BIOLOGICAL ASSESSMENT

FOR

TERRESTRIAL WILDLIFE SPECIES

Rocky Mountain Ranger District Travel Management Plan

Rocky Mountain Ranger District
Lewis and Clark National Forest

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SUMMARY

The Lewis and Clark National Forest (LCNF) proposes to revise Travel Management on the non-wilderness portion of the Rocky Mountain Ranger District (RMRD) south of Birch Creek. This Biological Assessment analyzes the potential impacts of the Proposed Plan on four species listed as Threatened under the Endangered Species Act: gray wolf, grizzly bear, Canada lynx, and bald eagle.

Gray wolves inhabit primarily the wilderness portion of the RMRD that would not be affected by the Proposed Plan. The Proposed Plan would reduce the total mileage of motorized routes and the total area available to snowmobiles in the non-wilderness adjacent to the area occupied by wolves. There would be no anticipated impacts to wolf denning or rendezvous areas or to the prey base (ungulates). Therefore the Proposed Plan would have *no effect* on gray wolves or their habitat.

The Proposed Plan would result in motorized route densities that would be at or below threshold levels recommended by the Northern Continental Divide Ecosystem (NCDE) Interim Access Management Direction for grizzly bears and levels recommended in the Flathead National Forest A-19 Amendment regarding motorized access and grizzly bears. The Proposed Plan would also result in security core areas at or above levels recommended in the those guidelines. Analysis using the NCDE Eastside Cumulative Effects Model (CEM) indicates that the Proposed Plan would maintain or improve Habitat Effectiveness for grizzly bears as compared with the Existing Situation. The LCNF Forest Plan standards would provide additional protection from future increases in motorized access. Therefore the Proposed Plan *is not likely to affect* grizzly bears or their habitat.

The Proposed Plan would decrease the total area available to snowmobiles in winter, thus reducing the potential for dispersed snow compaction and for fragmentation of Canada lynx travel and foraging habitat. The plan would maintain the existing low mileage of designated over-the-snow routes and roads used regularly by snowmobiles. The Proposed Plan would therefore have *no effect* on Canada lynx or their habitat.

There are no known bald eagle nesting areas and little if any nesting habitat on the RMRD. Use of the RMRD by bald eagles is primarily by transient birds along the eastern boundary during migration. The Proposed Plan would not alter habitats currently used by eagles. Therefore the Proposed Plan would have *no effect* on bald eagles or their habitat.

DETERMINATION OF EFFECTS

Implementation of the proposed Federal action **WILL HAVE NO EFFECT** on Gray Wolf, Canada Lynx, and Bald Eagle, and **IS NOT LIKELY TO ADVERSELY AFFECT** Grizzly Bear.

CONSULTATION REQUIREMENTS

In accordance with the Endangered Species Act (ESA), its implementation regulations, and FSM 2671.4, the Lewis and Clark National Forest is required to request written

concurrence from the United States Fish and Wildlife Service (FWS) with respect to determinations of potential effects on Threatened Gray Wolf, Canada Lynx, Bald Eagle, and Grizzly Bear.

NEED FOR RE-ASSESSMENT BASED ON CHANGED CONDITIONS

The Biological Assessment findings are based on the best current data and scientific information available. A revised Biological Assessment must be prepared if: (1) new information reveals affects, which may impact threatened, endangered, and proposed species or their habitats in a manner or to an extent not considered in this assessment; (2) the Proposed Plan is subsequently modified in a manner that causes an affect, which was not considered in this assessment; or (3) a new species is listed or habitat identified, which may be affected by the action.

INTRODUCTION

The purpose of this Biological Assessment is to review the possible effects of a proposed federal action (revising the travel management plan for the Rocky Mountain Ranger District of the Lewis and Clark National Forest) on threatened, endangered, and proposed species and their habitats. Threatened, endangered, and proposed species are managed under the authority of the Federal Endangered Species Act (PL 93-205, as amended) and the National Forest Management Act (PL 94-588). Under provisions of the Endangered Species Act (ESA), Federal agencies shall use their authorities to carry out programs for the conservation of listed species, and shall insure any action authorized, funded, or implemented by the agency is not likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of proposed species; or (3) adversely modify proposed critical habitat (16 USC 1536).

This Biological Assessment analyzes the potential effects of the proposed federal action on all threatened, endangered, and proposed species known or suspected to occur in the Proposed Plan influence area (Table 1). This species list was confirmed on 19 July 2006 by referencing the FWS website: http://montanafieldoffice.fws.gov/Endangered_Species/Listed_Species/Forests/L&C_sp_list.pdf. The list for the Rocky Mountain Division of the Lewis and Clark National Forest was most recently updated on the website on 17 July 2006. Life history information on these species can be found in the reference document "The Distribution, Life History, and Recovery Objectives For Region One Threatened, Endangered, and Proposed Terrestrial Wildlife Species" (2001) and is incorporated by reference in this Biological Assessment.

Table 1. Threatened, Endangered And Proposed Species Known Or Suspected To Occur Within The Influence Area Of The Proposed Plan.

Species	Status	Occurrence
Gray Wolf *(Canis lupus)*	Endangered	Established pack in Wilderness portion of Rocky Mountain RD west of project area, limited documented use of project area
Grizzly Bear (*Ursus arctos*)	Threatened	Known to occur throughout Rocky Mountain RD
Canada Lynx (*Lynx canadensis*)	Threatened	Known to occur throughout Rocky Mountain RD
Bald Eagle (*Haliaeetus leucocephalus*)	Threatened	May occur occasionally, particularly during migration; no known nests or suitable nesting habitat on Rocky Mountain RD

PROPOSED PROJECT

Project Purpose and Need

The purpose of travel management is to provide the public with opportunities to use both non-motorized and motorized modes of transportation to access public lands and travel on National Forest System (NFS) lands, roads, and trails. Motorized and non-motorized travel on the Rocky Mountain Ranger District has been managed for the past 18 years under regulations described on the 1988 Lewis and Clark Forest Travel Plan map for the Rocky Mountain Division. In recent years several concerns regarding the Travel Plan have been identified and need resolution. Revision of the current Travel Plan is needed to:

- Simplify the number and type of restrictions and their display on the map, both to reduce confusion by the public and to increase enforceability on the ground
- Improve consistency in travel types and restriction dates with adjoining National Forests and state and BLM managed lands
- Reduce conflicts among different user groups
- Reduce any negative impacts to resources that may be occurring as a result of current travel management
- Evaluate the impacts of recreational ATV use, which was in its infancy in 1988, and decide where and when this type of travel is appropriate
- Evaluate a number of non-system routes and determine whether they should be retained as system routes or decommissioned
- Address the impacts of changes in snowmobile technology and identify appropriate areas and seasons for snowmobile use
- Assess opportunities for disabled access
- Respond to an outstanding appeal to the 1988 Travel Plan that directed the Forest Service to conduct additional analysis on that plan
- Fully implement the provisions of the 2001 three-state OHV decision that was signed by the Forest Service and the Bureau of Land Management (BLM)
- Implement Forest Service regulations that were passed in November 2005 regarding management of motorized travel on NFS lands

Proposed Action (Proposed Plan)

The Lewis and Clark National Forest proposes to implement revised travel management on the non-wilderness portion of the Rocky Mountain Ranger District south of the North Fork of Birch Creek. Although alternatives were considered and analyzed for the entire District in the Draft Environmental Impact Statement (DEIS) released in June 2005, a decision on travel management for the Badger-Two Medicine area, between U.S. Highway 2 and the North Fork of Birch Creek, has been postponed awaiting further analysis and consultation with the Blackfeet Tribe. This Biological Assessment addresses the Proposed Plan selected for the non-wilderness portion of the District extending from the Dupuyer Creek area in the north to the Falls Creek drainage in the south. This area will be referred to as the Project Area or as the Birch-South area.

The alternative selected as the Proposed Plan is based both on comments submitted by the public requesting greater separation of motorized and non-motorized travel, and on efforts by the Interdisciplinary Team (IDT) to identify areas in which to focus motorized loop opportunities and other areas in which to emphasize enhancement of other resources. In identifying areas in which to restrict motorized travel, the IDT attempted to choose areas in which more than one resource (e.g. wildlife habitat, wilderness/roadless characteristics, traditional travel, etc.) might benefit. In identifying areas in which to focus motorized loop opportunities, the IDT looked for areas in which the existing infrastructure could support a specific type of motorized use, in which loops existed or trail mileages were sufficient to create a reasonable motorized recreational opportunity, and in which other resources could be appropriately protected or impacts of motorized travel mitigated. The IDT also attempted to provide a mix of recreational opportunities throughout various geographic areas of the RMRD.

Travel management proposals are quite complex due to the amount of detail involved with each road and trail. The Proposed Plan developed by the IDT consists of a map and accompanying data tables containing information on how each road, trail, and area would be managed for motorized and non-motorized travel, including seasons of allowed use. Maps displaying the Proposed Plan and the Existing Condition (for comparison) are included as attachments (Appendices A and B) to this document, and the information contained in the data tables is summarized below in Table 2.

Table 2. Miles of Roads and Trails In the Birch Creek South area by Type of Wheeled Vehicle Management

ROADS & TRAILS ON ROCKY MTN. RANGER DISTRICT	**EXISTING SITUATION**	**PROPOSED PLAN**
Roads (open yearlong or seasonally to motorized travel).	105 mi.	85 mi.
Trails (open seasonally to ATV travel).	65 mi.	24 mi.
Trails (open seasonally to motorcycle travel).	144 mi.	50 mi.
Subtotal -- **motorized**	**314 mi.**	**159 mi.**
Roads (closed yearlong to motorized travel).	2 mi.	3 mi.
Trails (closed yearlong to motorized travel).	136 mi.	259 mi.
Subtotal--**non-motorized**	**138 mi.**	**262 mi.**
Grand Total	**452 mi.**	**421 mi.**

NOTE: differences in grand totals between alternatives are due to the differences in mileage of road and trail abandoned (decommissioned) and not managed as a designated system route.

In addition to the travel management detailed in the map and summarized in the table above, the Proposed Plan would incorporate provisions of the 2001 three-state OHV decision signed by the Forest Service and the Bureau of Land Management. This decision prohibits motorized cross-country travel on all National Forest System and BLM public

lands in a three state area, including the entire Lewis and Clark National Forest. It allows motorized cross-country travel within 300 feet of a designated route for the purposes of accessing a campsite, provided that streams are not crossed, trees or other vegetation are not cut or removed, and other resource damage does not occur. The 2001 decision did not address winter travel, but winter travel has been thoroughly considered and incorporated in the travel management DEIS and the Proposed Plan.

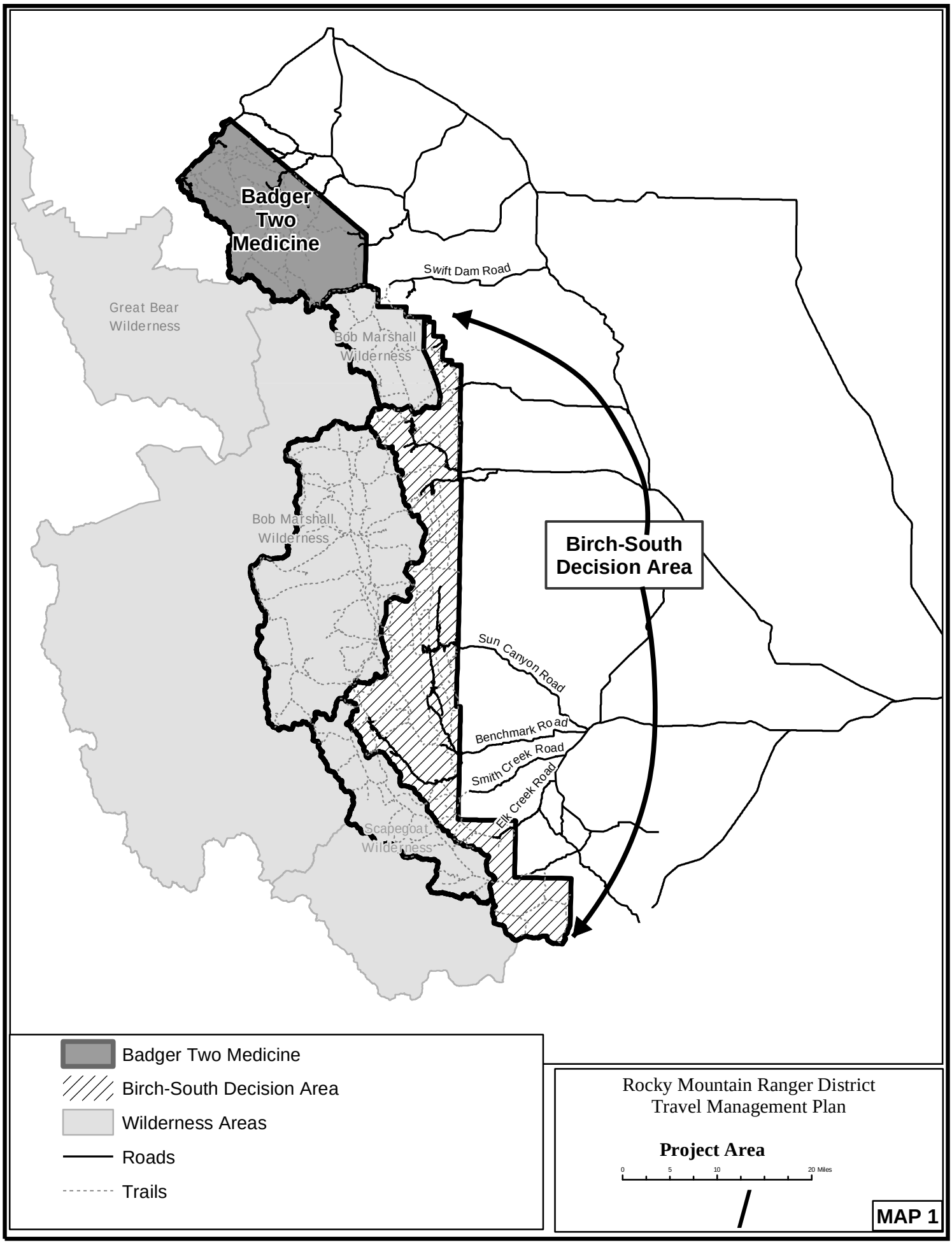
In November 2005 the Forest Service issued revised regulations for motor vehicle use on all National Forest System lands. These rules are to be implemented over the course of the next 4 years. The new regulations require designation of roads, trails, and areas for motor vehicle use. The new rules prohibit the use of motorized wheeled vehicles off of routes specifically designated for motorized travel (closed unless designated open). The new rules also apply to snowmobiles, but provide local land managers more flexibility in allowing cross-country travel by snowmobiles within areas appropriate for such use. The Proposed Plan considers and is in compliance with these new regulations.

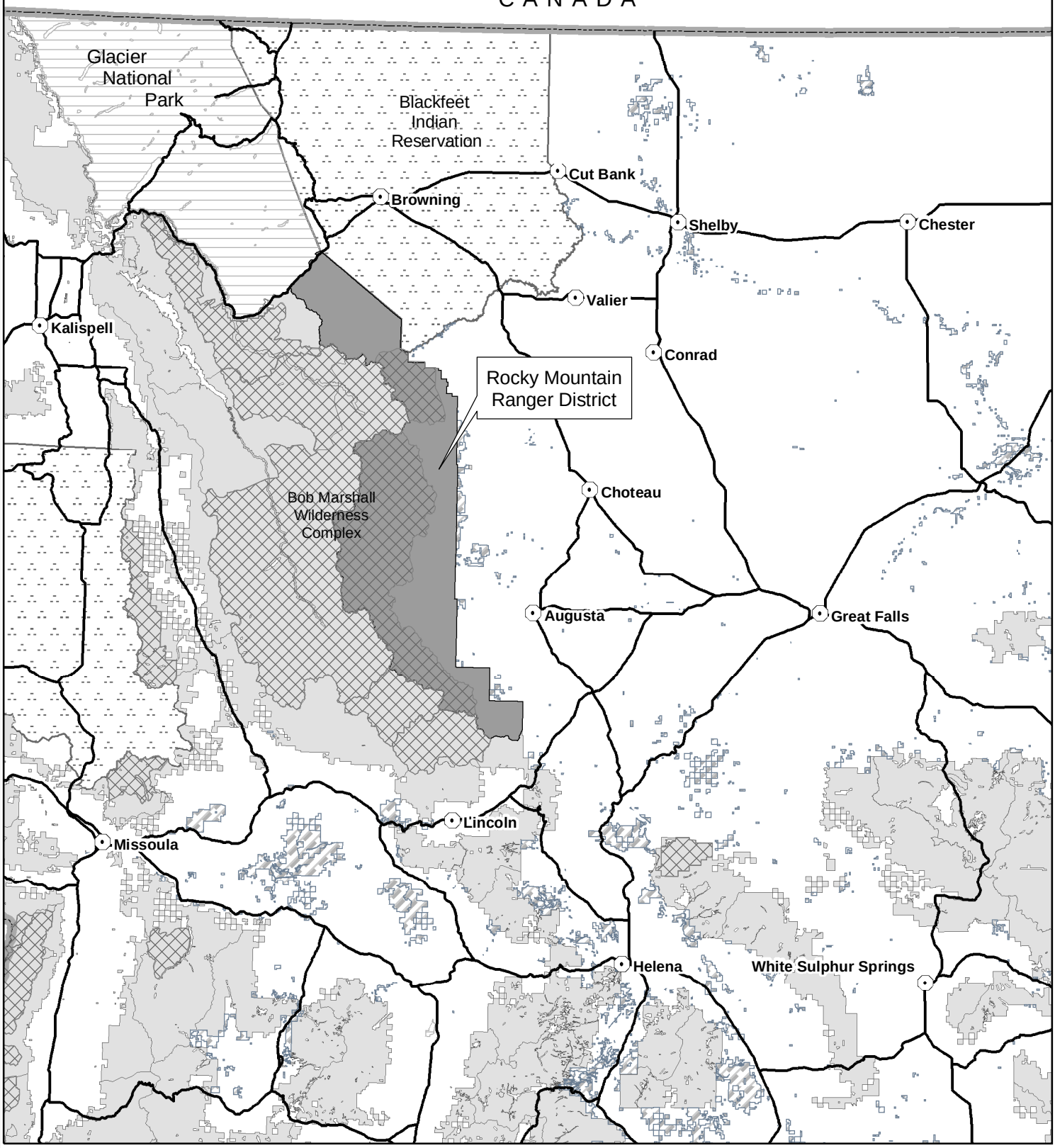
Project Area

The project area is the non-wilderness portion of the Rocky Mountain Ranger District (RMRD) of the Lewis and Clark National Forest south of the North Fork of Birch Creek (Map 1). It encompasses approximately 264,000 acres, or about 67% of the 777,600 total acres that comprise the Rocky Mountain Ranger District.

Approximately 385,900 acres of designated Wilderness in the Bob Marshall Wilderness Complex (BMWC), which includes the Scapegoat and Bob Marshall Wilderness areas, will not be specifically addressed in this Biological Assessment. Travel management in these two wilderness areas will continue to occur in accordance with the Wilderness Act of 1964 and Recreation Management Direction for the Bob Marshall Complex (USDA, 1987). An additional 133,000 acres in the Badger-Two Medicine area, or approximately 33% of the non-wilderness portion of the RMRD will not be specifically addressed here, but will be in a future decision and Biological Assessment.

The vicinity map (Map 2) shows the location of the Rocky Mountain Ranger District in relation to other locations in Montana. Due to the complexity of travel management issues, some discussions in the analysis focus on general areas.


Badger Two Medicine
Great Bear Wilderness
Bob Marshall Wilderness
Bob Marshall Wilderness
Scapegoat Wilderness
Swift Dam Road
Birch-South Decision Area
Sun Canyon Road
Benchmark Road
Smith Creek Road
Elk Creek Road
Badger Two Medicine
Birch-South Decision Area
Wilderness Areas
Roads
Trails
Rocky Mountain Ranger District
Travel Management Plan
Project Area
0 5 10 20 Miles
MAP 1



Rocky Mountain Ranger District
Wilderness
Reservation Lands
Forest Service Lands
BLM Lands
National Park Service

Rocky Mountain Ranger District
Travel Management Plan

Vicinity Map

0 12.5 25 50 Miles

MAP 2

SPECIES ASSESSMENTS

GRAY WOLF (Canis lupus)

Legal Status

The RMRD Travel Management plan occurs within the Northwest Montana Recovery Area for the gray wolf. Wolves within this area are classified as Endangered by the U.S. Fish and Wildlife Service (USFWS), under the Endangered Species Act (ESA). The USFWS is currently undergoing a status review to determine whether wolves in the northern Rocky Mountains constitute a Distinct Population Segment (DPS), separate from wolves elsewhere in the United States, and whether this DPS has recovered and can be removed from the Endangered Species list.

The population objective stated in the Northwest Montana Recovery Plan is to establish a minimum of 10 breeding pairs, or approximately 100 wolves, in the Northwest Montana Recovery Area for three successive years (U.S. Fish and Wildlife Service 1987). The FWS, which is the agency responsible for administering the ESA, believes that 30 or more breeding pairs of wolves, with an equitable distribution among the 3 states of Montana, Idaho, and Wyoming for 3 successive years constitutes a viable and recovered wolf population. That criterion was met at the end of 2002. If other provisions required for delisting are met, primarily adequate regulatory mechanisms in the form of state laws and wolf management plans that would reasonably assure that the gray wolf would not become threatened or endangered again, the USFWS will propose delisting (U.S. Fish and Wildlife Service 2005).

Local Population and Habitat Status

According to the most recent available Rocky Mountain Wolf Recovery Annual Report (U.S. Fish and Wildlife Service et al. 2006), at the end of 2005 there were 16 packs containing a total of 126 wolves in the Northwest Montana Recovery Area. Gray wolves are resident on the RMRD, in Glacier National Park (GNP) to the north, and on the Flathead National Forest to the west. One pack is known to occur on the RMRD. The Red Shale pack has established a territory in the North Fork Sun River drainage in the Bob Marshall Wilderness on the RMRD, roughly 7 miles west of the western boundary of the area for which this travel management decision is being made.

Observed pack size in the Red Shale pack has ranged from 2 to 14 individuals, with a minimum of 7 wolves (4 adults and 3 pups) observed in November 2005. Two radio-collars were placed on wolves in the Red Shale pack in late 2002; one collar was shed in 2003 and the other has not been successfully located since early 2004. Information since that time has been from observations of wolves, wolf sign (tracks, scats and killsites), and howling reported by a number of experienced observers.

The Red Shale pack appears to use primarily the upper North Fork Sun River drainage within the Wilderness, although occasional winter movements outside the wilderness in the upper Gibson Reservoir area have been documented. Sporadic observations of

individual wolves have been recorded in the non-wilderness portion of the RMRD and on non-NFS lands to the east. It is not known whether these observations represent wolves from the Red Shale pack, other wolves traveling through the area, or both. No regular activity, dens, or rendezvous sites are known to occur in the project area.

Habitat requirements for the gray wolf are extremely general. Wolves require only 2 key habitat components: 1) an adequate year-round supply of wild ungulate prey, and 2) freedom from excessive persecution by humans (Fritts et al. 1994, Fritts and Carbyn 1995 *in* Claar et al. 1999). Habitat used by wolves in the northern Rocky Mountains has been correlated with ungulate distribution and abundance (Carbyn 1974, Huggard 1993, Weaver 1994, Kunkel 1997, Boyd-Heger 1997 *in* Claar et al. 1999). In Montana, lower-elevation landscapes that tend to contain productive riparian areas and higher year-round concentrations of wild ungulates also frequently contain livestock, recreationists, and human development (Claar et al. 1999).

Direct, Indirect, and Cumulative Effects Analysis

Direct and Indirect Effects

Humans are responsible for the majority of mortalities of wolves through shooting and trapping both illegally and for management purposes, through vehicle collisions, and potentially due to den abandonment or displacement of packs due to disturbance (Claar et al. 1999). Because wolves are highly intelligent and depend on learning and behavioral plasticity as a survival strategy, they exhibit a wide variety of individual behaviors with respect to humans. Some individuals within a pack may be extremely sensitive to human disturbance, while others may be extremely tolerant (Claar et al. 1999). Humans may also impact wolves by altering distribution or abundance of their prey.

The Proposed Plan would reduce the total mileage of motorized wheeled routes in the non-wilderness portion of the RMRD, as well as reducing the total acreage available to snowmobiles. Motorized travel would be confined to main roads or concentrated in specific areas, rather than being distributed throughout the non-wilderness of the RMRD as it is under the Existing Condition. Non-motorized recreation would continue to occur throughout the RMRD. Whether these changes may have any impact on recreation use patterns or levels is unknown.

Although specific measurements have not been made, it is generally recognized that very little trail-based motorized travel occurs in the area encompassed by the Proposed Plan. Furthermore, because the Red Shale Pack territory is almost exclusively in the Wilderness, changes in pattern and amount of motorized travel resulting from the Proposed plan are unlikely to have any impact on the wolves or their prey. Individual wolves using other portions of the RMRD and adjoining lands are likely transient individuals that would also be unaffected by changes in the pattern of motorized travel.

Cumulative Effects

A number of factors could potentially result in impacts to wolves cumulative to those of the Proposed Travel Plan. These factors are: prescribed burning/wildfire, timber harvest, wildlife habitat on adjacent lands, and livestock grazing.

Two large wildfires have burned in the Red Shale Pack territory since the pack became established there. During that time two prescribed fires were carried out in areas outside the known Red Shale Pack territory. Within the perimeter of all 4 of these fires, a mosaic of fire effects was achieved. Additional prescribed burning is scheduled within the Scapegoat Wilderness as soon as conditions are favorable. This planned fire is expected to create a varied patchwork of fire intensity and effects. Additional natural and prescribed fires may occur throughout the RMRD and adjoining lands in future years. Impacts on habitat will vary depending on the location and severity of the fires and on other factors. Generally, however, fires result in improved forage for ungulates (i.e. wolf prey) within 1-5 years of their occurrence.

Very little timber harvest has occurred on the RMRD since 1988. A total of 107 acres were harvested between 1988 and 2002, using a variety of techniques ranging from small (1-20 acre) clearcuts, to small (1- 8 acre) thinning and other limited harvest projects. The sum of these past harvests has had no detectable impact on wolf prey numbers or distribution. These projects occurred and any future projects would occur outside the known territory of the Red Shale pack.

Several small fuels treatment projects are planned that will alter the vegetation on a total of approximately 750 acres of the RMRD in the Benchmark drainage. The size of individual units varies from 3 to 236 acres, and all units are located immediately adjacent to recreation residences or to the National Forest boundary. All treatment units are outside the area known to be used by the Red Shale pack, and most are outside of areas mapped as important ungulate ranges. The result of these projects will be a variety of small openings or thinned canopy that may improve forage for wolf prey species.

The area to the west of the project area, including the territory of the Red Shale pack, is the heart of the Bob Marshall Wilderness Complex. Wildlife habitats there are subject almost exclusively to natural forces, such as climate and fire, and receive only minimal influence from human activity. Lands east of the NF boundary are largely privately-owned ranch lands, where livestock husbandry is the primary activity. Although there are 3 state-owned Wildlife Management Areas (WMAs) that provide key ungulate winter range, large numbers of elk and deer also winter on private lands. Despite the presence of the WMAs and of a large block of land owned by The Nature Conservancy, it is unlikely that wolves would exist for long east of the NF boundary without eventually coming into conflict with livestock operations. The history of the Sawtooth Pack, which established a territory in 1993 on private land in the Smith Creek area and eventually had to be removed (in 1996-97) after a series of livestock depredations, lends weight to this assumption.

Livestock grazing occurs within the project area on permitted grazing allotments. No cattle grazing permits are allowed within designated wilderness, where the Red Shale pack lives. The pack has not been observed to frequent any of the cattle grazing allotments on the RMRD. Several allotments also exist for limited outfitter/guide horse and mule grazing, some of which are in wilderness near or within the Red Shale pack territory. The LCNF Forest Plan states that "the Interagency Wildlife Guidelines [will be used] to avoid or mitigate conflicts between livestock razing [sic] and T&E Species". The RMF Guidelines do not specifically address wolves, but guidelines for grizzly bear/livestock conflict would likely be used as a basis by which to manage wolf/livestock conflicts. The Guidelines stress that any actions taken as a result of conflict should minimize disturbance to bears, and that in general, management of multiple-use activities on the RMRD should favor bears.

Determination of Effects

I have determined implementation of the proposed Federal Action will have NO EFFECT on the Gray Wolf. My determination is based on the following rationale:

1. The project area does not include any known den or rendezvous sites, and the Proposed Plan would not affect the known den/rendezvous site on the RMRD west of the project area.
2. The Proposed Plan would not affect the wolf prey base, and would not increase mortality risk to wolves.
3. Although livestock grazing occurs within the project area, it does not occur within the known territory of the Red Shale pack, and the Proposed Plan would not result in any changes to existing grazing practices. Current grazing of outfitter/guide horses may occur within the Red Shale pack territory, which is outside the project area, and would not be changed by the Proposed Plan.

Recommendations For Removing, Avoiding, or Compensating Adverse Effects

No adverse effects are anticipated.

GRIZZLY BEAR *(Ursus arctos)*

Legal Status

The grizzly bear is currently listed as a Threatened species throughout the conterminous United States. The Grizzly Bear Recovery Plan identifies 5 recovery zones, based on ecosystem characteristics, in which grizzly bear populations could be self-sustaining (U.S. Fish and Wildlife Service 1993). The RMRD is entirely within the Northern Continental Divide Ecosystem (NCDE) Recovery Zone, which extends approximately 20 miles eastward from the NF boundary to U.S. Highway 89, northward across U.S. Highway 2 into Glacier National Park, west of the RMRD into the Flathead and Lolo National Forests, and south of the RMRD into the Helena National Forest. Recovery of grizzly bears in the NCDE is contingent on (U.S. Fish and Wildlife Service 1993):

- presence of 10 females with cubs inside GNP and 12 females with cubs outside GNP over a running six-year average both inside and outside the Recovery Zone (excluding Canada)
- occupation of 21 out of 23 Bear Management Units (BMUs) by females with young from a running 6-year sum of verified sightings and evidence, with no 2 adjacent BMUs unoccupied
- known human-caused mortality not to exceed 4%, during any 2 consecutive years, of the population estimate based on the most recent 3-year sum of females with cubs; no more than 30% of this mortality limit shall be females
- occupation of the Mission Mountains portion of the ecosystem

Local Population and Habitat Status

Population estimates of grizzly bears on the RMRD portion of the NCDE have ranged from 80 to 115 bears (USDI Bureau of Land Management 1992), although these estimates are several years old and based on limited mark-recapture data. An effort is currently underway to estimate the entire population of the NCDE using DNA samples collected systematically across the ecosystem. When that study is complete (estimated in late 2006) a more precise estimate of the grizzly bear population on the RMRD should be available. An additional effort is underway to analyze grizzly bear population trend in the NCDE. Results from that study may help determine population trend on the RMRD as well.

In 2004, the most recent year for which recovery measures were calculated, the NCDE did not meet recovery goals for females with cubs inside GNP or overall, and exceeded the mortality limits established in the Recovery Plan. The distribution goals (occupation of 21 out of 23 BMUs as described above), however, were met (U.S. Fish and Wildlife Service data revised 3/16/06, C. Servheen). Grizzly bear mortality, particularly along the Highway 2 corridor and on private lands within the NCDE continues to be an issue with respect to recovery.

Grizzly bears are opportunistic and adaptable omnivores. Habitat use varies between areas, seasons, local populations, and individuals (Servheen 1983, Craighead and Mitchell 1982 *in* Claar et al. 1999). In Montana, important grizzly bear habitats include coniferous forest for thermal and security cover, and meadows, riparian zones, shrubs, parks, avalanche chutes, and alpine areas for foraging. Grizzly bears frequently exhibit wide-ranging seasonal movements in search of widely dispersed and varying food sources.

On the RMRD, grizzly bears generally den in the higher elevation areas well within the NF boundary (Aune and Kasworm 1989). Many grizzly bears then move to low-elevation foothill habitat along the eastern NF boundary as well as to adjacent non-NFS lands in spring to forage on greening vegetation and winter-killed carcasses on ungulate winter ranges. Spring habitats are generally used between April 1 and June 30 in this area (USDI Bureau of Land Management et al. 1987).

Summer grizzly bear habitat is primarily on the RMRD, although a few grizzly bears remain on non-NFS lands throughout the non-winter months. Bears generally use higher elevation forests and meadows during the summer, although they may be found throughout the RMRD during this time. Many grizzly bears return to lower elevations, including non-NFS lands, in late summer and fall to take advantage of ripening buffaloberry (*Sheperdia canadensis*) and chokecherry (*Prunus virginiana*). During fall, some bears may shift to areas with concentrations of hunters throughout the RMRD and lands to the east to capitalize on gut piles and carcasses left by big-game hunters. Summer habitats are generally used between July 1 and August 31, while fall habitats are used between September 1 and November 30 (USDI Bureau of Land Management et al. 1987).

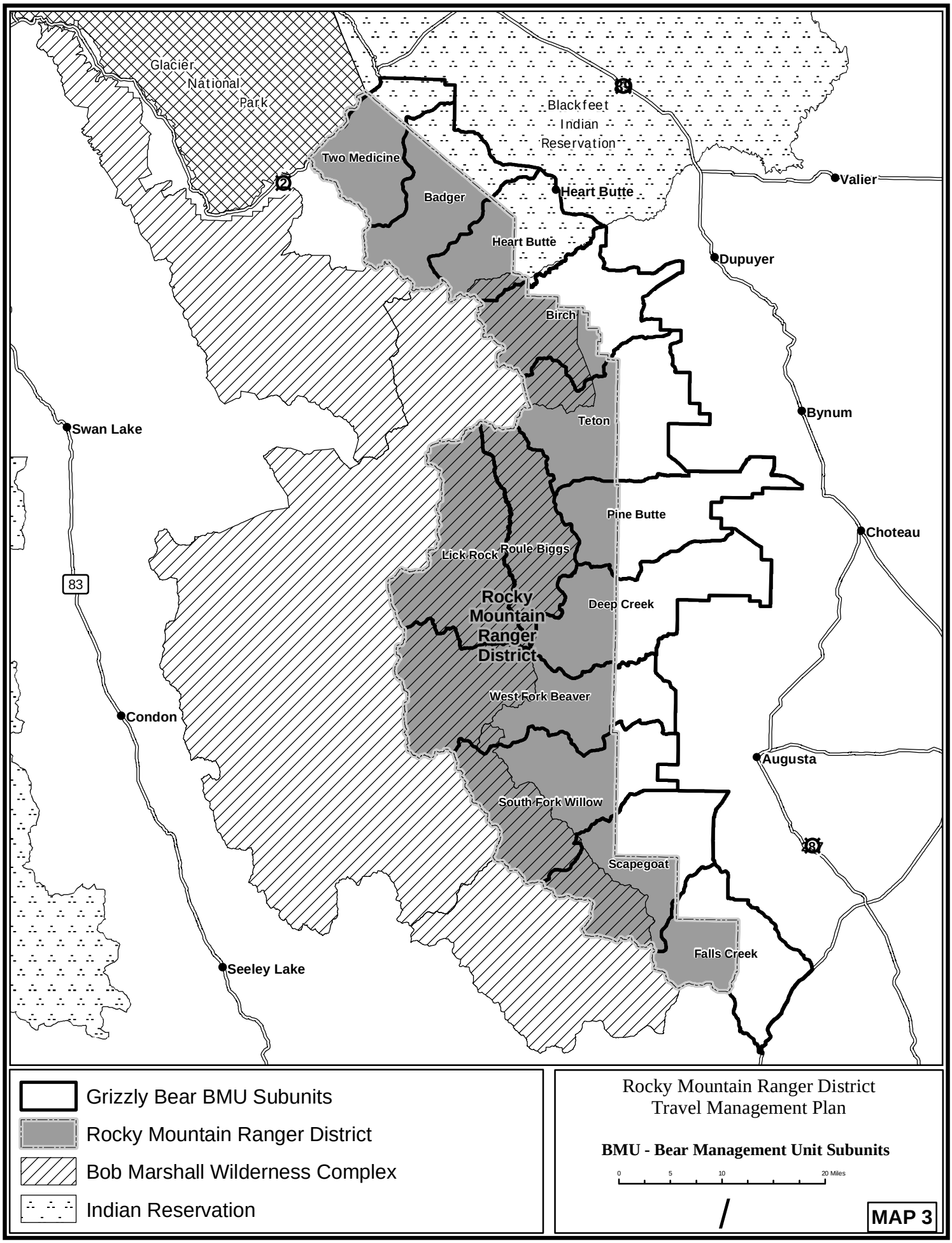
Potential grizzly bear spring and denning habitats have been mapped for the RMRD based on general habitat and landscape characteristics and information derived from studies of radio-collared bears. Table 3 shows the amount of mapped grizzly bear habitat in and adjacent to the RMRD, as well as the amount and percent on NFS lands and within the project area. For completeness, this table includes figures for the Badger-Two Medicine area that are not under consideration in the current decision. Nearly all denning habitat in the area occurs on NFS lands, while a large majority of the spring habitat occurs on non-NFS lands east of the boundary.

Table 3. Total Acreage of Grizzly Bear Denning and Spring Habitats, and Acreage and Percent of each Habitat within National Forest Boundary and within Badger-Two Medicine and Birch-South Areas

Habitat	Total Acreage	Acreage Within NF Boundary	% of Total Habitat Within NF Boundary	Acreage of Habitat in Badger-Two Medicine	% of NF Habitat in Badger-Two Medicine	Acreage of Habitat in Birch-South[1]	% of NF Habitat in Birch-South[1]
Grizzly Bear Denning	340,840	333,200	98%	45,270	14%	287,930	86%
Grizzly Bear Spring[2]	632,870	205,410	32%	46,720	23%	158,680	77%

[1] Acreage and percent of habitats in Birch-South portion includes habitat within designated Wilderness
[2]Acreage and percent of spring habitat within NF boundary includes approximately 1% of total spring habitat that occurs on private inholdings inside the NF boundary

The RMRD has been divided into Bear Management Units (BMUs) and Subunits to facilitate analysis of project effects and to evaluate recovery goals (Map 3). Each BMU Subunit approximates the size of an adult female grizzly bear's annual home range. See Table 4 for acreage of each BMU subunit and the portion of each that is on NFS lands and within Wilderness. For completeness, this table includes figures for the 3 Subunits in the Badger-Two Medicine area that are not under consideration in the current decision, as


Glacier National Park
Blackfeet Indian Reservation
Two Medicine
Badger
Heart Butte
Heart Butte
Valier
Dupuyer
Birch
Bynum
Swan Lake
Teton
Pine Butte
Choteau
Lick Rock
Roule Biggs
83
Rocky Mountain Ranger District
Deep Creek
West Fork Beaver
Condon
Augusta
South Fork Willow
Scapegoat
Falls Creek
Seeley Lake
Grizzly Bear BMU Subunits
Rocky Mountain Ranger District
Bob Marshall Wilderness Complex
Indian Reservation
Rocky Mountain Ranger District
Travel Management Plan
BMU - Bear Management Unit Subunits
0
5
10
20 Miles
MAP 3

well as figures for 2 subunits that fall entirely within designated Wilderness and are therefore outside the project area. The project area (the non-wilderness portion of the RMRD south of the North Fork of Birch Creek) includes portions of 8 BMU Subunits out of a total of 13 on the RMRD. The portions of the 8 Subunits within the project area that extend onto non-NFS lands to the east, as well as the portions of 5 of those Subunits that fall within designated Wilderness are not included in the travel managment decision. Nevertheless, most of the analysis with respect to grizzly bears occurs at the level of the Subunit and will therefore incorporate both non-NFS lands and designated wilderness.

Table 4. Total Acreage of BMU Subunits, and Acreage and Percent of each BMU within National Forest Boundary and within Designated Wilderness

Subunit	Total Acreage in Subunit	Acreage Within NF Boundary	% of Subunit Within NF Boundary	Acreage in Wilderness	% of Subunit Within NF Boundary in Wilderness	% of Subunit in Wilderness
Badger Two Medicine Area:						
Two Medicine	62,780	47,520	76%	0	--	--
Badger	82,430	56,660	69%	0	--	--
Heart Butte	71,020	33,380	47%	5,620	17%	8%
Birch South Area:						
Birch	94,640	47,050	50%	40,240	86%	43%
Teton	113,200	58,250	51%	14,800	25%	13%
Roule Biggs	64,120	64,120	100%	64,120	100%	100%
Lick Rock	101,060	101,060	100%	101,060	100%	100%
Pine Butte	87,170	25,960	30%	0	--	--
Deep Creek	104,700	40,850	39%	0	--	--
West Fork Beaver	142,420	120,830	85%	78,920	65%	55%
South Fk Willow	120,730	97,380	81%	50,620	52%	42%
Scapegoat	100,900	58,030	58%	30,350	52%	30%
Falls Creek	84,950	30,540	36%	0	--	--

Following direction in the Interagency Grizzly Bear Management Guidelines (Interagency Grizzly Bear Committee 1986), the RMRD has been stratified into Management Situations (MS) to prioritize habitat and multiple-use management in relation to grizzly bear recovery. Nearly all (98%, or over 760,000 acres) of the RMRD is classified as MS-1, which contains grizzly bear population centers and habitat key to species survival and recovery. Management priorities in MS-1 are to maintain/improve

grizzly bear habitat, minimize grizzly-human conflicts, and to make management decisions that favor the needs of the grizzly bear when grizzly habitat and other land use values compete. A small portion (2%, or roughly 14,000 acres) of the RMRD is designated MS-3. This habitat is located around existing centers of human activity such as recreation residence tracts, permitted lodges, and campgrounds. Management priorities in MS-3 habitat are to manage grizzly-human conflicts and to discourage grizzly bear presence and factors contributing to their presence. An additional roughly 5,000 acres that fall within the boundary of the RMRD are privately owned; nearly half of this private inholding acreage is at the north end of the Badger-Two Medicine area immediately adjacent to U.S. Highway 2.

Direct, Indirect, and Cumulative Effects Analysis

Direct and Indirect Effects

Access Management

Overview

To protect important seasonal grizzly bear habitat from disturbance, the Lewis and Clark National Forest has relied primarily upon the dates recommended in the Rocky Mountain Front Interagency Wildlife Guidelines (RMF Guidelines) to restrict motorized access in those habitats. Adherence to the RMF Guidelines is incorporated as a Forest-Wide Wildlife Management Standard (C-1, p.2-31) in the LCNF Forest Plan. Restriction dates recommended by the RMF Guidelines were incorporated into the 1988 Travel Plan, and were included as key factors in developing the Proposed Plan. Thus LCNF has not adopted formal motorized access route density objectives as have some other national forests in the NCDE and other ecosystems where grizzly bears are present.

The IGBC Access Management Taskforce Report on Grizzly Bear/Motorized Access Management (Taskforce Report) published in 1993 provided the basis for development in 1995 of the Interim Motorized Access Management Direction for the NCDE (Interim Direction). The Interim Direction calls for calculating total motorized access route density (TOTMARD), to include all routes that are designated as motorized regardless of seasonal or year-round restrictions, and open motorized access route density (OPMARD), to include all routes that are open to motorized travel at any time during the non-denning season (1 April – 30 November). Core, consisting of blocks of habitat that are $\geq$ 2500 acres in size and more than 500m from an open motorized or high-use non-motorized road or trail, is also to be calculated. According to the Interim Direction TOTMARD, OPMARD and CORE are to be calculated for each BMU Subunit regardless of ownership pattern, for the entire non-denning season. Guideline values for the % of each Subunit at a certain density of TOTMARD and OPMARD or in Core are to be applied only to federal lands within the Subunit. The Interim Direction recommendations are as follows:

- TOTMARD: No increase; move toward $\leq$19% of Subunit in $\geq$2 mi/mi^2 density category on federal lands
- OPMARD: No increase; move toward $\leq$19% of Subunit in $\geq$1 mi/mi^2 density category on federal lands

- CORE: No decrease in % of analysis area in Core. Move toward ≥ 68% of Subunit in Core on federal lands.

The Taskforce Report was updated in 1998, noting among other things that OPMARD and Core may be calculated or identified by season. The Report recommended that each ecosystem subcommittee of the IGBC develop or update their access management direction based on relevant ecosystem-specific information. The NCDE Access Management Rule Set Proposed Direction (IGBC 2001) was subsequently developed, proposing a set of guidelines that addressed some difficulties in applying the original guidelines, and suggested more specific protocols for calculation of densities. The Proposed Direction also incorporated important differences between grizzly bear habitats and land ownership and management east of the Continental Divide versus west of it, included consideration of percent federal ownership of subunits, and attempted to address seasonal changes in grizzly bear habitat needs. Objectives for the Proposed Direction are measured in kilometers per square kilometer, to be more in line with units used in scientific research, but they are therefore difficult to compare directly with calculations made under the Interim Direction. The Proposed Direction has not yet been formally accepted by the IGBC.

Meanwhile, in 1995 the Flathead National Forest adopted Amendment 19 (A-19), amending their Forest Plan to incorporate access management standards. These standards are based on the 1995 NCDE Interim Direction but include more specific application of density standards based on percent federal ownership in a Subunit. A protocol was developed to calculate TOTMARD, OPMARD, and Core for all projects to evaluate compliance with A-19. The A-19 standards are as follows:

- TOTMARD
  - Subunits ≥ 75% NFS lands: ≤19% of Subunit in ≥2 mi/mi^2 density category
  - Subunits < 75% NFS lands: no net increase in % of Subunit in ≥2 mi/mi^2 density category
- OPMARD
  - Subunits ≥ 75% NFS lands: ≤19% of Subunit in ≥1 mi/mi^2 density category
  - Subunits < 75% NFS lands: no net increase in % of Subunit in ≥ 1 mi/mi^2 density category
- CORE
  - Subunits ≥ 75% NFS lands: ≤ 68% of Subunit in core areas ≥ 2500 acres
  - Subunits < 75% NFS lands: no net decrease in % of Subunit in core areas ≥ 2500 acres.

Despite not having adopted access management standards based on the NCDE Interim or Proposed Direction, the LCNF has conducted an access management analysis to evaluate motorized access on the RMRD under the existing (1988) Travel Plan and under the Proposed Plan. The FNF A-19 standards provide a useful and familiar point of reference because they have been formally established in a Forest Plan Amendment and applied to

a number of land management projects on the FNF. Therefore the A-19 protocol used by the Flathead National Forest, modified slightly to account for some minor differences in available type and quantity of data, was used to carry out the analysis for the RMRD travel plan. Specific information regarding those modifications as well as other details on application of the access management analysis to the RMRD is available in the project file. Results are compared to A-19 standards for a point of reference, as well as to the NCDE Interim Direction.

In addition to calculations made for the entire non-denning season OPMA and Core were calculated by season, as suggested in the 1998 IGBC Taskforce Report and in the NCDE Proposed Direction. Calculating these values by season better reflects specific concerns about impacts to important grizzly bear habitats, and allows better evaluation of the effectiveness of adhering to the RMF Wildlife Guideline recommendations for seasonal restrictions on motorized access. The results for the Birch-South area are displayed by analysis category in Tables 5-11 below, and are organized to group Subunits by ownership level per the A-19 divisions. The tables do not include the Badger-Two Medicine portion of the RMRD, for which a later decision will be made. The tables also do not include the 2 wilderness Subunits, which meet objectives for TOTMARD, OPMARD, and Core in both the Existing Situation and the Proposed Plan. In all tables, numbers in **Bold** indicate Subunits or portions of Subunits that would not be in compliance if the A-19 standards were applied to the RMRD Existing Situation. Numbers in *Italics* indicate Subunits or portions of Subunits that would not meet the A-19 numeric objective under the Proposed Plan, even if they meet the standard by moving toward the numeric objective.

Total Motorized Access Route Density (TOTMARD)

TOTMARD calculations include all roads and trails that are designated for motorized travel, regardless of whether or not there are seasonal or yearlong restrictions present.

Table 5. TOTMARD: Percent of each Subunit portion in >2mi/mi^2 density class, by ownership category.

	Subunit	NFS Lands Portion		All Lands in Subunit		Non-NFS Lands Portion[1]	
		Existing	*Proposed*	*Existing*	*Proposed*	*Existing*	*Proposed*
≥75% NFS Lands	***W. Fork Beaver***	2.90	2.65	7.06	7.00	**29.73**	*30.68*
	S. Fork Willow	2.43	1.63	5.59	4.92	17.76	17.60
<75% NFS Lands	***Birch***	3.26	0.13	**23.04**	*21.03*	**42.62**	*41.72*
	Teton	5.82	3.97	17.47	16.03	**29.45**	*28.42*
	Pine Butte	11.7	3.38	**20.83**	18.35	**24.70**	*24.70*
	Deep Creek	9.1	1.23	18.26	15.35	**23.53**	*23.48*
	Scape-goat	2.29	2.22	14.00	13.96	**29.76**	*29.76*
	Falls Creek	5.99	0.17	**22.47**	*19.90*	**31.71**	*30.98*

[1] Differences between Existing and Proposed numbers on Non-NFS lands are likely due to portions of routes that are included and managed as NF system routes but that travel across non-NFS lands. Note that all such differences are minor, involving short portions of road or trail, and do not affect compliance of those lands.

The NFS lands portion of all Subunits meets the A-19 standard in both the Existing Situation and the Proposed Plan. Three of 6 Subunits with <75% NFS lands do not meet the A-19 recommendation as a whole in the Existing Situation, but all 6 subunits would move in that direction under the Proposed Plan, thus meeting the A-19 standard, and the Interim Direction.

Open Motorized Access Route Density (OPMARD)

OPMARD calculations included all routes that are open for motorized travel during the season for which the calculation was made. Routes are included regardless of the estimated use level; i.e. some routes may be open during all or part of the non-denning season, and therefore included in OPMARD calculations, but they may receive little or no use all or part of that time. Development of OPMARD differs from the A-19 protocol as follows: under A-19, the method of closure (e.g. berm vs. gate) determines inclusion or exclusion from OPMARD, and that determination differs for roads and trails. For the RMRD calculation, method of closure was not considered, and all motorized routes were treated the same.

The Proposed Direction stresses that the benefits of the proposed access management "depend heavily on effective implementation of a 'gated' road management system". The RMRD, however, has a total of only 135 miles of road within an area of over 776,000 acres (with 105 road miles on 264,000 acres considered in the current travel management decision). Almost all of these roads are closely tied to major public access points such as trailheads, campgrounds, and recreation residences, and are therefore considered "uncloseable". Thus very few roads are involved in the access management issue and in TOTMARD calculations on the RMRD. Roads may be a more critical issue both on the west side and with respect to requirements for gates or other physical closure devices. The RMRD access issue revolves primarily around motorized trails, and very few physical closure devices are used to implement seasonal or other restrictions on trails. The majority of ATV trails are in the Badger-Two Medicine area. Motorized trails in the Birch-South decision area are almost entirely single-track motorcycle trails that receive almost no use at any time of year due to a combination of terrain, trail structure, and lack of a significant motorcycle user group. Most of these single-track trails are also relatively inaccessible until after the critical spring season.

OPMARD calculations were carried out for the entire non-denning season (1 April – 30 November), as well as for spring (1April – 30 June), and summer/fall (1 July – 30 November). Seasonal calculations were done to examine the effectiveness of seasonal restrictions on motorized routes based on the RMF Guidelines.

Summer and/or fall also include the maximum number of routes that might be open at any time during the non-denning season, because most seasonal closures are in place either in spring to protect grizzly bear spring or elk calving habitats, or in fall to protect elk and other big game habitats during general rifle hunting season. Summer/fall OPMARD is thus the same as OPMARD for the entire non-denning season. Therefore the results for overall non-denning OPMARD and summer/fall OPMARD are presented in a single table (Table 6) below.

A number of motorized routes on the RMRD are restricted to motorized access between 15 October and 1 December (general rifle hunting season) under both the Existing Condition and the Proposed . These routes were included in fall OPMARD totals, however, because the fall season for bears is considered to begin 1 September, fully 6 weeks before the restrictions begin. Therefore OPMARD for both summer and fall include the same routes. It should be noted, however, that OPMARD is further reduced for half the bear fall season, at a time when motorized use likely increases on many unrestricted routes and human activity overall likely increases as well. Hunting season restrictions on motorized access likely provide additional security for bears that have not yet entered hibernation.

It is important to note that nearly all of the 105 miles of road open seasonally or yearlong on the RMRD under the Existing Condition are open yearlong or for a long enough period to be included in all OPMARD calculations. With respect to trails, of the 209 miles of motorized trail in the Existing Condition, 144 miles are single-track trail open to motorcycle use only. Although no numeric data are available regarding use levels, it is

generally accepted that these trails receive very low levels of use throughout the time period they are open. All or part of most of these trails are inaccessible during the spring due to snow, high water, or wet and muddy conditions. Similar patterns of use are expected under the Proposed Plan, with the available motorized trail miles greatly reduced (74 total trail miles, 24 of them open to ATV and motorcycle, and 50 of them single-track trails open to motorcycle only). Thus many trails included in OPMARD calculations for both the Existing Situation and the Proposed Plan may actually receive little or no use.

Table 6. OPMARD for Entire Non-Denning Season (1 April – 30 November) and for the Summer/Fall Season (1July – 30 September): Percent of each Subunit portion in >1mi/mi^2 density class, by ownership category

	Subunit	NFS Lands Portion		All Lands in Subunit		Non-NFS Lands Portion[1]	
		Existing	*Proposed*	*Existing*	*Proposed*	*Existing*	*Proposed*
≥75% NFS Lands	*W. Fork Beaver*	10.64	9.60	**20.04**	*19.18*	**71.3**	*71.41*
	S. Fork Willow	14.5	9.96	**23.3**	*19.63*	**57.17**	*56.85*
<75% NFS Lands	*Birch*	8.95	1.55	**43.34**	*40.40*	**77.37**	*78.85*
	Teton	**23.16**	12.54	**44.46**	*38.30*	**66.37**	*64.78*
	Pine Butte	**46.59**	12.62	**54.00**	*43.88*	**57.14**	*57.14*
	Deep Creek	**40.43**	9.25	**57.13**	*45.51*	**66.74**	*66.38*
	Scape-goat	7.36	7.24	**29.12**	*29.05*	**58.43**	*58.43*
	Falls Creek	**33.64**	2.70	**54.96**	*43.12*	**66.93**	*65.81*

[1] Differences between Existing and Proposed numbers on Non-NFS lands are likely due to portions of routes that are included and managed as NF system routes but that travel across non-NFS lands. Note that all such differences are minor, involving short portions of road or trail, and do not affect compliance of those lands.

The NFS lands portion of all Subunits with ≥ 75% NF ownership meets the A-19 standard in both the Existing Situation and the Proposed Plan. Four of 6 Subunits with <75% NFS lands do not meet the A-19 recommendation on NFS lands or as a whole in the Existing Situation. It should be noted that the Falls Creek subunit does not meet the standard because trails on NFS lands in that Subunit are designated as open to motorcycle use on the travel plan map. These trails, however, are in fact not currently available for motorized use due to restrictions placed by the private landowner who controls access to the Falls Creek trail system.

Under the Proposed Plan the NFS portion of all 6 subunits would meet the density goal, and all 6 subunits would move in that direction in their entirety under the Proposed Plan, thus meeting the A-19 standard as well as the Interim Direction.

Table 7. OPMARD for Spring Season (1 April – 30 June): Percent of each Subunit portion in >1mi/mi^2 density class, by ownership category

	Subunit	NFS Lands Portion		All Lands in Subunit		Non-NFS Lands Portion[1]	
		Existing	*Proposed*	*Existing*	*Proposed*	*Existing*	*Proposed*
≥75% NFS Lands	***W. Fork Beaver***	8.14	4.69	17.84	14.94	**70.73**	*70.83*
	S. Fork Willow	6.31	4.34	16.76	14.80	**56.98**	*55.07*
<75% NFS Lands	***Birch***	3.58	0.77	**40.66**	*40.01*	**77.35**	*78.85*
	Teton	18.77	9.69	**42.05**	*36.85*	**65.97**	*64.78*
	Pine Butte	**19.31**	12.62	**45.87**	*43.88*	**57.14**	*57.14*
	Deep Creek	18.85	9.25	**49.10**	*45.51*	**66.52**	*66.38*
	Scape-goat	7.36	7.24	**29.12**	*29.05*	**58.43**	*58.43*
	Falls Creek	**30.29**	2.70	**53.57**	*43.12*	**66.64**	*65.81*

[1] Differences between Existing and Proposed numbers on Non-NFS lands are likely due to portions of routes that are included and managed as NF system routes but that travel across non-NFS lands. Note that all such differences are minor, involving short portions of road or trail, and do not affect compliance of those lands.

The NFS lands portion and the entire portion of all Subunits with ≥ 75% NF ownership meets the A-19 standard in both the Existing Situation and the Proposed Plan. Only 1 of 6 Subunits with <75% NFS lands does not meet the A-19 density objective on NFS lands in the Existing Situation, and that subunit is at the borderline for meeting the objective. Once again it should be noted that the Falls Creek subunit does not comply on paper, but currently does comply on the ground as discussed above. The greater overall compliance and lower OPMARD densities in spring compared to the entire non-denning season demonstrate the effectiveness of existing seasonal road and trail closures in protecting key seasonal habitats.

Under the Proposed Plan the NFS portion of all 6 subunits with <75% NFS lands would meet the standard, and all 6 subunits would move in that direction in their entirety under the Proposed Plan, thus meeting the A-19 standard, as well as the Interim Direction.

Core Area (CORE)

The analysis of Core Area involves buffering all open motorized roads and trails as well as all high-use non-motorized trails by 500 m. Remaining blocks of habitat ≥2500 acres are then identified and assigned status as secure areas, or Core. Many large blocks of Core are bisected by >1 Subunit boundary. The percentage of each subunit in Core reflects the portion of each Subunit that contains entire blocks of Core or portions of blocks of Core.

Core calculations were carried out for the entire non-denning season (1 April – 30 November), as well as for spring (1 April – 30 June), summer, (1 July – 30 August) and fall (1 September – 30 November). Seasonal calculations were done to examine the effectiveness of seasonal restrictions on motorized routes based on the RMF Guidelines. Unlike OPMARD, Core differs between summer and fall as well as between those seasons and the entire non-denning season due to differences in high-use non-motorized trails. Non-motorized trails receive different levels of use in summer vs. fall because of seasonal changes in recreational pursuits (e.g. hiking/camping vs. hunting) as well as differences in weather and trail condition.

Although a rule exists for determining whether a non-motorized trail is considered high use (>20 parties per week; see NCDE Cumulative Effects Model Manual - 2005), actual data do not exist with which to determine whether a particular trail should be considered high use or not. Use levels were assigned to all trails after discussion with trails and wilderness managers and other FS personnel familiar with those trails and the use they receive in each season. Where there was doubt between 2 use levels, the higher level was assigned in order to arrive at the most conservative estimate of secure grizzly bear habitat.

As noted above under the OPMARD discussion, many trails included in OPMARD calculations, particularly single-track motorcycle trails, may receive little if any actual use during all or part of the non-denning season. Considering this and the manner in which use levels were assigned to non-motorized trails, the results presented below are more likely to underestimate Core than to overestimate it.

Table 8. Core for Entire Non-Denning Season (1 April – 30 November): Percent of each Subunit in Core by ownership category

	Subunit	NFS Lands Portion		All Lands in Subunit		Non-NFS Lands Portion[1]	
		Existing	*Proposed*	*Existing*	*Proposed*	*Existing*	*Proposed*
≥75% NFS Lands	*W. Fork Beaver*	78.12	78.17	68.65	68.7	**17.00**	*17.00*
	S. Fork Willow	**66.95**	*67.01*	**59.21**	*59.28*	**29.42**	*29.50*
<75% NFS Lands	*Birch*	82.81	89.01	**47.05**	*50.55*	**11.66**	*12.48*
	Teton	68.82	75.76	**44.06**	*49.65*	**18.60**	*22.80*
	Pine Butte	**46.16**	81.30	**40.75**	*53.72*	**38.46**	*42.01*
	Deep Creek	**44.98**	*62.36*	**29.87**	*39.20*	**21.18**	*25.87*
	Scape-goat	**62.48**	*62.58*	**50.96**	*51.02*	**35.46**	*35.46*
	Falls Creek	**60.24**	86.11	**37.47**	*48.59*	**24.69**	*27.53*

[1] Differences between Existing and Proposed numbers on Non-NFS lands are likely due to portions of routes that are included and managed as NF system routes but that travel across non-NFS lands. Note that all such differences are minor, involving short portions of road or trail, and do not affect compliance of those lands.

The NFS lands portion of one Subunit with ≥ 75% NF ownership meets the A-19 standard in both the Existing Situation and the Proposed Plan. The South Fork Willow Subunit does not meet the standard in either situation, although the Proposed Plan moves this subunit closer to the standard. As displayed in Tables 9-11 below for seasonal Core calculations, the South Fork Willow Subunit meets the A-19 standard for Core in spring and summer, but not in fall. As discussed above in the OPMARD section, the density of open motorized routes is the same in both summer and fall. The only difference between these seasons that influences the amount of Core area is the density of high-use non-motorized trails in the Subunit. Thus it is the contribution of fall (likely hunting-related) travel on non-motorized trails, rather than motorized travel, that heavily influences Core calculations in this Subunit and prevents it from achieving ≥68% Core for the entire non-denning season. Under the Proposed Plan this Subunit meets the Interim Direction, however, by not decreasing Core and by moving toward the 68% objective. As discussed above, it is possible that Core is underestimated in this as in other subunits due to the way in which use levels were assigned to non-motorized trails.

Four of 6 Subunits with <75% NFS lands do not meet the A-19 Core objective on NFS lands or as a whole in the Existing Situation. The Falls Creek subunit does not meet the standard because trails on NFS lands in that Subunit are designated as open to motorcycle

use on the travel plan map. These trails, however, are in fact not currently available for motorized use due to restrictions placed by the private landowner who controls access to the Falls Creek trail system.

Under the Proposed Plan the NFS portion of 4 of those 6 subunits would meet the objective, and all 6 subunits would move in that direction in their entirety under the Proposed Plan, thus meeting the A-19 standard, as well as the Interim Direction. As with the South Fork Willow Subunit, Core in the Deep Creek and Scapegoat subunits is limited by high use of non-motorized trails during the fall (hunting) season.

Table 9. Core for Spring Season (1 April – 30 June): Percent of each Subunit portion in >2mi/mi^2 density class, by ownership category

	Subunit	NFS Lands Portion		All Lands in Subunit		Non-NFS Lands Portion[1]	
		Existing	*Proposed*	*Existing*	*Proposed*	*Existing*	*Proposed*
≥75% NFS Lands	***W. Fork Beaver***	87.95	91.50	76.98	79.98	**17.17**	*17.17*
	S. Fork Willow	93.27	95.22	80.11	81.69	**29.42**	*29.61*
<75% NFS Lands	***Birch***	95.39	97.40	**53.31**	*54.73*	**11.67**	*12.50*
	Teton	81.14	89.98	**51.58**	*59.47*	**21.18**	*28.10*
	Pine Butte	80.21	86.46	**50.89**	*55.25*	**38.46**	*42.01*
	Deep Creek	79.80	88.81	**42.59**	*48.86*	**21.18**	*25.87*
	Scape-goat	91.46	91.56	**67.69**	*67.75*	**35.7**	*35.70*
	Falls Creek	71.26	96.07	**41.49**	*52.18*	**24.77**	*27.55*

[1] Differences between Existing and Proposed numbers on Non-NFS lands are likely due to portions of routes that are included and managed as NF system routes but that travel across non-NFS lands. Note that all such differences are minor, involving short portions of road or trail, and do not affect compliance of those lands.

During the spring season, the NFS lands portion of all subunits, regardless of ownership level, would meet the A-19 standard and Interim Direction under both the Existing Situation and the Proposed Plan. In the Existing Situation this is likely due to a combination of adherence to the RMF Guidelines in restricting motorized travel, and low levels of use on all trails at this time of year. Under the Proposed Plan, overall reductions in density of motorized routes in combination with low levels of use during spring contribute to the generally high levels of Core. The Proposed Plan would increase the amount of Core in all Subunits considered in their entirety regardless of ownership.

Table 11. Core for Summer Season (1 July – 31 August): Percent of each Subunit portion in >2mi/mi^2 density class, by ownership category

	Subunit	NFS Lands Portion		All Lands in Subunit		Non-NFS Lands Portion[1]	
		Existing	*Proposed*	*Existing*	*Proposed*	*Existing*	*Proposed*
≥75% NFS Lands	*W. Fork Beaver*	78.4	79.91	68.89	70.17	**17.00**	*17.00*
	S. Fork Willow	80.16	82.74	69.70	71.76	**29.42**	*29.50*
<75% NFS Lands	*Birch*	82.81	89.01	**47.05**	*50.55*	**11.66**	*12.48*
	Teton	68.82	75.79	**44.06**	*49.66*	**18.60**	*22.80*
	Pine Butte	**46.16**	81.30	**40.75**	*53.72*	**38.46**	*42.01*
	Deep Creek	**54.22**	77.69	**33.25**	*44.80*	**21.18**	*25.87*
	Scape-goat	84.12	84.22	**63.48**	*63.54*	**35.69**	*35.69*
	Falls Creek	**60.24**	86.20	**37.47**	*48.62*	**24.69**	*27.53*

[1] Differences between Existing and Proposed numbers on Non-NFS lands are likely due to portions of routes that are included and managed as NF system routes but that travel across non-NFS lands. Note that all such differences are minor, involving short portions of road or trail, and do not affect compliance of those lands.

During the summer season, the NFS lands portion and the entire subunit of all subunits ≥75% NF ownership would meet the A-19 standard as well as the Interim Direction under both the Existing Situation and the Proposed Plan. Three of 6 Subunits with <75% NFS lands do not meet the A-19 numeric objective on NFS lands, and none of the 6 meet the objective when considered as a whole. As discussed above in the OPMARD section, the Falls Creek subunit may meet the objective on the ground, despite not meeting it on paper, due to actual restrictions on motorized access into the area by the private owner of the trailhead.

All Subunits would experience increases in Core as a whole under the Proposed Plan, thus meeting the A-19 standard and the Interim Direction. These increases are due entirely to reductions in density of motorized routes on NFS lands under the Proposed Plan, since non-motorized use levels are assumed to remain the same under either situation.

Table 11. Core for Fall Season (1 September – 30 November): Percent of each Subunit portion in >2mi/mi^2 density class, by ownership category

	Subunit	NFS Lands Portion		All Lands in Subunit		Non-NFS Lands Portion[1]	
		Existing	*Proposed*	*Existing*	*Proposed*	*Existing*	*Proposed*
≥75% NFS Lands	***W. Fork Beaver***	84.03	84.09	73.64	73.69	**17.00**	*17.00*
	S. Fork Willow	**66.99**	*67.05*	**59.24**	*59.31*	**29.42**	*29.50*
<75% NFS Lands	***Birch***	82.81	89.01	**47.05**	*50.55*	**11.66**	*12.48*
	Teton	68.82	78.62	**44.06**	*51.68*	**18.6**	*23.99*
	Pine Butte	**48.00**	83.15	**41.30**	*54.27*	**38.46**	*42.01*
	Deep Creek	**45.86**	*65.15*	**30.20**	*40.22*	**21.18**	*25.87*
	Scape-goat	**62.81**	*62.91*	**51.15**	*51.21*	**35.46**	*35.46*
	Falls Creek	**60.24**	86.11	**37.47**	*48.59*	**24.69**	*27.53*

[1] Differences between Existing and Proposed numbers on Non-NFS lands are likely due to portions of routes that are included and managed as NF system routes but that travel across non-NFS lands. Note that all such differences are minor, involving short portions of road or trail, and do not affect compliance of those lands.

Results for the the fall season are similar to those displayed above for the entire non-denning season. The NFS lands portion of one Subunit with ≥ 75% NF ownership meets the A-19 standard in both the Existing Situation and the Proposed Plan. The South Fork Willow Subunit does not meet the standard in either situation due to the level and pattern of high-use non-motorized trails used during the fall (hunting) season rather than to motorized travel.

Four of 6 Subunits with <75% NFS lands do not meet the A-19 numeric objective on NFS lands or as a whole in the Existing Situation. As in summer and for the entire non-denning season, the Falls Creek subunit does not meet the objective on paper but likely does meet it on the ground. This is illustrated by the fact that it would easily meet the standard under the Proposed Plan, in which the only change from the Existing Situation is the removal of the motorized designation from all trails in that area. Use levels are assumed to remain the same under both situations.

Under the Proposed Plan the NFS portion of 4 of the 6 subunits with <75% NFS lands would meet the A-19 numeric objective, and all 6 subunits would move in that direction in their entirety under the Proposed Plan, thus meeting the A-19 standard as well as the Interim Direction. As discussed above for the South Fork Willow Subunit, Core in the

Deep Creek and Scapegoat subunits is limited by high use of non-motorized trails during the fall (hunting) season.

Summary of Access Management Analysis

In summary, the Proposed Plan would result in the NFS portion of all Subunits meeting A-19 standards and Interim Direction for TOTMARD, OPMARD, and Core. In 3 Subunits, Core is limited by fall use levels on non-motorized trails, but the Proposed Plan would meet the standards by moving those Subunits closer to the objective.

A key management tool on the RMRD has been seasonal restrictions on motorized access in seasonally important habitats. However the methods used to determine compliance with the Interim Direction do not include consideration of seasonal restrictions (note that the 1998 Revised IGBC Taskforce Report indicates that OPMARD "may be calculated for a season or yearlong"). Therefore stating that under the Existing Situation some Subunits fail to comply with the Interim Directions when calculated only for the entire non-denning season ignores the fact that some or all of those Subunits may actually comply with the direction during the seasons when bears would most likely be using those areas. This is most likely to be the case in spring, when many trails and some roads are closed to motorized use specifically to provide security for grizzly bears. The relatively high compliance with the Interim Direction for OPMARD on NFS lands when calculated seasonally, particularly in spring, illustrates that the existing system of seasonal restrictions on the RMRD is an effective means for providing habitat security for grizzly bears.

The Proposed Plan would generally not affect the non-NFS lands portion of Subunits. The figures for non-NFS lands for all Subunits illustrate the contribution of those lands to TOTMARD, OPMARD, or Core, and demonstrate very clearly the limit to which decreasing the density of motorized access routes on NFS lands can contribute to increasing grizzly bear security in Subunits as a whole.

Cumulative Effects Model

Overview

Efforts have been made since the late 1980's to develop both unified and area-specific models with which to analyze the cumulative effects of human activity on grizzly bears. Most recently in the NCDE, a Cumulative Effects Model (CEM) has been developed that uses multivariate analysis of data from field studies on grizzly bears to predict seasonal grizzly bear habitat preference (USDA Forest Service et al. 2005). The model was adjusted to create an east-side and a west-side version, recognizing that habitats and grizzly bear use of them appear to differ substantially east vs. west of the Continental Divide. Simply put, the CEM for each area incorporates habitat features identified from satellite imagery that, based on data from research on grizzly bears, are assigned a value to indicate relative importance as grizzly bear habitat. These features in combination provide a Habitat Value (HV) for a given area, indicating the potential importance of that area to grizzly bears as compared to other areas. Calculations are made on a BMU or

BMU Subunit scale, so that each BMU or Subunit is assigned a HV for each season (spring, summer, and fall).

The key to the CEM and the reason behind its development, however, goes beyond simply assigning HV. The CEM uses information on human activities in the area of analysis to adjust the HV. Different types of human activity are assumed to decrease HV by different amounts. The adjustments to the HV made by the CEM after considering all human activities in an area are referred to as the Habitat Effectiveness (HE). Thus a Subunit may have a high HV for spring, for example, indicating that it has the potential to be more valuable than other Subunits, but it may have a relatively low HE because of the presence of a large amount of human activity or influence as compared to other Subunits. Specific information about development of the model, data and rationale behind values used in HV and HE calculations, and paramaterization of the model can be found in the NCDE Cumulative Effects Manual (USDA Forest Service et al. 2005).

Development of the various CEMs was intended to provide an objective, repeatable, and quantifiable measure of the accumulated impact of individual human activities on grizzly bear habitat. The NCDE CEM does that, but it is critically important to understand that the calculated HV and HE values have no intrinsic meaning beyond providing a means to compare local areas or different activities within a single area. The technical group working on development and interpretation of the NCDE CEM agreed that the most useful way to use and understand outputs from the CEM is to look at the relative amount of change from HV to HE in each Subunit. The group agreed that looking at percent loss ([1- (HE/HV)] x 100) appeared to be the simplest and most appropriate way of looking at the CEM results. As an example, if a Subunit has an HV of 10 but an HE of 5, it has experienced a 50% loss in the value of its habitat as a result of human activity. When looking at several Subunits, it is then possible to identify which Subunits have experienced greater or lesser impacts to their inherent habitat potential as a result of accumulated human activities. This method can be used to predict the relative impact of a new activity, such as a road or timber sale, on grizzly bear habitat in an area. It can also be used to compare the relative impacts of alternative activities within a specific area by comparing the percent loss in HV that would be caused by each alternative.

CEM Analysis

To provide a means of comparing the potential impacts on grizzly bear habitat of the existing (1988) RMRD Travel Plan with the potential impacts of the Proposed Plan, the east-side NCDE CEM was run at the BMU Subunit level for both situations. For both situations the only differences were in travel management – the quantity and pattern of motorized access routes on the RMRD. All other habitat features and human activity features were the same in both situations.

The most appropriate way to look at this analysis is to compare the percent loss for each Subunit, as described above, under the Existing Condition with the percent loss for each Subunit under the Proposed Plan. Habitat Value (HV) is the same under the Existing Situation and the Proposed Plan, so the comparison of percent loss provides some idea of the reduction in value of grizzly bear habitat due to travel management under the

Proposed Plan as compared to the Existing Situation. The results are displayed by season in Table 12 below for the Birch-South area; wilderness subunits are not included because travel management would be the same under the Proposed Plan as under the Existing Situation, so both HE and HV are the same under both situations. The percent loss under both the Existing Situation and Proposed Plan is displayed, as well as a measure of the degree to which that value would change under the Proposed Plan as compared to the Existing Situation.

Table 12. NCDE East-Side Cumulative Effects Model Results: Percent Loss ([1-(HE/HV)] x 100) Comparison under Existing Situation and Proposed Plan by Subunit and Season

Subunit	SPRING			SUMMER			FALL		
	Existing	***Proposed***	***Change in %: (Ex-Pref)x100***	***Existing***	***Proposed***	***Change in %: (Ex-Pref)x100***	***Existing***	***Proposed***	***Change in %: (Ex-Pref)x100***
Birch	26.03%	24.82%	**1.21%**	18.84%	15.65%	**3.19%**	16.06%	13.38%	**2.68%**
Teton	23.31%	21.82%	**1.49%**	17.23%	14.23%	**3.00%**	13.65%	10.98%	**2.67%**
Pine Butte	29.21%	28.93%	**0.28%**	18.11%	18.11%	**0.00%**	17.23%	16.92%	**0.31%**
Deep Creek	25.21%	23.85%	**1.36%**	18.48%	16.11%	**2.37%**	16.48%	16.10%	**0.38%**
W. Fork Beaver	8.28%	7.67%	**0.61%**	6.25%	6.25%	**0.00%**	4.39%	4.16%	**0.23%**
S. Fork Willow	13.38%	12.89%	**0.49%**	10.80%	7.95%	**2.85%**	8.22%	6.67%	**1.55%**
Scape-goat	21.42%	21.42%	**0.00%**	16.17%	16.17%	**0.00%**	13.21%	13.21%	**0.00%**
Falls Creek	27.25%	27.25%	**0.00%**	19.82%	19.37%	**0.45%**	16.49%	16.14%	**0.35%**

Summary of CEM Analysis

In all Subunits and all seasons, the Proposed Plan either does not alter or decreases the amount by which HV is reduced by human activity, effectively maintaining or improving the value of grizzly bear habitat. The amount by which the Proposed Plan does this indicates the relative degree of improvement and is displayed in the "Change in %" column in Table 12 above. In the Birch Subunit in spring, for example, there would be a 1.21% less reduction in HV due to human activity in the Proposed Plan than in the Existing Situation. Put another way, the habitat in the Birch Subunit would be 1.21% better under the Proposed Plan.

Differences between the Existing Situation and the Proposed Plan appear to be greatest in the summer. Summer is when the most motorized routes would be open under either situation, so the greater difference during that season illustrates the degree to which the overall reduction in motorized routes under the Proposed Plan would affect grizzly bear habitat. Differences between the Existing and Proposed are least in spring, reflecting the existing protection of important seasonal habitat through restrictions on motorized travel in the spring.

Use levels on motorized routes were assigned as described in the Access Management analysis above for non-motorized routes. Where there was question, the higher level was assigned in order to be conservative about estimates of grizzly bear habitat.

Forest Plan Direction

The LCNF Forest Plan includes a variety of standards and guidelines that either directly or indirectly address management of grizzly bears and grizzly bear habitat management. Table 13 below summarizes Forest Plan standards that are relevant to the proposed project or that pertain directly or indirectly to grizzly bear habitat management. This table also displays how both the Existing Situation and the Proposed Plan comply with those standards, with differences highlighted in the Proposed Plan column.

Table 13. Lewis and Clark National Forest Plan Standards for Grizzly Bear and Management of Roads and Motorized Trails.

Forest Plan Standards	Existing	Proposed Plan	Compliance
Manage motorized use on NFS lands… to reduce effects on wildlife during periods of high stress (Wildlife & Fish C-1-6)	RMF Guidelines used to apply seasonal restrictions on motorized use primarily in grizzly bear spring and denning habitats	Continued use of restrictions in addition to **overall reduction in mileage/density of motorized routes**	YES
Use the Interagency Wildlife (RMF) Guidelines to manage land-use activities occuring within the habitat of these species on the RMF (Wildlife & Fish, C-1-11)	RMF Guidelines used to apply seasonal restrictions on motorized use primarily in grizzly bear spring and denning habitats	Continued use of restrictions in addition to **overall reduction in mileage/density of motorized routes**	YES
Maintain active communication with research and use current research for planning and implementation of projects in T&E species habitat (Wildlife & Fish, C-2-4)	Ongoing involvement with NCDE subcommittee and other groups at Forest and District level	No change	YES
Use the Interagency Grizzly Bear Guidelines to coordinate multiple-use activities and manage T&E habitat (Wildlife & Fish, C-2-5; C-2-7, C-2-8)	Entire RMRD stratified into MS-1 (98%) and MS-3 (2%) habitat; appropriate management based on Interagency Guidelines applied to all activities accordingly	No change	YES
Schedule direct habitat improvement projects (Wildlife & Fish, C-2-6)	Periodic habitat improvement projects usually designed to benefit multiple species, including grizzly bears	No change	YES

Forest Plan Standards	Existing	Proposed Plan	Compliance
Establish an active public information and education program addressing T&E species management; emphasize protective measures (Wildlife & Fish, C-2-11)	Various ongoing public information efforts; major emphasis on enforcement of the NCDE Food Storage Order	No change	YES
Grazing will be made compatible with grizzly bears and/or habitat or discontinued (Range, D-4-6)	Most on-dates after July 1; ongoing monitoring of livestock forage consumption in riparian zones	No change	YES
Coordinate timber harvest activities with seasonal grizzly bear habitat use (Timber E-4-14); maintain or improve bear food production on harvest sites (Timber E-4-15,16,17,18); maintain escape cover and isolation for grizzly bears (Timber E-4-19)	Standard applied to past sales and incorporated into project development for planned fuels reduction projects. Projects since 1988 have averaged 3.5 acres, and maximum size has been ≤20 acres.	No change	YES
Limit firewood cutting on timber harvest roads, and permanently close after 2-3 years (Timber, E-2-4)	Minimal mileage of road, all within 1 mile of existing main access road, available for firewood cutting. No new roads for past >10 years.	**Slightly reduced mileage of road available for firewood cutting**.	YES
Protect T&E species through no surface occupancy and controlled surface use stipulations, timing limitations, and use of Interagency Guidelines for minerals operations and leases (Oil & Gas Leasing, Exploration Drilling Field Development, and Production, G-2-9, 10)	Stipulations and timing restrictions applied to all leases and to proposals for exploration and production. No active oil and gas operations for past >10 years.	No change	YES

Forest Plan Standards	Existing	Proposed Plan	Compliance
Unacceptable damage to.. wildlife… will be mitigated by road restrictions or other road management actions…Coordinate wildlife restrictions with MFWP (Facilities/Travel Planning, L-2-4)	RMF Guidelines used to apply seasonal restrictions on motorized use primarily in grizzly bear spring and denning habitats	Continued use of restrictions in addition to **overall reduction in mileage/density of motorized routes**	YES
Use the Interagency Wildlife Guidelines to avoid or mitigate conflicts between road construction and use and T&E species (Facilities/Travel Planning, L-2-33)	RMF Guidelines used to apply seasonal restrictions on motorized use primarily in grizzly bear spring and denning habitats	Continued use of restrictions in addition to **overall reduction in mileage/density of motorized routes**	YES
Implement seasonal or year-round closures on existing or proposed roads if… they are necessary to allow grizzly use of important habitat, to reduce conflict, or to meet habitat objectives (Facilities/Travel Planning, L-2-34)	RMF Guidelines used to apply seasonal restrictions on motorized use primarily in grizzly bear spring and denning habitats	Continued use of restrictions in addition to **overall reduction in mileage/density of motorized routes**	YES
Management Area (MA) Direction			
MA-E (79,900 acres or 10% of RMRD) Goal: Provide sustained high level of forage for livestock and big game. Objectives: Maintain important identified wildlife habitat, including T&E habitat; achieve low (0.5-1.5 mi. open road/mi^2 area) public access through permitting motorized use on all arterial and most collector roads	Overall open road density 0.2 mi/mi^2; motorized travel permitted on designated trails; no off-trail motorized travel allowed	**Overall open road density 0.16 mi/mi$^{2;}$ reduced mileage of motorized trails**; no off-trail motorized travel allowed	YES

Forest Plan Standards	Existing	Proposed Plan	Compliance
MA-F (58,500 acres or 7.5% of RMRD) Goal: Emphasize semi-primitive recreation opportunities, while maintaining and protecting other Forest resources. Objectives: Minimize impact on identified wildlife habitat, including T&E habitat; Do not construct roads for surface use activities; obliterate roads built for subsurface use when not needed; close all areas and trails to ORVs except designated routes	No new roads built; road provisions and other stipulations included in leases and applications for subsurface use; no off-trail motorized travel allowed	No new roads proposed; road provisions and other stipulations included in leases and applications for subsurface use; no off-trail motorized travel allowed; **reduced mileage of motorized trails**	YES
MA-G (103,400 acres or 13% of RMRD) Goal: Maintain and protect Forest resources with minimal investment. Objectives: Maintain important identified wildlife habitat, including T&E habitat; minimize public access by limiting motorized use to existing roads and travelways; obliterate roads built for subsurface use when not needed.	No new roads built; road provisions and other stipulations included in leases and applications for subsurface use; no off-trail motorized travel allowed	No new roads proposed; road provisions and other stipulations included in leases and applications for subsurface use; no off-trail motorized travel allowed; **reduced mileage of motorized trails**	YES

Forest Plan Standards	Existing	Proposed Plan	Compliance
MA-H (11,500 acres or 1.5% of RMRD) Goal: Provide recreation supported by public and private developments while maintaining other resource values Objectives: Minimize impacts on important identified wildlife habitat, including T&E habitat; achieve high (+3.0 mi. open road/mi^2 area) public access through permitting motorized use on all arterial and most collector roads	Primarily areas around main access roads, recreation residences and other developed areas. Patrols by recreation guards for public information and enforcement of NCDE Food Storage Order; overall open road density 2.99 mi/mi^2	**Overall open road density 3.51 mi/mi^2**; no other change	YES
MA-I (20,100 acres or 3% of RMRD) Goal: Maintain or enhance important big-game habitat… emphasize the management of T&E species habitat such as grizzly bear spring range Objectives: Maintain important identified wildlife habitat, including T&E habitat; allow occupancy for minerals where wildlife habitat can be maintained and surface quality can be fully reclaimed; achieve low (0.5-1.5 mi. open road/mi^2 area) public access through permitting motorized use on all arterial and most collector roads	Overall open road density 0.31 mi/mi^2; no new roads built; road provisions and other stipulations included in leases and applications for subsurface use; motorized travel permitted on designated trails; no off-trail motorized travel allowed	**Overall open road density 0.35 mi/mi^2**; no new roads proposed; road provisions and other stipulations included in leases and applications for subsurface use; **motorized travel permitted on designated trails after June 30**; no off-trail motorized travel allowed	YES

Forest Plan Standards	Existing	Proposed Plan	Compliance
MA-N (42,700 acres or 5.5% of RMRD) Goal: Manage to maintain wilderness characteristics pending decision on wilderness recommendation Objectives: Maintain important identified wildlife habitat, including T&E habitat; minimize public access by limiting motorized use to existing roads and travelways; do not construct roads for surface use; roads for subsurface use will be closed to public and obliterated when not needed	No new roads built; road provisions and other stipulations included in leases and applications for subsurface use; motorized travel permitted on designated trails; no off-trail motorized travel allowed	No new roads proposed; road provisions and other stipulations included in leases and applications for subsurface use; **greatly reduced mileage of motorized trails**; no off-trail motorized travel allowed	
MA-O (23,100 acres or 7.5% of RMRD) Goal: Protect, maintain, and improve resource quality while providing timber at low intensity level to meet local need. Objectives: Maintain important identified wildlife habitat, including T&E habitat; minimize public access by limiting motorized use to existing roads and travelways; roads constructed for surface and mineral use will be closed to the public; roads will be located…for the most economical commodity… management along with production of T&E species habitat.	No new roads built; road provisions and other stipulations included in leases and applications for subsurface use; no new roads for proposed fuels reduction projects; motorized travel permitted on designated trails; no off-trail motorized travel allowed	No new roads proposed; road provisions and other stipulations included in leases and applications for subsurface use; no new roads for proposed fuels reduction projects; **reduced mileage of motorized trails**; no off-trail motorized travel allowed	

Forest Plan Standards	Existing	Proposed Plan	Compliance
MA-P, Designated Wilderness (385,900 acres or 49% of RMRD) Goal: Manage in accordance with the Wilderness Act of 1964; maintain indigenous animals by protecting natural processes. Objectives: Conservation of T&E species and their habitats will receive high priority; the grizzly bear will continue to be a part of the wilderness experience; public will be informed of but generally not restricted from use of known problem areas; education of bear avoidance techniques will be emphasized.	Fall inspections of hunting camps with estimated >80% contact; bear-resistant container rental program; wilderness ranger public contacts; wildland fire allowed in as many situations as possible	No change	YES
MA-Q, Recommended Wilderness (55,800 acres or 7% of RMRD) Goal: Manage these areas to protect wilderness values Objectives: Maintain important identified wildlife habitat, including T&E habitat	No specific actions; overall open road density 0 mi/mi^2; motorized travel permitted on designated trails; no off-trail motorized travel allowed	Overall open road density 0 mi/mi^2; **reduced mileage of motorized trails**; no off-trail motorized travel allowed	YES

All MAs on the RMRD meet Forest Plan objectives. The Forest Plan direction for MAs, however, provides density objectives only for roads, and tends to be imprecise about motorized trails or overall motorized route density objectives. Evaluation of Forest Plan Management Area direction is an important component of assessing how well current Forest Plan direction controls access and therefore protects grizzly bear habitat. Because the amount and location of a particular MA may vary greatly by Subunit, however, and because each Subunit may contain anywhere from one to several MA types, this analysis must occur only as a component of overall analysis of access. Evaluation of MA direction and compliance is most useful if accompanied by maps displaying the quantity and configuration of MAs within each Subunit. These maps are available in the project file.

In sum, the LCNF Forest Plan specifically calls for applying seasonal restrictions to all motorized activities in important seasonal wildlife habitats, based largely on the recommendations included in the RMF Guidelines. These recommendations have been applied rigorously to travel management on both roads and motorized trails beginning with the Existing (1988) Travel Plan, as well as to any projects proposed since the Forest Plan was signed in 1986.

The Forest Plan also calls for any proposed new roads to be single-purpose roads that would be closed to the public during the period of use, and either closed permanently or obliterated upon completion of the project activity. Construction and use of these roads is to be carried out according to the seasonal restrictions recommended in the RMF Guidelines. Although no new road construction has been carried out for at least a decade, all proposals that have included new road construction (primarily oil/gas proposals) have incorporated those provisions.

Cumulative Effects

A number of factors could potentially result in impacts to grizzly bears cumulative to those of the Proposed Travel Plan. These factors are: developed and dispersed recreation, prescribed burning/wildfire, timber harvest, wildlife habitat on adjacent lands, and livestock grazing.

Recreation is one of the primary uses by the public of the RMRD. There are 98 permitted recreation residence cabins on the RMRD, clustered in MS-3 habitat mainly in the Sun Canyon and Benchmark areas. There are also 11 developed campgrounds, as well as numerous dispersed campsites, trailhead facilities, and other recreation sites. A large proportion of visitors to the RMRD travel in the backcountry away from these facilities, where they hike, ride horseback, camp, fish, and hunt. The potential for displacement from these activities and consequent reduction in the value of grizzly bear habitat was displayed above in the results of the CEM. The other potential impact of these recreational activities is access by grizzly bears to human food sources. The RMRD initiated development of the NCDE Food Storage Special Order (current version: Food Storage Special Order LC00-18) in the late 1980’s. Since that time, the RMRD has led efforts in the NCDE to revise the Food Storage Special Order (the Order) to make it both more effective and more enforceable. Several recreation guards are employed to patrol front-country recreation sites, posting signs and contacting the public as well as enforcing

the Food Storage Order. Several wilderness guards are employed to carry out the same tasks in the backcountry, and all employees are trained annually in the basics of the Order and enforcing it. The RMRD carries out a hunting camp patrol in the fall with an estimated >80% contact rate. Enforcement of the Food Storage Order is a primary purpose of those patrols. All activities permitted on the RMRD (including grazing, recreation residences, outfitting and guiding, etc.) include consequences of failing to comply with the Order within their permits. Through these combined efforts, the potential for grizzly bears to gain access to human foods is minimized.

Several wildfires of varying size as well as several smaller prescribed fires have occurred on the RMRD since 1988. At least one prescribed fire was part of a multi-phase grizzly bear habitat improvement project, and others included grizzly bear habitat improvement as a secondary goal or as a consideration. Within the perimeters of all of these fires, a mosaic of fire effects was achieved. Additional prescribed burning is scheduled within the Scapegoat Wilderness as soon as conditions are favorable. This planned fire is expected to create a varied patchwork of fire intensity and effects. Additional natural and prescribed fires may occur throughout the RMRD and adjoining lands in future years. Impacts on habitat will vary depending on the location and severity of the fires and on other factors. Frequently fires result in improved forage for grizzly bears within 1-5 years of their occurrence.

Very little timber harvest has occurred on the RMRD since 1988. A total of 107 acres were harvested between 1988 and 2002, using a variety of techniques ranging from small (1-20 acre) clearcuts, to small (1- 8 acre) thinning and other limited harvest projects. Several of these projects included grizzly bear habitat improvement as an objective, through improving growing conditions for buffaloberry (*Sheperdia canadensis*). The sum of these past harvests has likely had no impact on grizzly bear numbers or distribution.

Several small fuels treatment projects are planned that will alter the vegetation on a total of approximately 750 acres of the RMRD in the Benchmark drainage. The size of individual units varies from 3 to 236 acres, with the majority of units under 25 acres. All units are located immediately adjacent to recreation residences, most of which are in MS-3 habitat, or next to the National Forest boundary. Many treatment units are within mapped grizzly bear spring habitat, although Forest Plan standards restricting activity until after July 1 will be applied to all treatment projects. The result of these projects will be a variety of small openings or thinned canopy.

The area to the west of the project area is the heart of the Bob Marshall Wilderness Complex. Wildlife habitats there are subject almost exclusively to natural forces, such as climate and fire, and receive only minimal influence from human activity. Lands east of the NF boundary are largely privately-owned ranch lands, where livestock husbandry is the primary activity. Although there are 3 state-owned Wildlife Management Areas (WMAs) that provide key ungulate winter range, large numbers of elk and deer also winter on private lands. Grizzly bears are known to frequent lands east of the NF boundary, particularly in spring and late summer/fall. Nearly all grizzly bear-human conflicts occurring in the area known as the Rocky Mountain Front for the past 10+ years

have been on private land. All but one permanent management-related removal (via relocation or killing) from the area have been from private lands. Although significant efforts have been made by agencies and private groups, private lands east of the NF boundary are likely to continue to be a source of grizzly bear mortality.

Livestock grazing occurs within the project area on permitted grazing allotments. Several allotments also exist for limited outfitter/guide horse and mule grazing, most of which are in wilderness. The LCNF Forest Plan (see Table 13 above) requires, through incorporation of the RMF Guidelines and the Interagency Grizzly Bear Guidelines, that grizzly bear-livestock conflicts be resolved in favor of grizzly bears. Known conflicts have been minimal and where they have occurred, livestock permittees have been advised to move cattle from the area to reduce likelihood of further conflict.

Determination of Effects

I have determined implementation of the proposed Federal Action MAY AFFECT, BUT IS NOT LIKELY TO ADVERSELY AFFECT grizzly bears. My determination is based on the following rationale:

1. The Proposed Plan would reduce TOTMARD and OPMARD and increase Core in all Subunits to objectives recommended by the NCDE Subcommittee of the Interagency Grizzly Bear Committee. Motorized access densities on BMU Subunit portions east of the NF boundary, however, largely do not meet objectives and no controls exist to limit those densities. The LCNF Forest Plan includes a number of prohibitions and limitations on future road-building (see Table 13), and requires use of the RMF Wildlife Guidelines to implement restriction dates on human activities in grizzly bear habitat. The 2001 FS/BLM OHV decision and the 2005 FS OHV regulations prohibit off-trail motorized travel. In sum, the Proposed Plan would greatly reduce motorized travel on the RMRD, and would be reinforced by additional restrictions included in the Forest Plan and in recent FS regulations. Cumulative effects of other projects will not result in additional motorized access.
2. The NCDE Food Storage Order has been enforced effectively in both the front country and the back country on the RMRD since its inception. Extensive public education efforts are in place, and all permitted activities include provisions regarding the Order.
3. Timber harvest has been and will continue to be minimal. Treatments will have minimal, and potentially positive impacts on grizzly bear spring forage in localized areas. Fire may impact vegetation but generally in a manner that is positive for grizzly bears. These activities will not result in adverse cumulative impacts to grizzly bears or their habitat.
4. LCNF Forest Plan standards require adherence to the Interagency Grizzly Bear Guidelines for management of multiple use activities in grizzly bear habitat on the RMRD, 98% of which is designated as MS-1 habitat in the LCNF Forest Plan.

Recommendations For Removing, Avoiding, or Compensating Adverse Effects

Adverse effects are not likely to occur under the Proposed Plan. Widespread public education efforts regarding new travel management regulations, coupled with enhanced enforcement of new regulations would help make the transition occur more quickly and smoothly. Effective signing, patrolling, and enforcement as ongoing activities would help avoid adverse effects. Ongoing activities by other agencies, and where appropriate by the U.S. Forest Service, to address and limit grizzly/human conflicts on non-NFS lands will continue to be an important component of maintaining a healthy grizzly bear population in the area.

CANADA LYNX *(Lynx canadensis)*

Legal Status

The Canada Lynx is listed as Threatened throughout the contiguous Unites States.

The USDA Forest Service Region 1 is a signatory to the Lynx Conservation Agreement (USFS #00-MU-11015600-013). Signatories have agreed to take actions to reduce or eliminate adverse effects or risks to the species and its habitat and to maintain the ecosystems on which lynx depend. This agreement will eventually be superceded by the Northern Rockies Lynx Amendment, which will add specific management direction to Forest Plans, including the LCNF Forest Plan. Specific recommendations and guidelines to be followed under the current agreement are contained in the Lynx Conservation and Assessment Strategy (LCAS; Reudiger et al. 2000).

Local Population and Habitat Status

Lynx generally occur in cool, moist coniferous forest types that support populations of their primary prey, snowshoe hare (Reudiger et al. 2000). Sufficient presence of large, woody debris appears to be important for natal den sites (Reudiger et al. 2000). Lynx have been documented throughout the RMRD, with concentrations of observations in the Two-Medicine, Teton, and Sun River drainages. The accumulation of observations in these areas may result in part from the fact that these areas receive more use by forest visitors and employees than other, more inaccessible portions of the RMRD.

Potential lynx habitat has been mapped for the RMRD, using vegetation type and using models developed by the Kootenai National Forest, that were modified to fit conditions on the Lewis and Clark National Forest. Mapped potential lynx habitat is entirely within the NF boundary, and is classified as foraging, denning, or travel habitat (habitat that does not meet the requirements for denning or foraging habitat but that may serve to connect blocks of those habitat types). About 378,500 total acres of lynx habitat has been mapped on the RMRD. Table 14 displays acreage of lynx habitat by area.

Table 14. Total Acreage of Key Wildlife Habitats, and Acreage and Percent of each Habitat within National Forest Boundary and within Badger-Two Medicine and Birch-South Areas

Habitat	Total Acreage	% of Total by Habitat Type	Acreage of Habitat in Badger-Two Medicine	% of Total Habitat in Badger-Two Medicine	Acreage of Habitat in Birch-South	% of Total Habitat in Birch-South
Total Lynx Habitat	378,470	--	61,470	16%	317,000	84%
Lynx Travel Habitat	110,450	29%	25,140	23%	85,320	77%
Lynx Foraging Habitat	171,300	45%	25,980	15%	145,320	85%
Lynx Denning Habitat	96,710	26%	10,350	11%	86,360	89%

As part of the requirements of the Lynx Conservation Assessment and Strategy (LCAS; Reudiger et al. 2000), Lynx Analysis Units (LAUs) were mapped for the RMRD. LAUs are a conceptual framework meant to approximate the home range of a female lynx. They contain blocks of denning and foraging habitat in sufficient quantity to maintain a female lynx throughout the year. The LAU is generally the unit at which project analysis of impacts to lynx habitat is conducted. The RMRD contains 27 LAUs, encompassing all mapped potential lynx habitat as described above (see Map 4).

Direct, Indirect, and Cumulative Effects Analysis

Direct and Indirect Effects

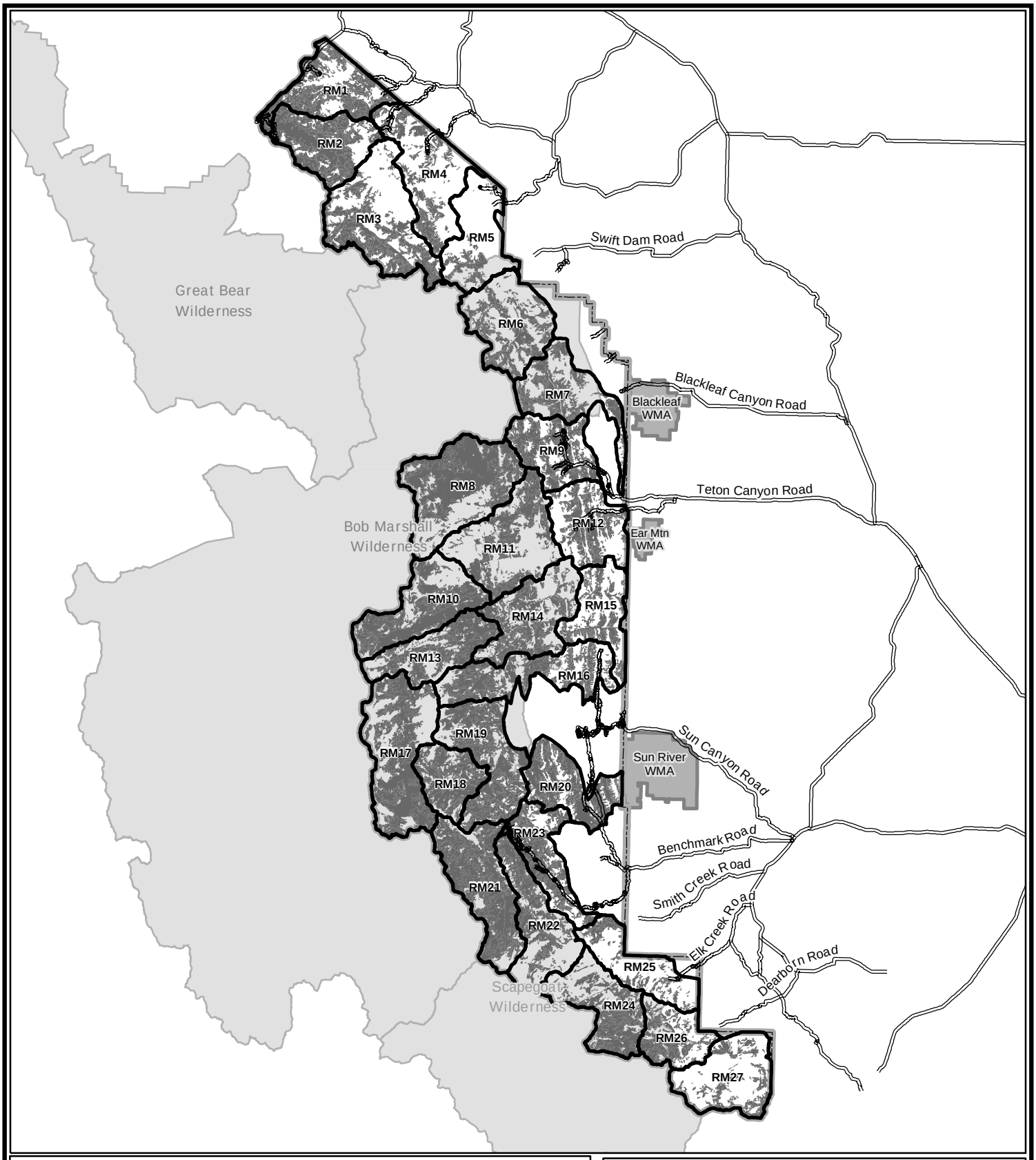
Dispersed Snowmobiling

The LCAS acknowledges that lynx can "adapt to the presence of regular and concentrated recreational use", but that to do so "it is essential that an interconnected network of foraging habitat be maintained that is not subjected to widespread human intervention or competition from other predator species" (Reudiger et al. 2000).

The LCAS guidelines for recreation and travel management planning efforts include:

> Provide a landscape with interconnected blocks of foraging habitat where snowmobile, cross-country skiing, snowshoeing, or other snow compacting activities are minimized or discouraged.

Although the LCAS does not set specific numeric guidelines for dispersed snowmobile travel, the Existing Situation and the Proposed Plan were analyzed to provide an idea of the potential impact this type of activity might have on lynx habitat. This analysis did not include over-the-snow routes, which are discussed separately below, or designated play areas, of which there are none on the RMRD. Table 15 shows the acreage of lynx habitat open to snowmobiles by LAU, and the percent of each LAU this represents. Lynx habitat includes foraging and denning habitat combined, but not habitat potentially used only for



Lynx Habitat

RM18 Lynx Analysis Unit

Rocky Mountain Ranger District Boundary

Wilderness Areas

Wildlife Management Areas

Rocky Mountain Ranger District
Travel Management Plan

Lynx Habitat and
Lynx Analysis Units (LAUs)

0 5 10 20 Miles

MAP 4

travel. LAUs not listed (i.e. breaks in the numbering sequence) have no acreage open to snowmobiles.

Table 15. Acres Open to Snowmobiling in Lynx Habitat by LAU and Percent of Habitat in LAU Open to Snowmobiling

LAU Name	Existing	Open Acres as Percent of Lynx Habitat in LAU	Proposed	Open Acres as Percent of Lynx Habitat in LAU
RM7	1817	**19%**	28	**<1%**
RM9	8704	**99%**	5000	**57%**
RM11	2	**<1%**	0	**--**
RM12	5686	**72%**	892	**11%**
RM14	2	**<1%**	0	**--**
RM15	7024	**100%**	0	**--**
RM16	4419	**36%**	0	**--**
RM18	12	**<1%**	0	**--**
RM19	4722	**30%**	0	**--**
RM20	13104	**97%**	692	**5%**
RM21	965	**5%**	0	**--**
RM22	2402	**24%**	1	**<1%**
RM23	10326	**100%**	831	**8%**
RM25	2709	**99%**	0	**--**
RM26	1987	**42%**	0	**--**
RM27	3564	**100%**	0	**--**
TOTAL	**67,446**	**29%**	**7444**	**3%**

A substantial portion of the acreage listed as open to snowmobiling under both the Existing Situation and the Proposed Plan may not actually be available to snowmobiles. Areas indicated as open were designated by drawing general boundaries on a two-dimensional map. Open areas thus include heavily vegetated areas, cliffs, rocks, steep terrain and other features that are actually unavailable to snowmobiles. Therefore the acreage open to snowmobiles in lynx habitat is likely to be substantially less than that displayed above.

The Proposed Plan would eliminate snowmobiling from lynx habitat in 10 of 16 LAUs in which it is allowed under the Existing Situation. In the LAUs where snowmobiling would

continue to be allowed under the Proposed Plan, the acreage available to snowmobiles in lynx habitat would be greatly reduced. Snowmobiling in lynx habitat on the RMRD as a whole would be reduced by 89% (from 67,400 acres to 7400 acres). As displayed on the Proposed Plan travel plan map (Appendix A) dispersed snowmobiling would only be allowed in two main areas (the Beaver-Willow divide, and portions of the North and South Fork Teton drainages). These localized snowmobile areas, within which only a portion of the landscape would be actually available as discussed above, would concentrate snowmobile use and preserve large blocks of lynx habitat undisturbed by this activity.

Over-the-Snow Routes

Concern regarding potential competition from other predator species provides the basis for the LCAS standard for programmatic planning in recreation management. The guideline for over-snow recreation, as stated in the Modifications of Lynx Conservation Assessment and Strategy, August 2000 Edition – Clarifying Language; Memo from Deputy Regional Forester, August 28, 2003, is to:

> … allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU unless the designation serves to consolidate unregulated use and improves lynx habitat.

Designated over-the-snow routes are defined as "over-the-snow routes (such as trails) and snowmobile play areas (usually large, open areas) that are 'designated', that is specifically marked on a map, described in the resource or forest plan, described in the travel plan, or signed. This definition does not apply to ski areas" (Modifications of Lynx Conservation Assessment and Strategy, August 2000 Edition – Clarifying Language; Memo from Deputy Regional Forester, August 28, 2003). There are very few miles of trail specifically designated as over-the-snow routes on the RMRD. There are, however, several stretches of road that are not plowed in winter but that may be used frequently by snowmobiles, and that therefore may experience compaction on a somewhat regular basis.

Table 16 shows the mileage of designated over-snow routes (trails designated on maps or other official documentation as snowmobile trails or cross-country ski trails) and the miles of road known to be used by snowmobiles in lynx habitat by LAU for both the Existing Situation and the Proposed Plan. Because plowed roads may also provide a compacted surface during winter, the miles of plowed road within lynx habitat are also displayed below.

Table 16. Miles of Designated Over-Snow Routes and Regularly Used Roads in Lynx Habitat, by LAU

LAU Name	Miles of Designated Over-Snow Route		Miles of Road Regularly Used by Snowmobiles		Miles of Plowed Road	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
RM9	1.9	1.9	1.5	1.5	0.7	0.7
RM12	0	0	0.2	0.2	0	0
RM20	0	0	0.2	0.2	0	0
RM23	0	0	1.4	1.4	0	0
TOTAL	1.9	1.9	3.3	3.3	0.7	0.7

There would be no change in the mileage of over-the-snow routes or the mileage of road regularly used by snowmobiles between the Existing Situation and the Proposed Plan. In both situations, the total combined mileage of over-the-snow route, regularly used road, and plowed road within lynx habitat is minimal (6 miles) and is confined to a few localized areas (see Appendix A). In addition to the miles shown, a few other roads, such as access roads to recreation residences, could experience limited over-snow travel. Those roads are usually very short and are located immediately off main access roads that are included under either the regularly used or plowed road totals above. The location and mileage of those would be the same under the Proposed Plan as under the Existing Situation.

The LCAS recommends, with respect to management of forest roads and trails:

> Determine where high road densities (>2 miles per square mile) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas (Reudiger et al. 2000, p. 7-10).

The LCAS also states, however, that "…lynx may not avoid roads, except at high traffic volumes. Therefore, at this time, there is no compelling evidence to recommend management of road density to conserve lynx" (Reudiger et al. 2000). There are only 105 miles of open road in the Birch-South area under the Existing Situation and 85 miles in the Proposed , spread across roughly 264,000 non-wilderness acres on the Birch South portion of the RMRD. Of those non-wilderness acres, over 260,000 acres are Inventoried Roadless.

<u>LCAS Standards</u>

Tables 17-20 below provide a summary of compliance with the appropriate LCAS standards and conservation measures for both the Existing Situation and the Proposed Plan. Text in bold indicates changes between the Existing and the Proposed.

Table 17. Canada Lynx Conservation Assessment and Strategy Standards; Conservation Measures Applicable to All Programs and Activities (LCAS, 7-2 to 4).

Standards	Existing Situation	Proposed Plan	Compliance
Project Planning (7-4)			
Within each LAU, map lynx habitat;… and topographic features important for lynx movement…; identify non-forest vegetation…adjacent to and intermixed with forested lynx habitat providing habitat for alternate lynx prey species	Lynx habitat mapped and classified; travel management does not alter habitat	No Change	YES
Within each LAU, maintain denning habitat in patches generally larger than five acres comprising at least 10% of suitable lynx habitat	Travel management does not alter habitat	No Change	YES
Maintain habitat connectivity within and between LAUs	Large patches of habitat remain undisturbed by motorized travel	**Reduced amount and density of both summer and winter motorized travel**	YES

Table 18. Canada Lynx Conservation Assessment and Strategy Standards; Conservation Measures to Address Risk Factors Affecting Lynx Productivity (LCAS, 7-4 to12).

Standards	Existing Situation	Proposed Plan	Compliance
Recreation Management (7-8 to 9)			
On Federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU	Extremely limited mileage of designated over-the-snow routes; no designated play areas	No Change	YES
Map and monitor the location and intensity of snow compacting activities in lynx habitat	Dispersed snowmobiling allowed in defined areas; plowed roads and roads regularly used for snowmobile travel mapped	**Area in which dispersed snowmobiling is allowed greatly reduced;** no change in mileage of plowed roads and roads regularly used for snowmobile travel	YES
Ensure Federal actions do not degrade or compromise landscape connectivity when planning and operating new or expanded recreation developments in lynx habitat	Large patches of habitat remain undisturbed by motorized travel	**Reduced amount and density of both summer and winter motorized travel**	YES
Design trails, roads, and lift terminals to direct winter use away from diurnal security areas	Extremely limited mileage of designated over-the-snow routes, roads used by snowmobiles, and plowed roads	No Change	YES
Evaluate and amend as needed, winter recreational special use permits (outside permitted ski areas) promoting snow compaction in lynx habitat	No winter recreational use permits in project area (except ski area)	No Change	YES
Forest/Backcountry Roads and Trails (7-9 to 10)			

Standards	Existing Situation	Proposed Plan	Compliance
On Federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU (winter logging activities are not restricted)	Extremely limited mileage of designated over-the-snow routes; no designated play areas	No Change	YES

Table 19. Canada Lynx Conservation Assessment and Strategy Standards; Conservation Measures to Address Mortality Risk Factors (LCAS, 7-12 to 13).

Standards	Existing Situation	Proposed Plan	Compliance
Competition and Predation as Influenced by Human Activities (7-13)			
On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU (intended for dispersed recreation rather than existing ski areas)	Extremely limited mileage of designated over-the-snow routes; no designated play areas	No Change	YES

Table 20. Canada Lynx Conservation Assessment and Strategy Standards; Conservation Measures to Address Movement and Dispersal (LCAS, 7-13 to 16).

Standards	Existing Situation	Proposed Plan	Compliance
Programmatic Planning (7-14)			
Identify key linkage areas important in providing landscape connectivity within and between geographic areas, across all ownerships	Additional lynx habitat exists to north in National Park, west in Wilderness, and south in NFS lands. Large patches of habitat remain undisturbed by motorized travel.	**Reduced amount and density of both summer and winter motorized travel**	YES
Develop and implement a plan to protect key linkage areas on Federal lands from activities creating barriers to movement	Ongoing at Forest level	No Change	YES
Evaluate the potential importance of shrub-steppe habitats in providing landscape connectivity between blocks of lynx habitat	Ongoing at Regional level	No Change	YES

Cumulative Effects

A number of factors could potentially result in impacts to Canada lynx cumulative to those of the Proposed Travel Plan. These factors are: prescribed burning/wildfire, timber harvest, and livestock grazing.

Several wildfires of varying size as well as several smaller prescribed fires have occurred on the RMRD since 1988. Within the perimeters of all of these fires, a mosaic of fire effects was achieved. Additional prescribed burning is scheduled within the Scapegoat Wilderness as soon as conditions are favorable. This planned fire is expected to create a varied patchwork of fire intensity and effects. Additional natural and prescribed fires may occur throughout the RMRD and adjoining lands in future years. Impacts on habitat will vary depending on the location and severity of the fires and on other factors. Fires may alter or remove habitat for lynx prey species within portions of their perimeter, but in some areas regeneration may result in improved snowshoe hare habitat within several years of burning.

Very little timber harvest has occurred on the RMRD since 1988. A total of 107 acres were harvested between 1988 and 2002, using a variety of techniques ranging from small (1-20 acre) clearcuts, to small (1- 8 acre) thinning and other limited harvest projects. The sum of these past harvests has likely had no detectable impact on lynx or their prey.

Several small fuels treatment projects are planned that will alter the vegetation on a total of approximately 750 acres of the RMRD in the Benchmark drainage. The size of individual units varies from 3 to 236 acres, with the majority of units under 25 acres. All units are located immediately adjacent to recreation residences or to the National Forest boundary; several units are outside mapped lynx habitat and LAUs. The result of these projects will be a variety of small openings or thinned canopy that will likely remove lynx prey habitat in very small, localized areas immediately adjacent to recreation residences.

Livestock grazing occurs within the project area on permitted grazing allotments. Many of these allotments contain only limited acreage of lynx habitat, and some are partly or entirely outside of LAUs. Grazing is managed in the project area on a deferred rest-rotation basis. Allotments are monitored and grazing plans adjusted annually to maintain established standards for forage utilization and impacts to vegetation and landscape features. Nevertheless, grazing has the potential to alter habitat for lynx prey species.

Determination of Effects

I have determined implementation of the proposed Federal Action will have NO EFFECT on Canada Lynx My determination is based on the following rationale:

1. The project would reduce the overall acreage available for dispersed snowmobiling and concentrate it in two main areas.
2. The project would maintain a very small mileage of designated over-the-snow routes and roads available for snowmobile and cross country use.

3. The limited area and mileage of routes available to snowmobiles would maintain large blocks of interconnected lynx habitat undisturbed by snow compacting or other activities.
4. The project would reduce overall mileage of wheeled motorized travel in spring, summer, and fall, thus reducing potential for impacts to lynx.
5. Cumulative impacts of other projects on lynx, their habitat, and prey species would be negligible.

Recommendations For Removing, Avoiding, or Compensating Adverse Effects

No adverse effects are anticipated.

Bald Eagle *(Haliaeetus leucocephalus)*

Legal Status

The Secretary of the Interior, on March 11, 1967, listed bald eagle populations south of the 40th parallel endangered under the Endangered Species Preservation Act of 1966. However, the decline continued until DDT was banned from use in the United States on December 31, 1972. Bald eagles were listed endangered under the ESA in 1973. From 1973 through 1995 bald eagles were listed as endangered, but due to cooperative efforts by government agencies and public and private non-government organizations, populations have increased and in 1995 it was down-listed to threatened status. The bald eagle is presently listed as threatened in Idaho, Montana, and North Dakota, but is currently proposed for de-listing (U.S. Fish and Wildlife Service 1996).

Local Population and Habitat Status

There are no known bald eagle nesting areas on the RMRD. Bald eagles nest almost exclusively in live trees usually within one mile in line of sight of a large river or lake. Although the RMRD includes all or part of 3 large lakes (Gibson, Diversion, and Swift Reservoirs), these are man-made reservoirs established primarily for irrigation purposes. Water levels in the reservoirs and downstream rivers fluctuate dramatically during the bald eagle nesting season, potentially affecting the foraging opportunities in those water bodies.

Some bald eagles may winter along the eastern portion of the project area, although most bald eagles observed along the Rocky Mountain Front, including the eastern portions of the project area, are migrants. Winter and migration habitat is generally associated with areas of open water where fish and waterfowl congregate (Stalmaster 1987 *in* USDA Forest Service 2001). Bald eagles use perches during the day while hunting, feeding, or resting; roosts are used at night or for protection during bad weather (Stalmaster 1987 *in* USDA Forest Service 2001).

Direct, Indirect, and Cumulative Effects Analysis

Management of bald eagle breeding territories may be accomplished by protecting nesting stands and feeding sites and minimizing human activities during the nesting period (Paige et al. 1991 *in* USDA Forest Service 2001). Guidelines have been

developed to provide management direction for bald eagles where there is little information on actual use areas. Because there are no known nesting sites in the project area, and little if any suitable nesting habitat, there will be no impacts from the Proposed Plan. Areas used by migrating bald eagles are frequently open areas where snow conditions seldom allow snowmobile travel, and are generally confined to the eastern portion of the project area, near larger river courses, reservoirs, and prairies east of the NFS boundary where carcasses and waterfowl may be found. Bald eagle use of the area appears to be temporary and flexible. Winter travel management under both the Existing Situation and the Proposed Plan will not impact bald eagle use of these areas. There would be no cumulative effects of other actions on bald eagles in the project area.

Determination of Effects

I have determined implementation of the proposed Federal Action will have NO EFFECT on bald eagles. My determination is based on the following rationale:

1. No bald eagle nests are known to exist in the project area, and there is little if any suitable bald eagle nesting habitat in the project area.
2. Foraging and perching areas used by migrating bald eagles would not be affected by travel management under the Proposed Plan.

Recommendations For Removing, Avoiding, or Compensating Adverse Effects

No adverse effects are anticipated.

CONSULTATION

Consultation for this project was initiated by a meeting between the following FS personnel: A. Rowley (LCNF Deputy Forest Supervisor), L. Conway (LCNF Forest Biologist), W. Maples (RMRD District Biologist), and the following USFWS personnel: A. Vandehey (Consultation Biologist). The meeting was held on 15 November 2005 in Wolf Creek, MT. Discussion focused primarily around information needs for consultation on grizzly bears pertaining specifically to access management. USFWS personnel expressed concern regarding the lack of a LCNF Forest Plan amendment regarding access management, and requested that the Biological Assessment for the proposed travel plan include: 1) evaluation at the BMU Subunit level of Existing and Proposed motorized access using the Flathead National Forest A-19 procedure or similar methodology and comparing motorized route density and security areas with A-19 and NCDE Direction objectives, 2) analysis and discussion of current method of using seasonal restrictions to limit motorized access, including any available information on actual use, limitations to use (e.g. terrain, weather), and compliance, and 3) discussion of all LCNF Forest Plan standards that would limit or prohibit increases in motorized access on the RMRD, and compliance with those standards. All of that information has been incorporated into this Biological Assessment in the appropriate sections. Additionally, USFWS personnel suggested that a uniform spring snowmobile closure date of 1 April would be recommended for protection of post-denning and spring grizzly bear habitats. That suggestion was fully incorporated into the Proposed Plan.

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