonal restrictions	21 routes	26 routes	46 routes	42 routes	28 routes
Number of gates and barriers necessary to provide field management of the system	92	191	206	209	211

* Indicator utilizes miles of open motorized routes to represent OHV accessibility. Unlike the action alternatives, OHVs are authorized to operate off motorized routes within the 255,830 acres of unrestricted areas. Therefore, all current and potential user-created routes and currently designated routes within unrestricted areas need to be calculated to determine an accurate numerical representation of the miles of OHV terrain available under alternative A. It is not possible to determine a linear unit such as miles of usable OHV terrain (managed and user-created) due to the volume and the dynamic nature of user created routes within the unrestricted areas.

** The number of miles of motorized route located in marginally unstable or unstable land types for the No Action alternative is based only on the miles of system roads and trails within the project area combined with the miles of known non-system trails. The actual mileage of motorized routes for Alternative A is likely higher. This mileage is provided only to give some estimate of how Alternative A compares with the other alternatives.

*** If no roads were present in the Management Areas, 64% of the MAs would provide more than 30% secure habitat. Minimum 30% threshold value is recommended by Hillis et al. (1991) to limit elk vulnerability during hunting season.

**** All action alternatives are consistent with current management direction and standards inside the primary conservation area because they all either maintain or improve secure habitat. Outside the primary conservation areas, secure habitat is improved for the Gros Ventre and Snake Bear Analysis Units under all of the action alternatives but declines for the Hoback Bear Analysis Unit. The percent of secure habitat improves at least 10% for the action alternatives compared to the No Action alternative. The percents displayed in this table represent the Snake Bear Analysis Unit. Other units do not vary among alternatives. All analysis units have greater than 70% secure habitat under the action alternatives indicative of a low level of human influence on bears and their habitat.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This Chapter summarizes the existing physical, biological, and social characteristics of the project area and discloses the effects of implementing each alternative on the natural and human environment. It also presents the scientific and analytical basis for the comparison of alternatives presented in Table 4 of Chapter Two. This chapter is organized by the seven significant issues.

The techniques and methodologies used in this analysis consider best available science. The conclusions made regarding direct, indirect, and cumulative impacts are based on the available science. The analysis identifies methods used and references scientific sources relied on. The relevant science considered for this analysis consists of several key elements:

- Field-based reconnaissance, data collection and monitoring information.
- Scientific literature.
- Modeling using currently acceptable analysis.
- The collective knowledge of the project area by interdisciplinary team members.
- Analysis conducted for other OHV route designation projects.

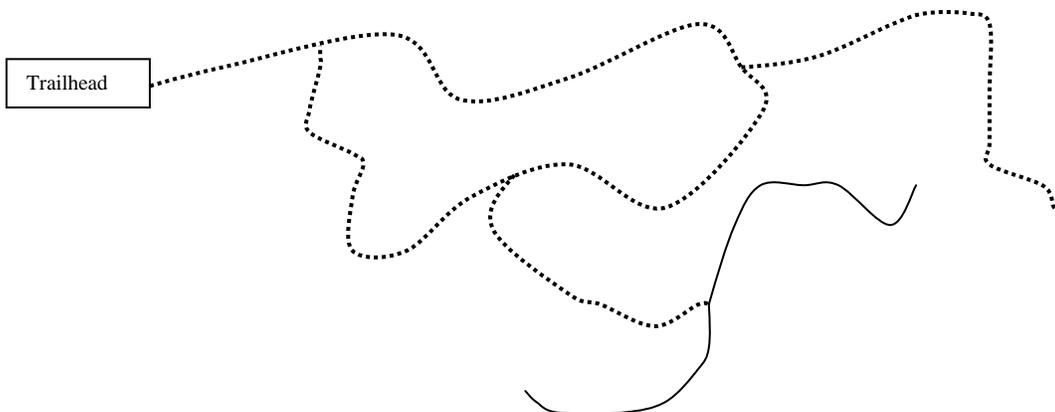
Issue 1: Motorized Recreation

Issues and Indicators

Issue 1.1: Quantity and Quality of Motorized Recreation Opportunities on Trails

The proposal may reduce the quantity (miles of trail) and quality of trails for motorcycle and ATV riding.

Miles of trail can be quantified. However, the quality of a trail system is more subjective. There are a number of different features that OHV visitors look for when they go for a ride; the primary item is a loop trail (Crimmins 2006). For analysis purposes, the variety of loop trail systems will be utilized to compare the quality of alternative trail systems. A loop trail system is defined as a set of trail segments that, when connected, create a loop or several loops. Spur trail segments connecting *directly* to a loop will also be considered as part of the loop system.



.....	Loop System (Individual trail segments form a loop and/or are directly connected to a loop)
—	Not part of the Loop System (Trail segments not directly connected to the loop)

Including the above two spurs that are not *directly* connected to the loop would be inconsistent with the design and purpose of loop trail systems. Loop systems are preferred because they provide more options and limit the amount of backtracking that is common on linear in-and-out trails. However, linear trail spurs connected *directly* to the loop are often necessary to access a loop from the trailhead or to access a desirable destination such as an overlook or campsite.

Indicators:

1. Number of miles of 50” or less trail and motorcycle trail for each season
2. Percent of total motorcycle and 50” or less trail miles associated with a loop system

Issue 1.2: Quantity of Motorized Recreation Opportunities on Roads

The proposal may affect opportunities for motorized recreation on roads, particularly opportunities for challenging 4x4 roads.

Roads on the Forest are maintained to different standards. Maintenance Level 2 roads contain the following attributes:

- Low traffic volume and low speed
- Dips are the preferred drainage method
- Not subject to the Highway Safety Act
- Surface smoothness is not a consideration
- Not suitable for passenger cars

Although maintenance level 2 roads are not specifically designed and built for 4X4’s they are managed to provide a 4X4 experience.

Indicator: Miles of maintenance level 2 roads for each season

Issue 1.3: Concentration of motorized use

The proposal may concentrate motorized use on a smaller number of trails, thus may lead to more congestion. This may reduce the quality of experience, reduce safety, and limit viewing opportunities.

An adequate supply of motorized opportunities that meet the demand of current and foreseeable motorized recreationists is desirable. The pure number of OHV route miles is not the only issue. The quantity of OHV routes may assist with use dispersal, however, if the design and quality of the routes do not meet users expectations, use will be concentrated on those few routes which do offer the desired experiences. Therefore, the quantity of routes containing highly valued characteristics for each type of user will be compared. For analysis purposes, two general categories of OHV activities are identified (recreational riders and hunters).

Recreational riders prefer and would concentrate in the most desirable trail systems, those systems containing loops, spurs, connectors and a variety of opportunities. Furthermore, recreational rider preferences can be further broken down into the difficulty of a given trail system. Advanced, aggressive riders would tend to concentrate on challenging trails and less aggressive, intermediated riders would seek out and concentrate on less challenging terrain.

Hunting based OHV users are less interested in loop systems. They typically desire maximum access into remote areas during the fall season. Subdividing OHV opportunities into such niches would provide an indication of the variety and quantity of opportunities available in each alternative. A combination of adequate route mileage and route diversification of motorized opportunities would most likely result in more even distribution of motorized use among available opportunities.

Indicators:

1. The difficulty and miles of each trail loop system
2. Total miles of motorized trails and maintenance level 2 roads open during the fall season

Issue 1.4: Forest Access

The proposal may reduce the ability to retrieve big game and limit the ability of elderly and handicapped people to get out in the forest. Mileage of motorized routes is not necessarily the most important attribute that affects motorized access. Distribution of motorized routes throughout the forest affects forest access. Two indicators are utilized to compare forest access among alternatives:

Indicators:

1. Percent of project area accessed within given distance from a route for each season
2. Acres of OHV usable terrain for each alternative *

* *OHV usable terrain*: Simply counting the linear miles of designated roads and motorized trails within unrestricted motorized travel areas would not present an accurate picture of where motor vehicles can travel. Two seasons were spent gathering GPS data of non-system (user created) trails in unrestricted areas. This data was gathered in within the Gros Ventre and Munger Mountain unrestricted areas. Many user created trails have been created and are being created each season in these two areas as well as in other unrestricted areas. The task of collecting GPS data on all user-created trails within all unrestricted areas is not possible given the dynamic nature of the unrestricted areas.

While it is not possible to know the mileage of all routes within the unrestricted areas, it is also not accurate to assume that every acre of the unrestricted area is covered by motorized routes. Thus, a concept called OHV usable terrain was used to estimate the acres potentially available for OHV use within the unrestricted areas that would continue under Alternative A – No Action. A separate model using similar criteria was used to define acres of OHV usable terrain for Alternative B-E where motorized use would occur only on designated routes. In both models, physical attributes that are not compatible with OHV use were identified and incorporated into a GIS query to identify those remaining areas that are potentially accessible by OHVs. Physical attributes utilized in the GIS query included vegetation type and density, slope, and aspects of the current Forest road and trail system. The model results were compared with GPS data on known non-system trails and the model was found to be valid. The GIS queries used to define usable OHV terrain can be found in the project record located on the Jackson Ranger District of the Bridger-Teton National Forest.

Affected Environment – Visitor Profile

Nationally, from 1982 to 2000-01, driving motor vehicles “off-road” became one of the fastest growing activities in the country, growing in the number of participants over 12 years old by more than 100% (Cordell et al. 2004). The Motorcycle Industry Council (MIC) is the primary

trade organization that represents the ATV and motorcycle industries in the United States. According to MIC reports, OHV sales more than tripled between 1995 and 2004, to more than 1.1 million vehicles sold in 2003. The population of OHVs in the U.S. grew nearly as fast, increasing 174% between 1993 and 2003 (Cordell, Betz, Green, Ownes 2005).

A recent study entitled *Study of Preferences and Values on the Bridger Teton National Forest*, Commissioned by the State of Wyoming, Governor’s Office, authored by Jessica M. Clement, Ph.D. , Antony S. Cheng, Ph.D. of the Department of Forest, Rangeland and Watershed Stewardship in Fort Collins, CO was conducted as part of the Forest Plan Revision process. Use preferences by the four county area are shown in Table 5.

Table 5: Use Preferences on the BT National Forest

Modes of Travel (% favor):	Whole Sample	Fremont	Lincoln	Park	Sublette	Teton
Non-Motorized Rec.	87	84	83	90	93	92
ATV Recreation	42	49	50	38	41	26
Four wheel drive	33	39	30	33	28	27
Over snow motor rec.	56	58	68	54	63	42
Horse packing	83	85	79	88	90	77

An additional source of forest visitor information is the National Visitor Use Monitoring project that was conducted on the Bridger-Teton National Forest in 2002. The data was published in August 2003. The National Visitor Use Monitoring (NVUM) project was implemented as a response to the need to better understand recreation use and activities as well as satisfaction with National Forest recreation opportunities. Surveys were completed on randomly assigned days as forest visitors exited the Bridger-Teton National Forest over a one year time period. NVUM methodology and analysis is explained in detail in the research paper entitled: Forest Service National Visitor Use Monitoring Process: Research Method Documentation; English, Kocis, Zarnoch, and Arnold; Southern Research Station; May 2002.

According to the NVUM survey, an estimated 2.5 million people recreated on the Bridger-Teton National Forest between October 1st, 2001 and September 30th, 2002. Six percent of forest visitors indicated they participated in off-highway vehicle travel (4-wheelers, dirt bikes, ATVs, ect) and 2% of all forest visitors surveyed indicated that off-highway vehicle travel was their primary activity during their Forest visit. Additionally, of all forest visitors surveyed, 0.1 % utilized designated off road vehicle areas, 2.6% utilized motorized trails, and 10.9% utilized forest roads. Over 45% of Bridger-Teton National Forest visitors (both motorized and non-motorized visitors) were from towns adjacent (within 50 miles) to the Forest. More specifically, 34.2% of all forest visitors surveyed were from the town of Jackson.

Numerous studies and industry reports indicate the same findings as above. The OHV industry and popularity of OHV-based recreation is increasing nationally. Locally, there is a demand for trail riding opportunities and OHV access to highly desirable sites within the forest. Although

NVUM surveys indicated a relatively small proportion of forest visitors on the Bridger-Teton National Forest participated in OHV (6%), national and regional trends indicate the demand will grow. Monitoring data, public comment and participation in meetings/workshops also support this increase in motorized recreation.

Affected Environment – Area Description (for Issues 1 and 2)

Blackrock – Togwotee Area

Commanding views of the Teton Range and large, relatively remote landscapes off major road corridors provide a stark contrast to the busy Jackson area. The area of unrestricted motorized use in Blackrock-Togwotee contains 59,897 acres, 27,212 acres of which are defined as OHV usable terrain (45%). Usable terrain is a term used to describe a GIS query to identify terrain that is accessible and rideable given today's OHV technology. It essentially includes those areas on the National Forest that contain less than a 35% slope and do not contain heavy vegetation cover or bodies of water. An extensive road network was created in the Blackrock area south of US 26 as a result of the several timber sales in the 1970-80's. Many of the logging spur roads constructed to transport timber to forest roads were not incorporated into the current road system, are not mapped, and in some cases are no longer passable due to landslides or regrowth. However, due to the unrestricted nature of cross-country travel in this area, hunters have been utilizing many of these non-system roads to access hunting terrain.

The area is split between roaded, rural and semi-primitive motorized recreation settings, with one sizable non-motorized backcountry area in the head of North Fork Spread Creek (refer to Appendix C for more information on recreation settings). Dispersed camping, hunting, and driving for pleasure are the dominate recreation activities on the primitive roads. Most OHV riding is on level 2 forest roads. There are very few motorized trail opportunities. Trail use includes hiking and mountain biking, but horseback riding appears to be the major use along trails. Several outfitters utilize the area for horseback trips, wagon rides, guided hunting and fishing. Most of the outfitted use is day use with the exception of the wagon rides offered on forest roads. An outfitter also provides mountain bike riding along some roads. Recently, Jackson rental and visitor information agencies have started recommending the area for ATV and 4x4 travel on the road system.

The unrestricted motorized area of Pacific Creek is bordered by the Teton Wilderness and Grand Teton National Park. The area is used for dispersed camping, fishing, foot/horse access to the wilderness. A non-system road network accesses large campsites. The area sees heavy use during hunting season.

Seasonal Use of Blackrock-Togwotee area: There is very little activity in the Blackrock-Togwotee-Pacific Creek areas during the spring, other than snowmobiling, which may continue through May in high-snowfall years. The snow usually melts after Memorial Day and roads dry out at the end of June. Summer activities include ATV riding and driving for pleasure, dispersed camping, fishing, hiking/horseback (trails leading into wilderness) and permitted activities. Hunting is the dominate activity during fall months. Wood collection is also common during late summer and fall months.

Gros Ventre – Shadow Mountain Area

The Gros Ventre road is the historic travel route into Jackson Hole. Ranching was the predominant use historically and private ranches still exist. The Gros Ventre Range includes unique red rock views from the valley bottom, access to Gros Ventre Wilderness to the south and unrestricted motorized terrain north of the valley bottom. The unrestricted motorized area, including Shadow Mountain, contains 89,272 acres, 40,006 acres of which are considered usable OHV terrain (45%). Nearly half of this area is in the semi-primitive motorized setting, in part due to non-system OHV routes. Many old 4WD roads exist in the area resulting from timber harvest, power line installation, and hunting access. Although some system and many non-system motorized trails exist, the trails were not designed for such use. Existing system trails such as Horsetail Creek now used by motor vehicles were originally designed for horse and packstock use. Numerous user-created ATV and motorcycle trails have developed off system trails and in completely new areas over the last 10 year. The development of these unplanned motorized trails has resulted in a trail system that is located on unsustainable slopes, and lacks sufficient loops and trail connectors. This has also become an area of conflict between motorized and non-motorized uses. Most conflicts occur in the fall when hunters are competing for the same terrain using different modes of transportation.

Seasonal Use of Gros Ventre and Shadow Mountain: Snow melts off the Gros Ventre road around early May. Much of the Gros Ventre road and side roads contain clay soils which are not conducive to travel in wet conditions. Popular activities along the Gros Ventre road and its side roads include dispersed camping, fishing, hunting, jeep travel, horseback riding, and kayaking in the spring and summer. ATV and motorcycle riding are increasing in popularity. Hunting is the dominate use during fall months. The easily accessed gentle south facing ridges in the unrestricted motorized areas north of the Gros Ventre road are popular among hunters utilizing OHVs to hunt and/or retrieve game.

Munger Mountain / Snake River Range Areas

The Munger Mountain and Snake River Range has 33,522 acres of unrestricted motorized area of which 9,951 acres is considered usable OHV terrain (30%). Four distinct areas were grouped together due to their proximity and the common influence that residents of Wilson, Red Top Meadows and Star Valley have on the areas.

Munger Mountain: No system roads exist within Munger Mountain area although several roads closed years ago are evident in the lower elevations. In some cases, the closures have not been effective and vehicle traffic occasionally occurs. Rock Creek is the only existing system trail but it does not go to the summit, is hard to follow in places and is not located on the ground as shown on topographic maps. Summer recreation use is increasing rapidly due to population growth along Fall Creek road and in the towns of Wilson and Jackson. Activities include hiking, horse riding, mountain biking, motorcycle use, ATV riding and hunting. This is a day use area with overnight camping occurring only along Fall Creek road. Due to the dramatic increase in recreation uses within this area over the past 10 years, the recreation setting has changed from semi-primitive non-motorized to semi-primitive motorized in much of the area and the density of trails have increased. The area south of lower Fall Creek has no system trails and retains its semi-primitive character for the most part. As recreation use has increased, hunting opportunities have

diminished due to wildlife displacement onto adjacent private land. Much of the area is within a cattle allotment.

North Fork of Fall Creek: Timber harvest and subsequent thinning operations have occurred in the South and North Forks of Fall Creek with logging spur roads still present. Dispersed camping is popular and many sites exist in the North and South Forks of Fall Creek as well as along the Fall Creek road. The current recreation setting is roaded natural. Firewood gathering, big game hunting, OHV riding, horseback riding, outfitting, hiking, and some mountain biking occur in this area.

Snake River Canyon: The Snake River corridor has heavy recreation use associated with river recreation and trail access into the non-motorized (summer) Palisades Wilderness Study Area to the north. Several developed recreation facilities exist. Sheep grazing occurs in drainages such as Dog, Cabin and Station Creeks. Both Fall Creek and the Snake River contain an important fishery and important bald eagle habitat. The unrestricted motorized area is the narrow strip of land between the highway and the WSA boundary and provides a roaded natural setting.

Mosquito Creek: Timber harvest has occurred within the Mosquito Creek drainage and a fairly extensive road network still exists. The area is adjacent to the Big Elk Creek drainage on the Targhee National Forest, within the Palisades WSA which is managed for non-motorized recreation in the summer. Motorized trespass into the Big Elk Creek drainage is a concern. Current recreation settings in this area provide roaded natural and semi-primitive motorized opportunities. The area north of the Mosquito Creek drainage via the Cottonwood Road has become popular with motorcycle riders and multiple routes have developed in the Smokey Hollow area. Dispersed camping is popular and many sites exist in the Mosquito Creek drainage. Nearby residents have expressed concerns about campfires at camp sites. Firewood gathering, outfitting, horseback riding, ATV riding, and mountain biking also occur in this drainage. As noted previously, the resident population along the Fall Creek road and in the town of Wilson has grown considerably resulting in increased recreation use in this area. Private land lies adjacent to this area and restricts access to some areas of public land.

Seasonal Use of Munger – North Fork - Snake Canyon - Mosquito Creek

Firewood gathering is a prominent activity in both Mosquito Creek and in the forks of Fall Creek during late summer and fall. Big game hunting is a popular activity in all three areas with the season opening in early September.

Phillips Ridge Area

The Phillips Ridge area has 12,748 acres of unrestricted motorized area of which 2,226 acres is considered usable OHV terrain (17%). This area, north of Highway 22 and Teton Pass, is adjacent to the Jedediah Smith Wilderness to the west and Grand Teton National Park to the North. Trails give access to both areas. A good road network exists on Phillips Bench to service the Bonneville Power Administration (BPA) power line. The road network is also used for firewood gathering, hunting access, paragliding access and some camping although this area is primarily a day use area. A SNOTEL and weather station maintained by the Natural Resource and Conservation Service are accessed by the BPA road. Beyond the road network, the area is heavily used by non-motorized recreationists and the trails are currently managed for non-motorized uses. Although trails in the unrestricted motorized area are legally available to

motorized use, motor vehicle use rarely occurs. Most of the area provides a semi-primitive non-motorized setting as currently managed and used. A trail plan for non-motorized travel was developed in 2004 and is being implemented through partnerships with many community organizations. The Ski Lake/Phillips Canyon area is adjacent to the Jedediah Smith Wilderness on the Caribou-Targhee National Forest so trespass by motor vehicles and mountain bikes is a concern. Private land restricts access from the Fish Creek road.

Seasonal Use of Phillips Ridge: The Phillips Ridge area melts out early June. Hiking is popular on the trails throughout the summer and fall with more than 30 vehicles sometimes observed at the trailhead. Phillips Canyon is also a popular mountain bike trail. Some rock climbing occurs on Rock Spring Buttress during the summer and paragliding is popular on Phillips Ridge.

Hoback Basin – Granite Creek Area

The Hoback Basin and Granite Creek area contains 60,390 acres of unrestricted motorized area of which 30,964 acres is considered usable OHV terrain (51%). Roughly half of the area provides a semi-primitive non-motorized recreation setting and the other half provides a semi-primitive motorized, roaded natural, or rural recreation setting.

Granite Creek – Granite and Little Granite Creek drainages are very popular dispersed recreation areas. The 12-mile Granite Creek road accesses a developed hot spring, a 52-site campground, recreational residence homes, a Girls Scout camp, private land, several Wilderness trailheads, and numerous dispersed campsites. The Granite Creek contains a small corridor of unrestricted motorized area. The steep slopes west and east of the Granite Creek road do not provide a large enough area to support a trail system. However, OHV use does occur on the Granite and Little Granite Creek roads and non-system spur roads accessing popular dispersed campsites have developed. Additionally, a stretch of road east of the river and south of the Jackpine recreation residences has been developed further to the south to access fishing and camping sites.

Hoback Basin – This area is penetrated by roads, some of them primitive and others unavailable to public use due to private lands, and some these receive very little use outside of hunting season. The primary purpose of the system roads in this area is to provide access to the forest for a variety of dispersed recreation opportunities, including hunting. The Dell-Jack Creek Road also provides access to private in-holdings and ranches. Some trails in this area are signed and managed for non-motorized uses although occasionally ATV tracks are observed.

Seasonal Use of Hoback Basin-Granite Creek: Snow melts out of the Granite Creek drainage around the end of May. Riling Draw Trailhead is also an elk feedground and opens to the public on May 1st although the Riling Draw road is gated until June to protect the road surface. Most other routes in Hoback Basin are usable by early June as well. The hot springs, fishing, variety of camping options, and outstanding scenery result in relatively high use in the Granite Creek drainage from late May through September. The rest of the Hoback Basin area is quiet during the summer, though attractions such as well-known fishing areas and trails leading into the Shoal Creek Wilderness Study Area contribute to steady and increasing summer use. Several hunting outfitters operate in this area.

Environmental Consequences – Direct and Indirect Effects _____

Issue 1.1: Quantity and Quality of Motorized Recreation Opportunities on Trails

Indicators:

1. Number of miles of 50” or less trail and motorcycle trail for each season
2. Percent of total motorcycle and 50” or less trail miles associated with a loop system

Summary Tables

Table 6: Number of miles (rounded to ½ mile) of 50” or less trail and motorcycle trail for each season

Season	Alt A *	Alt. B	Alt. C	Alt. D	Alt. E
Spring	33.5	17	29	29.5	130
Summer	33.5	33	101	99	139
Fall	33.5	20	34	64.5	139

* Alternative A only includes miles of system trail

SEASONS:

- Spring: May 1 (Winter regs until April 30) -June 21 (June solstice)
- Summer: June 22- September 22
- Fall: September 23 (autumnal equinox) – November 30 (Dec 1 start winter regs)

Table 7: Percent of 50” or less trail miles associated with a loop system during the summer for selected geographic areas *

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Blackrock – Togwotee Area				
n/a	0%	53%	100%	0%
Gros Ventre – Shadow Mountain Area				
81%	0%	54%	55%	51%
Hoback Basin – Granite Creek Area				
0%	0%	43%	39%	41%

* Motorcycle trails are associated with a loop system in all cases where designated trails are proposed except for Alternative E in the Munger Mountain area where 81% of the miles are associated with a loop system

Alternative A – No Action

Although OHVs would have unrestricted access to many trails within the project area, the quantity of managed system motorized trails would not change. Only these managed system routes would be maintained and signed. Alternative A has the second highest number of system motorized trails during the most restrictive season (spring) and it is the only alternative that does not have seasonal restrictions on motorized trails. However, there is only one system motorized trail loop system in Alternative A. The Slate Creek loop trail managed for vehicles less than 50” wide is located within the Gros Ventre area. Among the Gros Ventre system motorized trails, 81% are associated with the Slate Creek loop system. The remaining system trails within the Gros Ventre area and all of the motorized trails within the remaining unrestricted motorized areas are lower recreational value dead end trails.

Clearly, of all the alternatives, Alternative A has the potential for the highest number of miles of motorized trails if current and future non-system trails are included. However, the quality of the current trail system would decrease over time. In addition to loop trail systems, other motorized

trail characteristics that are associated with a quality trail system include: quality signing, good maps, and trail related facilities such as trailheads (NOVCC). Only system trails contain these characteristics. The unplanned and unmanaged non-system trails that currently exist and that would develop within the unrestricted areas over time would not include these characteristics. Assuming national and regional OHV use continues to increase, non-system routes within the unrestricted areas would likely increase over time. This would result in a greater proportion of unsigned and un-maintained motorized routes as the total miles of trails increase and the miles of system trail remain constant. This increasingly unplanned and unmanaged approach in the unrestricted motorized area would eventually decrease the riding experience. Additionally, unmanaged and unplanned riding areas are inherently more susceptible to accidents and lost riders than a planned, mapped, signed and maintained system.

Alternative B – Minimize number of designated OHV routes

Number of miles of 50" or less trail and motorcycle trail for each season:

When compared with other action alternatives, Alternative B has the fewest trail miles during the summer season (least restrictive season) and the fewest trail miles during the most restrictive season (spring). Alternative B has 33 miles of motorized trails during the summer months compared to other action alternatives that range from 99 to 139 miles of motorized trail during the summer months.

Percent of total motorcycle and 50" or less trail miles that are associated with a loop system:

There are no designated motorized trail loop systems in Alternative B. It would contain ATV trails ranging from beginner to advance. The 50" or less wide trails are relatively short, dead end trails that have no connectivity unless level 2 roads are used. Motorized opportunities would allow for hunting and general forest access, but are not well structured for recreational ATV or motorcycle riding.

Alternative C - Use seasonal restrictions more than closures for designated OHV routes

Number of miles of 50" or less trail and motorcycle trail for each season: Alternatives C and D would provide very similar motorized trail mileage during both the spring and summer seasons. Alternatives C and D differ in terms of motorized trail mileage during the fall season with Alternative C having significantly fewer miles of motorized trails during the fall.

Percent of total motorcycle and 50" or less trail miles that are associated with a loop system:

Within all of the geographic areas, Alternative C would have less than 50% of its motorized trails associated with a loop system. Of the five geographic areas, the Gros Ventre and Munger Mountain areas would have 100% of their motorized trails as part of a loop system during the summer months. However, both the Gros Ventre and Munger Mountain areas would offer no motorized loop system trails during the spring and fall months.

Alternative D: Initial Preferred Alternative

Number of miles of 50" or less trail and motorcycle trail for each season

As stated above, Alternatives C and D would provide very similar motorized trail mileage during both the spring and summer seasons. Alternatives C and D differ in terms of motorized trail mileage during the fall season with Alternative D having significantly greater miles of motorized trails during the fall.

Percent of total motorcycle and 50” or less trail miles that are associated with a loop system: 100% of the motorized trails in the Blackrock-Togwotee, Gros Ventre, and Munger Mountain areas are associated with a loop system during the summer season. Only the Blackrock-Togwotee loop system would stay open for the fall season.

Alternative E: Maximize the number of designated OHV routes

Number of miles of 50” or less trail and motorcycle trail for each season: Alternative E would offer significantly more motorized trails during all three seasons. There is very little seasonal variation between miles of motorized trails available each season, except that in the Blackrock-Togwotee area, 9.5 miles of non-loop motorized trail managed for vehicles 50” or less is closed during part of the spring season.

Percent of total motorcycle and 50” or less trail miles that are associated with a loop system: 100% of the motorized trails in the Gros Ventre would be associated with a loop system during all three seasons. This is the only situation in all the alternatives where a significant loop system of motorized trails is open for recreational riding during all three seasons.

Issue 1.2: Quantity of Motorized Recreation Opportunities on Roads

Indicator:

1. Miles of maintenance level 2 roads for each season

Summary Table

Table 8: Number of miles of maintenance level 2 roads for each season

Season	Alt A *	Alt. B	Alt. C	Alt. D	Alt. E
Spring	162	93.5	132	132	192
Summer	191	156	170	175.5	215.5
Fall	191	142.5	157	174	215.5

* Alternative A only includes miles of system road

SEASONS:

- Spring: May 1 (Winter regs until April 30) -June 21 (June solstice)
- Summer: June 22- September 22
- Fall: September 23 (autumnal equinox) – November 30 (Dec 1 start winter regs)

Alternative A – No Action

Alternative A would have the second highest mileage of Forest system maintenance level 2 roads for both the spring and summer seasons. Full sized vehicles would have unrestricted access within the project area. Non-system, user-created roads would likely develop over time. The potential quantity of non-system roads is well beyond the current Forest transportation system and those proposed to be designated in the action alternatives. However, similar to trails, user-created roads would not be planned, managed, maintained, mapped or signed. Alternative A would not modify the current managed road system.

Alternative B – Minimize number of designated OHV routes

Miles of Maintenance Level 2 roads for each season: Alternative B would contain the least miles of maintenance level 2 road during all seasons compared with other alternatives. The most significant reduction in road miles compared with other alternatives would be in the Blackrock-

Togwotee and the Gros Ventre areas and to a lesser extent, in the Munger Mountain and Mosquito Creek areas. Phillips Ridge and the Hoback Basin -Granite Creek areas would contain virtually identical mileages to the other action alternatives.

Alternative C - Use seasonal restrictions more than closures for designated OHV routes
Miles of Maintenance Level 2 roads for each season: Alternatives C and D would contain nearly identical mileages of maintenance level 2 roads during the spring and summer season. Alternatives C and D represent the middle of the action alternatives in terms of maintenance level 2 road miles.

Alternative D: Initial Preferred Alternative
Miles of Maintenance Level 2 roads for each season: As noted above, Alternative D would contain nearly identical maintenance level 2 road miles during the spring and summer season as Alternative C. However, Alternative D would provide 15 more miles of maintenance level 2 roads during the fall season compared with Alternative C. The increase in fall mileage would provide more access for hunting in the Blackrock-Togwotee and Gros Ventre areas.

Alternative E: Maximize the number of designated OHV routes
Miles of Maintenance Level 2 roads for each season: Alternative E would provide significantly more maintenance level 2 road miles compared with all the other action alternatives. The Blackrock-Togwotee area would have 22 miles of spring closures and the Hoback Basin would have one 1.5 mile road with a spring seasonal closure. There would be no seasonal closures on maintenance level 2 roads during the fall season.

Issue 1.3: Concentration of motorized use

Indicators:

1. Difficulty and miles of trail associated with a loop system
2. Total miles of motorized trails and maintenance level 2 roads open during the fall season

Summary Tables

Table 9: Miles of trail associated with a loop system during the summer season (1)

Alternative A (2)	Alternative B	Alternative C	Alternative D	Alternative E
15	0	59.5	67	76.5

- (1) A loop trail system is defined as a set of trail segments that, when connected, create a loop or several loops. Spur trail segments connecting directly to a loop are considered part of the loop system.
- (2) Alternative A only includes miles of Forest system roads (non-system roads are not included)

Table 10: Miles of motorized trails and maintenance level 2 roads open during the fall season

Alternative A (1)	Alternative B	Alternative C	Alternative D	Alternative E
224.5	162.5	191	238.5	355

- (1) Alternative A only includes miles of Forest system trails and roads (non-system trails and roads are not included)

Alternative A – No Action

The idea that the greater number of miles of OHV routes available under Alternative A will disperse motorized use assumes that all areas have the same appeal. Of course this is not the case. The unrestricted areas currently do not have an even distribution of non-system trails. Attributes such as scenic value, topography, aspect, vegetation, soils, wildlife, and access vary

throughout the project areas. Motorized use, if left unmanaged within the unrestricted motorized areas tends to concentrate in those areas containing desirable attributes. Thus, the creation and use of non-system trails would not be evenly distributed. Most likely there would be a high concentration of unplanned and unmanaged non-system trails within areas containing high value characteristics such as loop trails close to communities for recreational riders and areas with high concentrations of game animals for hunters using OHVs. It is not possible to quantify the current and/or future network of non-system OHV routes under Alternative A.

Difficulty and miles of trail associated with a loop system: Alternative A contains 15 miles of system motorized trail associated with a loop system. All 15 miles are part of the Slate Creek loop system. The Slate Creek trail system is an intermediate 50 inch or less trail system containing two access points. Local riders familiar with the area would have a variety of locations and difficulty levels to choose from since they would be more likely to know where non-system trails are located. However other recreational OHV riders would only have one loop option within the unrestricted motorized travel areas. This lack of diversity and mileage of managed system motorized trails would likely lead to some congestion during the riding season.

Total miles of motorized trails and maintenance level 2 roads open during the fall season: The majority of system OHV routes open during the fall season would be level 2 roads rather than trails. The mileage of system routes available during the fall season under Alternative A would be more than Alternatives B and C but less than Alternatives D and E. Although additional non-system routes could be used under Alternative A, they would not be maintained, signed, or managed.

Alternative B – Minimize number of designated OHV routes

Difficulty and miles of trail associated with a loop system: Alternative B would not contain any loop trail systems. The only thing resembling a motorized trail system would be Slate Creek. Since many recreational riders prefer trails systems that offer 50-100 miles of riding (Wernex 1994), the only reasonable option would be the Slate Creek trail. Therefore, there would be a high potential for concentration of recreational riders on the Slate Creek trail.

Total miles of motorized trails and maintenance level 2 roads open during the fall season: Alternative B would have the least miles of OHV routes among all alternatives during the fall season. The largest reductions in level 2 roads and motorized trails when compared to the existing condition would be in the Blackrock-Togwotee and Gros Ventre areas. All of the terrain north of the Gros Ventre road including Cottonwood Creek is closed to motorized use after September 9th except for the dead-end Horsetail Creek trail. These areas are popular hunting areas that receive significant OHV use to access campsites and scout and retrieve game animals. Such a reduction (seasonal and permanent closures) on level 2 roads and motorized trails in the Gros Ventre and in the Blackrock-Togwotee area during the hunting season would have high potential to concentrate use on the few open designated routes.

Alternative C - Use seasonal restrictions more than closures for designated OHV routes

Difficulty and miles of trail associated with a loop system: Alternative C would offer three loop trail systems (Slate Creek, Munger Mountain, and Hoback Basin) that would contain 10 or more miles of trail. The Slate Creek trail and Munger Mountain trail system would only be open during the summer months, while the Hoback Basin system would be open during all three

seasons. The 5 mile Uhl Draw trail in the Blackrock area and 2.5 mile Coal Mine Draw trail in the Gros Ventre area would likely be too short to be preferred by intermediate or advanced recreational riders but would provide an opportunity for beginner riders and would provide general forest access.

Total miles of motorized trails and maintenance level 2 roads open during the fall season: Alternative C would have less OHV route mileage during the fall season than existing forest system routes but would provide 28.5 more miles during the fall season compared with Alternative B. In terms of mileage, Alternative C and Alternative B differ most in the Blackrock-Togwotee area with Alternative C providing more OHV routes during the fall season.

Alternative D: Initial Preferred Alternative

Difficulty and miles of trail associated with a loop system: Alternative D would offer three loop trail systems (Slate Creek, Munger Mountain, and Hoback Basin) that would contain approximately 10 or more miles of trail. Both Alternatives C and D provide motorcycle loop trail systems in the Gros Ventre and Munger Mountain area. The smaller Uhl Draw trail system would be open during the summer and fall season.

Total miles of motorized trails and maintenance level 2 roads open during the fall season: Alternative D would provide more OHV routes in each geographic area than Alternatives B or C (except Phillips Ridge where the mileage is the same for all alternatives).

Alternative E: Maximize the number of designated OHV routes

Difficulty and miles of trail associated with a loop system: Alternative E would offer three loop trail systems (Slate Creek, Munger Mountain, and Hoback Basin) that would contain 10 or more miles of trail. The 2.5 mile Coal Mine Draw trail in the Gros Ventre area would be open during all three seasons. Alternative E has a greater mix of ATV and motorcycle trail in the Munger Mountain and Horsetail Creek areas.

Total miles of motorized trails and maintenance level 2 roads open during the fall season: Alternative E would offer 355 miles of OHV routes during the fall season. Mileages in the Blackrock-Togwotee and Gros Ventre areas would be significantly higher compared with all other alternatives. Additionally, Munger Mountain would offer 8 times more miles of motorized trails during the fall season compared with any other alternative.

Issue 1.4: Forest Access

Indicators:

1. Percent of the project area accessed within 1 mile from open motorized routes for each season
2. Acres of usable OHV terrain

Summary Tables

Table 11: Percent of project area accessed within 1 mile from open motorized routes for each season

Area	Alt A	Alt. B	Alt. C	Alt. D	Alt. E
Spring	See Table Footnote (1)	71%	71%	72%	89%
Summer		80%	88%	89%	92%
Fall		75%	76%	86%	92%

(1) Indicator utilizes miles of open motorized routes to represent OHV accessibility. Unlike the action alternatives, OHVs are authorized to operate off motorized routes within the 255,830 acres of unrestricted area. Therefore, all current and potential user-created routes and current system routes within unrestricted areas need to be calculated to determine an accurate numerical representation of the miles of OHV terrain available under alternative A. It is not possible to determine a linear unit such as miles of usable OHV terrain (managed and user-created) due to the volume and the dynamic nature of user created routes within the unrestricted areas.

Table 12: Acres of usable OHV terrain

Area	Alt A	Alt. B	Alt. C	Alt. D	Alt. E
Blackrock	27,193	4,353	4,470	4,524	5,357
Gros Ventre	40,021	4,888	4,886	4,960	5,494
Munger-Snake	9,947	1,721	1,852	1,880	1,923
Phillips Ridge	2,232	237	237	231	231
Hoback Basin	30,880	3,592	3,660	3,739	3,676
TOTALS	110,273	14,791	15,105	15,334	16,681

Alternative A – No Action

Two indicators are used to compare forest access among alternatives. However, the number of acres within a given distance from all routes for each season is not relevant for Alternative A. Motorized travel is not restricted to designated routes in Alternative A. Motorized vehicles may travel throughout the project area. Identifying the number of acres within a given distance from a *route* would not be an accurate portrayal of forest access for Alternative A. Therefore, the number of acres of OHV usable terrain is used as a surrogate to compare forest access among alternatives.

Acres of OHV usable terrain for each alternative: Clearly, Alternative A would have the most motorized forest access. 110,273 acres is 43% of the project area, compared to Alternative E which results in 7% of the total project area. Topography, vegetation, and hydrology would represent the major obstacles to game retrieval and general forest access in Alternative A.

Alternative B – Minimize number of designated OHV routes

Percent of project area accessed within 1 mile from a motorized route for each season:

Alternatives B, C, and D would provide relatively the same amount of access within the project area during the spring season. Additionally, Alternatives B and C would offer very similar access during the fall season. However, Alternative B has a noticeable lower forest access value compared with other action alternatives during the summer season. Several access roads and trails close September 9th to enhance wildlife habitat security during the hunt season. There would be a reduction in motorized forest access particularly within the Blackrock and Gros Ventre areas during the fall season.

Alternative C - Use seasonal restrictions more than closures for designated OHV routes

Percent of project area accessed within 1 mile from a motorized route for each season:

Alternative C is relatively the same as Alternatives B and D during the spring, offers no noticeable difference compared with Alternative D in the summer and would offer similar access as Alternative B during the fall season.

Alternative D: Initial Preferred Alternative

Percent of project area accessed within 1 mile from a motorized route for each season:
Alternative D would provide similar forest access within the project area compared with Alternative C during the spring and summer seasons. However, during the fall season Alternative D provides more forest access than Alternatives B and C.

Alternative E: Maximize the number of designated OHV routes

Percent of project area accessed within 1 mile from a motorized route for each season:
Alternative E would offer more forest access to the project areas during each season than any other action alternative.

Environmental Consequences – Cumulative Effects

This section identifies the impacts on the environment (motorized opportunities in this case) which result from the incremental impact of the proposed action added to other past, present, and reasonably foreseeable future actions. Proposals to modify the OHV system change the motorized setting within the project area of the Bridger-Teton National Forest which in turn affects people’s motorized experience and range of opportunities. However, recreation opportunities must be viewed in a regional context. Other OHV opportunities are present in the area. Therefore, a discussion of OHV opportunities outside of the project area is necessary. The analysis boundary for cumulative effects associated with this project is defined by a 50 mile radius around Alpine, Hoback, Wilson, Jackson, Kelly, and Moran. The analysis boundary is defined by the point at which the effects to motorized opportunities are no longer quantitatively meaningful. A 50 mile radius is considered adequate to assess the cumulative effects of this proposal since over 45% of forest visitors originate from local communities that are within 50 miles of the Forest (Kocis, et al 2003). Furthermore, visitors coming from outside the region, state, or country would likely based their vacation out of one of the local communities. Within this analysis boundary, Table 13 displays the motorized opportunities known to exist.

All proposed actions would be within the above project areas, the effects of the proposed actions would affect the motorized opportunities of forest visitors originating from communities outside of forest boundaries. How far out from the project area is the effected population is somewhat subjective. Although forest visitors originate from all around the globe, an effort to define the analysis boundary to the point were effects are not quantitatively meaningful is necessary. As indicated earlier, over 45 percent of forest visitors originate from local communities that are within 50 miles of the forest (2003 NVUM). Furthermore, out of region, state or country visitors would likely base their vacations out of the same communities (Jackson for example). The populations most affected by proposed actions within the project areas are living or are visiting communities within this 50 mile radius.

Table 13: Miles of Motorized Routes within the Analysis Boundary
(Including National Forest System Routes within Project Area in Alternative A)

Route Type	YNP	GTNP	SNF	CNF	BTNF	TNF	NER	Project Area	Total
4X4 Roads – miles	0	0	273	315	625	190	0	191	1594
Motorcycle Trails - Miles	0	0	0	35	2	353	0	6.5	396.5
ATV Trails - Miles	0	0	20	197	25	52	0	27	321

Table 14: Miles of Motorized Routes within the Analysis Boundary
(Including Designated Routes within Project Area in Alternatives B-E)

Facilities	YNP	GTNP	SNF	CNF	BTNF	TNF	NER	Project Area Routes Alts B-E	Total
4X4 Roads – miles	0	0	273	315	625	190	0	156-215	1559-1618
Motorcycle Trails - Miles	0	0	0	35	2	353	0	.5-37.5	390.5-427.5
ATV Trails - Miles	0	0	20	197	25	52	0	27-102	321-396

YNP – Yellowstone National Park
GTNP – Grand Teton National Park
SNF – Shoshone National Forest
CNF – Caribou National Forest

BTNF – Bridger-Teton National Forest
TNF – Targhee National Forest
NER – National Elk Refuge

Bridger-Teton National Forest system routes currently existing within the unrestricted motorized areas under Alternative A would constitute 10% of the total mileage of OHV routes within the larger analysis area. The cumulative effect of past, temporary, current, and foreseeable activities within the project area would be insignificant on the opportunities for motorized recreation when compared to the existing motorized opportunities in the larger analysis area. However, when the potential for non-system, user-created trails within the 110,273 acres of usable terrain within the project area are included, significant cumulative effects are possible. The potential for development of non-system, user-created OHV routes within the usable acres could easily exceed the total mileage within the entire analysis area.

Designated routes under Alternatives B-E would constitute 8% to 15% of the total mileage of OHV routes within the analysis area (depending on which alternative was selected). The cumulative effects of past, temporary, current, and foreseeable activities within the project area would be insignificant on opportunities for motorized recreation when compared to the existing motorized opportunities in the analysis area.

Issue 2: Non- Motorized Recreation _____

Issues and Indicators

Issue: *The proposal may affect the quality of the setting for non-motorized recreation users as well as the range of opportunities for non-motorized recreation. In particular, the noise and smell associated with motorized use may disrupt the peace and quiet and experience of being out in nature that many non-motorized recreation visitors seek.*

2.1: Degree of separation between motorized and non-motorized areas

Indicator:

1. Number of acres at least ½ mile from motorized routes, including roads and highways

This measure is meant to stand in for the acreage from which motor vehicles are generally unseen. The measure also addresses the noise issue to some degree. Although some vehicles can be heard from a longer distance, this varies according to the kind of vehicle, how it is being operated, whether it has a working muffler, and the effects on sound propagation due to vegetation and terrain. A loud motorcycle in a basin with echoing sidehills can be heard from many places; an ATV working its way along a ridgeline at low speed is not nearly as loud. There is a need to begin some baseline monitoring of sound in various places in order to verify effects.

2.2: Non-motorized recreation opportunities

Indicators:

1. Miles of non-motorized trails
2. Percent of project area that meets physical setting criteria for the primitive or semi-primitive non-motorized recreation classes (per the Recreation Opportunity Spectrum framework)

Although all trails within the project area are open to non-motorized use, it does not mean that all trails are within an environment that contains the attributes associated with quality non-motorized opportunities. These indicators help compare the effects of the five alternatives on non-motorized opportunities; they are not intended to imply allowed or prohibited uses. Appendix D shows the Recreation Opportunity Spectrum (ROS) planning system, with brief definitions of the classes and the kind of land areas they describe. ROS is a national system of zoning that provides the basic framework for inventorying, planning and managing recreation resources in accordance with the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA). ROS is used throughout this discussion, with an emphasis on the primitive and semi-primitive non-motorized classes that provide for non-motorized recreation.

Affected Environment

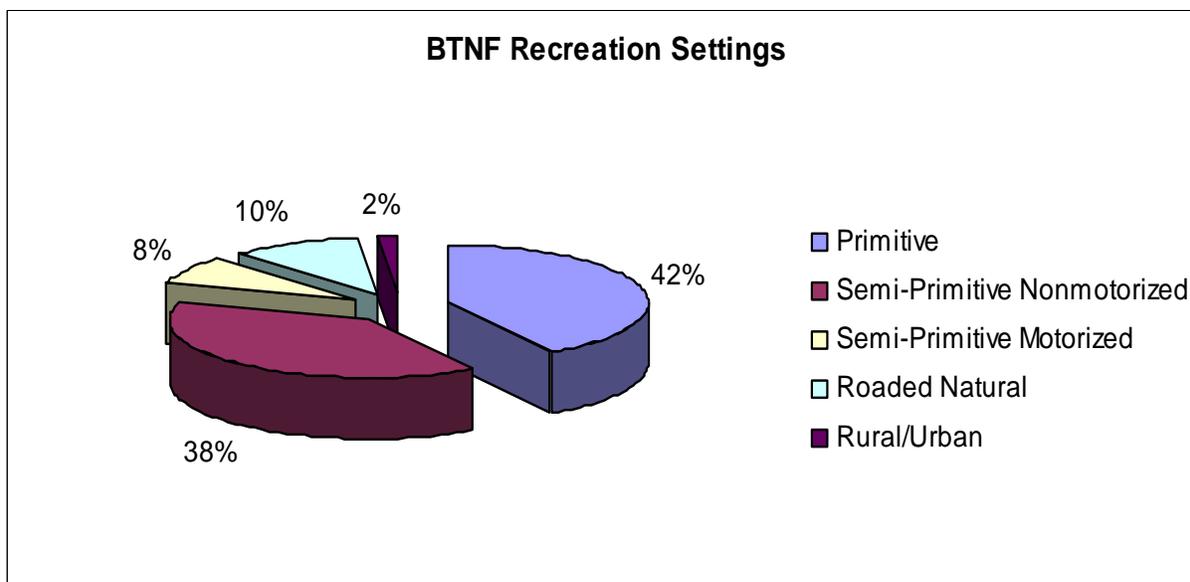
What the forest offers to the public. The role of the Bridger-Teton Forest in providing recreation settings is considered within a national and regional context. The Forest Service is the largest supplier of outdoor recreation opportunities in the U.S. The National Forest System contains most of the nation's land base available for semi-primitive and primitive forms of recreation, just

as the private sector provides most of the opportunities for resort lodging. If there is to be a broad spectrum of recreation types and settings available to the public, the Forest Service is in the best position to provide those kinds of recreation settings that require large areas of remote wildlands; other suppliers of outdoor recreation do not have the land base. Many other forests, especially those that are near large population centers, have developed much of the land base that is not in classified Wilderness, and their supply of non-wilderness primitive and semi-primitive recreation settings is dwindling.

Within the Greater Yellowstone Area, 68% of the federal lands provide primitive or semi-primitive non-motorized settings (GYCC 2006). Most of the primitive or semi-primitive acreage is found in remote backcountry areas. Yellowstone National Park and the Shoshone and Bridger-Teton National Forests have the greatest land base within the primitive and semi-primitive non-motorized settings. Semi-primitive motorized opportunities are in greatest supply within the Targhee, Gallatin, Bridger-Teton and Shoshone National Forests. These four forests provide 84% of the semi-primitive motorized opportunities within the Greater Yellowstone region (GYCC 2006). National Forests, National Parks and the National Elk Refuge participated in the assessment of recreation supply and demand within the Greater Yellowstone Area but they are not alone in contributing to recreation in the area (GYCC 2006). Private land, state and county parks, and lands held by the BLM contribute to the overall recreation supply, often in ways that complement what is offered by the National Parks and National Forests.

The Bridger-Teton National Forest currently has an abundance of non-motorized settings. Figure 3 displays the existing recreation settings for the entire Bridger-Teton National Forest. Most of the primitive setting is found within classified wilderness. During the non-snow season, there are approximately 1,468,000 acres of non-wilderness backcountry settings available on the Forest.

Figure 3. Recreation settings within the Bridger-Teton National Forest, including Wilderness.



Within the project area (current unrestricted motorized areas), 28% of the acreage provides semi-primitive non-motorized opportunities (78,081 acres), while 72% of the acreage provides semi-

primitive motorized or roaded natural opportunities (204,113 acres). However, motorized use currently can legally occur throughout the project area. Thus with motorized use not restricted to designated trails, most of the area would transition to a semi-primitive motorized or roaded natural setting over time as motorized use increases.

Driving motor vehicles “off-road” has become one of the fastest growing outdoor recreation activities nation-wide. At the same time, national and regional social science research indicates a growing demand for non-motorized recreation (Cordell et al, 2004). While OHV use is growing, there remains a high level of interest in non-motorized recreation, particularly near communities, where most of the geographic areas being analyzed in this project are found.

Existing conditions vary among the different geographic areas (refer to the affected environment section for Issue #1), but a general statement is that the number of people using these parts of the forest and the ways they use them have changed dramatically since the last travel plan was enacted for this part of the forest. The population growth of counties containing the Forest as well as the surrounding region continues to lead the nation. Technology has produced mountain bikes and motorized trail vehicles of many kinds capable of traversing rough terrain. More recently there has been a trend toward specialization in recreation activities, each requiring different terrain and different facilities. None of this was anticipated when the existing travel plan was completed.

With the increase in population, modes of transportation, and activity specialization, conflict inevitably occurs. This is particularly true in places where people have become accustomed to current conditions and a ‘new use’ appears and increases quickly. Non-system, routes are increasing, and in most areas trails are shared between motorized and non-motorized users.

What the public seeks from the forest. The national visitor use monitoring study conducted in 2001-2002 provides an estimate of the number of National Forest visits per year as well as the kinds of use and preferred activities of people coming to the Forest. Over 2.6 million people engaged in some kind of recreation within the Bridger-Teton Forest the year of the survey, including people who came for winter sports (Kocis et al 2003). The most-frequently cited activities [non-snow season only] that visitors participated in include:

- Viewing natural features such as scenery, flowers, etc.
- Viewing wildlife, birds, fish, etc.
- Hiking or walking
- Relaxing, hanging out, escaping noise and heat

Each visitor interviewed also identified one primary activity for their recreation visit to the Forest. The top primary non-snow season activities were hiking/walking, viewing natural features, and hunting (see Table 15, below).

Table 15. Primary recreation activities, Bridger-Teton National Forest (Kocis, et al 2003)

Activity associated with backcountry recreation settings	Percent participation	Percent who said it was their primary activity
Primitive camping	5.6	0.8
Backpacking, camping in unroaded areas	5.3	1.9
Viewing wildlife, birds, fish, etc on national forest system lands	46.5	2.0
Viewing natural features such as scenery, flowers, etc.	50.7	10.0
Visiting historic and prehistoric sites/area	3.6	0.4
Nature Study	5.9	0.3
General/other- relaxing, hanging out, escaping noise and heat, etc.	39.9	7.5
Fishing- all types	11.4	4.6
Hunting- all types	9.7	9.4
Off-highway vehicle travel (4-wheelers, dirt bikes, etc)	6.0	2.0
Driving for pleasure on roads	15.4	3.9
Hiking or walking	33.9	13.0
Horseback riding	3.2	1.1
Bicycling, including mountain bikes	13.2	8.8

In March 2007 a random survey was conducted with residents of Wyoming counties within or adjacent to the Bridger-Teton National Forest (Clement and Cheng, 2008). The sample included 483 respondents from five counties (Teton, Sublette, Lincoln, Park, and Fremont). Among the questions asked was the kind of recreational activities respondents engaged in. The answers show commonalities as well as significant differences between what residents do and what visitors seek from the Forest. Seventy-three percent of respondents to this five-county survey indicated that driving for pleasure was an activity they participated in whereas driving for pleasure was cited by only 15% of those participating in the national visitor use monitoring survey. However, wildlife viewing, fishing, hunting and nature enjoyment were also among the most-often mentioned activities in the 2007 survey; this is similar to the broader population of forest users surveyed in 2001-02.

Other questions asked during the 2007 survey are pertinent to this analysis. Residents of local counties were asked their opinions about the level of roaded access on the Bridger-Teton National Forest. Most respondents in the sample (42%) said that the current level of roaded access is appropriate; another 29% said they would like to see more roaded access but only by re-opening existing closed roads. Table 16 below shows responses from Sublette and Teton Counties only. Most of the project area is located in Teton County while the Hoback Basin area is located in Sublette County. Note that there is no distinction regarding what respondents use roads for; this survey included all forest uses, not recreation alone.

Table 16. Responses to statements about the existing level of road access, BTNF – these figures for counties included in this project (after Clement and Cheng, 2008).

Level of agreement with statements below	Teton County	Sublette County
There is a need to create more motorized access, including constructing new roads.	4%	4%

There is a need to create more roaded access but only by re-opening closed roads	23%	34%
The current level of roaded access is appropriate	51%	39%
The level of road access should be reduced	19%	17%
There shouldn't be any roaded access	4%	6%

Responses to the question regarding preferred mode of transport while recreating away from forest roads are summarized in Table 17, for Teton and Sublette Counties only. Note that people were allowed to select more than one activity, so the figures will not add up to 100%. Table 17 gives a snapshot of relative preferences of certain activities, but does not include all activities – motorcycles and mountain bikes are not specifically mentioned, and the horse-packing category could be interpreted as meaning overnight use only.

Table 17. Use preferences within the BTNF, non-roaded recreation – these figures are for counties included in this project (after Clement and Cheng, 2008).

Mode of transport, percent who favor	Teton County	Sublette County
Non-motorized	92%	93%
ATV	26%	41%
4WD	27%	28%
Horsepacking	77%	90%

Environmental Consequences – Direct and Indirect Effects _____

Alternative A – No Action

The quality of the recreation setting preferred by non-motorized forest visitors is likely to erode where motorized use is increasing. The effect would be a reduction in terrain that is not influenced by motor vehicle use—a change in acres from semi-primitive non-motorized to semi-primitive motorized. Conflicts and complaints are likely to increase as use types change and total use increases. Effects on non-motorized recreation would depend on the area, and what each person is seeking – some would be displaced entirely; some would find places to avoid motorized use within the area, and some would share the trails with motor vehicles and may not be greatly disturbed by them.

During hunting season conflicts between motorized and non-motorized use would intensify. Non-motorized hunters tend to start in the dark to reach their hunting area and are extremely annoyed when vehicles show up hours later. For some, the experience is dependent on a quiet, primitive setting where they can be alone to concentrate on the hunt. The loss of this opportunity

as motorized use increases (as well as other kinds of recreation use) would likely displace some hunters to other parts of the forest. Depending on the size and configuration of each geographic area, conflict during hunting season is a larger or lesser problem. In some areas (for example, Ditch Creek and Munger Mountain), visitors have reported that increased use by both motorized and non-motorized recreation has altered the behavior of big game and hunting quality has declined. Under Alternative A this trend would continue.

The noise and smell associated with motorized use would continue; however, there are potential mitigations to this concern through the development of quieter machines, similar to what has happened with snowmobiles in recent years.

If the entire usable terrain within all of the unrestricted motorized areas were to be managed predominantly for motorized use, it would directly affect 110,094 acres. Some of this area is already in a roaded or SPM setting. The significance of the loss of non-motorized settings varies by area. For example, most of the usable terrain within the Phillips Ridge area is already within the influence zones of roads. In the Hoback Basin, the majority of usable terrain is within a non-motorized setting, so the potential for significant change is greater.

Although there is a large acreage of semi-primitive non-motorized and primitive recreation settings elsewhere within the Bridger-Teton National Forest, as well as within the nearby National Parks, the unrestricted motorized areas include popular hiking, hunting, and horseback riding destinations near the growing communities of Jackson, Wilson, Moran, and Big Piney. More distant semi-primitive areas are available for non-motorized recreation, but these are not necessarily viable replacements for favorite trails with fifteen minutes' drive of home. The existing non-motorized areas near towns (such as Cache Creek) currently receive constant heavy use, and do not offer a true semi-primitive non-motorized experience, in which one would expect a high probability of finding solitude and little sign of others. Therefore, the loss of semi-primitive non-motorized settings in the project area would be significant in ways that cannot be expressed in terms of ROS settings alone.

Indicators:

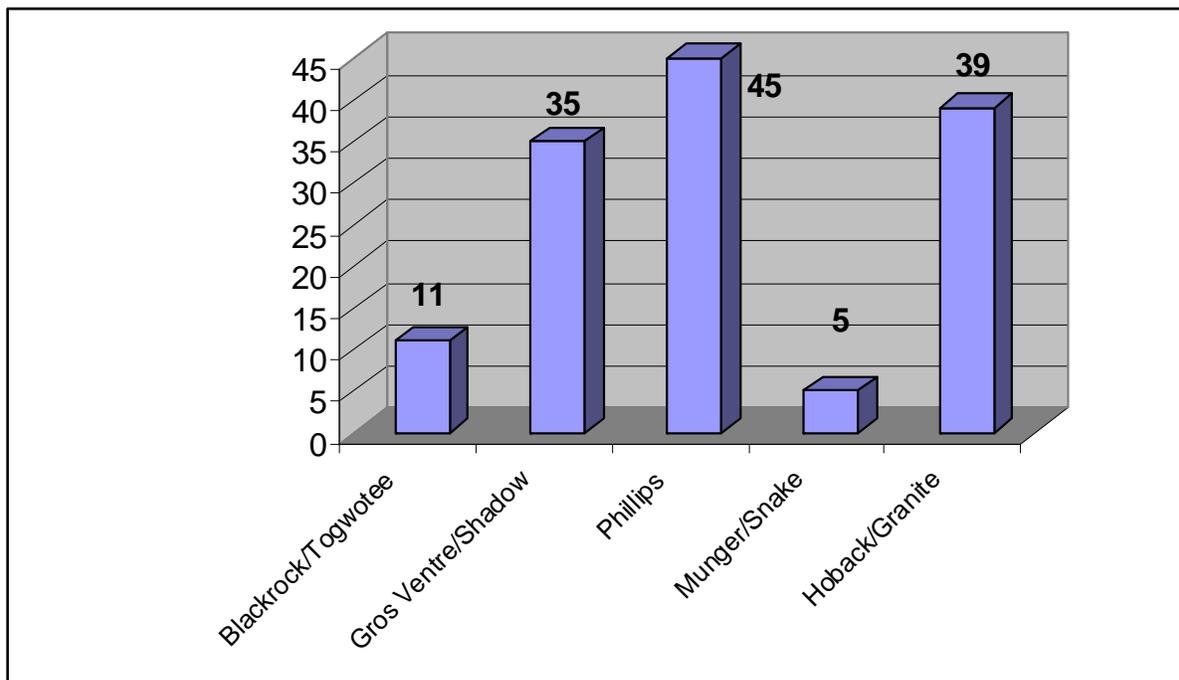
1. *Separation of motorized and non-motorized recreation, as measured by the number of acres at least ½ mile from motorized routes.* In many places there would be little separation between the various modes of travel, with 70% of the analysis area within ½ mile of the nearest system motorized routes. The possibility of continued development of non-system motorized routes under this alternative would likely to increase that percentage. Conflicts involving noise would continue.

2. *Miles of non-motorized trail.* Under the existing situation the project area contains 59 miles of trail that are managed for non-motorized use, however these trails are legally available for motorized use within the unrestricted motorized areas.

3. *Percent of the project area that meets physical setting criteria for the primitive or semi-primitive non-motorized recreation classes.* Under this alternative there would be varying percentages in the semi-primitive non-motorized class, depending on the geographic area. For example, 45% of the Phillips Ridge area would continue to provide semi-primitive non-motorized opportunities, as long as motorized use did not increase. At the other end of the

spectrum, the Munger Mountain / Snake River Range currently have 5% within the semi-primitive non-motorized class. Figure 4 displays this by area. There is no acreage within the primitive class.

Figure 4. Percent non-motorized setting by geographic area, Alternative A, based on how areas are currently managed and used.



Alternative B – Minimize number of designated OHV routes

Blackrock / Togwotee Area: The opportunities for quiet, non-motorized recreation under Alternative B would be expanded from the current condition due to the elimination of unrestricted motorized travel and designation of a relatively small number of miles of motorized routes. This is especially true in Wallace Draw uplands just east of Grand Teton National Park, where numerous primitive roads would no longer be available for motorized use. Non-motorized trails would give access to this area, enhancing non-motorized hunting opportunities. More space between roads would exist in the Baldy Mountain area with the closure of several dead-end roads that currently exist. With the closure of other dead-end roads, some of which are currently gated, the backcountry west of Squaw Basin and east of the Flagstaff Road would provide a larger area for non-motorized recreation in a popular big game hunting area.

Gros Ventre / Shadow Mountain Area: The opportunities for quiet, non-motorized recreation under Alternative B would be expanded from the current condition due to the elimination of unrestricted motorized travel and the elimination of some maintenance level 2 roads. The non-motorized area east of Shadow Mountain from Toppings Lakes and Mt. Leidy south to the Carmichael/Aspen Fork confluence would be enlarged with the closure of primitive roads/OHV trails in Ditch Creek and the divide between Turpin Creek and the Gros Ventre River. Numerous non-system ATV and motorcycle trails in this area would be closed. The Sunday Peak road

would be closed, leaving a wider area of non-motorized terrain between Bacon Creek and the Gros Ventre River.

Phillips Ridge Area: The opportunities for quiet, non-motorized recreation under Alternative B would be enhanced by the formal designation of the trail system as non-motorized. Little obvious difference would occur on the ground, since this area is already being managed primarily for non-motorized recreation in the summer.

Munger Mountain / Snake River Range Area: Opportunities for quiet, non-motorized recreation under Alternative B would be greatly enhanced, as there would be no designated OHV routes within the area. Trails that have developed on Munger Mountain would be managed for non-motorized use and the unimproved road in lower Fall Creek would be closed. In the Mosquito Creek drainage an OHV loop would connect lower Mill Creek and Cottonwood Creek and the upper portions of these closed roads would become part of the non-motorized trail system. Trails along the crest of the Snake River Range from Mud Pass to North Fork Fall Creek would be managed for non-motorized use.

Hoback Basin / Granite Creek Area: Because many trails in this area are already managed for non-motorized use the opportunities for quiet, non-motorized recreation under Alternative B would be very similar to the current condition. However, the formal designation of these trails as non-motorized would prevent conflicts from developing in the future. The unimproved road on the east side of lower Granite Creek would be closed, to leave the east side of the valley from Battle Mountain to West Shoal Creek non-motorized. The unimproved road between Jack Creek and Dell Creek, south of the Shoal Creek Wilderness Study Area, would be closed, providing non-motorized hunting opportunities in the Porcupine Creek area. The unimproved roads and remnants thereof in the Jenny Creek – Jack Creek area would be closed, as would the roads that have developed on Raspberry Ridge and Fortress Hill. This would create a large non-motorized area centered on Raspberry Ridge and eliminate some badly eroded routes. The OHV trail into Fisherman Creek Lake, most of which is within the Shoal Creek WSA, would be closed as well. The unimproved 4WD route in Sour Moose Creek would be closed, leaving the better located one on the slope above while providing a larger non-motorized area between Sour Moose and Rim Draw.

Alternative C - Use seasonal restrictions more than closures for designated OHV routes

Blackrock / Togwotee Area: Opportunities for quiet, non-motorized recreation under Alternative C would increase during the seasons when OHV routes are closed, but for most of the summer when seasonal closures are not in place open motorized routes would exist throughout the area. The largest part of this area that would offer non-motorized recreation is bordered by the Flagstaff Road, U.S. 26, Split Rock Creek, and the upper reaches of North Fork Spread Creek. More space between roads would be created by closing dead-end roads near Baldy Mountain.

Gros Ventre / Shadow Mountain Area: The opportunities for quiet, non-motorized recreation under Alternative C would be expanded from the current condition due to the elimination of unrestricted motorized travel. Opportunities for quiet, non-motorized recreation would increase during seasons when motorized routes are closed, but for most of the summer when seasonal

closures are not in place open motorized routes would exist throughout the area. The non-motorized area east of Shadow Mountain from Toppings Lakes and Mt. Leidy south to the Carmichael/Aspen Fork confluence would be enlarged somewhat with the closure of the primitive road/OHV trail on the divide between Turpin Creek and the Gros Ventre River. Numerous user-created ATV and motorcycle trails in this area would also be closed, and some OHV trails would be managed for single-track motorcycle only, during the summer months. This would increase the opportunity for non-motorized hunting in the area.

Phillips Ridge Area: Same as Alternatives B.

Munger Mountain / Snake River Range Area: The opportunities for quiet, non-motorized recreation under Alternative C would be expanded from the current condition due to the elimination of unrestricted motorized travel. Opportunities for quiet, non-motorized recreation would increase during seasons when OHV routes are closed, but for most of the summer when seasonal closures are not in place open motorized routes would exist throughout the area. In the Mosquito Creek drainage an OHV loop would connect lower Mill Creek and Cottonwood Creek and the upper portions of these closed roads would become part of the non-motorized trail system. Trails along the crest of the Snake River Range from Mud Pass to North Fork Fall Creek would be managed for non-motorized use. Trails that have developed on Munger Mountain would be managed for a mix of non-motorized and motorized use, with some trails subject to seasonal closure in the spring and fall.

Hoback Basin / Granite Creek Area: Because many trails in this area are already managed for non-motorized use the opportunities for quiet, non-motorized recreation under Alternative C would be very similar to the current condition. However, the formal designation of these trails as non-motorized would prevent conflicts from developing in the future.

Alternative D: Initial Preferred Alternative

Blackrock / Togwotee Area: The opportunities for quiet, non-motorized recreation under Alternative D would be expanded from the current condition due to the elimination of unrestricted motorized travel. Opportunities for quiet, non-motorized recreation would increase during seasons when OHV routes are closed, but for most of the summer when seasonal closures are not in place open routes would exist throughout the area. The largest part of this area that would offer non-motorized recreation is bordered by the Flagstaff Road, U.S. 26, Split Rock Creek, and the upper reaches of North Fork Spread Creek. This area contains closed roads but they would be managed for non-motorized recreation use under Alternative D.

Gros Ventre / Shadow Mountain Area: The opportunities for quiet, non-motorized recreation under Alternative D would be expanded from the current condition due to the elimination of unrestricted motorized travel. Opportunities for quiet, non-motorized recreation would increase during seasons when OHV routes are closed, but for most of the summer when seasonal closures are not in place open routes would exist throughout the area. The non-motorized area east of Shadow Mountain from Toppings Lakes and Mt. Leidy south to the Carmichael/Aspen Fork confluence would be enlarged with the closure of the primitive road/OHV trail on the divide between Turpin Creek and the Gros Ventre River, but the primitive road leading between South Fork Ditch Creek and Turpin Creek would be opened in the fall only, to allow vehicle access for hunting. Also, a summer-only motorcycle loop would reduce the size of this area somewhat.

Numerous user-created ATV and motorcycle trails in this area would be closed. Opportunities for non-motorized summer recreation and hunting would be present but not everywhere.

Phillips Ridge Area: Same as Alternatives B and C.

Munger Mountain / Snake River Range Area: The opportunities for quiet, non-motorized recreation under Alternative D would be expanded from the current condition due to the elimination of unrestricted motorized travel. Opportunities for quiet, non-motorized recreation would increase during seasons when OHV routes are closed, but for most of the summer when seasonal closures are not in place open routes would exist throughout the area. In this area, the trails along the crest of the Snake River Range from Mud Pass to North Fork Fall Creek would be managed for non-motorized use; access to the divide via the Cottonwood Creek Road would remain. Trails that have developed on Munger Mountain would be managed for a mix of non-motorized and motorcycle use, with all motorcycle trails subject to a seasonal closure in the spring and fall. Non-motorized recreation opportunities during the summer would consist of the trail from Fall Creek to the summit of Munger Mountain.

Hoback Basin / Granite Creek Area: Same as Alternative C.

Alternative E: Maximize the number of designated OHV routes

Blackrock / Togwotee Area: The opportunities for quiet, non-motorized recreation under Alternative E would be expanded from the current condition due to the elimination of unrestricted motorized travel.

Gros Ventre / Shadow Mountain Area: The opportunities for quiet, non-motorized recreation under Alternative E would be expanded from the current condition due to the elimination of unrestricted motorized travel. Unimproved roads along the divide between Turpin Creek and the Gros Ventre River would be closed but the system of motorcycle trails would increase. These would be subject to seasonal closures so non-motorized recreation would be increased from the current situation during the spring and fall. Numerous user-created ATV and motorcycle trails in this area would be closed.

Phillips Ridge Area: Same as Alternatives B, C, and D.

Munger Mountain / Snake River Range Area: The opportunities for quiet, non-motorized recreation under Alternative E would be expanded slightly from the current condition due to the elimination of unrestricted motorized travel. However, the lack of seasonal closures on many motorized routes would reduce the quality of non-motorized recreation opportunities compared with other alternatives.

Hoback Basin / Granite Creek Area: Same as Alternatives C and D.

Comparison of Alternatives B, C, D, and E

The following section summarizes the major differences among action alternatives in the way they respond to the indicators introduced at the beginning of this section.

1. Separation of motorized and non-motorized recreation, as measured by acreage beyond 1/2 mile from the nearest motorized route.

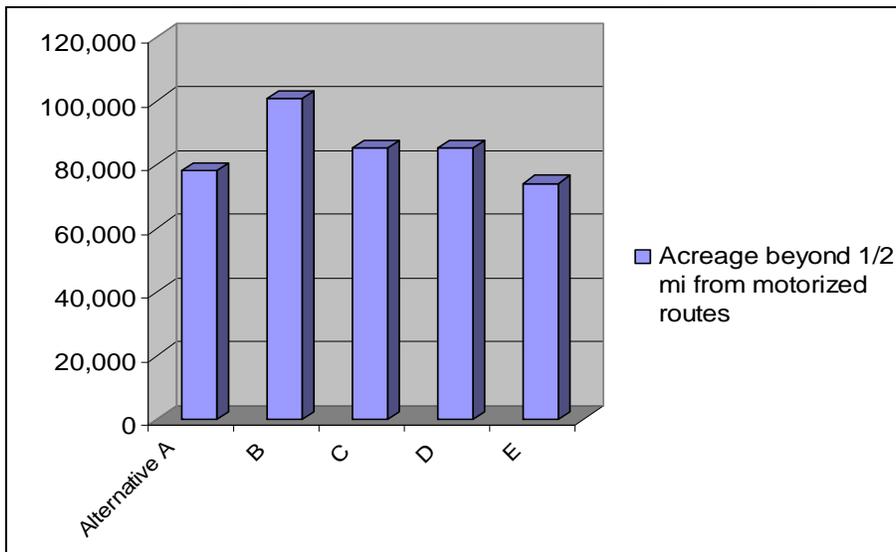
Alternative B offers the greatest opportunity for non-motorized recreation season-long with over 100,000 acres greater than 1/2 mile away from motorized routes. Alternative E, not surprisingly, offers the least, below 80,000 acres. The difference among the other alternatives is relatively little, as can be seen from Table 18 and Figure 5 below. The greatest differences between alternatives occur in the Blackrock/Togwotee, Gros Ventre/Shadow and Munger/Snake areas. Phillips Ridge differs little among alternatives, as does Hoback Basin /Granite Creek.

Table 18. Comparison of alternatives, acres greater than 1/2 mile from a motorized route for each of the geographic areas considered in this project.

Acreage beyond 1/2 mile from motorized routes	Alternative A	B	C	D	E
Blackrock/Togwotee	See Table Footnote (1)	13,060	12,575	13,018	10,752
Gros Ventre/Shadow		40,285	33,554	34,831	28,232
Phillips Ridge		8,080	8,080	8,080	8,080
Munger/Snake		12,212	7,721	6,255	4,264
Hoback/Granite		27,223	23,325	23,105	22,809
Summary			100,860	85,255	85,289

(1) Indicator uses miles of open motorized routes to represent OHV accessibility. Unlike the action alternatives, OHVs are authorized to operate off motorized routes within the 255,830 acres of unrestricted area. Therefore, all current and potential user-created routes and current system routes within unrestricted areas need to be calculated to determine an accurate number of miles of OHV routes available under alternative A. Since analysis of Alternative A uses “usable terrain” measured in acres, it is not possible to determine a linear unit such as miles of routes (system and non-system) due to the volume and the dynamic nature of user created routes within the unrestricted areas

Figure 5. Comparison of alternatives for the entire project area; acres greater than 1/2 mile away from a motorized route. (Alternative A only includes consideration of Forest system routes)



2. Miles of non-motorized trail.

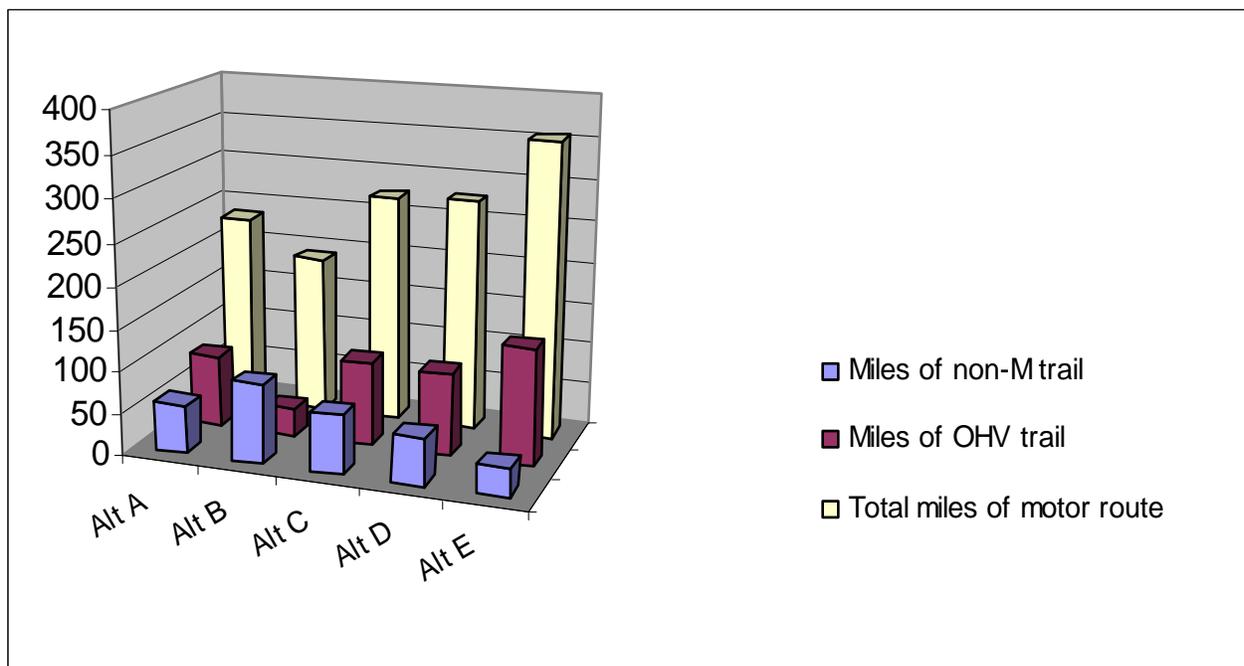
Again, Alternative B stands out as offering significantly more non-motorized trail than other alternatives while Alternative E offers the fewest, 15 miles fewer than existing system non-motorized trails in the project area. This is displayed in Table 19, which compares the miles of non-motorized trail resulting from each alternative.

Table 19. Non-motorized trail system under each alternative.

Comparison of trail system by alternative	Current	Alt B	Alt C	Alt D	Alt E
Miles of system trail for non-motorized use	58	95	70	57	35

Although Alternatives C and D appear very much alike, the miles of motorized trail that would be open season-long is quite different. More seasonal closures from July 1 to September 9 are provided in Alternative C compared with Alternative D. Figure 6 puts the non-motorized trails into the context of the complete road and trail system. In Figure 6, OHV trails include unimproved, high-clearance roads, many of which are almost exclusively used by ATVs and smaller vehicles. The total miles of motorized route in Figure 6 is a summary of routes from 4WD unimproved roads to U.S. highways that pass through the project area.

Figure 6. Profile of trail and road system in the project area, by alternative. Alternative A only includes roads and trails currently on the Forest system.



3. Percent of the project area that meets the physical setting criteria for the primitive and semi-primitive non-motorized recreation classes (per the ROS planning system).

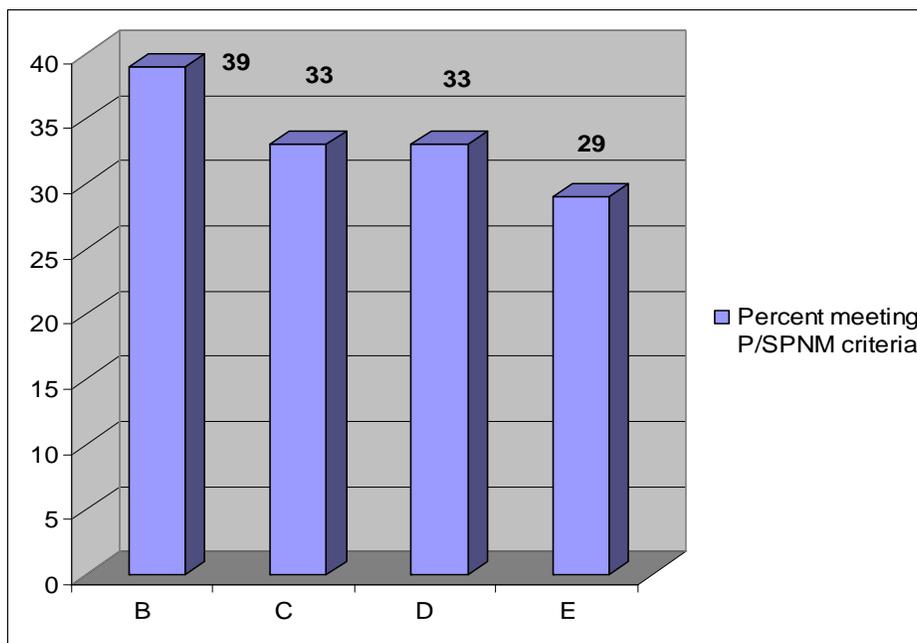
There are no areas within the project area that meet conditions for the primitive recreation class. Alternative B offers the greatest overall amount of semi-primitive non-motorized settings, although for certain geographic areas the differences are greater than for others, as shown by

Table 20 below. Figure 7 is a summary of the information provided in Table 20, for the project area as a whole.

Table 20. Comparison of alternatives by geographic area, percent of each area within the semi-primitive non-motorized class for action alternatives only.

Geographic Area	B	C	D	E
Blackrock / Togwotee	22%	21%	22%	18%
Gros Ventre / Shadow Mountain	45%	38%	39%	32%
Phillips Ridge	63%	63%	63%	63%
Munger Mountain / Snake River	36%	23%	19%	13%
Hoback Basin / Granite Creek	45%	39%	38%	38%

Figure 7. Summary of entire project area, showing percentage of total acres within the Primitive and Semi-primitive non-motorized classes for the action alternatives.



Overall, **Alternative B** provides the greatest opportunity for non-motorized recreation for the non-snow season. Restriction of vehicles to designated routes and a limited number of such routes combine to make a large difference between the current condition and Alternative B, especially in the Munger Mountain / Snake River Range area which currently offers little opportunity for non-motorized recreation settings.

Alternative C provides increased opportunity for non-motorized recreation relative to the existing situation. This is particularly true during the spring and fall when seasonal route closures would be in effect. Restriction of vehicles to designated routes would make a significant difference between current condition and Alternative C in most of the geographic areas; the exception is the Hoback Basin /Granite Creek area.

Alternative D provides increased opportunity for non-motorized recreation relative to the existing situation. Restriction of vehicles to designated routes would make the most difference between current condition and Alternative D in the Munger Mountain /Snake River Range area.

Alternative E provides the least opportunity for non-motorized recreation of any action alternative.

Environmental Consequences – Cumulative Effects_____

This section identifies impacts to the non-motorized recreation environment that would take place under the five alternatives, combined with other past, present, and reasonably foreseeable future actions. Considered in this section are ongoing activities, Forest Service planned projects such as vegetation management (prescribed fire, fuel reduction, aspen or winter range enhancement), timber harvest, acquisition of public rights-of-way for access to the forest, and improvement of existing facilities such as trailheads (See Appendix B). Other effects that are foreseeable in the future include the continuing increase in population in the local area as well as nearby states, changes in recreation patterns and what people seek from the forest, increases in private land subdivision near the forest boundary, highway reconstruction projects and improvements on county roads, private land development or redevelopment (ranchland to resort, for example), and specific proposals as they occur.

Effects on the non-motorized recreation environment under Alternative A:

1. With increasing residential and resort development at the forest boundary, non-system routes will continue to develop as people seek recreation on the national forest adjacent to their property. In the past, these routes have included everything from foot paths to primitive roads for cutting firewood. Motorized routes originating from private land can be expected to increase, further reducing the total acreage in non-motorized settings.
2. It can be expected that more of the mapped usable terrain will become used and new OHV routes will continue to develop. The separation between motorized and non-motorized recreation would therefore be reduced in an unmanaged way.
3. Some of the geographic areas are within productive timber lands and all lie partially within the wildland-urban interface. Fuels treatment, forest health and protection projects, wildlife habitat improvement and timber sales are planned within the next five years. This would affect 29,260 acres in the project area. Most of these projects would not permanently affect the non-motorized setting although during project implementation there would be an influence. Most of the projects are located near the forest boundary and within the corridors of existing roads.
4. Pressure on big game habitat is increasing as the population increases, non-forest lands are developed, and more people seek recreation from the national forest for all kinds of uses. Though more distant secure areas exist for big game, loss of habitat security in the analysis area due to increasing 4WD/OHV use and extent would combine with other factors to reduce opportunities for big game hunting in these areas.
5. A number of influences are expected to combine to reduce opportunities for quiet recreation. Increased use of trail vehicles in the project area, overflights as the number of private planes increases, highway noise as traffic increases, and the typical sounds coming from residential

areas (power tool use, etc.) as subdivision increases would likely reduce the opportunity to find a quiet, non-motorized setting near the forest boundary.

6. Firewood cutting and gathering of other personal-use forest products that are gathered via motor vehicle will continue to be a factor that incrementally reduces the total acreage of non-motorized settings, if only by an insignificant amount.

7. Access to the forest could have an effect on the location and management of future trails. Where new access points are acquired there could be reasons to alter the motor vehicle use map; this would be considered in the annual revision of the map. Access to some parts of the project area could become more difficult as private land ownership at the forest boundary changes. This would affect both motorized and non-motorized recreation.

Effects on the non-motorized recreation environment under Action Alternatives:

The incremental effects of action alternatives, when added to other past, present, and reasonably foreseeable future actions in each area, would result in less reduction in non-motorized settings when compared with Alternative A. Limiting motor vehicles to designated routes would enhance opportunities for non-motorized recreation relative to the current condition, though the alternatives discussed in this document would not change external pressures cited above.

Under the action alternatives the ongoing change from semi-primitive non-motorized settings to semi-primitive motorized settings due to unmanaged OHV use would cease; the semi-primitive non-motorized acreage would remain the same or increase. In some places this would mean a return to conditions that existed before the rapid increase in OHV use occurred.

Issue 3: Soils

Issues and Indicators

Issue: *The proposal may contribute to soil damage, erosion, and sedimentation into streams and river adversely affecting water quality and reducing the long-term sustainability of routes.*

Indicator: Miles of motorized routes located in marginally unstable or unstable land types

Since specific measurement of the potential for erosion and sediment delivery along a specific route is difficult to measure and quantify for such a large project area, the total number of miles of motorized route by landtype stability rating is used as an indicator to assess the relative effect of the five alternatives.

Landtype stability ratings were determined for each soil map unit during the course of the soil survey conducted in the area in the early 1980s . Each landtype, or soil map unit was rated for its inherent slope stability (USDA Forest Service, 1985). Rating definitions are given in Table 21 below.

Table 21. Soil stability type descriptions

RATING	DESCRIPTION
Stable	Evidence of past landslide activity has not been discerned and the observable characteristics of the land are evidence that the probability of landslides in the future is low.
Marginally Stable	Evidence of past landslide activity has not been discerned but there are some land characteristics that suggest a landslide potential may exist.
Marginally Unstable	Evidence of past landslide activity is discernable but none are of recent origin, i.e., within the last 50 years. The assumption is that the area is gaining stability but certain disturbances at critical locations could reactivate mass movements.
Unstable	Evidence of recent mass movement or fresh tension cracks are discernable. Probabilities of additional mass movements are high.

Ratings take into account the overall stability of the land-type. Typically, unstable land-types tend to have high erosion potential with silty soil surface textures and clayey subsoils and steeper slope angles. Disturbances, such as OHV use on unstable landtypes can lead to surface sheet and gully erosion, causing water to channel and runoff laden with sediment will eventually make its way into nearby stream channels. Figure 8 is an example of this condition in the North Fork of Fisherman Creek. Stable landtypes tend to have rocky soil surfaces and low slope angles. Soil erosion and runoff is low on these types. Figure 9 is an example of a stable landtype in the Jack Creek area within the Hoback Basin area.



Figure 8: Unstable landtype
North Fork Fisherman Creek – Hoback Basin



Figure 9: Stable landtype
Jack Creek area – Hoback Basin

Affected Environment

Unmanaged motorized use has created soil erosion problems in many spots within the project area. Figure 8 is an example of this where multiple trails are created causing soil erosion which creates gullies that direct sediment laden water directly to the stream below. The total number of motorized routes in the project area is about 395. The number of miles of non-system routes in the project area is about 185. The number of miles of existing motorized routes plus existing non-system routes on marginally unstable and unstable landtypes is about 166 miles.

Environmental Consequences – Direct and Indirect Effects

Table 22: Miles of motorized route in unstable or marginally unstable landtypes, by alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Unstable landtype	19 (1)	11	23	21	23.5
Marginally unstable landtype	147 (2)	59	79	81.5	98

(1) Includes 5 miles of known non-system motorized trail, based on partial inventory

(2) Includes 71 miles of known non-system motorized trail, based on partial inventory

Comparison of Alternatives

Alternative A would result in more non-system routes being established over time. Thus, allowing unrestricted motorized travel to continue would have the most impact to soil erosion and water quality. Alternatives B, C, D, and E would close many non-system routes which would reduce soil erosion and sedimentation. Alternative B has the least amount of miles in marginally unstable and unstable rated landtypes (70 miles). Alternative E has the highest amount of motorized routes in marginally unstable and unstable landtypes (122). Alternatives C and D have relatively the same amount of miles of motorized routes in marginally unstable and stable landtypes (102 miles). In addition to the benefit of confining motorized use to managed designated routes, erosion and sedimentation can be reduced by employing best management practices for the design and maintenance of designated routes.

Issue 4: Wildlife

Wildlife species indigenous to the Bridger-Teton National Forest include 6 species of amphibians, 6 species of reptiles, 74 species of mammals, and 208 species of birds. In addition, there are five species of mammals and 71 bird species listed as rare or accidental visitors to the Forest. The following section focuses on the wildlife related issues identified in Chapter 1. With respect to federally listed threatened or endangered species, findings indicate the preferred alternative will have no effect on the threatened Canada lynx and their proposed critical habitat and will not likely jeopardize the continued existence of the non-essential experimental population of Northern Rocky Mountain gray wolf. Biological evaluations were also prepared for Forest Service Intermountain Region sensitive plant and animal species. This analysis determined that the project will have no impact on six sensitive species, and may impact individuals or habitat of ten species but will not likely contribute to a trend toward federal listing or loss of viability to the population or species. Further information is available in the project file located at the Jackson Ranger District.

Issue 4.1: Big Game Habitat Quality and Security

Motorized disturbance and associated recreation activity can displace big game from seasonally important habitats, sites and ranges, and increase vulnerability to mortality

The Forest ungulate species known or suspected to occur within the project assessment area include all the Forest Plan Management Indicator big game species: bighorn sheep, elk, moose, mule deer and pronghorn antelope, and bison. Elk and pronghorn are the two species selected to represent this wildlife group as focal or emphasis species. Big game populations on the Forest, especially those of elk, are an extremely important recreational and economic resource in northwest Wyoming. Additionally, elk are the most studied big game species relative to motorized access effects. Effects to pronghorn migration were raised as an issue. Pronghorn is discussed in Issue 4.2.

Three indicators are used to compare alternatives. Elk *Habitat Effectiveness* based on a distance band width model was used to incorporate recent research from the Starkey Experimental Forest and Range Experiment Station in northeast Oregon. An elk vulnerability model and guidelines were used to compare *habitat security* during the hunting season and the density of motorized routes within elk calving areas was used to compare *elk calving* areas among the alternatives.

Indicator #1: Elk Habitat Effectiveness – Assessed from Distance Band model route buffer assessment by Desired Future Condition category and by 6th field watershed.

Observed declines in habitat use adjacent to roads have led to the development of elk habitat effectiveness models. Habitat effectiveness refers to the percentage of available habitat that is usable by elk outside the hunting season (Lyon and Christensen 1992). A variety of elk habitat effectiveness models have been produced for different habitats in the western United States, but the primary factor affecting habitat effectiveness has been recognized as the presence, density and human use of roads (Thomas et al. 1979, Lyon 1983). Using Lyon's model for habitat effectiveness based entirely on road density (Lyon 1983), Christensen et al. (1993:2-3) recommended that habitat effectiveness should be 70% or greater (open road density <0.7 mi/sq

mi) for areas intended to benefit elk summer habitat and retain high use (i.e. DFCs 2A, 6A-D, 6S, 7B and 12). Areas where elk are one of the primary resource considerations should have habitat effectiveness of 50% or greater (open road density <1.9 mi/sq mi) (i.e. DFCs 7A, 8, and 10). Areas with <50% habitat effectiveness (>1.9 mi/sq mi) were expected to make only minimal contributions to elk management goals (Christensen et al. 1993:2). Additionally, Canfield et al. (1999:6.12) recommended that open road densities should be less than 1.0 mi/sq mi in big game summer habitat, with scattered key areas with no roads.

Results from research at the Starkey Experimental Forest and Range in northeastern Oregon suggest that a road-effects model based on distance bands provides a more spatial explicit and biologically meaningful tool than the traditional model based on road density (Rowland et al. 2000). Their study found no relation between numbers of elk locations and HE scores based on open road density, but elk preference increased strongly as distance to open roads increased. Rowland et al. (2005) found that habitat effectiveness calculated from open road density may overestimate habitat effectiveness for elk under certain conditions. In their analysis of project alternatives designed to restore and enhance ecosystems through thinning, prescribed fire and mechanical fuel reduction treatments, they found that HE calculated from distance bands was consistently lower than HE determined from open road density.

The analysis areas used to calculate habitat effectiveness for alternatives in this Final EIS are based on an area approximating an elk summer home range rather than using Management Areas which were used in the Draft EIS. The 6th field watershed area more closely approximates an elk summer home range area size, and watershed units are more biological relevant than arbitrary Management Area boundaries that may cross several watersheds at any elevational range within a watershed. To be completely consistent with the distance band model approach and to improve the analysis, habitat effectiveness was recalculated for Alternatives A, B, modified D and E using the 6th field watersheds as the assessment area instead of Forest Plan Management Areas which have no biological relevance to elk summer range use across the landscape of the project area. To simplify this analysis only the no action (Alternative A), Alternatives (B and E) and the preferred modified Alternative D were evaluated for relative comparison of changes in HE.

Open motorized routes were evaluated for Forest Plan DFC groups [(7A, 8, 10) and 2A, 6A-D, 6S, 7B and 12) within each 6th field watershed to compare HE for the action alternatives relative to each other, the current condition and benchmarks recommended by Canfield et al. (1999) and Christensen et al. (1993:3). The results of this analysis are displayed in Tables 23 and 24 and Figures 10 and 11. Most of the research used to develop the road density recommendations for summer elk range was conducted more than 10 years ago and did not study the effects of motorized trails. The use of motorized trail vehicles such as ATVs and motorcycles has increased in that time. Although data are limited, many biologists now feel that the effects of motorized trails on elk habitat are similar to those of open roads (Canfield et al. 1999:6.16-6.17, Towell and Thomas 2002:808). Preliminary results of a study in progress support this assertion. Wisdom et al. (2005) found that “elk movement rates and flight response were higher during ATV riding than hiking”. Just one pass/day by any off-road vehicles increased movement rates and flight response of elk. Wisdom (2007) also found that repeated exposure to ATVs caused increased avoidance of ATV trails during both the periods of ATV use and non-use. Therefore, open motorized route (road + trail) densities were calculated and compared among action alternatives and the current condition with recommendations from Canfield et al. (1999) and Christensen et al. (1993:3) for HE in summer elk habitat .

Open roads and trails are defined as all routes open to the public and administrative access. Each DFC area within each 6th field watershed was partitioned into five bands, each 394 yards (360m) wide, with the sixth band containing any area greater than 1969 yards (1800m) from an open route. Approximately 1800m is the distance at which elk response to open roads diminished markedly at Starkey (Rowland et al. 2000). Each band was assigned a weight, reflecting a linear increase in elk selection ratios as distance from open roads increased at Starkey: band 1 – 0.17; band 2 – 0.33; band 3 – 0.50; band 4 – 0.67; band 5 – 0.83; and band 6 – 1.0. Habitat effectiveness in relation to open routes was then calculated as a weighted average; with the proportion of each DFC area within a 6th field HUC in each band multiplied by the appropriate weight. Band weights were not altered, or “back buffered”, based on the level of security cover, road type or road use in each band (Roloff 1998). This additional refinement may be warranted in situations where cover is predicted to vary under proposed management alternatives, but since cover remains a constant under the proposed action alternatives and only linear miles, density and pattern of motorized access routes change relative to measures of elk habitat effectiveness back buffering was unnecessary in comparing HE among action alternatives and the current condition. Also, seasonal average daily traffic use is really an unknown and road type is not necessarily a very accurate indicator or surrogate of daily road use.

Indicator #2: Elk Habitat Security – Total acres of secure habitat and % of secure habitat by Management Area (MA).

Hillis et al. (1991:40) provides guidelines for managing elk habitat to limit elk vulnerability. Their concept was to provide security areas for elk during the hunting season where they are less vulnerable to harvest. They defined secure areas as non-linear blocks of hiding cover >250 acres in size and >0.5 miles from an open road, and recommended that they comprise >30% of an analysis unit. Although open roads have the largest effect on elk vulnerability, restricted roads also have an impact because they provide easier access for hunters using non-motorized transportation (Skovlin et al. 2002:553). Lyon and Burcham (1998:5) found that elk hunters are likely to use closed roads to access areas farthest from open roads. The Hillis guidelines for secure areas include a recommendation to minimize closed roads within elk security areas, but do not provide standards for accomplishing this (Hillis et al. 1991:39). The 30% secure habitat is a minimum value necessary to avoid excessive bull elk mortality during the hunting season, realizing that more may be necessary in some analysis areas, due to variables such as topography, vegetation cover and hunting pressure.

The Hillis guidelines are used to calculate the amount of secure elk habitat available in each Management Area. This method (Hillis et al. 1991:40) involves calculating the amount of secure habitat in an analysis area (Management Area), defined as areas >250 acres in size and >0.5 miles from an open road in forest hiding cover. Since field validation of forest stands providing hiding cover was not conducted, a surrogate of forest stands having > 40% crown density/canopy cover was used to define the forest cover types potentially providing hiding cover.

The use of ATVs and motorcycles for recreation and hunting has expanded since the Hillis guidelines were developed. ATVs are now commonly used for recreation and hunting access where they are allowed, while motorcycle use is less common. Although data are limited, ATV and motorcycle trails that are open during the hunting season likely have similar impacts on elk vulnerability as do open roads (Canfield et al. 1999:6.16-6.17, Toweill and Thomas 2002:808). Therefore, the analysis method was refined so that security areas were defined to include areas

>250 acres in size and >0.5 miles from a road or trail open to motorized vehicles. The analysis does not discriminate among routes that are open season-long versus those that have seasonal restrictions during the hunting season, and thus it represents a “worst-case” scenario. The percentage of each Management Area meeting the secure habitat criteria described above was calculated and compared among action alternatives.

Indicator 3: Security of Elk Parturition Areas – Total miles and density of motorized routes open from May 15 to June 30 within elk calving areas.

Elk reproductive success has been shown to decrease following human disturbance within calving areas (Phillips and Alldredge 2000). In general, ungulates respond to recreational activities by avoiding areas near roads, recreation trails, and other types of human activities (Cassier et al. 1992, Ferguson and Keith 1982, Freddy et al. 1986, Leslie and Douglas 1980, MacArthur et al. 1982, Papouchis et al. 2001, Rowland et al. 2000). Human activities are of particular concern for ungulates when they occur where young are reared (Canfield et al. 1999). Although winter is a time of obvious stress to elk and other ungulates, the importance of adequate summer habitat has received growing recognition from biologists. This is the period during which they must have access to adequate forage to build fat stores sufficient to allow them to survive the next winter. Summer nutrition plays an important role in the ability of cows to produce healthy calves (Canfield et al. 1999:6.9). Disturbance from human activities has the potential to displace them from preferred habitats during these critical periods, thus compromising their ability to survive and reproduce, potentially affecting populations (Canfield et al. 1999:6.11). The total miles and density of open motorized routes (trails and roads) in elk calving areas during calving season was used as an indicator to compare alternatives.

Affected Environment – Elk

Elk are found throughout the project area. They use nearly all habitats over the course of an annual cycle, from low elevation sagebrush/grasslands in winter to subalpine forests, and meadows in summer. Elk populations on the Forest are managed by the Wyoming Game and Fish Department (WGF) to provide for a sustained yield of surplus animals for hunters, along with viewing opportunities for the public. WGF manages elk populations within designated Herd Units (HU). Four HU encompass the project area: Fall Creek, Hoback, Jackson and Targhee. Herd Model population estimates presently place two HU (Fall Creek and Jackson) above the WGF population objective. The Gros Ventre herd within the Jackson HU is presently below objective and has a low bull:cow ratio. The Hoback HU population is presently at objective. The population objective for the Targhee HU is 200 animals but there is not an estimated population size because of a lack of herd classification data. The Forest Service has an important responsibility to provide habitat for elk, because most summer range for the affected elk herds is located on the Forest along with portions of several key winter ranges. The Forest provides a large amount of high quality elk habitat.

Numbers of elk in Gros Ventre drainage during 2006 (3,430 elk) were lower than the 2001–2005 average (3,879 elk). Bull:cow ratios in the Gros Ventre River drainage remained low in 2006 (4 adult bulls:100 cows and 3 spike bulls:100 cows). Low calf:cow ratios during the late 1990s have caused a reduction in the number of mature bulls observed during post season classification surveys. Over the past several years, license quotas have been reduced and in 2007 the hunting season structure was changed to antlerless elk the last week of the season in an effort to address

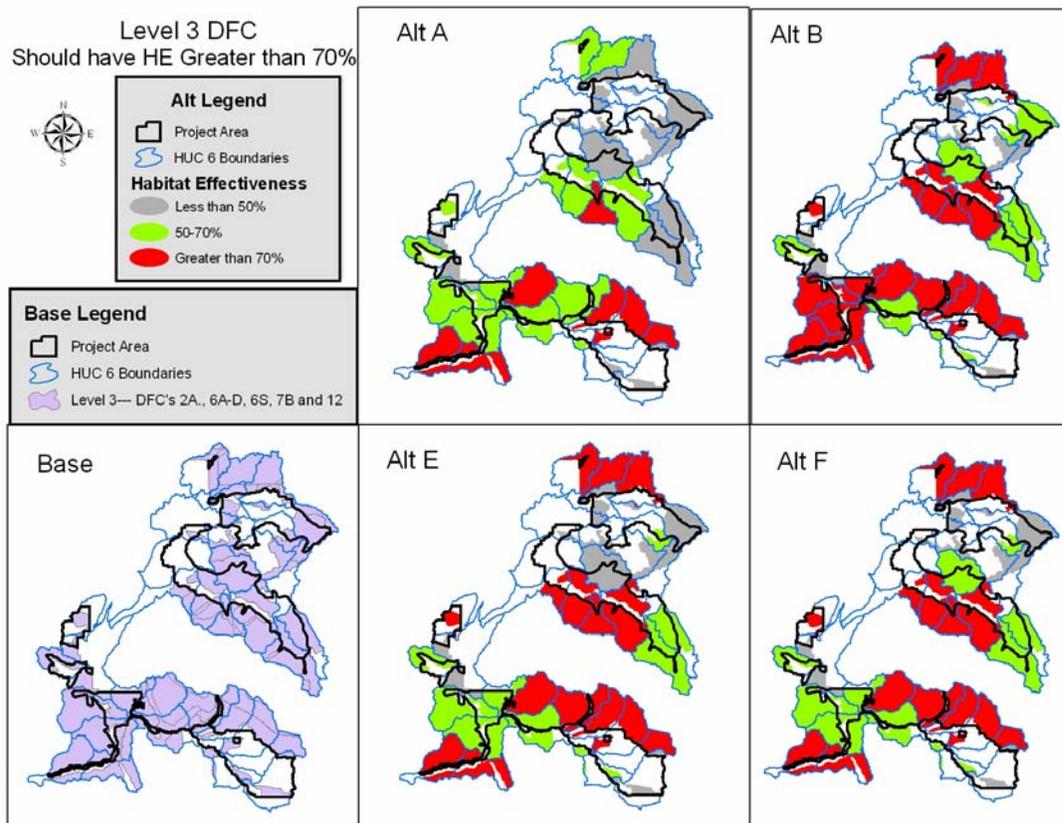
the high bull harvest that occurs the last week of October near the three Gros Ventre feedgrounds. Due to public concerns, hunt areas 81-83 were spikes excluded during the 2007 hunting season. Spikes excluded seasons were used in the mid 1980s in an effort to improve bull:cow ratios. At that time the elk population was increasing in the Gros Ventre drainage. As elk numbers improved, so did the number of bulls. Managers at the time felt that they could not attribute the increased number of bulls to the spikes excluded season. Despite the agency analysis, members of the public felt the change in bull numbers was enough to warrant this type of season again. The changes proposed for 2007 were an effort to reduce hunting pressure on bull elk specifically in Areas 81-83. The shortened bull seasons as well as the spikes excluded seasons in the Gros Ventre are intended to improve bull:cow ratios in this herd segment.

In the decades after World War II, the Forest Service responded to the growing demand for timber by building extensive road systems to facilitate timber harvest on many areas of National Forest. By the 1970s, biologists began to see that access afforded by extensive road systems led to excessive hunting mortality of adult bulls. In some cases, declines in elk populations caused by low calf production were found to be the result of low mature bull/cow ratios (Canfield et al. 1999:6.14-6.15, Stalling et al. 2002:767). Studies were conducted to determine factors influencing elk vulnerability to hunting to seek management solutions to low mature bull elk numbers. One of the conclusions was that motorized access was a major factor influencing elk vulnerability, along with hunter numbers, availability of security cover, topography, hunting season structure and length, hunting equipment technology and other factors. Data have consistently shown that elk mortality rates increase with increasing open road density, because the number of hunters and their distribution both tend to increase with increasing road density (Skovlin et al. 2002:551-553). This is especially true for bulls because hunting regulations have traditionally allowed greater opportunity for harvesting them compared to cows (Vore and Desimone 1991:23). Motorized access is one of the few factors affecting elk vulnerability for which the Forest Service has management authority (Christensen et al. 1992:4). Most other methods of reducing bull elk mortality must be implemented by state wildlife agencies, and have included restricting hunting opportunity by shortening seasons and increasing the complexity of regulations (Stalling et al. 2002:762, 776-780).

Environmental Consequences – Direct and Indirect Effects

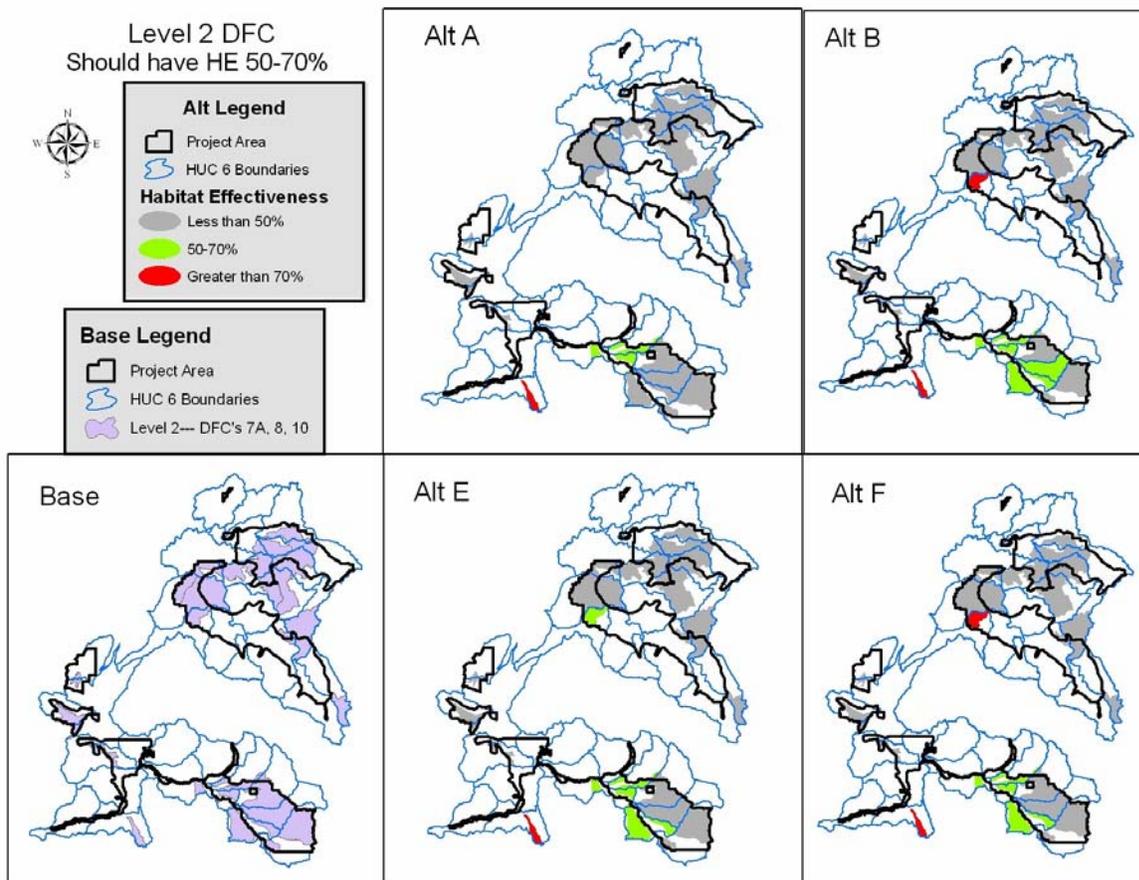
6 th Field (HUC) Watershed Statistics (N = 33)	Alternatives			
	% HABITAT EFFECTIVENESS (HE)			
	No Action A	B	Modified D	E
Maximum		91	91	91
Minimum	See	28	28	27
Mean	Table	65	64	62
Median	footnote	71	67	65
Mode		81	81	72
# (%) of HUCs with < 70% HE		16(49)	17(52)	18(56)
# (%) of HUCs with > or = to 70% HE		17(52)	16(46)	15(46)

Table 23 and Figure 10. Habitat Effectiveness values for 6th field watershed DFC (12, 7B, 6S, 6A-D, 2A) areas intended to benefit elk summer habitat and retain high use (>70% habitat effectiveness) as affected by proposed motorized route changes in Alts B, modified D (F in Figure) and E. For Alternative A, OHVs are not restricted to designated routes. Indicator uses open motorized routes to evaluate effects, thus it is not possible to present a valid comparison since a complete inventory of routes is not available for Alt A.



6 th Field (HUC) Watershed Statistics (N = 28)	Alternatives % HABITAT EFFECTIVENESS (HE)			
	No Action A	B	Modified D	E
Maximum		72	72	72
Minimum	See	21	21	21
Mean	Table	41	38	36
Median	footnote	36	34.5	34
Mode		27	34	24, 34
# (%) of HUCs with 50-70% HE		7(25)	6(21)	6(21)
# (%) of HUCs with < 50 to 70% HE		21(75)	22(79)	22(79)

Table 24 and Figure 11. Habitat Effectiveness values for 6th field watershed DFC (10, 8, 7A) areas where elk are a primary resource consideration (50 to 70% habitat effectiveness) as affected by proposed motorized route changes in Alternatives B, modified D (F in Figure) and E. For Alternative A, OHVs are not restricted to designated routes. Indicator uses open motorized routes to evaluate effects, thus it is not possible to present a valid comparison since a complete inventory of routes is not available for Alt A.



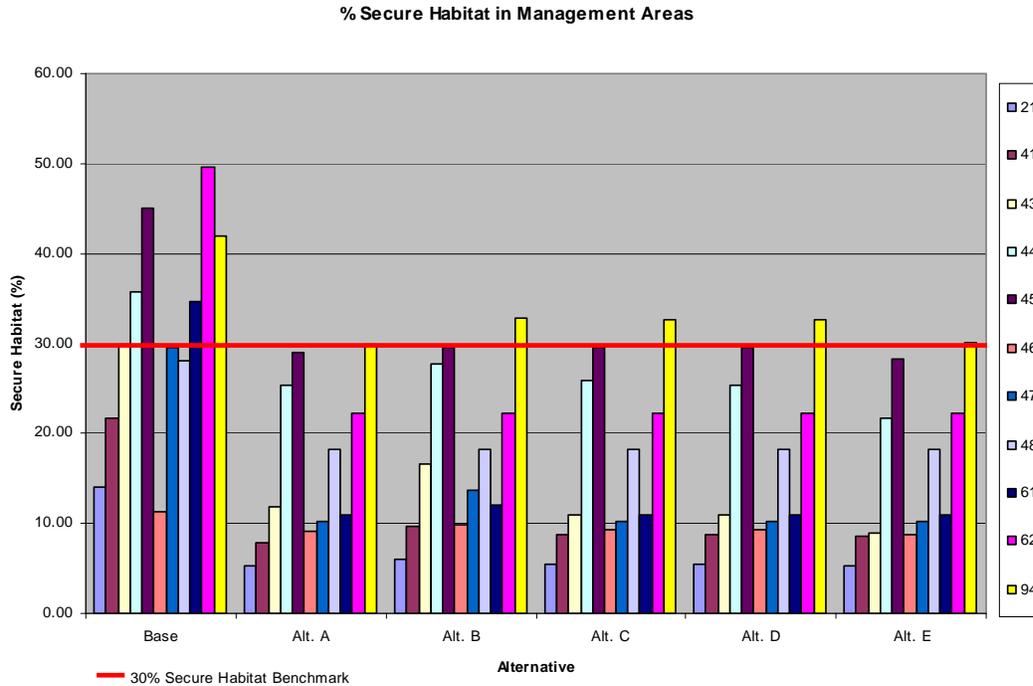


Figure 12. Percent of secure elk habitat in Management Areas by Alternative. Alternative A includes only Forest System routes (unauthorized routes excluded). The base represents the percent of habitat available to elk within the Management Areas meeting the secure habitat criteria without buffering open motorized routes by 0.5 miles on each side.

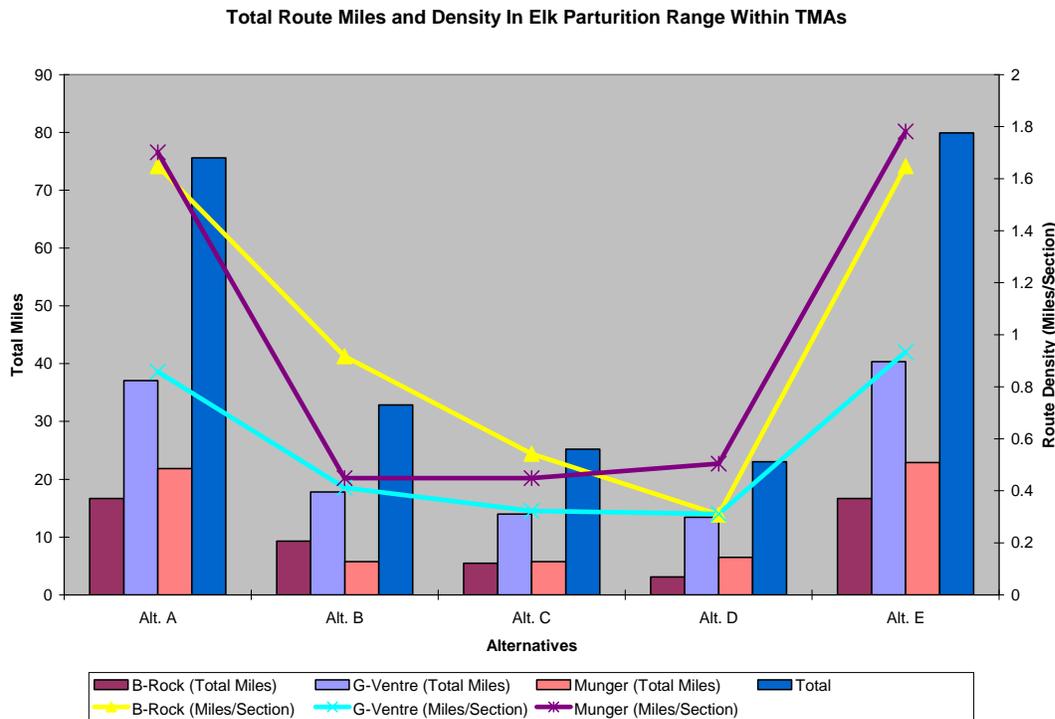


Figure 13. Total miles and density of open motorized routes in elk calving areas during the calving season in three geographic areas. Alternative A includes only Forest System routes (unauthorized routes excluded).

Alternative A – No Action

In general, under Alternative A, unrestricted off-road motorized travel would continue, non-system roads and trails would continue to develop, closed roads would be open to ATVs, and non-motorized trails would be legally available for motorcycle travel within the project area. This situation represents a greater threat to present and future elk habitat effectiveness, habitat security and elk calving areas than any of the action alternatives.

Total miles of open motorized routes and route density could be expected to increase in the future on elk summer range in the project areas from motorized creep. Non-system user created motorized trails and two-track roads would undoubtedly expand in distribution over summer range by virtue of the unrestricted off-road motorized travel permitted in the project area under the current Travel Plan. These new non-system motorized routes, unrestricted off-road motorized travel, and continued motorized use of already established non-system roads and trails and closed roads, would assure that motorized travel and associated recreation would continue as a source of disturbance to elk, increase their vulnerability to mortality from vehicle strikes, and increase the potential for illegal poaching and take during hunting seasons.

As motorized access expands into previously non-motorized areas, the greater the likelihood that motorized disturbance and associated recreational activities will displace elk and cause them to avoid preferred habitats and sites such as key foraging areas, calving areas, rutting/wallow complexes, and migratory corridors. Elk vulnerability to hunter harvest would increase which could reduce mature bull numbers and thus hunter opportunity through more restrictions on hunting seasons and harvest.

Habitat security would be expected to further decline below its already low values (range 5 to 30%, average 16%) for Management Areas within the unrestricted motorized areas. Only one of 11 Management Areas presently meets the recommended guideline (30%) for secure habitat. However, the actual effects on elk vulnerability would be greater than what this analysis shows, because OHV travel potentially would be possible across approximately 110,273 usable acres throughout the project area.

Effects Common to all Action Alternatives

All action alternatives would benefit elk and their habitat by virtue of designating motorized travel routes and prohibiting off-road motorized travel. Both habitat effectiveness and security would improve over the present conditions. By virtue of restricting motorized travel to designated routes the frequency and volume of motorized travel would be expected to increase on the designated routes. Initially, this would potentially increase disturbance along the routes and could result in displacement of elk and avoidance of preferred habitats along routes that previously may have received less frequent and lower traffic volumes which elk had progressively adapted to over time. At the same time, designated routes would potentially provide increased acreage (approximately 95,000 acres) of non-motorized habitat for elk which would decrease both direct and indirect habitat loss. Over the longer term, restricting motorized travel to designated routes would reduce the potential for motorized disturbance in big game habitat, reduce habitat alteration resulting from the development of user-created routes, and lower the potential for displacement, habitat avoidance and disruption of elk movements and activities. A summary of the three indicators identified above follows.

Indicator #1: Elk Habitat Effectiveness – Assessed from Weighted Distance Bands from Open Motorized Routes.

Desired Future Condition 2A, 6, 7B and 12 (Where big game are the primary emphasis) Habitat effectiveness (HE) calculations using distance-bands along open motorized routes showed that Alternative B is below Christensen's recommendation of 70% in 16 of 33 (49%) 6th field watershed, modified Alt. D is below in 17 of 33, and E is below in 18 or 56%. Sixth field watersheds with HE >70% would not be an issue for summer elk habitat because the motorized route effects would be so low. Designated wilderness areas and wilderness study areas within 6th field watershed had a great influence on DFC areas with HE > 70% (Fig. 10). Alt. B, improves upon the current condition of habitat effectiveness in 10 of 17 (59%) watersheds, while modified D and E improve conditions in only 9 of 17 (53%) and 8 of 17 (47%), respectively (Table 23). Effective elk habitat relative to open motorized routes in this DFC group ranges from 27 to 91% across all watersheds for all action alternatives (Table 23). Alternatives B, modified D and E showed increases of 143, 129 and 114 percent for HE, respectively, over the current condition for the number of 6th field watershed areas intended to benefit elk summer habitat and retain high use (>70% HE). The median values for HE for all these watershed for Alternatives B, modified D and E also increased 34, 26 and 23 percent, respectively, over the current condition. Proposed seasonal road/trail closures (including loops/interior trails, parallel roads/trails, links), in the action alternatives have an additional benefit to HE relative to the current condition not reflected in these calculations.

Desired Future Condition 7A, 8 and 10 (Where big game are one of the primary considerations)

Habitat effectiveness (HE) calculations using distance-bands along open motorized routes showed that Alternative B is below Christensen's recommendation of 50 to 70% in 21 of 28 (75%) watersheds, while modified D and E are below in 22 of 28 or 79% of watersheds. Sixth field watersheds with HE >50% would not be an issue for areas where elk are one of the primary resource considerations because the effects on summer elk habitat would be minor. Alt. B, improves upon the current condition of habitat effectiveness in 3 of 7 (43%) watersheds, while modified D and E improve conditions in only 2 of 7 (29%) (Table 24). Effective elk habitat relative to open motorized routes in this DFC group ranges from 21 to 72% across all HUCs for all action alternatives (Table 24). Alternatives B, modified D and E showed increases of 75, 50 and 50 percent for HE, respectively, over the current condition for the number of 6th field watershed areas where elk are one of the primary resource considerations (50 to 70% habitat effectiveness). The mean values for HE for all these watershed for Alternatives B, modified D and E also increased 32, 23 and 16 percent, respectively, over the current condition.

Indicator #2: Habitat Security

Only 2 out of 11 Management Areas influenced by Alternatives B, C and D have secure habitat greater than 30%. Alternative E had only 1 out of 11 Management Areas above the 30% recommended threshold (Figure 12). In general, the action alternatives provide only minimal core escape habitat for elk during the hunting season. Low secure habitat values in Management Areas 43, 44, and 46 are most problematic for the Gros Ventre elk herd because of recurring low bull (yearling and mature):cow and calf:cow ratios during the last two decades.

Indicator #3: Elk Calving

All action alternatives have motorized routes open to the public within designated elk calving areas in three geographic areas (Blackrock/Togwotee, Shadow Mountain/Gros Ventre and North Fork Fall Creek/Munger Mountain) during the calving period of May 15 to June 30 (Figure 13). Alternative E has the highest open route density in all the geographic areas. Alternative D has the fewest total route miles for the three geographic areas and the lowest route density in two of the three geographic areas, and thus does the most toward restricting human activity and disturbances in calving areas during the calving period. Alternative C and B, respectively, also substantially reduce potential disturbances in calving areas in all three geographic areas compared with the existing situation.

Cumulative Effects

Many management actions on the Forest and activities on private lands adjacent to the Forest contribute to cumulative effects on big game or their habitat in four defined areas: 1) productivity, 2) mortality, 3) movement and dispersal, and 4) habitat modification/fragmentation. Currently, most elk herd units on the Forest are in stable or increasing trend and are above population goals. However, elk populations are dynamic and fluctuate based on many factors beyond management of Forest system roads and trails. The cumulative effects analysis area includes the Jackson, Hoback, Fall Creek and Targhee Herd Units.

The population of the Jackson area and the surrounding region is increasing, and summer recreational use of the Forest will likely continue to increase as well. Dispersed recreation activities including hiking, horse riding, mountain biking, motorcycle riding, ATV riding, hunting and outfitting/guiding. All these activities have the potential to disrupt elk movements and habitat use patterns when foraging, calving, bedding, rutting, and migrating, and increase elk vulnerability to mortality. Increasing public use will decrease the ability of elk to fully occupy available habitat. Hunting on the Forest during the fall deer and elk rifle seasons can be especially disruptive to elk during their breeding, post-breeding seasons and fall migration. Hunter harvest of animals reduces herd numbers annually and affects calf/cow/bull ratios and age structure of the herd.

A highway reconstruction and rehabilitation project was initiated along U.S. Highway 287/26 through elk spring/summer/fall range for the Jackson Elk Herd in 2006 and is projected to continue into 2015. The project extends from near Moran Junction eastward 37.7 miles to approximately 12 miles west of the town of Dubois at the Shoshone National Forest boundary and intersects several migration corridors on the eastern half of the reconstruction area. With projected increasing traffic volumes (2400 annual average daily traffic and 3300 seasonal average daily traffic by 2021) and roadway improvements that could trap animals on the road, the long-term risk of elk/vehicle collisions is expected to increase. At least 20 elk/vehicle accidents were documented along the highway from 1990 through 2001 (FHA and WYDOT 2003). Future proposed reconstruction of Highway 189/191 through the Hoback Canyon and Highway 26/89 along the Snake River corridor for the next 3 to 5-years also may increase the potential risk of vehicle/elk strikes.

Road maintenance, improvement and construction on the Forest have been declining in recent years. However, the maintenance and improvement of roads that does occur annually can increase traffic speed, volume and frequency on the Forest which can affect elk. The Forest Service designs and operates roads for low speeds over mostly native and gravel surface, which

greatly reduces the mortality risk to wildlife. Federal, state and county road maintenance and improvement present the same issue with regard to potential direct mortality to elk especially if driving speed is enhanced, and traffic volume and frequency can present a possible barrier to seasonal movement and migration.

Potential mortality from sport hunting, poaching or vehicle strikes facilitated by designated motorized routes in the action alternatives would be additive to the greater hazard and higher risk of future elk mortality as a result of these on-going and proposed future highway reconstruction projects and annual maintenance or improvement of forest, county and state roads.

Major habitat alterations associated with human development such as recreation resorts have likely had a cumulative impact to elk and their habitat. Removal of security cover and high levels of human disturbance associated with developed ski areas such as the Jackson Hole Mountain Resort just north of the Phillips Ridge area pose barriers to elk movement and fragment an important north-south connectivity corridor along the Teton Range. Clearing trees for runs, lifts, and other facilities has resulted in a permanent loss of security cover for elk, while disturbance associated with ski area use has reduced the amount of suitable summer habitat.

There are three winter elk feed grounds on Forest land, one on private land, three on State land and one on the National Elk Refuge within or adjacent to the project area. The feed grounds concentrate elk during the winter season and expose them to abnormally high rates of predation, disease, parasites, and injury. Feeding during the critical winter season may also artificially keep herds at a higher carrying capacity than native big game winter ranges could support, leading to population numbers higher than State management objectives for several elk herd units. Feed grounds partially replace the loss of historic winter range in the Jackson Hole, Snake River and Hoback canyons from development of private lands.

The designation of large Wilderness areas – the Jedediah Smith, Teton and Gros Ventre; two Wilderness Study Areas - Palisades and Shoal Creek; and two National Parks – Grand Teton and Yellowstone, offer a refuge for many elk to the presence motorized vehicles and associated recreation. These remote areas provide a high percent of summer habitat that is non-motorized and where elk are relatively undisturbed by large numbers of people.

Recreation residences on the Forest are under special use permits that control future development on their already established footprint. Recreational residences within or adjacent to the project areas would have minimal additional affect on elk movements and habitat use since their footprints have been long established.

Most non-recreational special uses have minimal effects on elk once the facility is in place and construction operations cease. However, permits for such infrastructure as power lines come with loss of security cover and potentially increased motorized access to the Forest due to service roads needed for facility construction and maintenance.

Trends indicate increased levels of road improvement and building construction on private lands adjacent to National Forest and within inholdings as working ranches are developed into ranchettes, resorts and residential housing. Construction of roads and greater infrastructure development on private lands contribute to increased traffic volumes and speeds, more human activity and loss of open space (direct habitat loss) which can increase elk mortality through vehicle collisions, poaching and legal harvest during elk hunting seasons, possibly disrupt migratory pathways, and displace elk from private to Forest lands as ranches are developed.

On-going and future projects involving vegetation management are tied largely to fuels reduction and management, and wildlife habitat improvement. Mechanical and prescribed fire treatments in forest and non-forest cover include projects for hazardous fuels reduction (Granite Creek, Gros Ventre River Ranches, Randolph Mountain, Buffalo Valley, Bryan Flat, Hoback Junction, Snake to Teton, Greater Snow King, Pacific Creek, Ditch Creek, Continental), big game and grizzly bear habitat enhancement (Lower and Upper Gros Ventre, North Fork Fish Creek, Grouse Mountain, Flagstaff, Leidy, Dry Quad, Flagstaff, Fourmile), and timber salvage (Hardscrabble Salvage, Snake River Canyon salvage) The major adverse effect of treatment activities on elk, that of new or reconstructed vehicle routes, will be limited to temporary roads and skid trails with such routes closed and/or decommissioned after the project is completed. Harvest operations may disturb elk and increase their vulnerability to mortality during the activity period. Other effects of timber harvest in relation to elk are mostly temporary in nature: loss of hiding cover, change in forage quality and quantity.

The basic change in summer travel management policy from all routes and areas open for motorized use unless posted closed, to a system where all summer motorized traffic is restricted to designated routes, would result in a notable reduction of direct and indirect effects to wildlife from motorized use, and a corresponding reduction in overall cumulative effects. Elk populations will persist in the presence of the designated motorized routes proposed under each alternative, although trend in numbers of animals and herd fitness may fluctuate annually at least partially in response to the human activities described in this section. The effects to elk and their habitat from each action alternative relative to the number of miles and density of designated routes and their distribution pattern across elk summer range would be proportionally cumulative to the effects noted for the human activities described above.

Issue 4.2: Pronghorn Migration

Motorized access and associated recreation activity during the spring and fall in the Gros Ventre River drainage and Hoback Basin area have the potential to disrupt the annual cycle of pronghorn movements between seasonal ranges in Jackson Hole/middle Hoback Basin and the Upper Green River valley. Repeated disruption of secure passage along these migratory pathways could result in abandonment of or confinement to summer ranges in Jackson Hole and Hoback Basin and threaten survival of these pronghorn herds

Indicator: *Miles of motorized routes within Gros Ventre and Hoback Basin pronghorn migratory corridor.*

Motorized routes facilitate human access into sagebrush, mountain shrub and meadow habitats. Motorized travel and associated recreation activities within and adjacent to traditional migratory corridors during pronghorn spring and fall migration periods may disrupt seasonal movement along these confined pathways. Such disturbance can induce flight response and scatter individuals and small groups of animals and increase their vulnerability to mortality from predation or accident/injury. Autenrieth (1978) found that harassment of pronghorn by all-terrain vehicles stresses animals at all times of year. Frequent, repeated disruptions could change timing of migration, numbers of animals migrating, group size, and ultimately cause pronghorn to alter seasonal movements and abandon traditional summer ranges in the Jackson Hole and middle Hoback Basin or possibly trap pronghorn on summer range during the winter

period. Either scenario could threaten survival of these two herds. Miles and density of designated routes open for public and administrative motorized use within the migratory corridors was used as an indicator to compare alternatives.

Affected Environment - Pronghorn

Migratory pronghorn (*Antilocapra americana*) populations rely on seasonal ranges to meet their annual nutritional and energetic requirements. Because seasonal ranges often occur great distances apart and across a mix of vegetation types and land ownership, maintaining migration corridors to and from these ranges can be difficult. Sawyer et al. (2005) captured, radiomarked, and monitored pronghorn ($n=34$) in western Wyoming to document seasonal distribution patterns and migration routes. Pronghorn migrated 116–258 km between seasonal ranges in the Upper Green River valley and Jackson Hole. These distances represent the longest recorded migration for this species.

Pronghorn from the Sublette Herd migrate as far as 170 miles into the Jackson Hole area each spring from winter range in the Red Desert in the Upper Green River valley south of Pinedale and west of Rock Springs, Wyoming. This migratory herd is one of only two that persist in the Greater Yellowstone Ecosystem. The migration route is the second longest mammal migration remaining in the Western Hemisphere, surpassed only by that of Arctic caribou. Pronghorn follow an ancient, invariant and narrow corridor through the Gros Ventre River drainage (Figure 14). The pathway along the Red Hills area is a bottleneck along the corridor because of steep topography and highly erosive soils. Fall migrations are highly synchronous, averaging 3 days between summer and winter ranges. Spring migrations are less so, averaging 30 days.

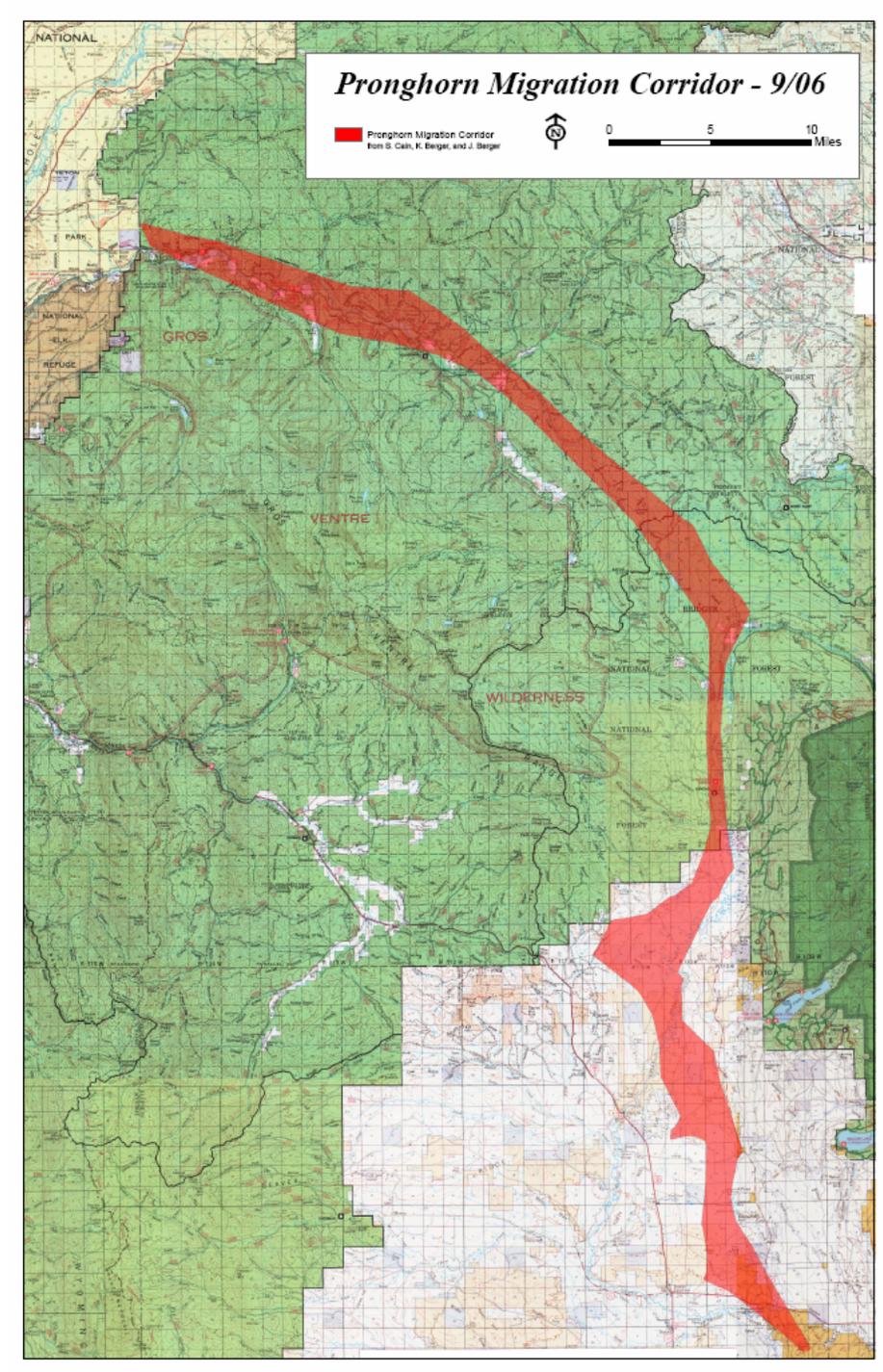


Figure 14. Gros Ventre pronghorn migration corridor.

The Jackson Hole/Gros Ventre population has been fluctuating from roughly 200 to 400 individuals (Sawyer and Lindsey 1999, Berger 2003, Berger et al. 2008) that summer in Grand Teton National Park and the Gros Ventre River drainage. Within the project area, habitat for pronghorn is generally restricted to the Gros Ventre River drainage. Radio telemetry data

indicate that pronghorns use south facing sagebrush slopes on the north side of the Gros Ventre River during migration and through the fall (Sawyer and Lindsey 1999).

Pronghorn migrating to the Hoback Basin area are also part of the Sublette Herd. The north sub-herd unit, one of three for this herd, encompasses most of the antelope using Hoback Basin. The population management objective for this sub-herd is 22,000 animals. Recent population trends for this sub-herd have estimated an increase to 29,000 animals in 2007. Annual herd classification counts in the Hoback Basin have also been increasing in recent years with a high count of 528 individuals in 2007. Antelope typically begin migrating out of Hoback Basin in October and arrive in May/early June, but the timing varies with weather conditions. The length of the migration for this group of antelope varies from 40 to 100+ miles as some pronghorn winter just south and west of Pinedale and others winter south and west of Farson.

Environmental Consequences – Direct and Indirect Effects _____

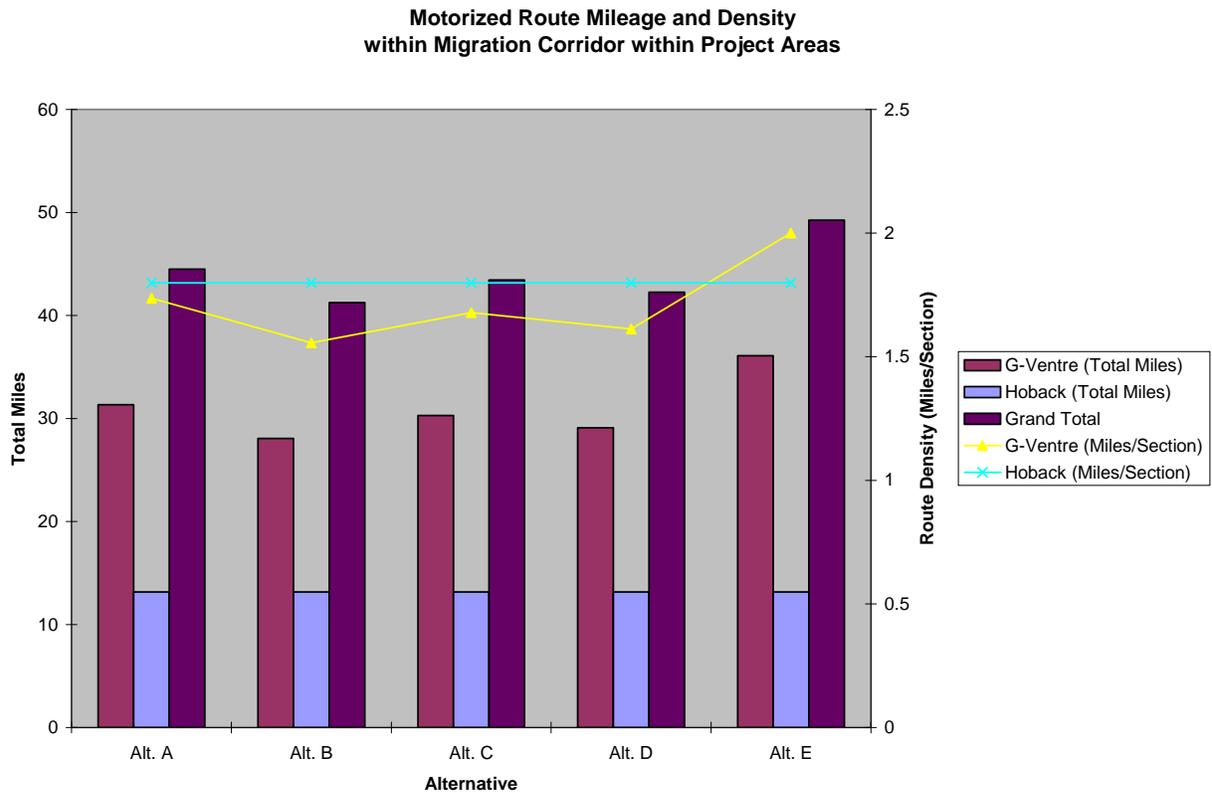


Figure 15. Forest System routes (Alt. A) and proposed designated (Alts. B-E) motorized route miles and density within the pronghorn migration corridors in the Gros Ventre/Shadow and Hoback/Granite project areas.

Alternative A – No Action

In general, unrestricted motorized travel as described in Alternative A represents a greater threat to present and future pronghorn migration than any of the action alternatives.

Total miles of open motorized routes and route density (Figure 15) could be expected to increase in the future along the traditional migratory pathways from motorized creep. Non-system user created motorized trails and two-track roads would undoubtedly expand in distribution by virtue of unrestricted off-road motorized travel. These new non-system motorized routes along with continued motorized use of already established system and non-system routes assure that motorized travel and associated recreation would continue as a source of disturbance to migratory pronghorn, increase their vulnerability to injury and mortality from predation, illegal poaching and harvest during hunting seasons.

As motorized routes expand into previously non-motorized areas, the likelihood that motorized disturbance and associated recreational activities would disrupt pronghorn migration and alter seasonal movement increases. Pronghorn vulnerability to predation and accident/injury could increase during flight from disturbance sources.

Action Alternatives

All action alternatives would benefit migrating pronghorn by designating motorized routes and prohibiting all off-road motorized travel. However, alternatives do differ in terms of total miles and location of designated routes, their season and type of use. Consequently, the total miles and location of routes closed to motorized access also differs among alternatives. By restricting motorized travel to designated routes, the frequency and volume of motorized travel would be expected to increase on the designated routes. Initially, this would potentially increase disturbance along these routes and could induce flight responses from migrating pronghorn where routes intersect or closely parallel the traditional migration pathways. At the same time, designated routes would increase the acreage of non-motorized area along the migration pathway for pronghorn which decreases both direct and indirect habitat loss.

Miles and density of designated routes open for public and administrative motorized access under each alternative within the pronghorn migratory corridor are displayed in Figure 15. The more miles of designated routes and the higher the route density within and immediately adjacent to the migratory corridor, the greater the likelihood of one or more of the potential impacts noted above occurring. Along the Gros Ventre migration pathway, Alternative B has the least potential to adversely affect pronghorn movements and shows the greatest improvement over the existing situation; Alternative E has the greatest potential to adversely affect pronghorn migration movements (Figure 15). Alternative E has more miles and a higher density of open motorized routes than what is currently on the Forest transportation system but less than what exists on the ground if non-system routes are included.

There is no difference in potential impacts to pronghorn movements along the Hoback Basin pathway between any of the action alternatives or any change from the existing Forest transportation system based on equal values for total miles of designated routes and route density within the corridor for all alternatives (Figure 15).

Cumulative Effects

The analysis area for cumulative effects is the length of the Gros Ventre and Hoback Basin migration corridors from the Sublette antelope herd winter range areas to their summer ranges in Grand Teton National Park and Hoback Basin.

Habitat loss and fragmentation and associated disturbances from current and projected development of natural gas fields on winter range used by these herds on the Pinedale Mesa in the Upper Green River Basin may ultimately have the greatest effects on pronghorn movements, limiting pronghorn numbers and influencing the timing of pronghorn migrating along the Gros Ventre and Hoback Basin corridors (Berger et al. 2007).

Sawyer et al. (2005) identified a number of bottlenecks along the Gros Ventre migration route. The most critical appeared to be the 1.6-km-wide Trapper's Point bottleneck near Pinedale. Housing developments and roadways apparently have reduced the effective width of this bottleneck to <0.8 km. An estimated 1,500–2,000 pronghorn move through the bottleneck twice a year during spring and autumn migrations. Protecting this bottleneck from further infrastructure development will be necessary to maintain pronghorn seasonal movements throughout their range.

Prescribed burning and mechanical treatment activities associated with the Lower Gros Ventre Habitat Enhancement project have the potential to temporarily disturb migrating pronghorns in spring and fall. This would be especially true during aerial reconnaissance and ignition, hand firing operations, smoke during burning periods, and any necessary confine, contain or suppress actions should the prescribed fire exceed contingency boundaries and require control actions.

The population of Jackson and the surrounding region is increasing, and summer recreational use of the Forest will likely increase as well. Dispersed recreation activities including hiking, horse riding, mountain biking, motorcycle riding, ATV riding, hunting, and outfitting/guiding. These activities will continue to be a potential source of disturbance to pronghorn. Limited quota sport hunting for pronghorn on the Forest would affect numbers and age/sex ratios of animals summering on the Forest.

The re-introduction, range expansion and population increase of the gray wolf in the Greater Yellowstone Area has increased fawn survival rates four-fold on pronghorn summer range used by wolves (Berger et al. 2008). Wolf predation on transient coyotes facilitated the increase in fawn survival.

The proposed Gros Ventre mineral exploration project along Cottonwood Creek in the upper Gros Ventre drainage could be a potential source of disturbance if there is an increase in traffic volume or frequency during the spring and/or fall migration period.

Reasonably foreseeable future project proposals that could potentially affect pronghorns migrating along the pathway into Hoback Basin include several large ground disturbing actions. Lower Valley Energy has proposed construction of a natural gas pipeline through Hoback Canyon along the existing highway corridor. Plains Exploration has proposed development of a natural gas field in the Noble Basin/South Rim area in the upper Hoback. WYDOT is proposing

reconstruction along Highway 189/191 between Hoback and Daniel junctions. All these activities are scheduled over the next 3 to 5 years.

Recreational and administrative motorized disturbance from travel along routes designated under each alternative within the migration corridor would be cumulative to the disturbance occurring from the on-going and reasonably foreseeable future actions described above.

The basic change in summer travel management policy from all routes and areas open for motorized use unless posted closed, to a system where all summer motorized traffic is restricted to designated routes, would result in a notable reduction of direct and indirect effects associated with travel management, and a corresponding reduction in contribution to overall cumulative effects. Pronghorn migration can persist in the presence of designated motorized routes proposed under each action alternative, but remains threatened in the foreseeable future from continued expansion and development of natural gas fields and residential developments on their winter range and along the migration corridor.

Issue 4.3: Grizzly Bears

Motorized access and associated recreation activity can displace bears from seasonally important habitats and sites, disrupt movement between habitats, and increase vulnerability to mortality from bear/human conflicts, shooting, and vehicle collisions.

Indicators – Inside the Primary Conservation Area (PCA):

Three indicators are used to evaluate bear habitat inside the Primary Conservation Area (PCA) within each Bear Management Unit (BMU) subunit:

- (1) *Percent of secure habitat* relative to 1998 baseline percent when the bear population was considered recovered
- (2) *Open motorized access route density (OMARD) > 1mi/sq mi (% of BMU subunit) by season (March 1 – July 15 and July 16 – November 30) relative to 1998 baseline.* Open motorized access route density (OMARD) includes all motorized access routes (trails, highways, forest roads) having motorized use or the potential for motorized use (restricted roads, generally gated roads). Private roads and state and county highways are not counted. OMARD is calculated in two seasons. Season one is the spring emergence and estrus period (March 1-July 15) and season two is the early and late period when high levels of feeding occur to build winter fat reserves (July 16-November 30).
- (3) *Total motorized access route density (TMARD) > 2mi/sq mi (% of BMU subunit) relative to 1998 baseline.* Total motorized access route density (TMARD) includes all motorized access routes (trails, highways, forest roads) having motorized use or the potential for motorized use (restricted roads, generally gated roads). Private roads and state and county highways are counted.

OMARD greater than 1 mile/square mile, and TMARD greater than 2 miles/square mile are route densities of greatest concern because they are the densities at which bears seem to experience difficulty moving through the landscape. An ACCESS model using the moving window GIS technique (Mace et al. 1996), 30-meter pixel size, a square mile window size and

route density measured as miles/mi² was used to calculate OMARD, TMARD and secure habitat.

National Forest Land and Resource Management Plans for the six Forests in the Greater Yellowstone Area were amended in April 2006 to incorporate the “*Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area*” (2003) in the “*Forest Plan Amendment for Grizzly Bear Habitat Conservation for the Greater Yellowstone Area National Forests – Record of Decision*” (Amendment). The Amendment provides direction on managing motorized access. This direction is used to assess the effects of all the action alternatives on grizzly bears. The standard for access management in the Amendment is to “maintain secure habitat in bear management subunits at or above 1998 levels”. Secure habitat is defined as any area more than 500 m from an open or gated motorized access route. Secure habitat must be greater than or equal to 10 acres in size. Large lakes (> one square mile) are not included in the calculations. The year 1998 was chosen as the baseline because this was the access level at which the grizzly bear population was considered recovered. This direction applies only to the Primary Conservation Area. Some deviations are allowed under specific conditions described in the Amendment.

Indicator – Outside the Primary Conservation Areas (PCA):

The percent of secure habitat in Bear Analysis Units relative to the 2003 baseline.

The “*Conservation Strategy*” in the “*Forest Plan Amendment for Grizzly Bear Habitat Conservation for the Greater Yellowstone Area National Forests – Record of Decision*” delineates Bear Analysis Units on the Forest outside the primary conservation area within potentially suitable habitat. Within the boundaries of the project area there are three bear analysis units: Gros Ventre, Hoback and Snake.

Affected Environment – Grizzly Bears

In 1975, grizzly bears were listed as threatened under the Endangered Species Act (ESA). The Greater Yellowstone Area was designated as one of six recovery zones in the United States in the 1993 Grizzly Bear Recovery Plan (USFWS 1993).

A Conservation Strategy for Grizzly Bear in the Yellowstone Ecosystem (ICST 2003) was completed by the Interagency Conservation Strategy Team in March 2003. The National Forests, State Fish and Game agencies, and Bureau of Land Management within the Greater Yellowstone Area signed a Memorandum of Understanding (ICST 2003:12-13) to implement the Grizzly Bear Conservation Strategy when a final rule delisting the Yellowstone population was published in the Federal Register. The US Fish and Wildlife Service removed the Yellowstone grizzly bear population from ESA protection March 22, 2007 and published the Final Rule as a Federal Register Notice (3/29/2007) Grizzly Bears; Yellowstone Distinct Population; Notice of Petition Finding; Final Rule ([72 FR 14865](#)). National Forest Land and Resource Management Plans for the six Forests in the Greater Yellowstone Area were amended in April 2006 to incorporate the Conservation Strategy in the “*Forest Plan Amendment for Grizzly Bear Habitat Conservation for the Greater Yellowstone Area National Forests – Record of Decision*” (Amendment). The bear is now designated as a sensitive species on these Forests.

The Conservation Strategy and Amendment delineate a Primary Conservation Area (PCA) for bears where management emphasis is on maintaining a recovered bear population and quality bear habitat. Approximately, 90% of the Bridger-Teton National Forest within the PCA is designated wilderness or is in a management area that does not allow timber harvest. The PCA encompasses most of the Buffalo Ranger District and the northern portions of the Jackson District. The PCA is divided into 18 Bear Management Units (BMUs), which are further divided into subunits that approximate the size of a female bear home range. The OHV project area falls within the Buffalo/Spread Creek and Two Ocean/Lake BMUs. The only road which currently, and is proposed to, exist in all the action alternatives within the Two Ocean/Lake BMU is the Pacific Creek road. Therefore, the assessment and comparison of effects on grizzly bears focus on the Buffalo/Spread Creek bear management unit. The Amendment also delineates Bear Analysis Units on the Forest outside the primary conservation area within potentially suitable habitat. Within the boundaries of the project analysis area there are 3 bear analysis units: Gros Ventre, Hoback and Snake (Table 25). The Gros Ventre bear analysis unit includes the Gros Ventre Wilderness. The Hoback bear analysis unit includes the Shoal Creek Wilderness Study Area and the Snake bear analysis unit includes the Palisades Wilderness Study Area.

The Yellowstone Distinct Population Segment of grizzly bears has increased from estimates as low as 136 individuals in 1975 to more than 650 animals as of 2007. This population has been increasing between 4% and 7% annually. The range of this population also has increased dramatically as evidenced by the 48% increase in occupied habitat since the 1970s. This population segment of grizzly bears continue to increase their range and distribution annually and now occupy habitats they have been absent from for decades. Currently, roughly 84-90% of females with cubs occupy the Primary Conservation Area and about 10% of females with cubs have expanded out beyond the Primary Conservation Area within the distinct population segment boundaries. Grizzly bears now occupy 68% of suitable habitat within this boundary and may soon occupy the remainder of the suitable habitat.

In general, grizzly bears occur throughout the northern portions of the Forest, with the highest densities occurring within the Teton Wilderness. Bears are found primarily on the Buffalo Ranger District and portions of the Jackson and Pinedale Districts, with occasional documented occurrence into the Wyoming Range and Upper Green River drainage.

Environmental Consequences – Direct and Indirect Effects _____

Table 25. Buffalo/Spread Creek Bear Management Unit OMARD, TMARD and Secure Habitat percentages **inside** the Primary Conservation Area.

Alternative	Subunit	% Secure Habitat	OMARD Season		TMARD
			#1	#2	
A	1	88.3	10.2	10.3	4.1
	2	74.3	14.4	14.0	10.1
B	1	88.3	10.1	10.2	4.1
	2	81.2	11.2	11.3	10.4
C	1	88.3	10.1	10.2	4.1
	2	81.3	11.6	11.7	10.4

D	1	88.3	10.1	10.2	4.1
	2	81.3	12.0	12.0	10.4
E	1	88.3	10.2	10.3	4.1
	2	81.0	14.0	14.2	10.4
1998 Baseline Values	1	88.3	10.2	10.3	4.1
	2	74.3	13.3	14.5	10.4

*Lakes >1 mile in size were removed from subunit totals for TMARD, OMARD, secure habitat

*Size of subunits is shown in thousands of acres (Subunit 1=140.7 and 2=324.9)

**Table 26. OMARD, TMARD and Secure Habitat percentages for Bear Analysis Units outside the PCA.
Percent of OMARD, TMARD, and Secure Habitat outside of the PCA within the
Gros Ventre, Hoback and Snake Bear Analysis Units**

Gros Ventre BAU					
	% Secure Habitat	OMARD Season #1	OMARD Season #2	TMARD	
Alternative A	63.5	20.1	20.3	8.1	
Alternative B	75.3	15.6	15.6	8.6	
Alternative C	74.9	16.3	16.3	8.6	
Alternative D	75.0	16.4	16.4	8.6	
Alternative E	74.5	17.2	17.2	8.8	
2003 Baseline Value	64				
Hoback BAU					
	% Secure Habitat	OMARD Season #1	OMARD Season #2	TMARD	
Alternative A	57.9	17.3	17.5	3.1	
Alternative B	73.9	17.7	17.8	3.7	
Alternative C	73.9	20.5	20.6	3.7	
Alternative D	74.1	20.5	20.6	3.7	
Alternative E	74.0	20.6	20.8	3.7	
2003 Baseline Value	85				
Snake BAU					
	% Secure Habitat	OMARD Season #1	OMARD Season #2	TMARD	
Alternative A	67.6	16.5	16.5	5.9	
Alternative B	77.5	13.9	13.9	6.1	
Alternative C	76.2	15.5	15.5	6.9	
Alternative D	75.6	16.1	16.1	7.1	
Alternative E	75.7	18.5	18.5	7.1	
2003 Baseline Value	73				

Alternative A – No Action

Inside the Primary Conservation Area - Secure habitat in both subunits in the Buffalo/Spread Creek Bear Management Unit presently is the same as the 1998 baseline values (Table 25) for each subunit (88% and 74% respectively, for subunits 1 and 2). Total motorized access route density (TMARD) for both subunits is presently at the 1998 baseline values (4% and 10%, respectively, for subunits 1 and 2). OMARD for subunit #1 for bear seasons 1 and 2 also is at the 1998 baseline values of 10% and 10%, respectively. OMARD for subunit #2 in season 1 (14%) is presently greater than the 1998 baseline (13%). In season 2, OMARD is presently less (14%) than the 1998 baseline (15%).

Both open and total motorized access route densities would be expected to increase in the future within the unrestricted motorized area of the Buffalo/Spread Creek Bear Management Unit subunit #2 as motorized use increases. Non-system motorized trails and two-track roads would undoubtedly increase in miles and distribution due to unrestricted motorized travel. These new non-system motorized routes combined with motorized use of already established system and non-system roads and trails would assure that no secure habitat would be provided for bears in the Blackrock/Togwotee area. As motorized travel expands into previously non-motorized areas and habitat security declines, the likelihood that motorized disturbance and associated recreation will displace bears and cause individuals to avoid preferred habitats and/or sites will increase. This will also increase bear vulnerability to mortality as a result of human/bear conflicts and illegal poaching or legal take of bears during hunting seasons.

Secure habitat outside the Primary Conservation Area for the three Bear Analysis Units is 58% for Hoback, 64% for Gros Ventre, and 68% for the Snake. These amounts of secure habitat indicate a moderate level of human influence on bears and their occupied habitat (Gibeau 1998, Hood and Parker 2001, Puchlerz and Servheen 1998, USFWS 1993). The values for the Hoback and Snake Bear Analysis Units are below the 2003 baseline values (85% and 73%, respectively) for secure habitat outside the PCA.

Both open and total motorized access route densities would be expected to increase in the future within the unrestricted motorized areas that occur within these three Bear Analysis Units. Non-system user created motorized trails and two-track roads would undoubtedly increase in miles and distribution due to unrestricted motorized travel. Unrestricted motorized travel would reduce habitat security as motorized routes expand into existing secure habitat. This will displace bears and cause individuals to avoid preferred habitats and/or sites, increase their vulnerability to mortality as a result of human/bear conflicts and illegal poaching or legal take of bears during hunting seasons.

Action Alternatives

All action alternatives would benefit grizzly bears and their habitat by designating motorized travel routes and prohibiting off-road motorized travel. However, the alternatives do vary in terms of the total miles and location of designated routes, their season and type of use. By restricting motorized travel to designated routes, the frequency and volume of motorized traffic would be expected to increase on the designated routes. Initially, this would potentially increase disturbance along the routes and could result in displacement of bears and avoidance of preferred habitats along routes that previously may have received less frequent and lower traffic volumes

which bears had adapted to. At the same time, designated routes would provide increased acreage (approximately 95,000 acres) of non-motorized habitat for bears which decreases both direct and indirect habitat loss.

Alternative B implements the strongest measures to limit motorized use both inside and outside the Primary Conservation Area to protect secure habitat and best meets management direction for grizzly bears. However, all action alternatives are consistent with current management direction and standards inside the Primary Conservation Area because they all either maintain or improve secure habitat. Outside the Primary Conservation Area, secure habitat is improved for two bear analysis units, but decline for one analysis unit under all action alternatives relative to the 2003 baseline. However, all bear analysis units under all action alternatives still have greater than 70% secure habitat indicative of a low level of human influence on bears and their habitat.

Inside the Primary Conservation Area

All action alternatives maintain or increase secure habitat at or above the 1998 baseline values for the Buffalo/Spread Creek Bear Management Unit. Secure habitat for subunit #1 for all action alternatives is maintained at the 1998 baseline value of 88.3% (Table 25). Secure habitat for subunit #2 increases from the 1998 value of 74.3% to approximately 81% for all action alternatives. Total motorized access route density (TMARD) for both subunits is maintained at the 1998 baseline values (4.1 and 10.4 %, respectively, for subunits 1 and 2) for all action alternatives, and slightly above the current condition value of 10.1% for subunit 2.

All action alternatives, except Alternative E, maintain or reduce open motorized access route density (OMARD) at or below the 1998 baseline values for the Blackrock/Spread Creek bear management unit. OMARD for subunit #1 for bear seasons 1 and 2 for all action alternatives is maintained at the 1998 baseline value of 10.2% and 10.3%, respectively. Alternative B reduces the density of open motorized routes for subunit #2 from the 1998 value of 13.3 % to 11.2%. Alternatives C and D both reduce open motorized routes densities below the 1998 baseline value of 13.3% to 11.6% and 12%, respectively. Alternative E increases open route density above the 1998 baseline value of 13.3% to 14%, however this is a decrease over the current condition.

All action alternatives reduce open motorized route densities below the 1998 baseline value (14.5%) during bear season 2. Alternative B reduces route densities the most to 11.3%, while Alternative E reduces densities the least to 14.2%. Alternatives C and D reduce densities to 11.7% and 12%, respectively.

Outside the Primary Conservation Area

Gros Ventre Bear Analysis Unit

Secure habitat is the same for all action alternatives (75%) and greater than the 2003 baseline value of 64% (Table 26). Greater than 70% secure habitat is indicative of a low level of human influence on bears and their occupied habitat. Open motorized route density is the same for Alternatives B, C, and D for both seasons one and two (16%), however for Alternative E, open motorized route densities are higher for both seasons one and two (17%). Total motorized route density is the same for Alternatives B, C, D, and E (8%).

Hoback Bear Analysis Unit

Secure habitat is the same for all action alternatives (74%), but less than the 2003 baseline of 85%. This amount of secure habitat is still indicative of a low level of human influence on bears. Alternative B has the lowest open motorized route density for both seasons one and two (18%). Open motorized route densities for Alternatives C, D, and E for both seasons is 21%. Total motorized route density is the same for all action alternatives (4%).

Snake Bear Analysis Unit

Secure habitat is the greatest for Alternative B (78%) and the same for Alternatives C, D, and E (76%). These percentages are greater than the amount of secure habitat for the 2003 baseline (73%) and indicate a low level of human influence on bears. Open motorized route density for Alternative B is the same for both seasonal periods (14%) and lowest among all action alternatives. Alternative E has the highest open motorized route density (19%). Alternatives C and D have open motorized route densities for 16% for both seasons. Total motorized route density (6%) is least for Alternative B (6%) and the same for Alternatives C, D, and E (7%).

Cumulative Effects

The Final EIS for the Forest Plan Amendment for Grizzly Bear Habitat Conservation for the Greater Yellowstone Area (USDA 2006) gives a detailed look at the potential cumulative effects on the bear from numerous past, other present and reasonably foreseeable activities.

Recurring activities or situations that have exposed grizzly bear to disturbance, human encounters and/or mortality include: 1) motorized routes and associated recreation, 2) availability of food or garbage attractants, and 3) livestock grazing.

Motorized route maintenance and improvement on the Forest is not beneficial for grizzly bears. Higher vehicle speeds can lead to direct grizzly bear mortality. Maintenance and improvement of roads can also increase visitor numbers which can result in increased bear/human encounters. Federal, state and county roads through the Forest are more of an issue with respect to direct mortality to grizzly bears since the speed limits generally are higher and surfaces are improved. There are several miles of such roads within and adjacent to the project area. Major routes, such as Highway 26/287, can serve as barriers to grizzly bear movements. As the grizzly bear population increases and expands into new habitat, and human population and traffic in the area increases, the potential for grizzly bear mortality on Forest roads and county and state highways increases. Most roads under the jurisdiction of the Forest Service are not paved, and design limits are relatively low. National Forest motorized trails are generally driven at low speeds. Thus, for the most part, there would be very low vehicle-caused mortality on National Forest roads and trails. Some mortality is expected on paved roads (like county, state and federal highways) with higher design limits that pass through the Forest.

A highway reconstruction project was initiated in 2006 along U.S. Highway 287/26 through the Buffalo/Spread Creek bear management unit and is projected to continue into 2015.

Approximately 18 miles of the highway are within the Bridger-Teton National Forest and 14 miles are within the Shoshone National Forest. With projected increasing traffic volumes (2400 annual average daily traffic and 3300 seasonal average daily traffic by 2021), roadway improvements that could trap animals on the road, increasing numbers of bears and a wider distribution of bears, the long-term risk of vehicle/bear collisions is expected to increase.

Additionally, bears may be attracted to the highway for carrion, creating an even greater risk of vehicle related bear mortality (Ruediger 1996). Grizzly bear mortality from a vehicle strike did occur along the highway on the Bridger-Teton National Forest in 2007. Potential mortality from illegal shooting or vehicle strikes facilitated by motorized access routes would be additive to the greater hazard and higher risk of future bear mortality as a result of Highway 287/26 improvement now underway. Wide-ranging carnivores are especially vulnerable to road mortality due to their large home ranges and fairly low productivity (e.g., grizzly bear and wolverines) (Ruediger 1996). Large carnivores (e.g., grizzly bears) that occur in low density, have low reproduction rates and long generation times are most susceptible to additive mortality. Rates of mortality can be high enough to reduce local population densities (Forman et al. 2003:115, 116, 118, 119).

Considerable dispersed recreation use occurs during the snow-free seasons. Dispersed recreation use by day hikers, day horse riders, backpackers, mountain bikers, campers and wildlife watchers is increasing. With a concurrent increase in the numbers of grizzly bears and an expansion in the area used by bears, more bear/human encounters will likely occur. Food storage regulations should help reduce bear/human encounters related to attractants. However, as long as humans and grizzly bears occupy the same landscape, there are likely to be bear/human encounters.

The grizzly bear is classified as a "trophy game animal" in Wyoming. Regulated hunting will be part of the Department's overall grizzly bear management program now that the bear has been delisted. Grizzly bear hunts will occur when grizzly bears are at a population level able to sustain limited harvest. Quotas for public hunting will be set to assure that thresholds established in the Conservation Strategy are not exceeded. Females with dependent young at side (cubs-of-the-year, yearlings, two year olds) will be protected in any hunter harvest scheme. Public take may be directed to areas of highest human-grizzly bear conflict in an effort to reduce these conflicts. Human/grizzly bear conflicts erode support for grizzly bears statewide, thus hunting may be a useful method in reducing the number of nuisance grizzly bear incidents. Baiting of grizzly bears will continue to be illegal within the Primary Conservation Area, throughout the life of the *Conservation Strategy*. Outside the Primary Conservation Area, the policy of baiting black bears will be evaluated in areas occupied by grizzly bears. If grizzly bear mortalities occur over black bear bait sites, black bear baiting may be discontinued in those areas. Statutes prohibit use of dogs in taking bears. Regulated hunting, along with other tools, will be used to ensure the long-term conservation of grizzly bears in Wyoming.

The highest source of grizzly bear mortality in the Greater Yellowstone Area has been due to interactions with hunters. As bear numbers increase and their distribution expands, bear/hunter encounters are likely to increase. The current mountain pine beetle epidemic and spread of blister rust in whitebark pine may also increase encounters as bears switch their diet from whitebark cone seeds to hunter-killed game in the fall. Big game rifle hunting season each fall is when grizzly bear mortality spikes due to numerous people with firearms being in areas where bears occur. Occasionally, grizzly bears are killed through misidentification with black bears or in self-defense when hunters surprise bears or return to kill sites claimed by bears during the hunter's absence. Education and enforcement of food storage regulations may help to reduce the likelihood that these will be fatal encounters.

The number of recreation residences is not expected to increase in the future, and although there may be some modifications, their impacts will be about the same as they are at present. Permits for several of these facilities are being renewed in 2008. Language is included in all permits on

proper storage of food and garbage and consequences for noncompliance. As long as residents follow the food storage order and do not create attractants for bears, they can coexist fairly well with bears.

Requests for non-recreation special use permits will continue to be received for a variety of proposed activities. Most non-recreational special uses are fairly benign once the facility is in place. However, permits for infrastructure developments, such as power lines, come with increased motorized access to the Forest due to service roads for the facility construction and maintenance.

Private in-holdings within the Forest boundary can be problematic for bears. Lands that are developed into home sites or resorts result in direct habitat loss and displacement of grizzly bears from these areas. More human presence in these areas increases the probability for bear/human encounters resulting in injury or mortality.

Food storage regulations on the Forest have been very beneficial to bears. The implementation of food storage regulations and installation of bear resistant garbage containers, food storage boxes and poles has occurred on the Forest and on private lands. This has reduced bear/human encounters. Food storage efforts must be maintained and increased as the human population increases and the bear population expands.

The designation of Wilderness areas - the Teton, Gros Ventre, and Jedediah Smith; two Wilderness Study Areas - Shoal Creek and Palisades; and two National Parks – Grand Teton and Yellowstone, created large, remote areas of secure habitat for grizzly bear adjacent to the project area.

Livestock grazing has been a part of the area's history since white settlers first arrived. Sheep, goats, cattle, and horses have been grazed on the Forest, and sheep were grazed in large numbers in the 1800's and early 1900's. It is likely that many grizzly bears were killed due to conflicts with livestock, primarily sheep, prior to grizzly bears being protected by law. The reduction in sheep allotments and numbers that gradually occurred over the years decreased negative interactions between sheep and bears, and reduced grizzly bear mortalities. A more recent development within the project area was closing two cattle allotments, Buffalo/Spread Creek and Fish Creek, to help reduce recurring incidents of grizzly bear/livestock conflicts. However, bear depredation on livestock grazed on and off the Forest continues to be a recurring conflict that can result in bear relocation or removal from the population to resolve chronic incidents. The reintroduction of the gray wolf in 1995 has led to some interactions among grizzly bears and wolves with respect to depredation on some cattle and sheep allotments. In some cases, it is unclear which species (bears or wolves) caused the depredation versus which species just took advantage of the situation.

On-going and future projects involving vegetation management are tied largely to fuels reduction and wildlife habitat improvement. Mechanical and prescribed fire treatments in forest and non-forest cover include projects for hazardous fuels reduction (Granite Creek, Gros Ventre River Ranches, Randolph Mountain, Buffalo Valley, Bryan Flat, Hoback Junction, Snake to Teton, Greater Snow King, Pacific Creek, Ditch Creek, Continental), big game and grizzly bear habitat enhancement (Lower and Upper Gros Ventre, North Fork Fish Creek, Grouse Mountain, Flagstaff, Leidy, Dry Quad, Flagstaff, Fourmile), and timber salvage (Hardscrabble Salvage, Snake River Canyon salvage) The major adverse effect of treatment activities on bear, that of new or reconstructed vehicle routes, will be limited to temporary roads and skid trails with such routes closed and/or decommissioned after the project is completed. Harvest operations also

may disturb bears and increase their vulnerability to mortality. Effects of timber harvest in relation to grizzly bears are mostly temporary in nature: loss of hiding cover and change in forage quality and quantity.

A proposed plan of operations for gold exploration along Cottonwood Creek in the upper Gros Ventre drainage is presently being assessed for its potential effects on resources within and adjacent to the project area. Any increase in traffic volume and frequency could potentially increase bear vulnerability to mortality.

Cumulatively, the action alternatives generally improve conditions for the grizzly bear and their habitat from the current situation by reducing the total area of potential motorized access and density of motorized routes. However, all action alternatives still pose a potential cumulative threat to bear displacement due to potential avoidance of preferred habitats and sites, and increased vulnerability to mortality. This is because designated motorized routes help facilitate the human activities noted above or add human disturbance to the disturbances associated with each of the on-going and proposed activities noted above.

The cumulative effects of some activities have been strongly negative, such as the history of motorized route development and big game hunting. Other actions have been very positive, such as implementation of food storage regulations and the decline of sheep and cattle grazing allotments on the Forest. Overall, the resulting effects from the past, on-going and proposed cumulative actions have been trending in a more positive direction as evidenced from recovery of the grizzly bear population in the Greater Yellowstone Area and their recent delisting.

Issue 4.4: Sage Grouse

Motorized access and associated recreation activity can potentially adversely impact sage grouse productivity, survival, distribution and habitat quality by displacement, increased vulnerability to mortality, and exotic plant invasion

Indicator: *Miles of motorized routes within 5 km of sage grouse lek complex*

The analysis area for evaluating the effects of the alternatives is a 5 km radius buffer centered on each of the two Breakneck Flats lek sites and collapsed into one buffer area surrounding this lek complex. This area was chosen because it encompasses the two known leks, all the nest sites, brood rearing habitat and summer male grouse locations documented by Holloran (2004) from April 1999 through March 2003. The acres within this buffer area equal 17,357.

In areas where nesting habitats have not been delineated, research suggests that greater sage-grouse nests are not randomly distributed. Rather, they are spatially associated with lek location within 5 km (3.1 miles) in Wyoming (Holloran and Anderson 2005). However, a 6.4 km (4-miles) buffer is needed to encompass 74-80% of nesting habitat (Moynahan 2004, Holloran and Anderson 2005, Colorado Greater Sage-Grouse Conservation Plan Steering Committee 2008). These results suggest that all areas within at least 4-miles of a lek should be considered nesting and brood-rearing habitats in the absence of area specific maps.

The total number of miles of all motorized routes open to public and administrative access within the buffer area was determined and open motorized route density was calculated for this area.

Affected Environment – Sage Grouse

The sage grouse is a year-round resident of the Jackson Hole area. Prior to 1950, an estimated 500 sage grouse resided in the Jackson Hole area. However, the population declined 73% between 1948-49 and 2002-03 (Holloran and Anderson 2004). The population is currently estimated to contain 400-500 individuals. Information collected by Holloran between 1999 and 2003 suggests that the population remained relatively stable during this period.

Sage grouse in the Jackson Hole area are non-migratory. Within the project area, the Gros Ventre River drainage provides breeding, nesting, brood rearing and winter habitat. For these non-migratory populations the lek may be the approximate center of their annual range. Leks, or strutting grounds, are traditional sites used by males for breeding displays. Leks typically occur in open areas surrounded by sagebrush. There is one known active lek complex (two lek sites) within the drainage in the Breakneck Flat area. Approximately 10 to 20 males have occupied the lek complex each spring since 2000.

Approximately two-thirds of hens nest within 3 miles of the lek where they were bred (Holloran and Anderson 2005) and half within 2 miles. Hens move their broods immediately after hatching from the nest site to brood-rearing areas. Sites used during the first 10-14 days after hatching are typically within 1.5 miles of the nest.

Roads facilitate human access into sagebrush habitat. Human caused fires are linked to open roads. Motorized travel and associated recreational activities during the breeding and nesting periods may cause sage grouse leks to become inactive over time and cause fewer hens to initiate nests. In addition, human disturbance may increase the distance hens move away from the lek increasing their exposure to predation and can result in nest failure and/or chick mortality in the case of nest/brood abandonment. Wisdom et al. (2000) noted that roads and associated human disturbances can be especially harmful to sage-grouse during the lekking period. Disturbance of leks may result in regional declines in populations (Baydack and Hein 1987). On leks adjacent to roads, recreational viewing of leks can cause disruption of breeding activities. Motorized routes can also serve as a vector for invasion and spread of invasive plants which can result in degradation of grouse nesting, brood rearing and foraging habitat (Gelbard and Belnap 2003). Diet quantity and quality can ultimately be compromised and potentially influence grouse physical condition and survival, especially for chicks.

Traffic during the strutting period results in declines in male lek attendance when road-related disturbance is within 0.8 miles (Holloran 2005). Additionally, females breeding on leks within 1.9 miles of natural gas development had lower nest initiation rates and nested farther from the lek compared to non-impacted individuals (Lyon and Anderson 2003), suggesting disturbance to leks influenced females as well. Often, timing stipulations (periods where no activity that creates disturbance is allowed) for breeding habitat have been applied using a radius around a lek. Research indicates that timing stipulations to protect nesting hens and their habitat should be in place from March through June in mapped breeding habitat or within 4 miles of active lek sites if nesting habitat has not been mapped (Moynahan 2004, Holloran et al. 2005, Colorado Greater Sage-Grouse Conservation Plan Steering Committee 2008). Local variations may influence the application of specific dates, which are typically within a window of March 1 and May 31.

Environmental Consequences – Direct and Indirect Effects

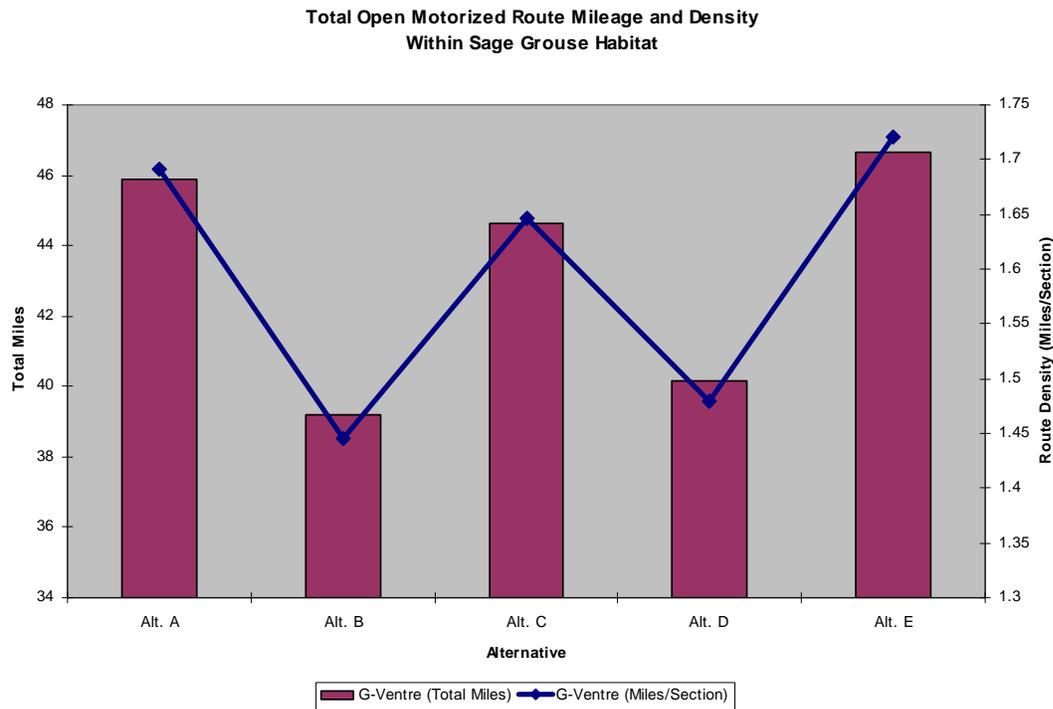


Figure 16. Total open Forest System routes (Alternative A) and proposed designated (Alternatives B-E) motorized route mileage and density within a 5 km radius buffer centered on each of the two Breakneck Flats sage grouse lek sites in the Gros Ventre River drainage.

Alternative A – No Action

In general, unrestricted motorized travel as described in Alternative A represents a greater threat to present and future sage grouse populations and their habitat than any of the action alternatives.

Total miles of open motorized routes and route density would be expected to increase in the future on grouse summer range in the Gros Ventre area from motorized creep. Non-system motorized trails and two-track roads would undoubtedly expand in distribution under unrestricted motorized management. This would assure that motorized travel and associated recreation would continue as a source of disturbance to grouse, increase their vulnerability to mortality from vehicle strikes, illegal poaching and predation, and serve as a vector for the spread and establishment of exotic plants on grouse summer range.

As motorized use expands into previously non-motorized areas, the likelihood that motorized disturbance and associated recreation will displace grouse and cause them to avoid preferred habitats and sites such as lek areas, nesting and brood rearing habitats would increase. This disturbance could also cause nest abandonment and/or failure, or brood mortality and result in lower production and survival rates. Transport and deposition of exotic plant seeds by motorized vehicles on native ranges could result in competition with native species. This competition could reduce forage productivity and quality, and nesting, brood rearing and escape cover.

Miles of open motorized routes and their density within grouse summer habitat would be expected to increase above the current 1.69 miles/mi² (Figure 16) as motor vehicles pioneer new trails and two-tracks through open sagebrush/grassland summer habitats occupied by grouse.

Action Alternatives

All action alternatives would benefit grouse and their habitat over the long term by designating motorized routes and prohibiting unrestricted motorized travel which would reduce the area open to motorized access compared with the present condition. However, the alternatives do vary in terms of the total miles and location of designated routes, their season and type of use. By restricting motorized travel to designated routes the frequency and volume of motorized travel would be concentrated on the designated routes. Initially, this could potentially increase disturbance along the routes and could result in displacement of grouse and avoidance of preferred habitats and sites along routes that previously may have received less frequent and lower traffic volumes to which grouse had progressively adapted to over time. At the same time, prohibiting unrestricted motorized travel would provide increased acreage of non-motorized habitat for grouse which would decrease both direct and indirect habitat loss.

Designated motorized routes within the area occupied by sage-grouse have the potential to disturb individual birds, disrupt daily activities and temporarily displace birds from preferred habitats. Such disturbances can reduce breeding, nest and fledgling success, and increase adult and juvenile bird vulnerability to mortality. The more miles of routes and the higher the route density within the occupied grouse habitat open to public and administrative motorized access the greater the likelihood of one or more of impacts noted above occurring. Frequency and volume of traffic, season of use, type and sound of motorized vehicle, and associated recreational activity all would have a bearing on the degree of impacts, but these are all unknown factors associated with the designated routes. All action alternatives reduce the potential to adversely affect grouse productivity, survival, distribution and habitat quality relative to Alternative A (No Action). However, each alternative does pose a potential threat to grouse and their habitat. Of the action alternatives, Alternative B and D have the least potential to adversely affect grouse and their habitat, while Alternative E has the greatest potential (Figure 16).

Cumulative Effects

Vectors for invasive noxious weed species other than motorized vehicles include wildlife and domestic livestock. Three cattle grazing allotments (Upper Gros Ventre, Fish Creek and Bacon Creek) overlap sage-grouse summer range in the upper Gros Ventre. The Upper Gros Ventre is the only active allotment at the present time. The Bacon Creek/Fish Creek allotments are vacant "forage reserves" and aren't currently stocked during the grazing season. Livestock and range riders disturb grouse, especially hens with broods, during the driest part of the grazing season, when cattle and grouse seek out the most succulent forage still available around, spring, seeps and streams.

Cattle and horses also transport weed seeds in their hair and defecate seeds consumed while grazing. Likewise, big game animals act as weed vectors in the same manner. Other wildlife species, both mammals and birds, also can be sources for the spread of noxious weeds. Weed seeds transported and deposited by motorized vehicles along designated routes would be additive to the seeds spread by livestock and wildlife. Motorized access also provides an ignition source

for wildfires which can create favorable conditions for the establishment of weed seeds in areas where native plants are burned off exposing mineral soil and eliminating native plant competition. Such disturbed areas would be additive to areas disturbed from livestock and big game grazing, trampling and trailing, and proposed mineral exploration along Cottonwood Creek to the east of Breakneck Flats.

The Gros Ventre mineral exploration project along Cottonwood Creek east of the Breakneck Flats lek complex could be a potential source of disturbance and mortality if there is an increase in traffic volume or frequency through the Breakneck area or if grouse use sage habitat at the site of exploration activities. Disturbances from motorized travel and associated recreation along designated routes through the Breakneck Flats area would be cumulative to any of the agents mentioned here.

Road maintenance, improvement and construction on the Forest has been declining in recent years. However, the maintenance and improvement of roads and trails that does occur annually can increase traffic speed, volume and frequency on the Forest which can affect grouse presence and survival. The Forest Service designs and maintains roads for low speeds over mostly native and gravel surfaces, which greatly reduces the mortality risk to grouse. Permanent modification of grouse habitat from existing travel routes occurs primarily because of continued habitat fragmentation and absence of security cover associated with the presence of road and trail corridors through sagebrush habitat.

The population of Jackson and the surrounding region is increasing, and summer recreational use of the Forest will likely continue to increase as well. Dispersed recreation activities including hiking, horse riding, mountain biking, motorcycle riding, ATV riding, hunting and outfitting. These activities have the potential to disturb grouse and disrupt breeding, nesting, brood rearing and foraging activities, and increase their vulnerability to mortality. Increasing public use will decrease the ability of grouse to fully occupy available habitat.

The basic change in summer travel management policy from all routes and areas open for motorized use unless posted closed, to a system where all summer motorized traffic is restricted to designated routes, would result in a notable reduction of direct and indirect effects associated with travel management, and a corresponding reduction in contribution to overall cumulative effects. The Gros Ventre grouse population has persisted in the presence of existing summer motorized routes and unrestricted travel and would be expected to maintain their numbers at a viable population level as motorized travel within their breeding, nesting and brood rearing range is restricted to designated routes.

Issue 4.5: Peregrine Falcon

Motorized access and associated recreation activity within suitable peregrine falcon nest management zones may cause nest site abandonment or habitat avoidance.

Indicator: *Density of motorized routes within peregrine falcon nest management zones.*

To assess the effects of the alternatives on peregrine habitat security, ½ mile buffer zones were delineated around each occupied eyrie using GIS. Miles of system or designated motorized

roads and trails within these zones were then determined for each alternative. Seasonal road closures were incorporated into the analysis.

Affected Environment – Peregrine Falcon

Suitable habitat for peregrine falcon nesting and foraging occurs in the project area with eight known active peregrine eyries (nests). Additional suitable nesting cliff habitat is available. Peregrines typically nest in open country on mountain cliffs and river gorges. They exhibit a high degree of nest site fidelity and will return to the same cliffs and even the same nesting ledge year after year. Peregrines arrive in their territories in late March and early April and initiate egg laying in late April or early May. Young birds hatch in early June, fledge in mid to late July, and then remain in the general area until September or October.

Peregrines are most susceptible to disturbance during the breeding season. They are most sensitive during their courtship, egg-laying, and incubation periods. Human activity, especially above the nest area, can cause the abandonment of nests and reproductive failure.

Environmental Consequences – Direct and Indirect Effects

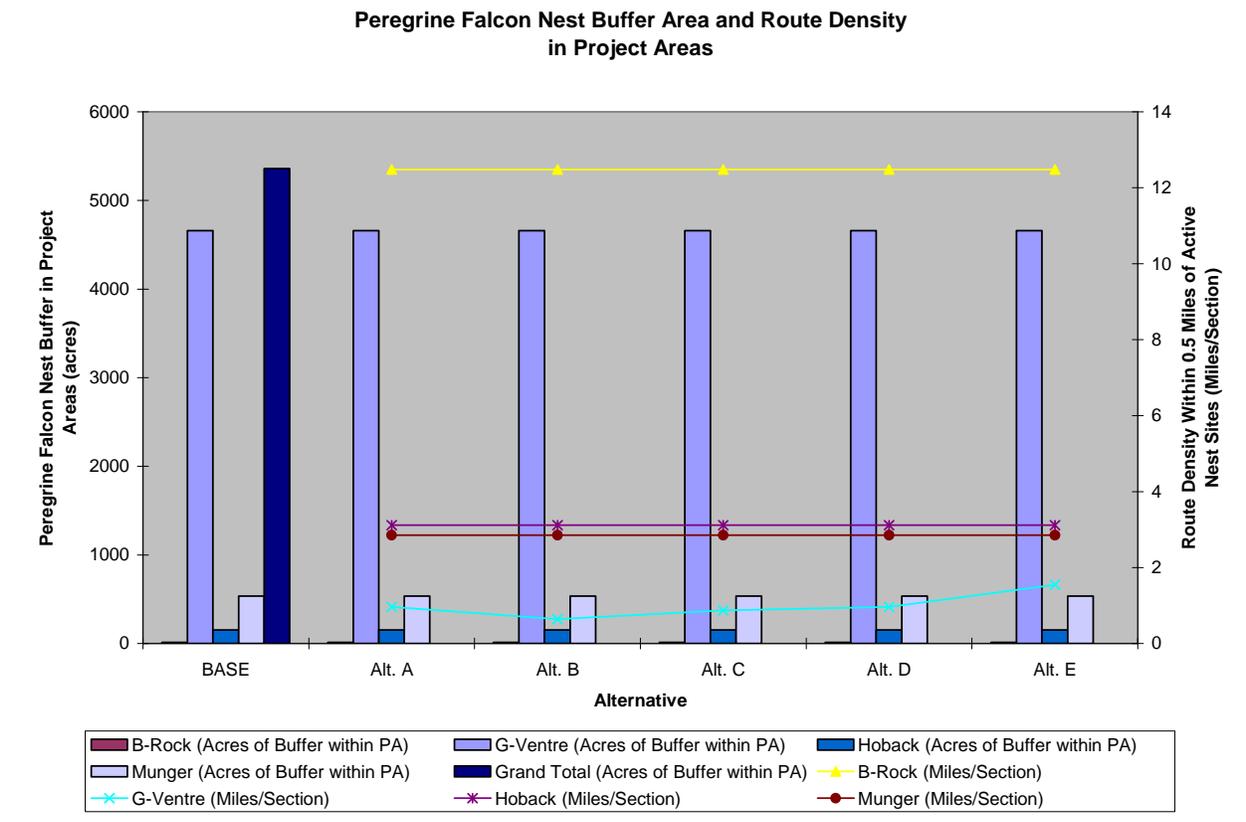


Figure 17. All open Forest System routes (Alternative A) and proposed designated motorized routes (Alternatives B-E) within a ½ mile management zone of peregrine falcon nest sites within project areas.

Alternative A – No Action

In general, unrestricted motorized travel as described in Alternative A represents a greater threat to present and future peregrine falcons and their habitat than any of the action alternatives.

Total miles of open motorized routes and route density would be expected to increase within peregrine management zones as motorized use increased. Non-system motorized trails and two-track roads would undoubtedly expand with unrestricted motorized travel. These new non-system motorized routes combined with continued motorized use of already established system and non-system roads and trails would assure that motorized travel and associated recreation would continue as a source of disturbance to breeding and nesting peregrines. As motorized use expands into previously non-motorized areas, the likelihood that motorized disturbance and associated recreation would displace peregrines could increase and cause pairs to avoid preferred cliff habitats and eyrie sites, and cause nest abandonment/failure, chick mortality and lower productivity. Miles of open motorized routes and route density within peregrine management zones would be expected to increase above the current values for system routes (Figure 17) in the areas where peregrine eyries occur as motor vehicles pioneer new non-system trails and two-tracks through low elevation conifer, sagebrush/grassland and mountain shrub habitats that typify peregrine foraging and nesting areas.

Action Alternatives

All action alternatives would provide some benefit to peregrines and their habitat by designating motorized routes and prohibiting unrestricted motorized travel. However the alternatives do differ in terms of total miles and location of designated routes, their season and type of use. By restricting motorized travel to designated routes, the frequency and volume of motorized traffic would be concentrated on the designated routes. Initially, this could potentially increase disturbance along some routes and could result in displacement of peregrines and avoidance of preferred cliff habitats for nesting. This effect would be expected along routes where falcon pairs had adapted to an incremental increase in motorized use over a longer period of time. A more sudden increase in motorized use with recurring disturbance at higher use levels could cause pairs to abandon traditional eyrie sites.

All alternatives designate some motorized routes which have the potential to disturb nesting pairs at active eyries during the March 1 through July 31 period. Designated motorized roads and/or trails occur within the ½ mile zones of six active and two inactive eyries (in 2007) in all alternatives. The total miles of motorized routes and route density within the peregrine management zones for six of the eyries in three geographic areas are the same under all of the alternatives (Figure 17).

Motorized travel and associated recreational activities during the breeding and nesting periods may cause peregrines to abandon eyrie sites and avoid preferred nesting cliffs. Designated routes within peregrine management zones have the potential to disturb pairs, disrupt breeding and nesting activities and temporarily or permanently displace birds from preferred cliff habitats. Such disturbances can reduce breeding, nest and fledgling success, and lower chick survival and productivity. Despite these potential effects to peregrine from the action alternatives, the Forest goal of maintaining two nesting pairs would be achieved under any of the action alternatives.

Only two eyries in the same geographic area show a difference in total miles of motorized routes and route density within the peregrine management zone across alternatives. For these eyries (one active and one inactive), Alternative B has the least motorized disturbance and Alternative E has the greatest. Alternatives C and D are in between, with Alternative C having less motorized disturbance than Alternative D (Figure 17).

Cumulative Effects

Prescribed burning and mechanical treatment activities associated with the Randolph Mountain hazardous fuels reduction project and Lower Gros Ventre habitat enhancement project have the potential to temporarily disturb three peregrine pairs if any of these activities occur within the peregrine management zones during the March 1 to July 31 period. This would be especially true with respect to aerial reconnaissance and ignition, and any necessary confine, contain or control actions if fire suppression becomes necessary within the falcon management zones.

Construction activities associated with the future Hoback Canyon Lower Valley Energy natural gas pipeline and highway reconstruction over the next 3 to 5-years have the potential to disturb one breeding and nesting pair.

Several eyries are located close to lakes, larger rivers and associated developed campgrounds, boat launches and dispersed sites. Unusual recreational and/or administrative activities associated with these water bodies and recreation sites have the potential to disturb foraging and/or breeding/nesting pairs.

A few eyries are located near private inholdings developed as ranchland, ranchettes or resorts. Activities such as landing strips for small aircraft on these private lands could potentially disturb foraging and/or breeding/nesting pairs.

One peregrine management zone has a designated heli-skiing refueling and pick-up area which has the potential to disturb breeding pairs in early spring as they arrive for the nesting season.

Motorized disturbance along routes designated under each action alternative within the peregrine management zones would be cumulative to disturbance occurring from any of the on-going and reasonably foreseeable future actions described above. However, the basic change in summer travel management policy from all routes and areas open for motorized use unless posted closed, to a system where all summer motorized traffic is restricted to designated routes, would result in a reduction of direct and indirect effects associated with motorized use, and a corresponding reduction in contribution to overall cumulative effects. Despite potential cumulative effects, the Forest Plan goal of securing two nesting pairs and providing suitable and adequate amounts of habitat for peregrine falcons would still be achieved into the foreseeable future.

Issue 5: Special Areas

Issues and Indicators

Issue 5.1: Effect on the character of National Parks, Wilderness, and Wilderness Study Areas and chance for illegal intrusions.

The proximity of proposed motorized routes to special areas such as Grand Teton National Park, designated Wilderness and Wilderness Study Areas (WSAs) may result in illegal motorized intrusions into these areas.

Indicator:

1. Miles of motorized routes within $\frac{1}{4}$ mile of special areas such as Grand Teton National Park, Wilderness, and Wilderness Study Areas (WSAs).

This is an indicator of sound from motor vehicles reaching these areas as well as the potential for illegal entry. The Wyoming Wilderness Act specifies that non-wilderness uses potentially seen or heard within wilderness are allowed up to the boundary. However, effects on Wilderness must be considered and this indicator offers a way to quantify the potential effects in a manner that helps disclose the difference among alternatives. Legal motorized routes within the WSAs are also discussed.

Issue 5.2: Effect on the character of inventoried roadless areas.

The proposed motorized system may affect the character of inventoried roadless areas (IRAs).

Indicators:

1. Motorized routes nearby or leading to a non-motorized trail that then enters an IRA. This is a measure of both noise and likelihood of OHV use within the IRA. There is not a consistent metric for this indicator; it is discussed in the narrative.
2. Miles of non-motorized trails within the travel-unrestricted parts of IRAs.
3. Acres of IRAs that fall within non-motorized recreation opportunity settings.

Issue 5.3: Effect on the character of wild and scenic river candidates.

The proposed motorized system may affect the outstandingly remarkable values of eligible wild and scenic rivers.

Indicator:

1. Effect of OHV routes within the river corridor on the outstandingly remarkable values. No metric exists for this; narrative discussion is provided.

Affected Environment

Special areas include those established through an act of Congress (Wilderness; Wild and Scenic Rivers), and administrative designations established through Forest Service administration procedures (such as Research Natural Areas; National Forest Scenic Byways; National Natural Landmarks). Covered in this section are only those special areas that are potentially affected by

this OHV route designation project (no national natural landmarks, research natural areas, etc. are affected). Special areas covered in this section include classified wilderness and wilderness study areas, Grand Teton National Park, inventoried roadless areas, and eligible wild and scenic rivers.

Grand Teton National Park

Unrestricted motorized areas are contiguous with Grand Teton National Park at Phillips Pass and along much of the eastern boundary of the park from the Gros Ventre River to Spread Creek. Few OHV riders use the Phillips Ridge area and neither the terrain nor trail conditions encourage it. The trail system currently does not lead directly into the park, although it does lead into the Jedediah Smith Wilderness. It is possible that particularly loud OHVs can be heard from locations within the park, but these would be quite distant, and the sound minor compared to existing highway and aircraft noise. On the east margin of the park are 43 miles of shared boundary with the Bridger-Teton National Forest; in some places along this boundary illegal OHV use is taking place within the park. Known problem areas include the park boundary between the Gros Ventre River and the Teton Science School, including a state section north of the Gros Ventre River road; Antelope Springs and the area around the Shadow Mountain road; Ditch Creek, where occasional ATV use occurs on old jeep trails; and the park-forest boundary between Coal Mine, Uhl, and Enyon Draws.

Wilderness and Wilderness Study Areas

Three Congressionally designated Wildernesses are adjacent to the project area: The Teton Wilderness on the Bridger-Teton National Forest was designated in the 1964 Wilderness Act and expanded in 1984 with passage of the Wyoming Wilderness Act. The Gros Ventre Wilderness and Jedediah Smith Wilderness were both designated in the 1984 Wyoming Wilderness Act. The Gros Ventre Wilderness is located on the Bridger-Teton National Forest and the Jedediah Smith Wilderness is located on the Caribou-Targhee National Forest.

In general Wilderness on the Bridger-Teton National Forest remains outstanding in the qualities that were recognized when these areas were initially designated. During the 2001-02 national visitor use monitoring study on the Bridger-Teton National Forest, wilderness visitors surveyed originated from over seventy zip codes and visitor satisfaction was very high. Illegal use of wheeled motor vehicles in these wildernesses is restricted to a few perennial problem areas, such as the Alkali Creek and Soda Lake area, where old jeep roads lead into the wilderness. Problem areas in the Soda Lake area were addressed in the summer of 2008 with the assistance of the ArrowCorp5 Boy Scout project which resulted in the closure and re-vegetation of four routes. The Alkali area has been repeatedly signed, but problems continue, facilitated by the open terrain and lack of natural barriers.

Farther up the Gros Ventre River the wilderness boundary is poorly marked in places and some established OHV trails may be within it. The forest is continuing an ongoing effort to survey and mark the boundary correctly and reroute motorized trails and roads where necessary.

Wilderness Study Areas were designated by Congress in 1984 and the Forest was directed to manage them to retain their eligibility for future wilderness designation while allowing certain

established uses (snowmobiling) to continue. Effects of recreation on the WSAs and their continuing potential for future wilderness are not restricted to OHV use; other influences are discussed in the cumulative effects section.

Palisades Wilderness Study Area

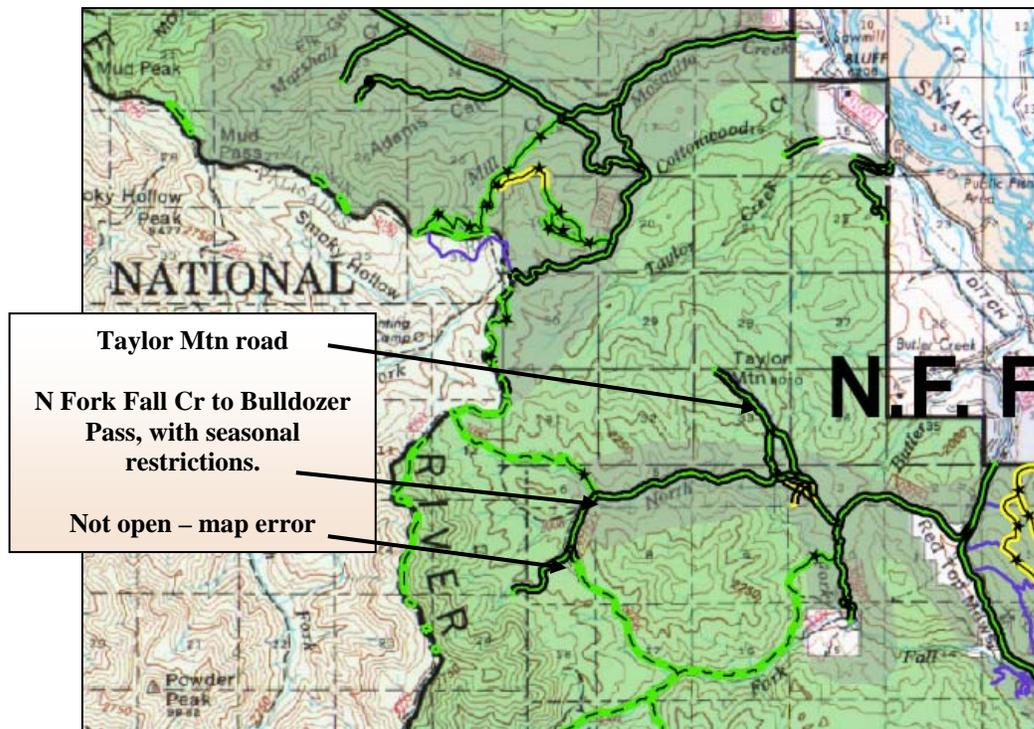
The Palisades Wilderness Study Area includes approximately 135,800 acres on the Bridger-Teton and Targhee National Forests (82,584 acres are within the BTNF). There is, and has been in the recent past, a fair amount of off-road vehicle use in the Palisades WSA, most of it originating from Mosquito Creek (including Cottonwood Creek road and the trail to Mud Pass), the North Fork of Fall Creek, and the Pritchard Pass/Coburn Creek area. Some of these spots now have effective closures which have reduced vehicle use in the WSA. The current condition of this WSA in terms of motorized routes within ¼ mile is summarized below.

Motorized routes closer than ¼ mile or within the WSA, or leading to a non-motorized trail that then enters the area include:

- (1) The Cottonwood Creek road allows vehicle traffic to the divide of the Snake River Range and because the Smoky Hollow – North Fork Big Elk Creek area is relatively open and gentle, it is easy for vehicles to drive off-route. Several logging spurs exist that remain drivable.
- (2) The Divide Trail north to Mud Pass has become a popular motorcycle trail; the trail is partly within the WSA where it lies on the west side of the forest boundary. The Targhee National Forest has had a vehicle closure in place on this trail for years (the entire Big Elk Creek watershed is managed for non-motorized use) but it has proven difficult to manage due to open terrain and ease with which vehicles can access the trail from Cottonwood Creek and Mill Creek. Vehicles are able to connect with North Fork Fall Creek and Taylor Mountain, also affecting this part of the WSA and its character.
- (3) An outfitter in the South Fork Fall Creek has permission to use a vehicle to supply his camp; this involves about two miles of jeep road/trail that is not open to general public motorized use (and is therefore not shown on maps as open). The outfitter uses the road rarely.
- (4) There has been intermittent use of OHVs on the lower Coburn Creek trail, some of which is an old road; this trail is also within the WSA. Other trails leading into the WSA from U.S. 26/89 have seen some motorcycle use but are generally not passable by larger OHVs. Increased signing, more effective physical barriers, and public information about the management of the WSA has helped reduce motorized use in the WSA.
- (5) There are places roads and ATV trails from private land enter the WSA, including a water system access road that serves a nearby subdivision and a non-system motorized trail originating from private land such as the Fall Creek Ranch.
- (6) The Taylor Mountain road continues to be extended; it is now possible to ride an OHV to the divide.

The roads shown in Figure 18 are legally open because it was determined that they existed prior to the 1984 Wyoming Wilderness Act which designated the Palisades WSA. These are shown on the existing travel map.

Figure 18. Authorized (open) roads within the Palisades WSA (current condition).



Shoal Creek Wilderness Study Area

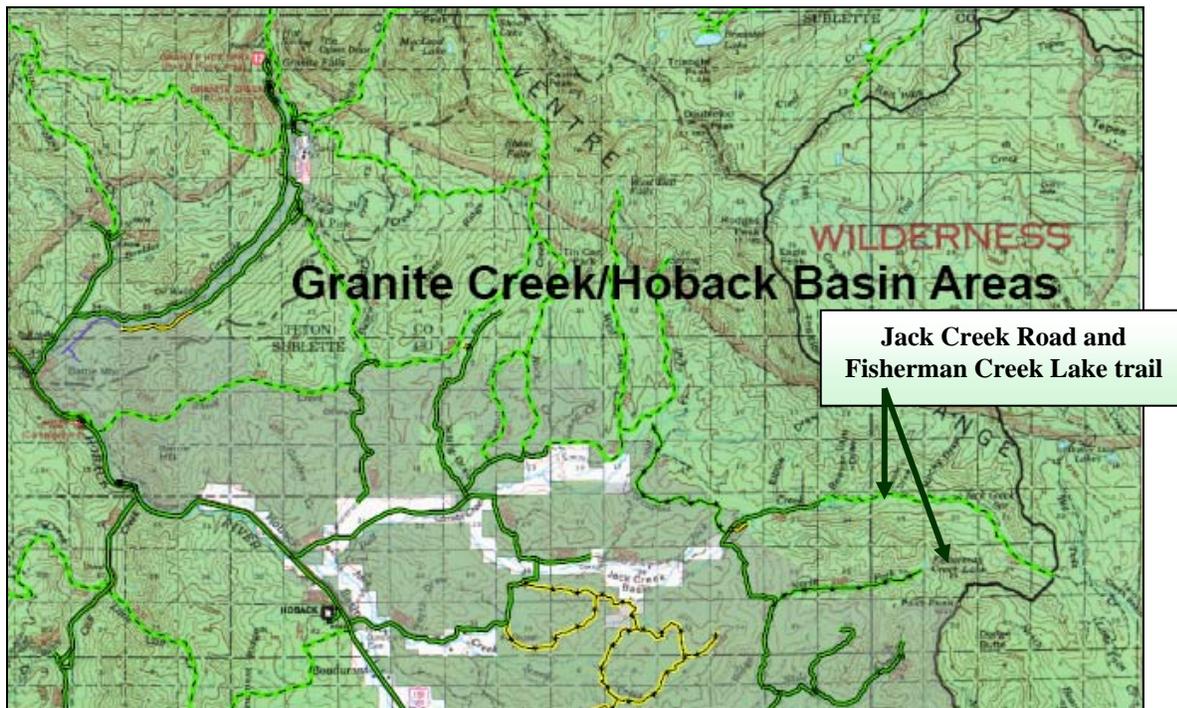
The Shoal Creek Wilderness Study Area includes 32,374 acres contiguous with the Gros Ventre Wilderness. New OHV route development within the WSA is increasing, though limited in places due to private land, terrain, and access. The OHV trail to Fisherman Creek Lake and the primitive road to the Jack Creek trailhead shown in Figure 19 with green arrows are legally open because it was determined that they existed prior to the 1984 Wyoming Wilderness Act.

Other open motorized routes that enter the WSA include logging roads east of Shoal Creek (from salvage sales in the 1970s and built prior to the Wyoming Wilderness Act) and an OHV trail that connects Jack Creek with Dell Creek. Neither of these routes appear on the current travel map as being open to vehicles but both are shown on maps related to this analysis as open to public motor vehicle use. (see Figure 19, yellow arrows). Assuming there was no mitigation required for the salvage sales in the 1970s, the logging spurs east of Shoal Creek could be considered as open roads in existence prior to 1984. The OHV trail between Jack and Dell Creeks is user-created and is neither on the travel map or a system trail.

With the existing OHV routes shown in Figure 19 plus other user-created OHV routes not shown on current maps, the southeastern corner of the WSA is being affected and its potential for wilderness compromised.

Motorized routes within ¼ mi of the WSA, or leading to a non-motorized trail that then enters the WSA include the area along the WSA boundary between Jack Creek and Dell Creek, the Jack, Dell and West Dell Creek trails, Rock, House, and Parody Draws, Riling Draw, Shoal Creek, and south of the Jack Pine summer homes. Along system trails and user-created routes there are ample opportunities for OHVs to enter the WSA.

Figure 19. Map of existing authorized motorized routes within Shoal Creek WSA.



Inventoried Roadless Areas

Inventoried roadless areas (subject to 2000 Roadless Area Conservation Rule and last mapped in 1983) that overlap areas of unrestricted motorized travel are listed in Table 27.

Table 27. Inventoried roadless areas (IRAs) included in the project area.

Area Name	Total acreage Each IRA, 1983 figures	GIS-calculated acreage 2008
Pacific - Blackrock Cr	26,370	24,236
Spread Creek – Gros Ventre R	172,821	165,972
Gros Ventre	435,320 [1]	116,487
Phillips Ridge	9,900	10,110
Munger Mtn.	12,909	12,813

[1] This is the 1983 acreage and includes what is now the Gros Ventre Wilderness and Shoal Creek WSA. The remaining roadless acreage is 116,487 acres.

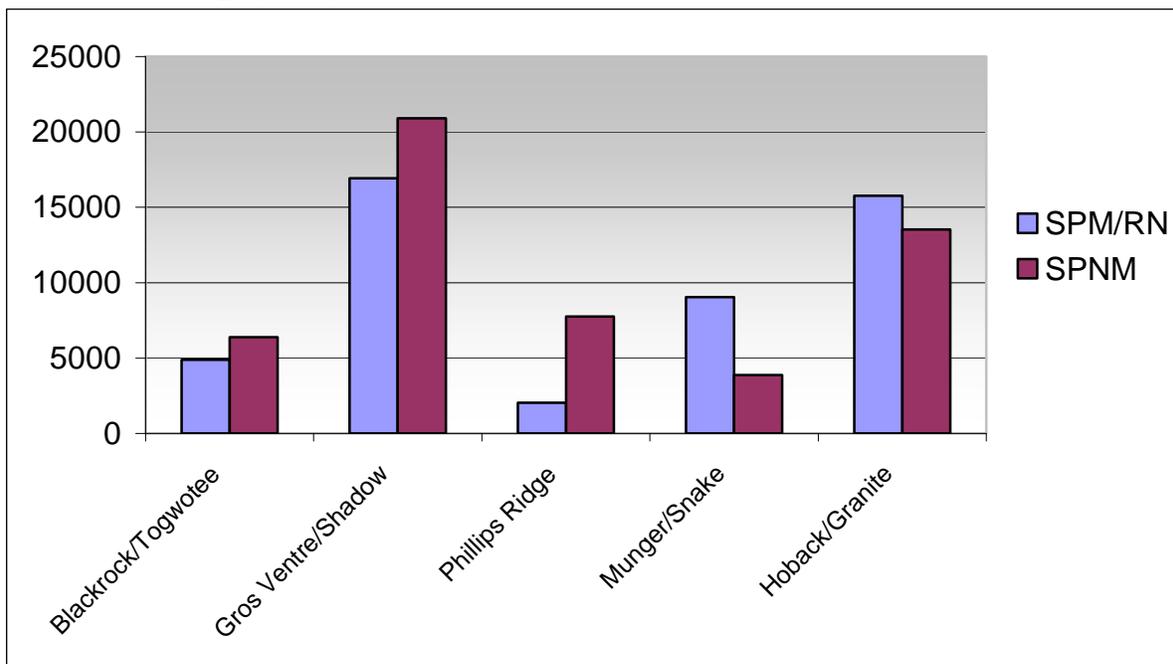
Of the total IRA acreage, 31% falls within the project area (101,120 acres) and 12% is considered usable OHV terrain (39,529 acres).

The existing condition differs by roadless area and its use patterns, size, location, and topography. Because of these differences, each is discussed separately in this section. Generally, most of the IRAs in this project area retain their character; permanent alterations to the roadless condition are few. The Roadless Conservation Rule allows motorized trails within inventoried roadless areas. However, unauthorized roads cannot be added to the Forest transportation system if they occur within an inventoried roadless area. Current management on the Bridger-Teton National Forest does allow for OHV use on existing open trails and additional routes have developed within the travel-unrestricted areas. There are nearly three times as many miles of motorized routes within those parts of the IRAs within the project area as non-motorized trails. These do not include user-created trails that are not on the forest transportation system. A summary of current conditions (all roadless areas combined) follows.

- 79.7 miles of motorized system trails are within the travel-unrestricted parts of the IRAs
- 27.5 miles of non-motorized system trails are within the travel-unrestricted parts of IRAs
- 48% of IRA acreage falls within motorized settings; 52% of IRA acreage falls with non-motorized settings

Figure 20 shows the acreage of IRAs within the project area that are in motorized settings (semi-primitive motorized, and roaded natural) and non-motorized settings (semi-primitive non-motorized).

Figure 20. Acreage of IRAs within each geographic area that are within motorized settings (blue) and non-motorized settings (brown).



The following section is a summary of the current condition of IRAs within each geographic area associated with this project.

Area 1. Blackrock/Togwotee

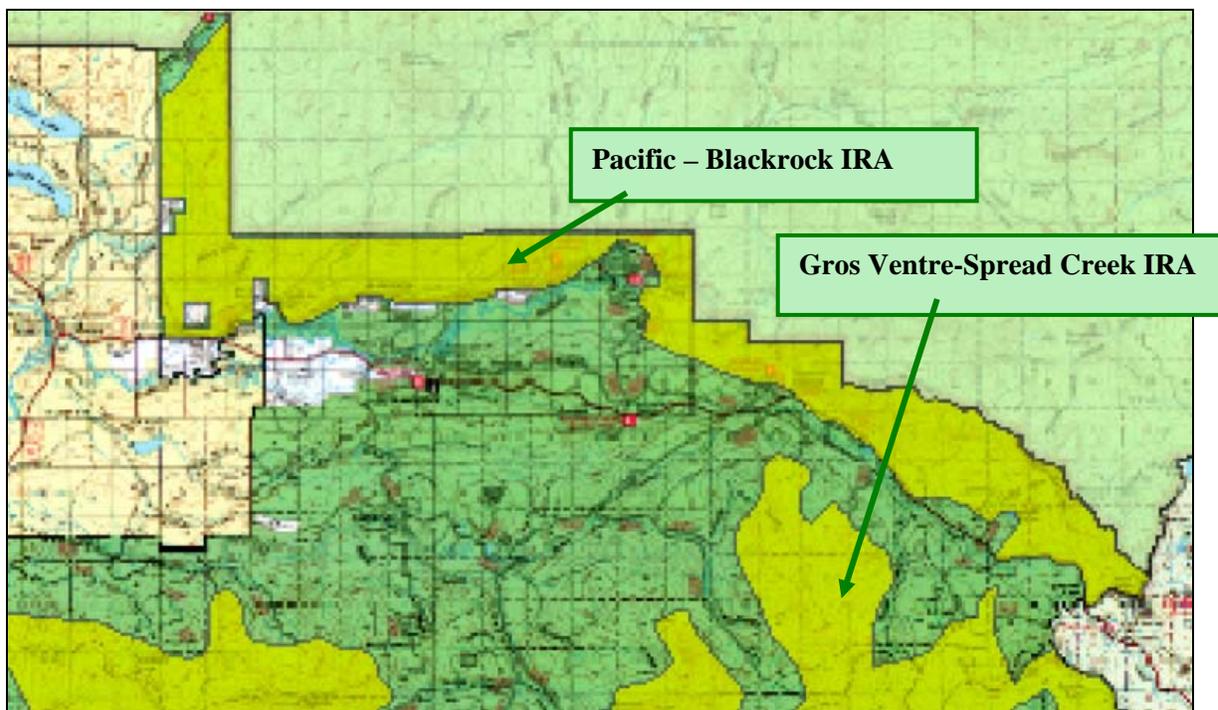
This area includes a small part of the Pacific–Blackrock Inventoried Roadless Area (north of U.S. 26 in the Turpin Meadows–Angles Mountain vicinity). It also contains some of the Spread Creek–Gros Ventre River IRA. Most of the Pacific–Blackrock IRA is managed under the forest plan for non-motorized recreation (DFC 2A). The section of the Spread Creek–Gros Ventre River IRA that lies within the project area is managed for grizzly bear recovery and protection (DFC 7A).

A few existing primitive roads enter the Pacific-Blackrock IRA from the Fourmile Road; some serve as hunting roads and trails for nearby resorts, one gives access to a small gravel pit. Terrain and interspersed private land limit places that unauthorized motor vehicle use can take place; except for some minor off-road driving to access campsites along the Buffalo Valley Road, nearly all motorized use remains on established roadways.

In the Spread Creek-Gros Ventre River IRA, the primary travel-unrestricted area lies between the North Fork of Spread Creek on the west and Split Rock Creek on the east. No motorized travel routes currently exist in this area but user-created OHV routes exist. These routes do not present a long-term affect on the roadless character of the IRA. Smaller areas of overlap exist elsewhere, including the northern reaches of an established OHV trail system originating in Slate Creek.

Figure 21 displays the extent of the Pacific–Blackrock IRA and that part of the Spread Creek – Gros Ventre River IRA that falls within the project area.

Figure 21. Map of the Pacific–Blackrock RARE-II inventoried roadless area (gold color).



- 15.4 miles of motorized system trails are within the travel-unrestricted parts of both IRAs
- 4.2 miles of non-motorized system trails are within the travel-unrestricted parts of IRA

- 43% of both IRAs fall within motorized settings and 57% falls within non-motorized settings

Area 2. Gros Ventre-Spread Creek

This geographic area includes some of the Spread Creek–Gros Ventre IRA. This IRA is largely travel-restricted and therefore outside of the project area. However, a large area between the South Fork of Ditch Creek and Dry Fork Cottonwood, including the Slate Creek OHV trail system, is accessed via existing system trails and primitive roads, as well as numerous user-created OHV routes. Bacon Creek also contains open system roads and motorized trails. The Shadow Mountain–Ditch Creek area is seeing increasing impacts at dispersed roadside camps and pioneering of routes off designated trails and roads (by both mountain bikes and OHVs).

The Gros Ventre River drainage has many open hills that are difficult to effectively barricade, and people can ride just about anywhere in some places. Except for deeply rutted routes (west slope of Russold Hill) and hill climb spots (Atherton, West Fork Horsetail, and others) many of the OHV routes are on gentle terrain and are not causing resource damage. The area is managed under the forest plan for a variety of desired conditions, including education (DFC 8 in the Ditch Creek area), wildlife habitat and dispersed recreation (most of the area; DFC 12), and mixed uses (DFC 10).

- 31.7 miles of motorized system trails within the travel-unrestricted parts of the Spread Creek – Gros Ventre IRA
- 16.3 miles of non-motorized system trails within the travel-unrestricted parts of the IRA
- 45% of the IRA falls within motorized settings and 55% falls within non-motorized settings

Area 3. Phillips Ridge

Nearly all of this area is within the RARE-II area that is also called Phillips Ridge. Although it is legally accessible to motor vehicles, it primarily receives non-motorized use. Recent closures of routes that were causing resource damage have reduced access by vehicles into the upper Ski Lake basin. The road system associated with the powerline is not within the IRA.

- 3.5 miles of motorized system routes are within the travel-unrestricted parts of the IRA
- 10 miles of non-motorized system trails are within the travel-unrestricted parts of IRA.
- 21% of the IRA falls within motorized settings and 79% falls within non-motorized settings.

Area 4. Munger/Snake

None of the Mosquito Creek drainage is within an inventoried roadless area. The primary place where overlap exists is on Munger Mountain. Munger Mountain has seen a rapid increase in year-round recreation use, the summer use being accompanied by unmanaged trail development and building by users. The result has been more motorized and non-motorized traffic in places that were formerly without trails and thus with little human use. Many of the non-system OHV routes in this area come from adjacent private or state land and most of these are not included on maps, as they are in continual flux. The character of this roadless area has changed in the past decade; there is less opportunity for solitude and signs of others are frequent. The ROS setting has gone from semi-primitive non-motorized to nearly all semi-primitive motorized.

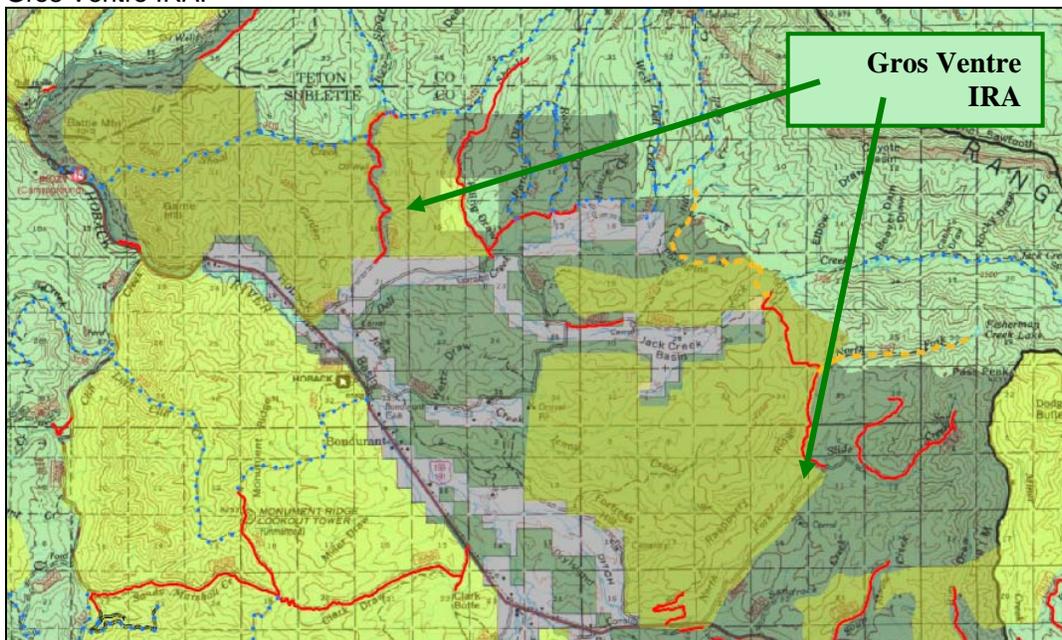
- 5.9 miles of motorized system trails are within the travel-unrestricted parts of the IRA
- 1.7 miles of non-motorized system trails are within the travel-unrestricted parts of IRA
- 70% of the IRA falls within motorized settings and 30% falls within non-motorized settings

Area 5. Hoback/Granite

This analysis area includes part of the Gros Ventre IRA. The IRA is currently 116,487 acres (what is left after designation of the Gros Ventre Wilderness and Shoal Creek WSA). That part of the IRA that is travel-unrestricted is shown in Figure 22. Some open system routes exist within it (mostly primitive roads open to all size vehicles) and although most are in adequate shape to accommodate existing vehicle use, some are in poor condition. There are several non-system established routes that are too steep to be sustainable and continued use is creating deep ruts and scars (e.g. at Battle Mountain next to U.S. 191). User-created vehicle routes are increasing on Raspberry Ridge and in various locations off the Dell Creek-Jack Creek loop. The terrain is gentle and open; in many places it is possible to drive a vehicle off legal routes. Dry conditions during hunting season are generally correlated with a greater degree of OHV use in non-motorized areas. This area is managed under the forest plan for mixed uses (DFC 10) and big game habitat/dispersed recreation use (DFC 12). Road construction within the IRAs violates the 2000 Roadless rule; allowing user-created roads to increase within the IRAs is not the same thing but could have the same effect on the area.

- 23.2 miles of motorized system trails or primitive roads are within the travel-unrestricted parts of the IRA
- 4.8 miles of non-motorized system trails are within the travel-unrestricted parts of IRA
- 54% of the IRA falls within motorized settings and 46% falls within non-motorized settings.

Figure 22. Map of the Hoback Basin, showing overlap between the Hoback/Granite project area and the Gros Ventre IRA.



Eligible Wild and Scenic Rivers

Eligible rivers within the Bridger-Teton National Forest must meet criteria for free-flowing character and at have at least one outstandingly remarkable characteristic. Eligible rivers that are near or within the areas being considered in this document are listed in Table 28, along with their mileage and potential classification. The three classification definitions under the Wild and Scenic Rivers Act are:

- Wild river—those rivers or sections of rivers that are free of impoundments and generally are inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.
- Scenic river—those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive or shorelines largely undeveloped but accessible in places by roads.
- Recreational river—those rivers or sections of rivers that are readily accessible by road or railroad that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Current condition of the eligible rivers on the forest is outstanding in nearly all locations. Water quality is high and the attributes for which each stretch is eligible are not impaired by ongoing recreational activities. The effect of OHV use within river corridors (¼ mile on each side of each stream) is provided for each geographic area considered in this analysis.

Table 28. Eligible wild and scenic river segments within the project area.

NAME and CURRENT ROS SETTING	REACH and POTENTIAL CLASSIFICATION	Geographic AREA	STATUS of MOTORIZED ROUTES
Pacific Creek R-N	Scenic - Wilderness boundary to Forest boundary	Blackrock	Pacific Cr road access to CG/TH, side roads give access to dispersed camps and outfitter staging areas.
Buffalo Fork R-N and R	Scenic, Turpin Meadows to Grand Teton NP boundary	Blackrock	Buffalo Valley Road on N; side roads (Burro Hill area) and access to camps off of this road.
Blackrock Cr. R-N and R	Scenic, source to Forest Boundary	Blackrock	US 26, a number of forest system roads and 2-tracks within the corridor.
Gros Ventre River R-N and R	Scenic - Darwin Ranch to Forest bdy (also GTNP bdy)	Gros Ventre	Gros Ventre Road follows river, access roads to private land, trailheads, OHV routes within the corridor.
Crystal Creek R-N and R	Scenic – Crystal Creek trailhead to confluence with the Gros Ventre River	Gros Ventre	Most of lower creek is private; Crystal Creek TH road and Gros Ventre road in the corridor.

Hoback River R-N	Recreational – mouth of Cliff Creek to confluence with Snake River	Munger/ Snake	About 4 miles of eligible river are within this area; parallels US 191/189, numerous river access points and roads to campsites and trailheads.
Granite Creek R-N and R	Scenic - Granite Hot Springs to confluence with Hoback River	Munger/ Snake	Granite Creek road and access to trailheads, private camps etc. and one parallel primitive road on E side.
Shoal Creek SPNM	Wild - Source to confluence with Hoback River	Munger/ Snake	About 9 miles in area, permission-only road at mile 8 follows creek for ½ mile. US 191 and Kozy CG at mouth.
West Dell Cr. SPNM	Wild - source to confluence with Dell Creek	Munger/ Snake	Very little of eligible segment is in the area; less than ¼ mi. No system roads/OHV routes.
Dell Creek SPNM	Wild - Source to confluence with West Dell Creek	Munger/ Snake	Very little of eligible segment is in the area; less than ¼ mi. No system roads/OHV routes.

Environmental Consequences – Direct and Indirect Effects _____

Issue 5.1: Effect on the character of National Parks, Wilderness, and Wilderness Study Areas and chance for illegal intrusions.

Table 29. Miles of motorized routes within ¼ mile of National Parks, Wilderness, and Wilderness Study Areas. Summary Table by Alternative

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
See Table Footnote (1)	46	50	46	53

(1) Indicator uses miles of open motorized routes evaluate effects. Unlike the action alternatives, OHVs are not restricted to designated trails under Alternative A. It is not possible to determine a linear unit such as miles of OHV routes (system and non-system) due to the dynamic nature of user created routes within the unrestricted areas.

Alternative A – No Action

Grand Teton National Park

Unrestricted travel areas lie adjacent to the park where the Pacific Creek road enters the forest and along the eastern boundary of the park from the lower Buffalo Fork to Enyon Draw and from Spread Creek to Ditch Creek. Under Alternative A this situation would continue, and the opportunity for motorized trespass into the park would remain. Terrain in the Enyon Draw – Coal Mine Draw area allows for user-created routes and there are already old jeep roads that enter the park from the east. Some of these are used by OHVs in hunting season. Alternative A

would allow these routes and areas to continue to be used, possibly affecting park resources in a particularly rich wildlife area. Noise associated with the use of vehicles on the forest would be noticed from a few places inside the park, but these are not heavy-use areas. Areas of concern include Ditch Creek and that part of the Gros Ventre River road that lies near the forest/park/state section boundary. The amount of trespass by OHVs into the park differs annually and is mostly dependent on how passable the routes are (when wet) and how many bison permits are issued. In the Phillips Ridge area, few opportunities for OHV riders exist beyond the lower road and trail sections. Phillips Pass is the primary access point to the National Park (via the Jedediah Smith Wilderness) and there has been no sign of OHV use here during the non-snow season. No change is expected under Alternative A, although the possibility would continue to exist.

Teton Wilderness

Unrestricted travel areas lie adjacent to the southern boundary of the wilderness and between the Pacific Creek road and the wilderness boundary. Though Alternative A would result in a continuation of this condition, the terrain does not lend itself to the development of significant OHV routes, and a changed condition relative to the wilderness is not expected. Sound traveling to the margins of the wilderness from nearby resorts, roadways, private homes, etc. is considerably more significant than the occasional OHV rider.

Gros Ventre Wilderness

Occasional use of vehicles in the wilderness would likely continue under Alternative A, particularly during hunting season as noted in the description of the existing condition. The development of additional OHV routes is less certain; in most places terrain or other types of obstacles prevent more routes from being developed (assuming today's typical OHV).

Jedediah Smith Wilderness

No effect is expected under Alternative A as noted in the section on Grand Teton Natl. Park.

Palisades Wilderness Study Area

OHV use near the boundary would continue as described in the existing condition. In Mosquito Creek, OHV use off legal routes would continue.

Shoal Creek Wilderness Study Area

Non-system OHV route development within the WSA would continue to increase under Alternative A and existing discrepancies between the current travel plan and on-ground management would continue. Especially where the pioneering of routes is being done by full-sized vehicles, this trend would have a negative effect on the WSA's wilderness potential.

Action Alternatives (B-E)

While all action alternatives would reduce resource impacts, including those in special areas, they differ in emphasis and methods. Location and density of the OHV trail system, season of use, and type of vehicle permitted on each route differ by alternative. Table 29 displays the differences among alternatives of motorized routes within ¼ mile of these areas. Alternative E includes the greatest number of routes within ¼ mile of one or more special area; Alternatives B and D include the least. However, the alternatives are not very different from each other; the range is between 46 and 53 miles. This is partly because motorized routes include open forest

roads and highways that pass through the project area; these do not change by alternative. Table 29 gives an indication of the likelihood of unauthorized OHV use within the special areas as well as noise intrusions. Some motorized trails within ¼ mile of the special area boundaries have no potential for effect due to topography, vegetation, or barriers such as rivers. OHV trails leading to non-motorized trails that then enter the special area are of greater concern. Alternative B, which eliminates most of the OHV routes east of Grand Teton National Park from Spread Creek to the Gros Ventre River would have the greatest positive effect on the park in terms of noise intrusion and potential trespass. Alternatives B and D reduce the potential for OHV use in the Palisades WSA.

Grand Teton National Park

Unrestricted travel adjacent to the park would no longer occur, and designated routes would be located to reduce, or in some alternatives eliminate, the likelihood of trespass into the park. Alternative B would eliminate off-route travel by motor vehicles and some currently used routes that enter Grand Teton National Park. Under Alternative C, the Wallace/Coal Mine Draw roads would become motorized trails and would be open July 1 and September 9 only, reducing the probability of OHV trespass into Grand Teton National Park for most of the hunting season. Directly south of this road, the road that approaches the park boundary at the head of Enyon Draw would be open July 1 through November 30, so motorized trespass into the Park could still occur. Under Alternative D, the Wallace/Uhl/Coal Mine/Enyon Draw roads would remain open as motorized routes from July 1 to November 30 which would not greatly reduce the possibility of trespass into the Park. South of Ditch Creek, OHV routes that enter the Park would be eliminated however trespass into the park during the hunting season would remain a possibility after September 9, when the Cobble Ridge/South Fork Ditch Creek OHV trail would be open. Under Alternative E all of the currently existing roads that approach Grand Teton National Park would remain open between May 1 and November 30. Even without the opportunity for additional user-created OHV routes, the effect on the park would be similar to Alternative A. Trespass into the Park during the hunting season would remain a possibility.

Teton Wilderness

There is little effect on the Teton Wilderness now, and the likelihood of future OHV use near or within the wilderness would be eliminated under any of the action alternatives.

Gros Ventre Wilderness

Use of vehicles in problem areas such as Alkali Ridge would be reduced, although terrain would continue to allow for trespass into the wilderness unless effective implementation of the motor vehicle use map is assured. Alternative B would eliminate off-route travel by motor vehicles and currently used routes that enter the Gros Ventre Wilderness. These routes include the lower end of the Alkali Ridge road and the Grizzly Lake trail. Under Alternative C, D and E, the road that accesses Alkali Ridge would not be closed at the Gros Ventre River road, so OHV trespass into the Wilderness would remain a possibility.

Jedediah Smith Wilderness

There is currently little to no evidence of OHV use at Phillips Pass during the non-snow season, and action alternatives would assure that this condition continued.

Palisades Wilderness Study Area

The elimination of unrestricted motorized areas adjacent to the WSA would reduce motorized use within the WSA from Mosquito and Cottonwood Creeks and the North Fork Fall Creek. OHV trails on the designated route system would be designed and located to minimize the likelihood of vehicles entering the WSA. In some alternatives OHV routes that approach the WSA boundary would end at new trailheads farther away and would be replaced with loops for riding outside of the WSA. Under Alternative B all motorized use in the Palisades WSA would be eliminated from May 1 through November 30. Under Alternatives C and D there would be less opportunity for motorized use within the Palisades WSA than currently takes place. The Mosquito Creek trail would continue to be managed for non-motorized use while the upper portion of the road would be closed. Upper Mill Creek and Cottonwood Creek roads would be managed for non-motorized use, reducing the current level of motor vehicle traffic within the WSA. Under both alternatives, the Taylor Mountain road would be open during the summer (July 1st until September 9th), reducing OHV entry into the WSA during the hunting season. Under Alternative E there would be little reduction in the number of motorized routes and motorized intrusions into the Palisades WSA would still be possible. While superior to Alternative A, this alternative would continue to encourage motorized use in closed areas since existing access points where OHV use can enter the WSA would remain open May 1 through November 30.

Shoal Creek Wilderness Study Area

The currently designated motorized routes within the WSA would remain open to motorized use under any action alternative, although the kind of vehicle allowed and season of use differs among alternatives. The continuation of user-created OHV routes that lead into the WSA would be discontinued under any action alternative. Alternative B would result in managing nearly all of the open roads within the Shoal Creek WSA as non-motorized trails. The logging spurs north of the Riling/Shoal Creek trailhead, the Fisherman Creek Lake trail and the ATV trail between Jack and Dell Creeks would all become non-motorized trails. The road in Jack Creek would remain within the Shoal Creek WSA but would end ¼ mile below Beaver Dam Draw. Under Alternative C, D, and E the road leading to the Jack Creek trailhead would end ¼ mile below Beaver Dam Draw. A motorized trail, open May 1 – November 30, would continue to give access to Fisherman Creek Lake. The OHV trail leading from Jack Creek to Dell Creek would remain open from May 1 to November 30, still entering the WSA.

Issue 5.2: Effect on the character of inventoried roadless areas.

Table 30. Miles of non-motorized trails within the travel-unrestricted parts of IRAs. There is little to no difference among action alternatives for IRAs within the Blackrock/Togwotee, Phillips Ridge, and Hoback Basin areas.

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Munger Mountain IRA					
Spring/fall	See Table	23	23	23	0
Summer	Footnote (1)	23	13	1.7	0
Spread Creek-Gros Ventre IRA					
Spring	See Table Footnote (1)	43	48	48	0
Summer		31	14	16	0
Fall		43	48	29	0

(1) Indicator depends on miles of open motorized routes to evaluate effects. Unlike the action alternatives, OHVs are not restricted to designated trails under Alternative A. It is not possible to determine a linear unit such as miles of trails (system and non-system) due to the dynamic nature of user created trails within the unrestricted areas.

Table 31. Summary Table for acres of IRAs that fall within non-motorized recreation opportunity settings. Seasonal route closures are not reflected in this table.

Current (1)	Alternative B	Alternative C	Alternative D	Alternative E
52,460	69,878	56,837	55,787	50,972

(1) Note that this figure is subject to change as additional OHV routes are created and more of the usable terrain is converted from a non-motorized to a motorized setting. The acreage for the current condition (alternative A) is a snapshot of what was known about the extent of the motorized setting as of the summer of 2007.

Alternative A – No Action

101,120 acres of Inventoried Roadless Area lie within the project area; if all of the useable OHV terrain were to be managed predominantly for motorized use, it would directly affect 39% of the IRA acreage within this project area.

Pacific-Blackrock IRA: There is currently little OHV use in this area and the off-road driving that takes place to reach existing dispersed campsites is not located within the IRA. Alternative A would have little to no effect on this roadless area.

Spread Creek-Gros Ventre River IRA: Although most of the IRA is managed for non-motorized use, a number of existing OHV routes lie within it. Most of them are on the south and west sides of the IRA and are not within this project area. This area has potential for the continued development of non-system roads and OHV trails, and under Alternative A it is likely that the miles of OHV route would continue to increase. 7,156 acres within the northern portion of this IRA are considered usable terrain, and though dense forest, topography, and wet areas limit the possibilities for new OHV routes, under this alternative some could become established. In the southern part of this IRA there is less than one mile of existing OHV route on the transportation system, though there are many, and increasing, user-created routes. This area has a high potential for the continuing development of these trails, and under Alternative A, it is likely that an increase would occur. In the southern portion of this IRA, 16,432 acres are considered usable terrain. Although it is not possible to predict where the next OHV routes will develop and become established, under this alternative they could appear in many places due to the large amount of suitable terrain.

Phillips Ridge IRA: The roadless area and the travel-unrestricted area are basically the same, so any additional OHV use or development of trails would affect the roadless character of this IRA. The trail system is being managed for foot, horse, and bicycle use, and OHVs tend to avoid it, even though the trails are legally open to single-track motorcycle use. No change in this pattern is expected.

Munger Mountain IRA: The roadless area would continue to be managed for unrestricted motorized use and its character would continue to change. Although the on-ground effects to the roadless character of the area are not severe, the continued establishment of uses incompatible with wilderness make the area a less likely candidate than it might have been. Some rutting and soil loss would continue to create a permanent effect on the roadless character. Thirty-four

percent (4,427 acres) of the IRA is considered usable terrain and although a dense system of trails has already been developed it is likely that new routes would continue to appear, and current soil and erosion issues would worsen.

Gros Ventre IRA segments: Much of this IRA is now designated by Congress, although several large parts (greater than 5,000 acres and therefore potential wilderness) remain, totalling 107,338 acres. Where unregulated OHV use is creating resource damage as noted in the description of the existing condition, this would continue, affecting the roadless character in some areas. Under Alternative A, expanded use of OHVs where terrain allows can be expected. 15,887 acres or 22% of this IRA are considered usable by OHVs. Motorized routes within the IRA would likely increase due to the amount of usable terrain.

Action Alternatives (B-E)

Within inventoried roadless areas, all action alternatives except Alternative E would result in an increase in non-motorized settings, as shown in Table 31. The greatest difference among alternatives is found in the Munger/Snake area, for which Alternative B includes the greatest amount of non-motorized setting and is very different from the other alternatives. Alternative C includes the second greatest amount of non-motorized setting, although this differs by season, as shown in Table 30. One of the major differences among action alternatives is the use of seasonal closures. Miles of non-motorized trail within the IRAs would change seasonally in response to these differences. Under Alternative B, there would be the greatest opportunity for non-motorized trail use season-long; Alternatives C and D offer the most non-motorized trails during the spring (until July 1) and fall (after September 9). Alternative E provides no non-motorized trails in these two areas.

Pacific-Blackrock IRA: There is little off-road driving in this area currently; under the action alternatives this use would be eliminated. Some alternatives reduce the mileage of primitive roads within the IRA as well.

Spread Creek-Gros Ventre River IRA: Under the action alternatives, user-created OHV routes would be closed. The mileage of non-motorized trails would be constant (5.5 miles) except during the summer under Alternative E, when only one mile would be managed for non-motorized use. Though the continuing development of user-created OHV trails would be eliminated under action alternatives, some established routes would be added to the forest transportation system under most action alternatives. Terrain and vegetation allow for user-created routes to continue in many parts of the IRA, so effective implementation of any action alternative must be assumed in order to state that there would be fewer OHV routes than currently exist. Non-motorized trail mileage varies considerably by alternative (see Table 30).

Under Alternative B, the area between Squaw Basin and Maverick Creek would be managed for non-motorized recreation. The road system in this area would not change but vehicles would have to remain on the designated system, thus reducing motorized use of the IRA and increasing the acreage of non-motorized settings. Motor vehicle use would end at the north end of Leidy Lake. In the southern portion of the IRA, many trails would be managed for season-long non-motorized use such as the South Fork Ditch Creek, Turpin Creek, and the West Fork of Horsetail Creek. This would result in most of the southwestern corner of the IRA being within a non-motorized setting. Dallas Fork and the Haystack/Bearpaw Creek trails would likewise be

managed for non-motorized use, enlarging the non-motorized setting around the Green Mountain area of the IRA.

Alternative C would be similar to Alternative B except the existing unimproved road to the head of Aspen Creek would remain open May 1 – November 30. This situation would not help prevent OHV use of currently closed areas within the IRA. In the southern portion of the IRA, some trails such as Turpin and Atherton Creeks would be managed for season-long non-motorized use. Other trails such as the West Fork of Horsetail Creek, Slate Creek loop, and the South Fork of Ditch Creek would be managed as non-motorized before July 1 and after September 9. This would result in most of the southwestern corner of the IRA being within a non-motorized setting for the spring and fall. More miles of trail would be managed for non-motorized use in spring and fall than under Alternative B (see Table 30).

Under Alternative D, the area between Squaw Basin and Maverick Creek would be managed for non-motorized use; more routes would be closed in this area than in Alternative B. The existing unimproved road to the head of Aspen Creek would end at the divide and be open from May 1 through November 30, intermediate between Alternatives B and C as far as deterring OHV use in closed areas of the IRA. In the southern portion, closed roads would be managed for non-motorized use in the Turpin—Atherton Creek area and Bacon Ridge, increasing the roadless character of the IRA in these areas. However a motorcycle trail would be designated within the IRA, open between July 1 and September 9, accessed via Horsetail Creek.

Under Alternative E, the area north of Mt. Leidy and west of Split Rock Creek (to the Flagstaff Road) would be the largest non-motorized area here; roadless character would remain in these and other forested parts of the analysis area that are reasonably distant from open OHV routes or forest system roads, so in this regard Alternative E is superior to Alternative A for retaining roadless character. In the southern portion of the IRA, most trails would be designated for motorized use May 1 through November 30, however the Turpin – Atherton Creek area would be non-motorized.

Phillips Ridge IRA: The trail system in the IRA would be managed officially for non-motorized use and under the action alternatives vehicles of all kinds would be restricted to the system roads (snow season excepted). There would be no effect on the roadless character under the action alternatives.

Munger Mountain IRA: The roadless character of this area has changed in the past decade due to increased OHV use and trail-building. Under the action alternatives some or all of these user-created trails would be added to the system, though allowed uses and seasons of use differ among alternatives. As the area becomes increasingly known for motorcycle and mountain bike use, and as trails are adopted into the system for these uses, the roadless character of the area would be affected, although not to the degree that exists under current conditions where trails are allowed to proliferate. Non-motorized trail mileage varies considerably by alternative (see Table 30).

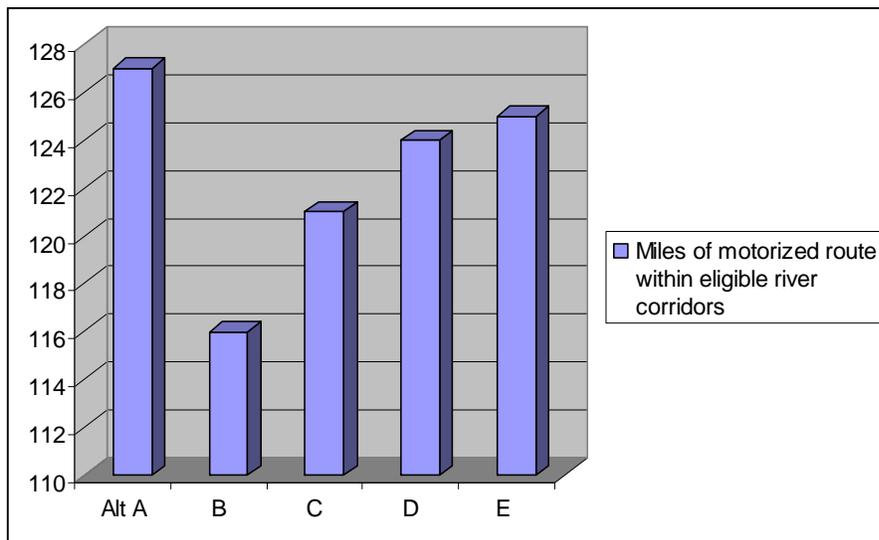
Under Alternative B all motorized use in the Palisades WSA and the Munger Mountain IRA would be eliminated from May 1 through November 30. Under Alternative C, motorized trail use would continue, but with a restricted season and travel on designated routes only. Alternative C

does not protect roadless values as well as Alternative B does, but both alternatives offer the same mileage in non-motorized trails except during the summer season. Under Alternative D, motorcycle trails would be open in most of the area between July 1 and September 9; the steeper trail leading up the south side of Munger Mountain from Fall Creek would be non-motorized season-long, but because of the open terrain and proximity of nearby developments, this part of the IRA alone would not be exemplary of roadless character. This alternative is less desirable from the point of view of retaining the character of the IRA than Alternative B or C. Under Alternative E, most trails would be available for a mix of motorcycle and ATV use from May 1 through November 30. A non-motorized setting would not be found much of the time, recognizing that on weekday mornings, use would be low. With season long motorized use, resource impacts associated with soil erosion, wildlife disturbance, and noxious weed spread are likely. As resource conditions deteriorate so would the roadless character of the area and its potential for wilderness designation.

Gros Ventre IRA segments: Under action alternatives existing user-created OHV routes would be added to the system where they can be maintained; some trails in poor locations would be rerouted or eliminated. Under Alternative B, the IRA would have roughly 4,000 acres more non-motorized acreage with the closure of the two-track east of Granite Creek and south of the Jack Pine summer homes and the low-standard 4WD road in Sour Moose Creek. This road would be shortened to provide for off-highway parking while the rest of the road is managed for non-motorized use. Under Alternatives C, D, and E, the low-standard 4WD road in Sour Moose Creek would be closed but roads in Granite Creek would remain open; this would not result in a great difference in non-motorized acreage within the IRA. Dell Creek would continue to be vulnerable to illegal OHV use since the OHV trail originating at Jack Creek leads directly to the non-motorized area.

Issue 5.3: Effect on the character of wild and scenic river candidates.

Figure 23. Effects on eligible rivers, showing miles of motorized route within the corridors of all eligible rivers combined.



Alternative A – No Action

Pacific Creek, Buffalo Fork of the Snake River, Crystal Creek: Assuming the recreation use patterns and current motor vehicle routes remain much the same, there is no significant effect on these rivers and their eligibility.

Blackrock Creek: Existing motorized trails on the south side of the highway and off the Flagstaff Road would continue to be used, and there are places where these routes could be expanded. The continued use of motor vehicles in this area would not affect the stream's eligibility but off-route driving within the riparian zone could detract from the scenic quality of the creek.

Gros Ventre River: Motorized routes within the river corridor are mostly in place where the terrain permits such use. The potential for creating additional OHV routes exists but mostly beyond the eligible river corridor. At the confluence of Crystal Creek and the Gros Ventre River there are some OHV routes, including user-created routes. While the presence of these routes has no current effect on the river's eligibility, uncontrolled use of vehicles in the corridor, primarily north of the Gros Ventre River, is not compatible with maintaining outstandingly remarkable values identified for this river (heritage, scenic).

Snake River: Few places exist in the river corridor that would encourage additional OHV routes or uncontrolled use off trails. This section of the river, eligible as a Recreational River, already has considerable development, a U.S. highway, and high use; Alternative A is expected to have no effect.

Wolf Creek: The lower creek to its confluence with the Snake River is within the highway influence zone. The terrain is not conducive to development of OHV routes or driving off-route; the trailhead area is the extent of it, so there is no effect under Alternative A on this potential Wild River.

Hoback River and Granite Creek: OHV use within the corridors of these streams is limited due to the presence of highways, forest roads, developments, etc. Their presence has no effect on eligibility, but uncontrolled use of vehicles in the streamside area is not compatible with maintaining the outstandingly remarkable values identified. Under Alternative A, unrestricted use of the river corridors would continue.

Shoal, Dell, and West Dell Creeks: Under Alternative A, user-created OHV routes identified in the current condition section would continue to affect parts of these eligible streams by reducing the values for which they were determined eligible.

Action Alternatives (B-E)

Effects on wild and scenic river candidates under the action alternatives are specific to each river and are described below. Nearly all of the candidate rivers are already within a roaded setting and most are accessible via a high-standard road or highway. The primary concern with OHV use is the potential effect on the values that make each river segment eligible. In many cases,

there is currently no effect and none would be expected under any action alternative. Figure 23 provides a visual summary of the differences among alternatives in miles of motorized route within the eligible river corridors. The chart displays that under any action alternative there would be fewer miles than currently exist. Since the chart includes all motorized routes from OHV trails to U.S. Highways, the difference is within the primitive roads and OHV trails.

Pacific Creek: Current OHV use in the area is limited to informal roads that lead to and between dispersed campsites. Under the action alternatives, established access roads would become part of the system of designated routes, allowing for continued use of the campsites. Random two-tracks that do not lead to campsites or other designated parking areas would be eliminated.

Blackrock Creek: OHV trails on the south side of the highway and off the Flagstaff Road would continue to be used only if deemed necessary for river access and added to the system of designated routes.

Buffalo Fork of the Snake River: Unrestricted motorized travel in the river corridor would be eliminated; parking for fishing and camping would continue but vehicles would not be allowed to drive along river banks at low water. Designated boat launch sites (across from the Buffalo RD compound for example) would be exceptions to this.

Gros Ventre River: Some motorized routes within the river corridor would become part of the designated system of OHV routes, while some unsustainable routes would be closed. River access points would not be affected. Designated routes would help maintain the outstandingly remarkable values identified for this river.

Crystal Creek: Currently some unauthorized vehicle travel takes place within the corridor, most of it directly east of Crystal Creek campground. This use would be discontinued under action alternatives and desirable campsites or fishing spots would be made accessible via system roads.

Snake River: There is currently little unauthorized OHV use in the corridor and most of the points of concern have already been effectively closed. All action alternatives would assure this trend continues and the values of the river maintained.

Wolf Creek: Nearly all of this potential Wild River is within the Palisades WSA. The current parking area for the Wolf Creek trail would be designated and retained under all action alternatives.

Hoback River and Granite Creek: OHV travel off designated routes would be eliminated and there would be the opportunity to restore eroded hill climb locations. Access to most established motorized routes would continue, though there are variations among alternatives. In some alternatives fewer existing open roads would be available; this does not have a great deal of influence over the values of the stream segments or their potential classification.

Shoal, Dell, and West Dell Creeks: Unrestricted OHV use would be eliminated but there is a difference among alternatives as far as protection of the potential Wild River segments. All action alternatives would include opportunities to restore some places where OHV use has created scars or ruts within the corridors of these streams.

Cumulative Effects

This section identifies impacts to special areas that could be expected to take place under Alternative A, combined with other past, present, and reasonably foreseeable future actions. Considered in this section are ongoing activities such as guided tours, Forest Service planned projects such as prescribed fire, fuel reduction, aspen or winter range enhancement, acquisition of public rights-of-way for access to the forest, and improvement of existing facilities such as trailheads. Other effects that are foreseeable in the future include the continuing increase in population in the local area as well as nearby states and resulting pressure on public lands for recreation and other uses. Increased air traffic, both commercial and private, would likely have a greater effect on the visitor experience within special areas than nearby ground-based traffic; the combination of more flights, more vehicles on roads and highways, and more development near the boundaries of special areas would likely reduce the sense of quiet; what the Forest Service can control is relatively minor.

With increasing residential and resort development at the forest boundary, user-created routes will continue to develop as people seek recreation on the National Forest adjacent to their homes. Development of motorized routes originating from private land can be expected to increase, with effects mostly seen in IRAs near the forest boundary and the Palisades WSA.

Grand Teton National Park and the Teton and Gros Ventre Wildernesses have less potential for being affected by decisions resulting from this project than other special areas. Eligible rivers in the project area are mostly already access via established roads and highways; additional effects from this project are not likely to be significant. The WSAs and IRAs have a greater chance of alteration in part because they have easy access, less law enforcement, and terrain that accommodates OHV use. The WSAs are managed by law to retain their wilderness potential. Existing and ongoing uses, including some that are not compatible with future designation (powerline rights of way, electronic sites, access roads to private land or permitted facilities, winter sports, roads within the WSA), along with terrain that allows for OHV use, could create cumulative effects on the WSAs that could be significant in some areas. Many uses and facilities cited here precede passage of the 1984 Wyoming Wilderness Act.

The IRAs include some established roads and motorized trails which are part of the forest transportation system and shown as open on the existing travel map. Some of these routes are within IRAs due to inaccurate mapping in the early 1980s. Some of the uses that now occur in the IRAs have simply evolved over time as foot and horse trails have turned into OHV trails and have been accepted as such by forest management. This occurs in nearly all of the analysis area (Phillips Canyon is the exception). The Spread Creek—Gros Ventre River IRA contains the majority of long-standing and accepted OHV trails.

Cumulative effects associated with the action alternatives, when added to other past, present, and reasonably foreseeable future actions in each area, would result in fewer effects on special areas than currently exist. The intrusions of noise or vehicle trespass into special areas, or the potential for intrusions to increase in the future, would be reduced under any action alternative. Occasional noise or OHV use near special areas is but one small part of the cumulative effects on these areas. Noise from highways, developments (including resorts, residents, etc.), and aircraft are

more significant in most places than the sound of OHVs. Population growth and visitation are factors that are expected to have a great deal of influence on special areas in the future; the U.S. Census Bureau (2004) estimates a possible growth rate of 10-15% in the fastest-growing counties in the Greater Yellowstone Area, and these include Teton and Sublette Counties.

Although wider trends are not within the control of the Forest Service, action alternatives included in this analysis would help direct the increasing use to sustainable roads and trails, while protecting the values of special areas to which the transportation system gives access.

Issue 6. Cultural Resources

Issues and Indicators

Issue 6.1. Effects of motorized routes and use on cultural resources.

The location and use of the proposed motorized route system may affect heritage sites, other cultural properties, and traditional use areas.

Indicators:

- 1. Number of eligible sites or potentially eligible sites along motorized routes*
- 2. Number of sites with potential adverse effects*

Cultural resources include prehistoric sites, historic sites, traditional use areas (referred to as traditional cultural properties in the regulations) and cultural landscapes. There are almost 1,000 cultural sites scattered across the landscape of the Bridger-Teton National Forest. Under the Travel Management Rule, motorized travel will be restricted to designated routes, and unmanaged off-route travel will be prohibited. According to USDA Forest Service Policy prepared in consultation with the Advisory Council on Historic Preservation, the closure of unrestricted motorized travel will serve to protect cultural resources across a broad landscape.

Motorized travel could affect cultural resources. Cultural resources are irreplaceable and vulnerable to motorized travel, especially since the advanced technology of today provides motorized access to areas not formerly accessible by motorized traffic. Resources previously protected by their remoteness or non-accessibility are now susceptible to vandalism, artifact collecting, digging and erosion. OHV travel has disturbed and damaged cultural sites by establishing new trails that cut through the protective sod layer that overtops sites, by rutting deep into undisturbed deposits and by widening impact areas by creating braided trails. Cultural sites are vulnerable to people who are collectors and to people who inadvertently camp at or use site locations. Interest in our heritage and concern over the destruction of cultural sites has prompted passage of legislation on the national, state, and local levels to protect and promote significant examples of our nation's history and traditional legacy. The goal is to avoid, minimize, or mitigate impacts to significant cultural sites referred to as Historic Properties in the legislation.

Affected Environment

A total of 149 cultural sites have been recorded within the five geographic areas that make up the OHV project area. Table 32 shows the number of sites previously recorded, the number of sites recorded or updated during the 2007 inventory for this project, the number of sites monitored for the proposed project, and the total number of sites recorded to date in each of the five geographic areas. Most sites are located on fairly level terrain, with slopes less than five degrees, and are within 100 meters of permanent water sources (Teton Division Landscape Scale Assessment 3-163).

Table 32: Cultural Resource Sites in the OHV Project Area

Geographic Area	Previously Recorded Sites	Sites Recorded or Updated - 2007 Inventory	Sites Monitored 2007	Total Number of Sites
Blackrock/ Togwotee Area	41	1	1	43
Gros Ventre/ Shadow Mountain Area	27	23	1	51
Phillips Ridge Area	4	0	0	4
Snake River Range/Munger Mountain Area	16	2	1	19
Hoback Basin/ Granite Creek Area	28	4	0	32
TOTALS	116	30	3	149

63% of recorded sites have been formally evaluated for the National Register of Historic Places. As shown in Table 33, 13% of the sites have been determined eligible to the National Register and 49% are not eligible. Two sites are listed on the National Register. One site is the Rosencrans Cabin Historic District (site 48TE971) that housed the first district ranger of the Teton National Forest at the turn of the century. The other site is the Bondurant Episcopal Church (site 48SU2673) in Hoback Basin that is partially located on the Forest. Bondurant residents initiated the process to have the church buildings listed on the National Register.

Table 33: Eligibility Status of Cultural Resource Sites in OHV Project Area

Geographic Area	Eligible Sites	Sites Listed on National Register	Unevaluated Sites	Sites Determined Not Eligible	TOTALS
Blackrock/ Togwotee Area	2	1 (48TE971)	11	29	43
Gros Ventre/ Shadow Mtn	8	0	26	17	51
Phillips Ridge	2	0	0	2	4
Snake River Range/Munger Mountain Area	2	0	3	14	19
Hoback Basin/ Granite Creek	6	1 (SU2673)	14	11	32
TOTALS	20	2	54	73	149
	(13%)	(1%)	(37%)	(49%)	(100%)

On May 31, 2007, a letter was mailed to the State Historic Preservation Office (SHPO) requesting concurrence on the survey strategy for fulfilling the Forest's Section 106 Consultation responsibilities for the proposed OHV route designation project and SHPO concurred with our survey strategy. According to USDA Forest Service policy, formally established system roads

and trails, already open to motor vehicle travel, generally need not be evaluated for cultural resources under the Travel Management Rule. Most of the roads or motorized trails included in the proposal fit into this category. However, changing the classification of a system road or motorized trail or adding a user-created (non-system) route to the Forest transportation system is considered an undertaking with the potential to affect cultural resources, triggering evaluation under Section 106 of the National Historic Preservation Act, 36 CFR Part 800, and consultation with Tribes. The survey strategy concentrated on these routes with special attention given to land surfaces most likely to contain cultural resources (i.e. slopes less than 15% within ¼ mile of water). According to USDA Forest Service policy, existing roads or motorized trails proposed to be closed do not warrant archeological survey since any cultural resources located along those routes will not be disturbed. (The Section 106 Process would be warranted where road closures involve ground disturbing activities.)

Archeological inventory of the routes during the 2007 field season indicate that the area of potential effect is less than what was expected at the beginning of the project. The survey strategy developed before beginning fieldwork estimated the area of potential effect to be about 200 feet wide for both full-sized vehicles and for single-track motorcycles. Survey results indicated that for most roads or ATV routes the area of potential effect appeared less than 100 feet wide and for single-track motorized trails the affected area averaged less than 30 feet wide. The survey corridor and area of potential effect for some routes was restricted due to geographic features such as steep slopes. Most motorcycle trails surveyed in 2007 followed ridgelines from one scenic view point to another scenic-viewing high point. There was little evidence of motorcycle use outside the trail tread except in areas where the trail was braided or at scenic viewing points. Many routes revisited in 2007, especially motorcycle routes, had new extensions and were longer in length than what was observed in past years.

For the scope of the OHV project, a Class III cultural resource survey was conducted along 48.3 miles of proposed routes, 49% of the total routes proposed with the initial preferred alternative (Alternative D). The survey included routes with proposed changes in their classification or routes proposed to be added to the Forest transportation system. An additional 62.5 acres were surveyed along routes in areas considered likely places for finding sites or in areas that were being impacted by recreational activities, grazing or other ground-disturbing activities. The 2007 field season was dedicated to surveying as many routes as possible. In total, 832.5 acres were surveyed for this project and 33 archeology sites were recorded on or near proposed motorized routes. The 33 sites are captured in the site numbers listed in the above tables. A report detailing the results of this survey has been reviewed by SHPO.

The 33 sites include 9 historic sites, 22 prehistoric sites, and 2 sites having both historic and prehistoric components. The historic sites include a hunting camp, two cow camps, a coal mine, two cabin sites, remains of a fire lookout, a historic artifact scatter, and an outfitter camp located within a historic mining district. The prehistoric sites are mostly lithic scatters; some lithic scatters have other features associated with them such as fire-cracked rock concentrations, stone circles, or hearths. Most prehistoric sites found in the rugged mountains of this part of Wyoming generally do not contain high numbers of artifacts. In order to survive in this harsh environment, most prehistoric inhabitants traveled in small groups, traveled light, and were typically on the move to hunt and gather plant resources. Many prehistoric sites on the Forest do not have buried deposits because of shallow soils.

Environmental Consequences – Direct and Indirect Effects _____

Summary Tables

Table 34: Number of Eligible Sites/Potentially Eligible Sites Along Proposed OHV Routes

Geographic Area	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Blackrock/Togwotee	14	1	2	2	2
Gros Ventre/Shadow Mountain	34	6	6	11	12
Phillips Ridge	2	0	0	0	0
Snake River Range/Munger Mtn	5	1	2	2	2
Hoback Basin/Granite Creek	20	1	1	1	1
TOTALS	75	9	11	16	17

Table 35: Eligible Cultural Resource Sites with Potential Adverse Effects

Alternative A (1)	Alternative B	Alternative C	Alternative D	Alternative E
		48TE499	48TE499	48TE499
			48TE1326	48TE1326
		48TE1628		48TE1628
TOTALS	0 sites	2 Site	2 Sites	3 Sites

(1) There are 75 eligible or potentially eligible sites within the project area. All of these sites are susceptible to direct and indirect effects from motorized use. An accurate number of known and unknown sites with potential adverse effects cannot be determined since it is not possible to survey every acre and the motorized system is continuing evolving under unrestricted travel management.

Alternative A – No Action

The No Action alternative provides a baseline for the action alternatives. This alternative has the greatest amount of routes and open motor vehicle use areas that encroach directly on or near cultural resources. With this alternative, all 149 known sites have potential for greater disturbance than under the other alternatives. The No Action alternative maintains unrestricted motorized travel which would result in expansion of non-system routes and perpetuates existing risks for sites located off of existing roads or trails. Even in the short-term, the impacts to cultural resources would increase due to the expected continuing increase of motorized use. Less than 3% of the entire Forest has been inventoried for cultural resources and it is expected there are unknown sites along routes that are currently being impacted from motorized use. Not all motorized routes and open use areas are creating negative impacts to cultural resources. However, unrestricted motorized use is resulting in current impacts to cultural resources, thus continuing this type of management would result in more impacts as motorized use increased.

Over the long-term, the no action alternative would accumulate significant impacts. This alternative has the most potential for adverse cumulative impacts to cultural resources because it retains more open motorized use areas than any other alternative.

Action Alternatives (B-E)

All routes being considered in the travel plan project currently exist and are being used to varying degrees, thus there will not be new ground disturbance with any of the action alternatives. Prohibiting unrestricted motorized travel will greatly reduce the potential for direct and indirect affects to sites located away from designated routes. Restricting motorized use to designated routes will reduce impacts currently occurring to sites as well as reduce potential cumulative impacts. Restricting motorized use also discourages the establishment of user-created trails over or through sites.

Table 34 lists the number of eligible sites and unevaluated sites (potentially eligible sites) along proposed routes in the action alternatives compared to Alternative A. In the regulations, unevaluated sites are treated as eligible sites until they are formally evaluated and determined not eligible. According to the National Historic Preservation Act, sites formally evaluated and determined not eligible do not warrant protection. Alternative B has the fewest number of eligible or unevaluated sites and Alternative E has the highest number of sites. The routes proposed for all action alternatives are basically the same routes with combinations of various seasonal closures. Alternative B has the fewest miles of routes and 63% of the routes have been surveyed; Alternative C has 49% surveyed; and Alternative E has the highest miles of routes and has 40% surveyed.

A summary of the eligible sites with potential adverse effects are listed in Table 35. Two prehistoric sites (48TE499, 48TE1326) on the list already exhibit evidence of direct or indirect impact damage from motorized use and impacts would continue or escalate with Alternatives C, D, and E. Alternatives C, D, and E will adversely affect site 48TE499, the largest stone circle site on the Forest. This eligible site consists of at least 28 stone circles and at least 10 other scatters of rocks which could represent other stone circles. Recent consultation with the Eastern Shoshone Tribe indicates that the site may hold traditional cultural significance. To date the Tribe has not stated a formal position as to whether or not they want the site to have motorized access. An informal comment was made that they want the site protected and that includes not having motorized access.

Site 48TE499 is located along an existing two-track road/OHV trail proposed to be added to the Forest system as a motorized trail. The two-track road/trail marks the eastern boundary of the site. By comparing photographs of the site taken in the 1980s with photos taken in 2007, the trail tracks are a little deeper and there is more erosion at the site due to vehicle traffic. The route crosses through the middle of one stone circle and possibly others. Fewer stone circles were identified in 2007 and that may be due to natural causes rather than looting. There was no recent evidence of people camping at the site location. However, several timber poles, possible tipi poles, were found scattered near at least five of the stone circles in the early 1980s and they were not at the site in 2007. The number of user-created motorized trails in the vicinity of site 48TE499 has increased in recent years. Any non-system trails added to the Forest transportation system would be shown on the motor vehicle use map and may encourage more use of this area. (The trail is currently not shown on the travel map.) Although seasonal restrictions are proposed in some of the alternatives, an increase in use of that area could occur during other months. Adding this trail to the Forest transportation system could lead to more looting and additional impacts to the site. Potential impacts to site 48TE499 are expected to be the same for Alternatives C, D, or E.

Table 35 also shows that Alternatives D and E have the potential to affect site 48TE1326. The prehistoric component of this eligible site consists of stone circles, a rock shelter, and fire-cracked rock concentrations. The existing single-track trail that goes through site 48TE1326 is a proposed motorcycle route in Alternatives D and E. This trail would provide a loop route for riders. Direct impacts to the site from motorcycle use along the trail are currently minimal. However, increased use and prolonged use may cause the trail to become more braided and cause further disturbance to the site, especially to those features and other buried cultural materials located close to the trail.

In 1995, archeologists noted artifacts being exposed from erosion (caused by nature and not by human activity). Grazing impacts in the form of trampling from big game animals was noted at the site in 2000. Even though an artifact inventory wasn't taken in 2000, there appeared to be fewer artifacts on the ground surface than what was initially recorded in 1995. While monitoring the site in 2000, several new motorcycle trails were noted in the area. There is no mention of the motorcycle trails in earlier site monitoring reports. A looter's pile of artifacts was noted at the site in 2006. In 2007 the single track trail through the site was more deeply entrenched in the soil and more braided than what was observed in 2000 and 2006. The other new motorcycle trails visible from the site location were also more braided and more obvious on the landscape in 2007.

The trail crossing through the site is not currently shown on the travel map. If this route were added to the Forest transportation system, the trail would be shown on the motor vehicle use map and may encourage more use of this area. Adding this trail to the Forest transportation system could lead to more looting and more ground disturbing activities at the site. Although Alternative D proposes to only allow motorized travel across the site during three months of the year, an increase in use by other user groups may occur during the rest of the year.

The Forest has initiated formal consultation with the Shoshone-Bannock Tribes and the Wind River Shoshone regarding this OHV project and so far the Tribes have not stated a formal position as to whether or not they want to see site 48TE1326 have motorized access. An informal comment was made that they want the site protected and that includes not having motorized access. In addition, this area has a very high site density compared to other parts of the Forest. Four other significant sites are recorded in vicinity of site 48TE1326 and these sites would be more susceptible to vandalism and damage if motorized use increased in this area. These sites have potential for indirect effects with Alternatives D and E. Site 48TE1326 and other significant prehistoric sites in the area are important to preserve because they have potential, both individually and collectively, to provide important information to better understand prehistoric and early historic travel patterns. Increased use of this area has potential for increased disturbance to site 48TE1326 and the other significant sites located in the vicinity.

Direct and indirect impacts to site 48TE1326 and indirect impacts to other significant sites in the vicinity would likely increase with motorized use in Alternatives D and E. Alternatives B and C do not allow for motorized use within the site boundary or in the general area. Impacts to site 48TE1326 and other significant sites in the vicinity may continue in Alternatives B and C without motorized use, however, the impacts are not expected to increase as in the other action alternatives.

The remaining eligible site listed in Table 35, site 48TE1628, is a historic coal mine located along an existing road proposed as an OHV trail in Alternatives C and E. The existing two-track road crosses through the site boundary. Although no structures or features are close to the road, the structures stand out in the open and are easily visible from the road. Alternatives C and E have potential for indirect effects to site 48TE1628. The site would continue to be susceptible to vandalism and damage. Increased motorized use would increase the risk of damage to the site. The 2007 survey season was dedicated to surveying and monitoring sites in Alternative D and this site was not visited during the 2007 survey season. Site 48TE1628 will be monitored in 2008 as soon as the site area is snow free. This OHV route is not included in Alternatives B and D; site 48TE1628 would be better protected with these two alternatives.

Two other eligible sites with potential effects merit some discussion. Site 48TE1747 is located within the potentially affected area in all action alternatives. Although a proposed road crosses through the site, no artifacts or fire-cracked rock concentrations were found in or near the road bed. The site has been impacted by erosion and washing actions; not by human activity or vehicle traffic. There are no plans at this time to improve the trailhead accessed by the road. Adding this road to the Forest roads and trails system will not impact or disturb site 48TE1747, thus no effects are anticipated under any of the action alternatives.

Site 48TE1768 is located along an existing two-track road that is currently not on the forest transportation system but is being proposed as a single-track motorcycle trail in Alternatives C, D, and E. The two-track road crosses through the site and turns into a single-lane trail. As noted in the management requirements common to all action alternatives (Chapter 2), all alternatives include placing a barrier fence in the parking area at the bottom of the knoll, outside the site boundary, to prevent vehicles from driving past the parking area to the site location. Full-size vehicles would no longer be allowed within the site boundary. The impact of having a single-track motorcycle trail cross through the site would be minimal. The management requirement included with the action alternatives would help protect site 48TE1768.

Effects Summary

In general, of the four action alternatives considered in detail, Alternative B is the most beneficial to cultural resources. No known significant sites (Historic Properties in the legislation) would be adversely affected by Alternative B. Alternative C has potential to adversely affect two significant sites, 48TE499 and 48TE1628. Alternative D has potential to affect two significant sites, 48TE499 and 48TE1326. Alternative E has potential to affect three significant sites, 48TE499, 48TE1326, and 48TE1628. Tribes have expressed concerns with the two Historic Properties affected by Alternative D and E. Further consultation with Tribes and State Historic Preservation Office is needed to develop appropriate mitigation measures if the proposed routes crossing these two sites are incorporated into the Forest transportation system.

Additional archeological work, in consultation with the State Historic Preservation Office and the Tribes will be necessary if any routes are changed or added to the alternatives. If any cultural resources are discovered along the proposed routes or existing motorized routes, the Forest Archeologist or Project Archeologist should be notified and appropriate measures taken to evaluate the findings and protect or mitigate significant sites.

Issue 7. Management of the Motorized System _____

Issues and Indicators

Issue 7.1 Effect on the ability to manage the OHV route system

The design of the proposed OHV system may not encourage users to stay on trails. The proposed motorized system may increase complexity thus may not be able to be adequately managed and maintained given existing funding (signing, maintenance, monitoring, enforcement).

The design of the OHV system greatly affects how well the system can be maintained, enforced, and understood. Factors such as the number of dead-end trails not associated with a loop, the number of routes with seasonal restrictions, and the number of gates and barriers necessary to provide field management of the system all play an important role in the eventual success of a designated motorized route system.

A complex OHV system including multiple seasonal closures, differing vehicle type restrictions on a single route, numerous trailheads, and dead-end trails is prone to misunderstanding by both managers and users. Forest visitors would be more likely to make honest mistakes when trying to navigate a complex OHV system. Likewise, enforcement, interpretation, and signing a very complex system are more difficult for forest managers, maintenance crews, and field patrollers.

The most user-friendly and maintenance-friendly OHV system would be a continuous trail system which had a minimum of vehicle and seasonal restrictions. However, the nature of balancing motorized access with resource values over a large diverse landscape prevents such a simple OHV system.

Indicators:

1. *Number of different seasonal restriction dates (excluding May 1-Nov 30)*
2. *Number of routes with seasonal restrictions*
3. *Number of dead-end trails not associated with a loop system*
4. *Number of gates, barriers and/or signs necessary to provide basic field management of the proposed OHV system*

To evaluate each alternative using indicator #4, the following assumptions were made. Gates, barriers, or signs would be needed at (1) the beginning of a closed or seasonally restricted route, (2) the end of an open route that dead-ends in an area that is not open to motorized travel, (3) change in authorized use within a single route, (4) motorized trailheads, (5) on routes exiting an unrestricted area and entering into areas restricted to motorize travel only on designated routes (only applies to Alternative A), (6) no sign is technically required within an unrestricted area except for seasonal closures (only applies to Alternative A).

Management Principles

Successful management of a designated motorized route system depends on four components: engineering, education, enforcement, and evaluation.

1. Engineering centers on how well the system is designed. First and foremost is to create a system of roads and trails that serve the motorized user. If routes are connected to a loop

opportunity or lead to locations of value, such as: popular campsites, scenic vistas, and staging locations for fall hunting opportunities on foot, riders are more likely to stay on the designated route and not stray off-route or create new trails. In addition, designing trail systems by vehicle class, (e.g. motorcycle or 50” or less (ATV) trails) simplifies management making field patrols more effective.

2. Education is most effectively achieved by promoting a culture shift among peers. Respectable and responsible riding ethics can be conveyed by using local media campaigns to inform riders about opportunities and responsibilities. Identifying and working with OHV community leaders, such as local motorized business owners can help spread OHV educational messages and promote responsible riding. Trailhead signing and direct visitor contacts by field patrollers are also essential parts of the education program. Consolidating staging trailhead/parking locations where riders begin their trip can help focus where information is available and where patrols should be concentrated.
3. Enforcement depends on having adequate field patrols to assist visitors and issue citations to those who choose not to comply with regulations. Enforcement is also improved by having designated roads and trails clearly delineated on maps that are readily available to users and having routes clearly signed on the ground with the appropriate vehicle class, season of use and route number. OHV barriers on trails and gates or physical closures on roads are also critical to the success of the OHV route system to clearly indicate where motorized use is allowed and where it is not.
4. Evaluation would be an annual and on-going process of reviewing what changes may be necessary to improve the system for users, respond to resource issues such as a new landslide or emerging wildlife concern, or address a continual enforcement or maintenance problem. Monitoring information along with public feedback would be used to indicate the need for change. The Motor Vehicle Use Map is required to be reprinted each calendar year to reflect any changes or necessary updates.

Environmental Consequences – Direct and Indirect Effects _____

Summary Table

Table 36: OHV System Complexity Elements

	Alt A	Alt B	Alt C	Alt D	Alt E
# of different seasonal restriction dates	1	3	3	4	1
# of routes with seasonal restrictions	21	26	46	42	28
# of dead-end trails not associated with a loop system	4	9	13	12	24
# of gates, barriers and/or signs necessary to provide basic field management of the OHV system	92	191	206	209	211

Alternative A – No Action

Administrative challenges resulting from continuing unrestricted motorized use management under Alternative A are summarized in four categories:

1. *Forest Visitor (Motorized and Non-motorized) comprehension of OHV system:*
The current OHV system is difficult for forest visitors to interpret and comply with. The unrestricted areas are identified on the Bridger-Teton National Forest Summer Travel Map which is shown at a 1:126,000 scale. It is often difficult to determine the exact boundaries of the unrestricted areas at this scale. Furthermore, it is difficult to completely sign the boundaries of each unrestricted area. This has resulted in many violations, particularly where non-system trails cross the boundary. Motorized routes within unrestricted areas may be posted closed due to adverse resource impacts or because the route is no longer needed for forest management. However, the area as a whole including the corridor of a “closed” route is technically open to motorized use within the unrestricted area. Likewise, hiking trails within unrestricted motorized areas are also open to motorized travel assuming resource damage does not occur from such use. Regulatory signing, barriers, and gating associated with specific motorized route closures within the unrestricted areas is very confusing to motorized and non-motorized users and has led to many conflicts. Furthermore, since non-system routes are not shown on Forest maps, it can take years for a visitor to figure out where trails go and what opportunities exist. For the first time visitor, a trail network that is mostly unsigned and unmapped is very confusing and can lead to riders getting lost and potential accidents if riders end up on trails that are above their riding capabilities.
2. *Enforcement Obstacles:* The current OHV system is difficult to enforce. OHVs are allowed to travel anywhere within an unrestricted area as long as they are not causing “resource damage.” Unfortunately, “resource damage” is not clearly defined in current regulations, thus it is difficult to have consistent law enforcement within the unrestricted motorized areas. Additionally, patrolling and enforcing hundreds of miles of boundary between the restricted and unrestricted motorized travel areas is an extremely difficult task; under Alternative A, law enforcement would have 110,273 acres of usable acres to patrol. Further complicating enforcement is the fact that the current system of motorized trails only includes one loop for ATV and motorcycle riding. Such a system design does not encourage compliance with travel regulations since it does not meet user needs. As a result, user-created trail networks have developed.
3. *Relative Number of signs/gates/barriers required:* Alternative A would require less signs/gates/barriers than other alternatives (see Table 36). There would be very few situations for OHV signing within an unrestricted area other than directional signs along system routes because closed roads are really not closed and hiking trails are not really limited to non-motorized use. Additionally there are no fall or summer seasonal closures and a minimal number of spring closures. However, the boundaries of unrestricted areas are often compromised due to the fact the boundaries are often not identified on the ground and are hard to determine by the Forest Travel Map. Although it is not practical to sign much of the boundary of the unrestricted areas, the need to sign the boundaries does exist.

4. *Maintenance limitations and challenges:* Due to limited Forest funds, maintenance would be limited to system routes and areas experiencing high levels of resource damage. Non-system roads and trails would not be maintained. Due to the continual development of new roads and trails, the Forest Service would not be able to keep up with locating, signing, closing or maintaining all of the new roads and trails.

Due to the challenges identified above, Alternative A's OHV system is and would be difficult to manage. Over time, it would likely become even more difficult to manage. With continued growth in OHV use, the number of non-system motorized trails and conflicts among recreation visitors within the unrestricted areas would increase if management did not change. Additionally, as more non-system roads and trails are developed, a greater percent of the motorized trails on the Forest would not be managed, not maintained and not signed or mapped. This would result in greater potential for accidents and search and rescues.

Action Alternatives (B-E)

Administrative challenges resulting from implementing a designated OHV route system under Alternatives B-E are summarized in four categories.

1. *Forest Visitor (Motorized and Non-motorized) comprehension of OHV system:*
All action alternatives would be implemented and administered according to the National Travel Management regulations. Part of the rationale for implementing the new regulations is to improve the enforceability of the OHV system compared with the situation where unrestricted motorized use is allowed. Under the travel management regulations, individual Forest special orders are no longer necessary and the development of a Motor Vehicle Use Map (MVUM) becomes the enforceable document. The motor vehicle use map conveys to the public specifically which routes are open and available for motor vehicle travel, by class of vehicle and season of use (non-motorized trails are not shown). There should be little difficulty for the public to understand where they may ride since all routes shown on the map will be signed numbered routes on the ground. If a route is not on the map, the unsigned route or area is closed to motorized recreation. This clarity should also help reduce potential conflicts with non-motorized visitors since the map will clarify specifically where motorized use is and is not allowed. Additionally, the motor vehicle use map is required to be available both as a free publication and via the Forest website which will allow users to easily download a map for the specific area they want to visit. Since all open motorized routes would be shown on a map and signed, there should be less potential for people to get lost and less potential for accidents.
2. *Enforcement Obstacles:* All action alternatives would be administered and enforced according to National Forest travel regulations through development of the motor vehicle use map described above. All of the action alternatives would require more field patrol presence but each would present different law enforcement challenges. It is difficult to predict which OHV system would ultimately prove to be the least or most challenging to enforce. Alternative B proposes to close significantly more routes than the other action alternatives. As described under Issue #1, Alternative B would provide 33 miles of motorized trail in the summer versus 100 miles for Alternatives C and D, and 139 miles in Alternative E. This

small amount of motorized trail miles may not be sufficient to encourage a growing number of users to stay on the designated trails. Additionally, closing routes that are currently being used would present a difficult law enforcement challenge, at least initially.

Alternatives C and D have approximately twice as many routes with seasonal restrictions compared with the other action alternatives (see Table 36). Additionally, Alternative D would use four seasonal restriction categories, although only one route is proposed to use the summer restriction date. Routes with seasonal restrictions typically require more monitoring and enforcement than routes with no such restrictions.

Alternative E has twice as many dead-end motorized trails as the other action alternatives (Table 36). Dead-end trails are often frustrating to motorized users seeking an enjoyable ride complete with loops and adequate mileage. This can lead to motorized use beyond the point where motorized use is allowed. These types of trails are difficult to effectively patrol, sign, and enforce.

3. *Relative number of signs/gates/barriers required:* The difference in the number of signs, gates, or barriers required to cover the OHV route system is insignificant among all action alternatives (Table 36). All action alternatives would require approximately twice the number of signs, gates, or barriers compared with the current situation (Alternative A).
4. *Maintenance limitations and challenges:* All action alternatives would include a finite number of designated routes. This would allow the Forest Service to annually prioritize maintenance and repair needs on OHV routes. Among the action alternatives, Alternative E would require the most expense in terms of route maintenance since the greater number of designated route miles would translate into more miles of route to maintain. However, the management resources necessary to install and maintain signs, barriers, and gates would be similar among all action alternatives since there is no measurable difference in the number of regulatory signs and structures needed to implement the action alternatives.

Summary

All action alternatives would require significant effort to successfully implement education, enforcement, maintenance, rehabilitation, and monitoring/evaluation tasks. However, compared with the current management situation (Alternative A), all action alternatives offer an OHV route system that would be mapped and signed, would be more enforceable, and would have a far greater number of routes maintained annually. The costs associated with continuing current management (the No Action alternative) are considered higher than any of the action alternatives due to higher number of road miles to maintained, greater signing requirements (along entire area closure boundaries) and higher cost for enforcement.

A preliminary projection of costs associated with implementation of the designated OHV route system over the next five years is shown in Table 37 below. These costs are applicable to all action alternatives. The decision to establish a designated OHV route system is not dependent on ensuring that full funding will immediately be available for implementation.

Table 37. Preliminary anticipated costs associated with implementation of designated OHV route system (Alternatives B-E)

Task / Budget Item	Year 1	Year 2	Year 3	Year 4	Year 5
Project coordinator (coordinate patrol, public information and restoration work, volunteer and partner involvement, compile monitoring data)	\$42,230	\$43,500	\$44,800	\$46,100	\$47,480
Trail maintenance (approx 30 miles maintained annually @ \$700/mile)	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000
Road maintenance and repair (approx 80 miles maintained annually @ \$500/mile for Level 2 roads and \$5,000/mile for Level 3 and 4 roads)	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000
Trail reconstruction work (approx 2 miles/year @ \$10,000 per mile)	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Mini-excavator for restoration work (to be combined with existing Bobcat)	\$20,000				
Restoration project work (10 miles per year plus barrier installation)	\$11,000	\$11,300	\$11,600	\$12,000	\$12,400
Public assistance and enforcement patrols (4 forest protection officer qualified people per year)	\$48,000	\$49,440	\$50,900	\$52,430	\$54,000
Volunteer stipends (patrol and monitoring)	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Complete inventory of all non-system routes (develop database to manage restoration projects)		\$11,500	\$11,500		
ATV, vehicle and safety equipment (for patrols)	\$10,000	\$3,000	\$3,000	\$10,000	\$3,000
Graduate student monitoring/evaluation			\$5,000		\$5,000
Develop quality interpretive information posters for all kiosks ("Riding Right to Sustain Wildlife") (5 kiosks per year with additional development costs in first year)	\$5,000	\$1,250	\$1,250	\$1,250	\$1,250
Website development and maintenance	\$1,770	\$1,825	\$1,880	\$1,940	\$2,000
Trail signs, barrier materials, hardware	\$5,000	\$3,000	\$3,000	\$3,000	\$3,000
TOTAL	\$317,000	\$298,815	\$306,930	\$300,720	\$302,130

As shown in Table 37 above, implementation costs are anticipated to be approximately \$300,000 annually. Acquiring the funding and resources to complete implementation tasks will be an on-going effort and will require strategic prioritization of work. District Rangers can work with engineering staff to prioritize road maintenance work to move implementation of the designated OHV route system forward. Assistance with trail maintenance and reconstruction will be sought through the Forest's on-going partnership with the Wyoming State Trails program as well as some work that can be completed by volunteers. The Forest also intends to actively seek grant funding and partner contributions to complete implementation tasks. Over time, successful implementation of the designated OHV route system is considered realistic through the combined effort of the Forest Service, partnerships with many organizations including Wyoming State Trails and Wyoming Game and Fish Department, community involvement, volunteer service projects, and grant opportunities. With a strong sense of shared commitment by agencies, non-governmental organizations, and citizens, the designated OHV route system can be expected to be successfully implemented and improved over time to deliver both reasonable motorized access and protection of resource values that make the area special.

Other Issues

This section includes information on topics that are potentially affected by the designation of motorized routes but were not central to the development of the alternatives.

Wildlife (those species not addressed in Issue #4)

Old-Growth Associated Species

The three-toed woodpecker and the American marten were chosen as a focal or emphasis species of the primary cavity excavator group, associated with old-growth habitat. Mature and over-mature stands with large trees, snag and down wood are vital habitat components for these species.

Three-toed woodpecker (*Picoides tridactylus*) and the **American Pine Marten** (*Martes americana*) habitat can be affected by motorized access that may result in habitat loss and fragmentation. Compared with the No Action Alternative, all action alternatives would greatly reduce effects to old-growth associated species and their habitat from motor vehicle use.

Wide-Ranging Carnivores

Gray Wolf (*Canis Lupis*) and **Canada Lynx** (*Felis lynx*): motorized disturbance and associated recreation can displace wolves and cause these species to avoid seasonally important habitats and sites, and increase vulnerability to mortality from shooting, trapping, and vehicle strikes. In general, current unrestricted motorized route travel (OHV) represents a greater threat to current and future wolf and lynx presence and their habitats than any of the action alternatives.

Gray Wolf: There are approximately five wolf packs whose territories are partially or entirely within the project area. Alternative C maintains the most effective habitat for four wolf packs. Alternative B and D provide the most effective habitat for the Buffalo, Pacific, and Teton packs. Alternative E provides the most effective habitat for the Gros Ventre pack but has the least effective habitat for the other packs and would expose wolves to the greatest threat of mortality from human/wolf encounters. ESA protection for the northern Rocky Mountain gray wolf population was reinstated on July 18, 2008, however the change in status does not alter the effects analysis for this project.

Canada Lynx: The presence of roads and trails can directly and indirectly affect lynx and lynx habitat. Alternative E has the greatest potential to influence lynx movements, distribution, habitat use, and vulnerability to mortality due to the highest route density and most miles of routes open to motorized travel. Alternative B would have the least potential influence on lynx and their habitat. With the exception of the Blackrock/Togwotee area, there is little difference between Alternatives C and D relative to their potential influence on the lynx and their habitat, but Alternative C has a greater potential affect on lynx than Alternative D when considered at the larger scale of the Lynx Analysis Area (LAU).

Aquatic/riparian associated species

Bald Eagle (*Haliaeetus leucocephalus*): Motorized travel and associated recreation within bald eagle nest territories can potentially disrupt breeding, nesting, foraging and rearing activities leading to nest site abandonment/failure and lost productivity, and displacement from preferred

habitat features. In general, unrestricted off-road motorized travel, as described in Alternative A (No Action) represents a greater threat to present and future bald eagle pairs and their habitat compared with any of the action alternatives. All action alternatives would provide some measure of benefit to eagles and their habitat by virtue of designating motorized travel routes and prohibiting all off-road motorized travel. Despite the potential effects to eagles from motorized activity under the action alternatives; an increasing trend in the number of occupied nests and the number of young fledged each year in the Lower Snake River population on the Forest, indicates that Forest goals for number of active nests and number of fledglings occupied territory would continue to be achieved under all action alternatives.

Fisheries

Native fish are widely distributed across the project area and occupy historic habitat resulting in stable fish populations. Cutthroat trout (Yellowstone and fine-spotted), are the most widely distributed of all the cutthroat trout in the Greater Yellowstone Ecosystem. A proliferation of non-system unmanaged OHV routes that were not designed or located to protect watershed and fisheries are impacting these fisheries. Unmanaged OHV travel creates a source of sediment that is having an effect on fish habitat in the project area. Specifically, some travel routes are located in riparian habitat that results in higher than natural levels of sediment added to stream channels and water bodies. Elevated levels of sediment above natural levels have a detrimental effect on the physical and reproductive success of fish (Anderson 1996). Watersheds within the project boundaries, that have been most impacted by unmanaged OHV recreation are the Shadow Mountain/Gros Ventre corridor and the GraniteCreek/Hoback Basin areas (BTNF 2003).

Implementing a designated road and motorized trail system (Alternatives B-E), that reduces impacts to fish and fish habitat should increase viability of native fish by maintaining or enhancing the hydrologic integrity of watersheds. The effects of the different alternatives were compared by evaluating the season of use for existing and proposed routes within the inventoried stream corridors. Under Alternative A, sediment related issues with dispersed recreation and unrestricted motorized travel will have unknown and unpredictable consequences to fish and fish habitat. Alternatives B, C, D, and E would improve conditions on Slate and Horsetail creeks in the Gros Ventre corridor. Alternative B would have a direct benefit to fisheries in the Granite Creek/ Hoback Basin and Blackrock/Togwotee areas where data indicate dispersed camping sites are a source of stream sediment. Alternatives B and C have the highest level of resource protection for fisheries. The action alternatives will have no effect on Threatened and Endangered fish species and may impact individuals but would not likely cause a need for federal listing due to loss of viability for fine-spotted Snake River cutthroat trout. There would be no negative effect for Rainbow trout. Converting existing non-system OHV travel routes to Forest system routes in Alternatives B, C, D, and E would improve watershed health and ultimately fisheries by placing the routes on a maintenance schedule and bringing them into compliance with Forest standards and guidelines.

Hydrology

Roads and trails are necessary for access to and through public lands. Depending on their location, their characteristics, and their maintenance, they may impact aquatic resources. The proposed motorized route system may contribute to soil damage, erosion, and sedimentation into

streams and rivers, adversely affecting water quality and ecologically important wetlands and riparian areas. The issue of potential sedimentation is discussed within the Soils section of this chapter (Issue #3). Motorized route density within sub-watersheds encompassing the project area was used as the indicator to compare the effects of the alternatives on watershed integrity.

Water bodies in Wyoming are classified based on the beneficial uses their waters must support. Most streams in the project area are classified as 2AB streams. According to Wyoming Department of Environmental Quality, these waters “are those known to support game fish populations or spawning and nursery areas at least seasonally and all their perennial tributaries and adjacent wetlands and where a game fishery and drinking water use is otherwise attainable. Class 2AB waters are also protected for non-game fisheries, fish consumption, aquatic life other than fish, primary contact recreation, wildlife, industry, agriculture and scenic value uses.”

The main stem of Granite Creek (tributary to Hoback River) through its entire length and adjacent wetlands is classified as Class 1 water. Class 1, or outstanding waters, “are those surface waters in which no further water quality degradation by point source discharges other than from dams will be allowed. Non-point source discharges of pollution to Class 1 waters or tributaries of Class 1 waters shall be controlled by application of Best Management Practices adopted in accordance with the Wyoming Continuing Planning Process.

These are streams where Wyoming DEQ has determined that water quality is either impaired or threatened. The list is updated every two years as required by Section 303(d) of the federal Clean Water Act. There are no streams in the project area on this list. The North Fork of Spread Creek was on the list but is no longer listed as an impaired or threatened stream in the 2008 Wyoming Department of Environmental Quality 305(b) report. Available data indicates that beneficial uses are being maintained throughout the project area (see the hydrology specialist report for more details). There are no municipal supply watersheds within or downstream from the project area.

Direct and indirect impacts of roads and motorized trails in the project area are evaluated using information derived from Geographic Information System (GIS) mapping of routes, water bodies, and wetlands. Impacts to floodplains are not specifically addressed in this analysis because no new routes or structures are being proposed that would alter floodplain function.

Roads and motorized trails can have numerous impacts on water resources. Impacts may include increased magnitude and frequency of peak runoff, increases in total runoff and a decreased time between the peak of a storm and surface runoff, increased production and delivery of sediment to stream channels, confinement of floodplains, changes in water flow paths, changes in soil permeability, and increased potential for landslides. Runoff from roads, including road dust from dry road surfaces may contain hydrocarbons and other chemical pollutants attached to soil particles, thus reducing water quality. When roads are abandoned, they may continue to be sources of sediment via chronic surface erosion or mass failure (Dissmeyer 2000). Abandoned roads may also fail due to lack of culvert maintenance, which can lead to road fill washouts and delivery of large amounts of sediment in one pulse. Road impacts are especially important at crossings where culverts change channel form and capacity, reducing the ability of the stream to move sediment and transport flood flows.

Motorized route density (miles of motorized route per square mile of watershed) can indicate the potential for sediment delivery from routes to streams. It is also an indicator of where other route-related impacts may occur, if stream channels are present in the area. Higher route densities may also indicate the potential amount of “hydrologic connectivity” between routes and streams. Development of the Interior Columbia River Basin Ecosystem Management Plan (ICBEMP) categorized road densities (miles of road per square mile of watershed) based on their potential for adverse impacts to aquatic ecosystems (Quigley et al., 1996). The categories from this Plan are shown in Table 38.

Table 38. ICBEMP road density categories.

Category	Road density (mi road/sq mi)
Very Low	0.02 - 0.1
Low	0.1 - 0.7
Moderate	0.7 - 1.7
High	1.7 - 4.7
Extremely High	4.7+

The analysis for this OHV route designation project found no consistent difference in effects on watersheds among alternatives. The highest route density is in the Blackrock hydrologic unit, with a density of 0.70 mi/sq mi. According to ICBEMP, this is a “low” density with respect to impacts on aquatic ecosystems. All other densities are lower than this value, and so would be expected to have “low”, or lower, impacts to aquatic ecosystems based on this indicator.

Noxious Weeds

Motor vehicles are long distant vectors of noxious weed seeds and plant materials within the National Forest. Because many invasive species have seed traits that predispose them for vehicular dispersal, (OHVs) occasionally contribute to long-distance dispersal events (Rooney, 2005). Additional vectors of noxious weeds include the vehicles and trailers that haul ATVs or motorcycles on Forest roads to trailheads. Current infestations of noxious weed species have become established along the Forest transportation system. The spread of noxious weeds can lead to establishment of an undesirable vegetation monotype in which plant species present can cause significant decline in watershed conditions, reduce valuable forage species needed for wildlife habitat and livestock grazing, and cause a decline in high forage and habitat values.

Vehicles carry seeds and plant parts capable of reproducing such as roots within mud that cling to the vehicle, tires, undercarriage, skid plates, and radiators. When the vehicle travels on bumpy roads and trails, common on the Forest, the seeds are vibrated or jolted loose and introduce noxious weeds. Motorized users are often unaware that their vehicle may harbor noxious weed plant materials and are unaware of what they can do to prevent the introduction and spread of weeds.

Twenty-three regionally listed noxious weed species occur within the project area and are listed in Table 39. Total acres occupied by noxious weeds within the project boundary area equals 4,909 acres (NRIS Terra-Invasives database).

Table 39: Noxious weed occurrences within project area

COMMON PLANT NAME	NUMBER OF OCCURENCES	TOTAL ACRES
Canadian thistle	423	845.87
Dalmatian toadflax	11	4.35
Dyer's woad	13	161.58
Absinth wormwood	11	94.77
Black henbane	15	151.84
Perennial pepperweed	7	3.36
Bull thistle	74	394.24
Butter and eggs	3	9.69
Common St. Johnswort	5	42.88
Common mullein	81	496.74
Common tansy	18	167.07
Chamomile	7	15.97
Field bindweed	4	8.81
Field scabiosa	1	1.37
Houndstongue	87	509.10
Russian knapweed	1	0.66
Hoary false madwort	1	1.04
Leafy spurge	4	12.87
Musk thistle	437	1321.60
Orange hawkweed	1	0.14
Oxeye daisy	6	40.94
Spotted knapweed	104	581.17
Sulphur cinquefoil	11	32.04
Whitetop	<u>10</u>	<u>10.95</u>
	1335	4909.05

Under all action alternatives, the amount of area open to motorized use is reduced substantially compared to the current situation (Alternative A). However, the amount of activity on designated routes will likely increase. The risk of weed seed distribution remains high since the risk is related to the amount of use and number of vehicles. Noxious weeds are aggressive colonizers and would likely spread beyond designated routes if left untreated. If managed consistently from year to year, noxious weeds can be contained and early releases of new noxious weeds located and controlled more easily under a designated route system where the location of routes are known than under the no action alternative where new roads and motorized trails are continually created. Expanding noxious weed education and awareness programs for OHV use will further mitigate the effects of noxious weeds.

Sensitive Plants and Management Indicator Species

Sensitive Plants

The Forest Service is directed by the Endangered Species Act to manage for listed and candidate Threatened and Endangered plant species on lands under its jurisdiction. The Intermountain Region of the Forest Service has developed a sensitive species policy to address the management needs of rare plants that might qualify for listing under the ESA (Joslin 1994). The objective of this policy is to prevent Forest Service actions from contributing to further endangerment of sensitive species and their subsequent listing under the ESA. In addition, the Forest Service is required to manage for other rare species and biological diversity under provisions of the National Forest Management Act (Fertig, 1999).

There are eighteen sensitive plant species on the Bridger-Teton National Forest; four of these species occur within the OHV route designation project area. Adverse impacts of off highway vehicle (OHV) recreation are minimal for all four species.

1. Payson's Milkvetch (*Astragalus paysonii*): Payson's milkvetch occurs within the Snake River Canyon area with an historic occurrence in Little Granite Creek. There is a known population on the edge of the Hoback Basin.
2. Boreal draba (*Draba borealis*): There are two known and stable populations within the project area. There has not been any motorized use in the areas of these populations due to poor access.
3. Narrowleaf Goldenweed (*Ericameria discoidea* var. *linearis*): Populations occur in the Gros Ventre River drainage specifically along Cottonwood Creek, Soda Creek, Bacon Creek and along the main Gros Ventre River near the Fish Creek Feedground and the Dew Place homestead. Threats are probably low. The species is not preferred browse and may benefit from low level disturbance associated with recreational activities.
4. Payson's Bladderpod (*Lesquerella paysonii*): There are three recorded populations within the project area. One population was recorded in the Buffalo Valley but has not been relocated. The other two locations are on the edge of project area along the edges of roads. However, Payson's bladderpod is common within the subalpine areas of the Phillips Ridge project boundary area. Impacts from recreation (hiking and off-road vehicles), ski development, grazing, and mining are potential threats for lower elevation populations. Overall, threats are low at most sites.

Management Indicator Species (MIS) Plants

Management Indicator Species are identified in the 1990 Bridger-Teton National Forest Land and Resource Management Plan. Seven MIS plant species occur on the Forest.

Sweet-flowered rock jasmine (*Androsace chamaejasme*)—Sensitive

Payson's milkvetch (*Astragalus paysonii*)—Sensitive

Shultz milkvetch (*Astragalus shultziorum*)—Sensitive (note: this species has been removed from the Intermountain Region list)

Wyoming tansymustard (*Descurainia torulosa*)—Sensitive
Boreal draba (*Draba borealis*)—Sensitive
Weber’s saw-wort (*Saussurea webberii*)—Sensitive
Weber’s saw-wort (*Saussurea webberii*)—Sensitive
Aspen (*Populus tremuloides Michx*)—Ecological

Based on the Forest vegetation map, the aspen cover type occupies 18,920 acres within the OHV project area (Table 40).

Table 40. Acres of Aspen cover within project area

Geographic Area	Acres of Aspen	Acres of Aspen-Conifer Mix	Combined Acres
Pacific Creek	11.4	5.3	16.7
Blackrock/Togwotee	3,237.7	222.9	3,460.6
Shadow Mountain/Gros Ventre	5,652.3	371.7	6,024.0
Phillips Ridge	937.6	26.5	964.1
Mosquito Creek	574.0	54.3	628.3
N.Fork Fall Creek/Munger Mtn.	3,867.0	95.6	3,962.6
Snake River Canyon	0.0	0.0	0.0
Granite Creek/Hoback Basin	<u>3,809.9</u>	<u>53.5</u>	<u>3,863.4</u>
TOTALS	18,089.9	829.8	18,919.7

Desired Future Conditions for MIS plants involve the protection or enhancement of habitat populations and in the case of aspen; sustaining cover and improving age class distribution. Adverse impacts of off highway vehicle (OHV) recreation within the OHV project area are minimal or non-existent for all seven MIS plant species.

Range Management

OHV activity can affect permitted livestock operations within grazing allotments. Issues include effects to livestock distribution, impacts to range improvements, impacts to horseback operations, and cumulative effects of livestock and OHV created trails.

All of the action alternatives (Alternatives B-E) would have minimal to no effect on livestock allotments within the project area. This is due to either limited or non-existent proposed routes within the allotments or adjacent to them. The only known areas of conflict between livestock grazing and OHV use are within the Hoback Basin and Munger Mountain area.

Hoback Basin

Conflicts occur mostly during the hunting season when there is a high use of OHVs associated with hunting activities. This may impact livestock distribution and range improvements, such as leaving gates open. Designated routes may help limit the conflicts to livestock grazing within these allotments.

Munger Mountain

This allotment is the most impacted from OHV use. Unauthorized trail construction has been significant here. This has led to distribution problems with cattle which end up either in unscheduled pastures, unfenced private lands or on meadows along Fall Creek. Cumulative impacts have resulted in vegetation impacts to meadows along Fall Creek, soil compaction and erosion from OHV and livestock trails and the spread of noxious weeds, particularly musk thistle. All of these impacts would continue to increase if OHV use is left unmanaged under the no action alternative (Alternative A). Under Alternative B, Munger Mountain would be closed to OHV use; therefore Alternative B eliminates most of the conflicts and cumulative impacts between OHVs and permitted livestock use. Under Alternatives C, D and E, OHV use is restricted to designated routes. Designated routes make it possible to correct conflicts with distribution through grazing rotation management, adjusting the season of trail use, installing OHV passage gates in the fences, and confining vehicle travel and parking to designated sites. The adjacent North Fork of Fall Creek area has the potential of being added to the Munger Mountain Allotment to help resolve resource conflicts mentioned above.

Mixed Vehicle Use

It is vital to have an effective transportation system to allow Forest visitors to enjoy and experience the opportunities the forest provides. It is just as important to have a transportation system that is functional and meets agency management objectives and operations. This analysis only includes roads currently proposed within the unrestricted motorized travel areas for Alternative D (initial preferred alternative). This report analyzes those roads being considered for a status change from unauthorized (non-system roads) to designated (included in the Forest transportation system) in accordance with the National Travel Management Rule.

For the purpose of this document, motorized mixed use means designating a National Forest System (NFS) road for use by both highway-legal and non-highway-legal motor vehicles. Designating NFS roads for motorized mixed use involves safety and engineering considerations. All of the routes analyzed as part of the Mixed Use Analysis for this project currently exist on the ground. For the roads analyzed in this document over the past two years, evidence of mixed use exists on all the roads, and there has been no report of any accidents or crashes. Throughout this analysis, the Engineering Department consulted District and other Forest personnel on the current use and the accident history of the roads evaluated in this report.

The Guidelines for Engineering Analysis of Motorized Mixed Use on National Forest System Roads (December 2005) provide information on the probability of crashes given different driving condition factors. A lower probability of crashes exists where there is a combination of factors such as no known crashes, low traffic volume, consistent roadway where drivers and operators do not encounter unexpected conditions, low speeds (25 miles per hour or less), only vehicles with highway-legal lighting systems are operated at night, good visibility with sight distances exceeding stopping distances, and licensed or certified operators.

The Guidelines for Engineering Analysis of Motorized Mixed Use on National Forest System Roads also provide information factors affecting crash severity. Determining crash severity involves assessing the probable degree of property damage and personal injury resulting from a

crash on the road. Factors that may affect the severity of crashes include roadside conditions, vehicle speed, and difference in the size of the vehicles involved in the crash. Severity factors are low where crashes will have minor consequence (only minor property damage) and high where there is a likelihood of major property damage, critical injury, or fatality.

The Engineering Department has two options for evaluation of mixed use.

- ❖ **Engineering judgment.** *The evaluation of available information and the application of appropriate principles, standards, guidance, and practices as contained in these guidelines and other sources for the purpose of considering motorized mixed use designation for a NFS road. Engineering judgment must be exercised by a qualified engineer or by an individual working under the supervision of a qualified engineer, through the application of procedures and criteria established by the qualified engineer.*
- ❖ **Engineering report.** *A report signed by a qualified engineer, analyzing the factors in these guidelines and other applicable factors pertaining to the proposed designation of a NFS road for motorized mixed use. The report may identify alternatives for mitigation measures to reduce crash probability or crash severity. The report identifies risks associated with those alternatives and provides recommendations to the responsible official regarding the proposed designation for motorized mixed use.*

As stated above, the routes identified in this project do not have crash histories nor do they have a high probability or high severity for crashes. Consequently, an Engineering Judgment was prepared for all the roads identified in this project. All the roads proposed in this document will be assigned Maintenance Level 2. Given the current use of these routes, Engineering has only identified route 20-1 (road spur accessing campsite off Gros Ventre road) that would require mitigation measures to increase the safe use of the route and reduce the accident potential. For road 20-1, the district needs to sign the lower portion for 4WD use only.

Short-term Uses and Long-term Productivity _____

NEPA requires consideration of “the relationship between short-term uses of man’s environment and the maintenance and enhancement of long-term productivity” (40 CFR 1502.16). As declared by the Congress, this includes using all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (NEPA Section 101).

Allowing unrestricted motorized travel throughout the project area (Alternative A) allows motor vehicle use to occur over the largest possible area in the short term. However, as detailed in the effects analysis contained in this chapter, long-term productivity would be harmed. Impacts would occur to wildlife, soils, fish, and vegetation. All of the action alternatives reduce resource impacts although to differing degrees. Since the motor vehicle use map requires annual updates, nothing limits future choices to meet the challenge of providing for motorized recreation while protecting resource values and other uses of the National Forest.

Unavoidable Adverse Effects

All alternatives carry the risk that some motor vehicle users could trespass into motorized closure areas (under Alternative A) or stray off designated routes (under Alternatives B-E). Not all illegal OHV use will cause adverse resource impacts, but certainly some will. The potential for illegal use should decline with regulations that are clearer and better communicated as described in the effects analysis under Issue #7. Establishment of a designated OHV route system can be better signed, maintained, and managed further reducing the potential for illegal use but no enforcement system is perfect, thus some violations are inevitable.

While impacts from roads and motorized trails can be minimized, they cannot be eliminated. As described in the effects analysis, compared with the No Action alternative, all action alternatives reduce impacts to wildlife, soils, fisheries, plants, wilderness, roadless areas, eligible wild and scenic rivers, watersheds, and opportunities for non-motorized recreation. The impacts are reduced because much less of the project area would be open to motorized use under a designated route system compared with unrestricted motorized travel. However, where motorized routes are designated, some unavoidable effects to resource values and other forest uses would occur. This is particularly true for some wildlife species as described in the effects analysis under Issue #4. None of the effects are anticipated to be irreversible or irretrievable except as noted in the following section.

For non-motorized recreation opportunities and the character of inventoried roadless areas, if motorized travel continues to be unrestricted, these areas would be increasingly less desirable for non-motorized use and they would lose some of their potential for wilderness designation. This condition is not irreversible but unavoidable adverse effects to non-motorized recreation and wilderness character would occur where roads and trails are designated for motorized use. This is because the longer OHV use becomes established in an area, the harder it is to change back to a non-motorized setting.

For motorized recreation opportunities, all action alternatives carry unavoidable effects associated with restricting motor vehicle use to designated trails rather than allowing unrestricted travel. This will eliminate the opportunity to pioneer new routes and will limit the opportunity to access some locations, particularly when seasonal restrictions are in effect. This will likely require more advance trip planning, especially during the hunt season when arrangements will need to be made for retrieving game using non-motorized means. No irreversible or irretrievable effects to motorized recreation are anticipated due to the ability to update the motor vehicle use map annually allowing correction of significant problems that emerge.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line rights-of-way or road.

Cultural resources are irreplaceable and vulnerable to disturbance from motorized routes and associated recreation activity. The effects analysis discloses potential adverse effects to many eligible sites under the No Action Alternative and potential adverse effects to 2-3 sites under

Alternatives C, D, or E (Issue #6). Information from this effects analysis will be used to evaluate needed changes to proposed motorized routes before issuance of the Record of Decision.

Other Required Disclosures

NEPA at 40 CFR 1502.25(a) directs “to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with ... other environmental review laws and executive orders.” The Forest Service has consulted with several State and Federal agencies in preparing this Final EIS. Coordination meetings have been held with Grand Teton National Park, the Caribou-Targhee and Shoshone National Forests, and the US Fish and Wildlife Service. Considerable coordination has also occurred with Wyoming State notably the Wyoming Game and Fish Department, Wyoming State Historic Preservation Office, Wyoming State Trails Program, and Wyoming Office of State Lands. Consultation has occurred with both the Shoshone Bannock Tribes and Eastern Shoshone Tribes. In addition, numerous non-governmental organizations have participated in this project to date as well as many interested citizens. This Final EIS and accompanying project file has been prepared in accordance with the 2005 National Forest Travel Management Rule, Executive Orders 11644 and 11989 that relate to OHV management, National Environmental Policy Act, and the numerous laws that pertain to specific resources affected by OHV management.

CHAPTER 4. CONSULTATION AND COORDINATION

Preparers and Contributors _____

ID TEAM MEMBERS:

Dave Fogle	North Zone Fisheries Biologist, Bridger-Teton National Forest
<i>Project Role and Responsibility</i>	Fisheries analysis
<i>Degree</i>	BS in Fisheries and Wildlife, Utah State University, 1994; AD Degree in Forestry, Michigan Technological University, 1974
<i>Experience</i>	17 years of technical and professional experience with the Forest Service and 2 years of technical experience with the US Fish and Wildlife Service
Merry Haydon	Archeologist, Bridger-Teton National Forest
<i>Project Role and Responsibility</i>	Cultural resource analysis
<i>Degree</i>	BA in Anthropology, University of Wyoming, 1978
<i>Experience</i>	21 years of experience with the Forest Service
Terry Hershey	Wildlife Biologist, Jackson and Buffalo Districts, BTNF
<i>Project Role and Responsibility</i>	Wildlife analysis
<i>Degree</i>	BS Wildlife Biology, Colorado State University 1971 MS Wildlife Management, University of Idaho 1976
<i>Experience</i>	30 years of experience with the Forest Service; 22 years as a wildlife biologist and 8 years as a District Ranger
Chad Hudson	Developed and Dispersed Recreation Manager, Jackson and Buffalo Districts, BTNF
<i>Project Role and Responsibility</i>	Motorized recreation analysis and Management of the OHV system. Developed model for analyzing the effects of the No Action Alternative; Document editing
<i>Degree</i>	BS in Zoology, Southern Illinois University, 1995
<i>Experience</i>	8 years of experience with the Forest Service focusing on motorized and non-motorized trail planning, developed recreation and dispersed recreation management

Susan Marsh	Recreation and Wilderness Staff Officer, Bridger-Teton National Forest
<i>Project Role and Responsibility</i>	Non-motorized recreation and special areas analysis.
<i>Degree</i>	BS Geology, Western Washington University 1976 MLA – Landscape architecture and environmental planning, Utah State University, 1980
<i>Experience</i>	29 years of technical and professional experience with the Forest Service
Linda Merigliano	Recreation and Wilderness Program Manager, Jackson and Buffalo Districts, BTNF
<i>Project Role and Responsibility</i>	Team Leader and project coordination; Responsible for Chapters 1 and 2; Primary document editor
<i>Degree</i>	BS Cornell University, Natural Resources, 1980 MS Wildland Recreation Management, University of Idaho 1987
<i>Experience</i>	28 years with the Forest Service focusing on recreation, wilderness, and trail planning and management
Theresa Moran	Civil Engineer Bridger-Teton National Forest
<i>Project Role and Responsibility</i>	Mixed vehicle use analysis
<i>Degree</i>	BS Environmental Engineering 1995 Montana Tech - University of Montana
<i>Experience</i>	5 years with the Forest Service in transportation/facilities management; 10 years experience in private industry – environmental/civil engineering and project management
Ronna Simon, PH	Hydrologist Bridger-Teton National Forest
<i>Project Role and Responsibility</i>	Hydrology/watershed analysis
<i>Degree</i>	BS Geological Sciences, University of Michigan, 1981 MS Water Resources Mgmt, Univ of Wisconsin-Madison, 1986 MS Geography, University of Wisconsin-Madison, 1987
<i>Experience</i>	21 years experience in federal government – hydrology and watershed management
David Wilkinson	Travel Plan Coordinator Jackson and Buffalo Districts, BTNF
<i>Project Role and Responsibility</i>	Team Co-leader; GIS analysis; Map production; Public outreach; Document editing
<i>Degree</i>	AA Long Beach Community College, Liberal Arts Studies, 1984 BA Geography Cal State University, Long Beach 1989
<i>Experience</i>	6 years experience with Forest Service focusing on trail inventory, recreation, GIS and travel planning

FEDERAL, STATE, AND LOCAL AGENCIES:

Shoshone National Forest (USDA)—Cody, Wyoming
Caribou-Targhee National Forest (USDA)—Idaho Falls, Idaho
Bureau of Land Management (Department of Interior) [BLM Field Office]—Pinedale, Wyoming
US Fish & Wildlife Service (Department of Interior)
Grand Teton National Park (Department of Interior)—Moose, Wyoming
Environmental Protection Agency – Denver, Colorado
Wyoming State Clearinghouse
Wyoming Game & Fish Department
Wyoming State Trails
Wyoming State Historic Preservation Office
Office of State Lands & Investments—Cheyenne, Wyoming
Teton and Sublette Board of County Commissioners
Jackson Town Council
Teton Conservation District

TRIBES:

Shoshone Bannock Tribes – Fort Hall, Idaho
Eastern Shoshone Tribes - Fort Washakie, Wyoming

OTHERS: *(772 individuals are also included on the mailing list for this project)*

Backcountry Horseman of America
Beringia South
Biodiversity Conservation Alliance
Blue Ribbon Coalition
Cougar Fund
Congressional staff for Senators John Barrasso and Mike Enzi, and Rep.Barbara Cubin
Defenders of Wildlife
Dubois OHV Club
Fremont OHV Club
Friends of Pathways
Greater Yellowstone Coalition
Jackson Hole Conservation Alliance
Jackson Hole Land Trust
Jackson Hole Wildlife Foundation
Lehigh University—Bethlehem, Pennsylvania
Motorized Recreation Council of Wyoming
Sierra Club
Snow Devils
Targhee ATV/OHV Club
Teton Science School
Wyoming Snowmobile Association
Teton Science Schools
Western Wyoming Watershed
Wyoming Wilderness Association
Wildlands CPR
Wildlife Conservation Society
Winter Wildlands Alliance

Distribution of the Environmental Impact Statement _____

Notification of the availability of this environmental impact statement has been distributed to individuals who expressed interest in this project and requested to be included on the mailing list. In addition, copies have been sent to the Federal agencies, federally recognized tribes, State and local governments, and organizations listed above representing a wide range of views regarding the proposed designation of OHV routes for currently unrestricted motorized areas on the Bridger-Teton National Forest.

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