Appendix C

Biological Assessment

Biological Assessment for Terrestrial Wildlife Species:

Appendix C

BIOLOGICAL ASSESSMENT

FOR

TERRESTRIAL WILDLIFE SPECIES

Rocky Mountain Ranger District Travel Management Plan
Badger-Two Medicine Area

Rocky Mountain Ranger District
Lewis and Clark National Forest

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11/6/08
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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) north of Birch Creek in the area commonly known as the Badger-Two Medicine (BTM) Area. This Biological Assessment analyzes the potential impacts of the Proposed Plan on three species listed under the Endangered Species Act: gray wolf (Endangered), grizzly bear (Threatened), and Canada lynx (Threatened). This assessment also analyzes potential impacts to proposed critical habitat for Canada lynx.

Gray wolves inhabit a portion of the project area, and could potentially inhabit the entire area in the future. There are no known den or rendezvous sites in the BTM area. The Proposed Plan would not affect the wolf prey base, and would not increase mortality risk to wolves. Although the Proposed Plan would eliminate motorized use on all but a very limited mileage of short access roads and eliminate snowmobile use throughout the area, non-motorized use would continue throughout the area. The potential for disturbance, displacement, or mortality caused by humans would continue to exist. Therefore the Proposed Plan *may affect, but is not likely to adversely affect* gray wolves or their habitat.

The Proposed Plan would eliminate motorized travel on all but a few key access roads along the perimeter of the BTM area. Resulting motorized route densities would be well 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 well above levels recommended in the those guidelines. The LCNF Forest Plan standards would provide additional protection from future increases in motorized access. Non-motorized use would continue throughout the area. The potential for disturbance, displacement, or mortality caused by humans would continue to exist. Therefore the Proposed Plan *may affect, but is not likely to adversely affect* grizzly bears or their habitat.

The Proposed Plan would eliminate snowmobile travel in winter, thus reducing the potential for dispersed snow compaction and for fragmentation of Canada lynx travel and foraging habitat. The proposed removal of wheeled vehicle travel except on a few limited access roads near the area perimeter would further reduce the potential for fragmentation of Canada lynx habitat. Non-motorized over-snow travel such as cross-country skiing would continue, providing some potential for snow compaction in limited areas. The Proposed Plan therefore *may affect, but is not likely to adversely affect* Canada lynx or their habitat. The entire project area is within proposed critical habitat for Canada lynx, but the Proposed Plan would not result in any changes to vegetation or increases in traffic between existing areas of lynx habitat. Therefore, the Proposed Plan *would not result in destruction or adverse modification of proposed critical habitat*.

DETERMINATION OF EFFECTS

Implementation of the proposed Federal action **MAY AFFECT, BUT IS NOT LIKELY TO ADVERSELY AFFECT** the Endangered gray wolf, the Threatened grizzly bear, and the Threatened Canada lynx. Implementation of the proposed Federal action **WOULD NOT RESULT IN DESTRUCTION OR ADVERSE MODIFICATION OF PROPOSED CRITICAL HABITAT** for Canada lynx.

ARTICLE I. 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 Endangered gray wolf and Threatened Canada lynx and grizzly bear. The Lewis and Clark National Forest is also required to conference with the FWS with respect to determinations of potential effect to proposed critical habitat for Canada lynx.

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 Badger-Two Medicine portion of 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 and proposed critical habitat known or suspected to occur in the Proposed Plan influence area (Table 1). This species list was confirmed on 22 October 2008 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 September 2008. 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 and Habitats Known Or Suspected To Occur Within The Influence Area Of The Proposed Plan.

Species/Habitat	Status	Occurrence
Gray Wolf *(Canis lupus)*	Endangered	Established pack immediately northeast of project area; other known packs 10+ miles south and 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
Canada Lynx (*Lynx canadensis*) Critical Habitat	Proposed	Entire RMRD included in Unit 3 of Proposed critical habitat

Section 1.01 PROPOSED PROJECT

Article II. Project Area

The project area is the Badger-Two Medicine (BTM) portion of the Rocky Mountain Ranger District (RMRD) of the Lewis and Clark National Forest (LCNF). This area extends north of the North Fork of Birch Creek (Map 1). It encompasses approximately 133,000 acres, or about 17% of the 777,600 total acres that comprise the RMRD. The vicinity map (Map 2) shows the location of the RMRD in relation to other locations in Montana.

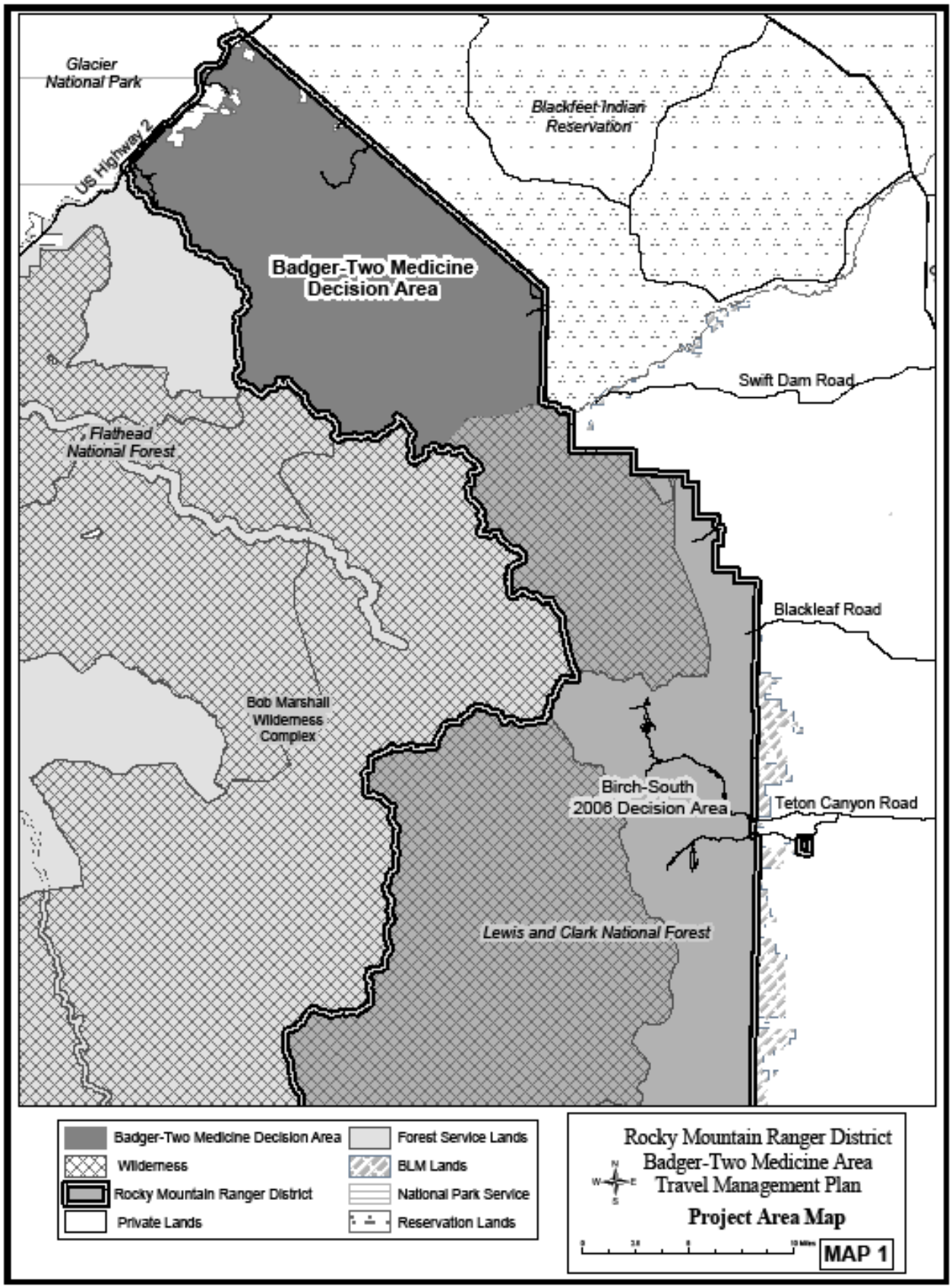
The project area does not include any land within the Bob Marshall Wilderness Complex that adjoins the project area to the west and south. Travel management in designated Wilderness will continue to occur in accordance with the Wilderness Act of 1964 and Recreation Management Direction for the Bob Marshall Complex (USDA Forest Service 1987). Approximately 102,000 acres of the BTM area, or about 76% of the area that would be affected by the Proposed Plan, is in the Bear-Marshall-Scapegoat-Swan Inventoried Roadless Area (IRA). Regulations regarding management of IRAs is currently under litigation but are likely to either heavily restrict or completely prohibit construction of new roads in IRAs.

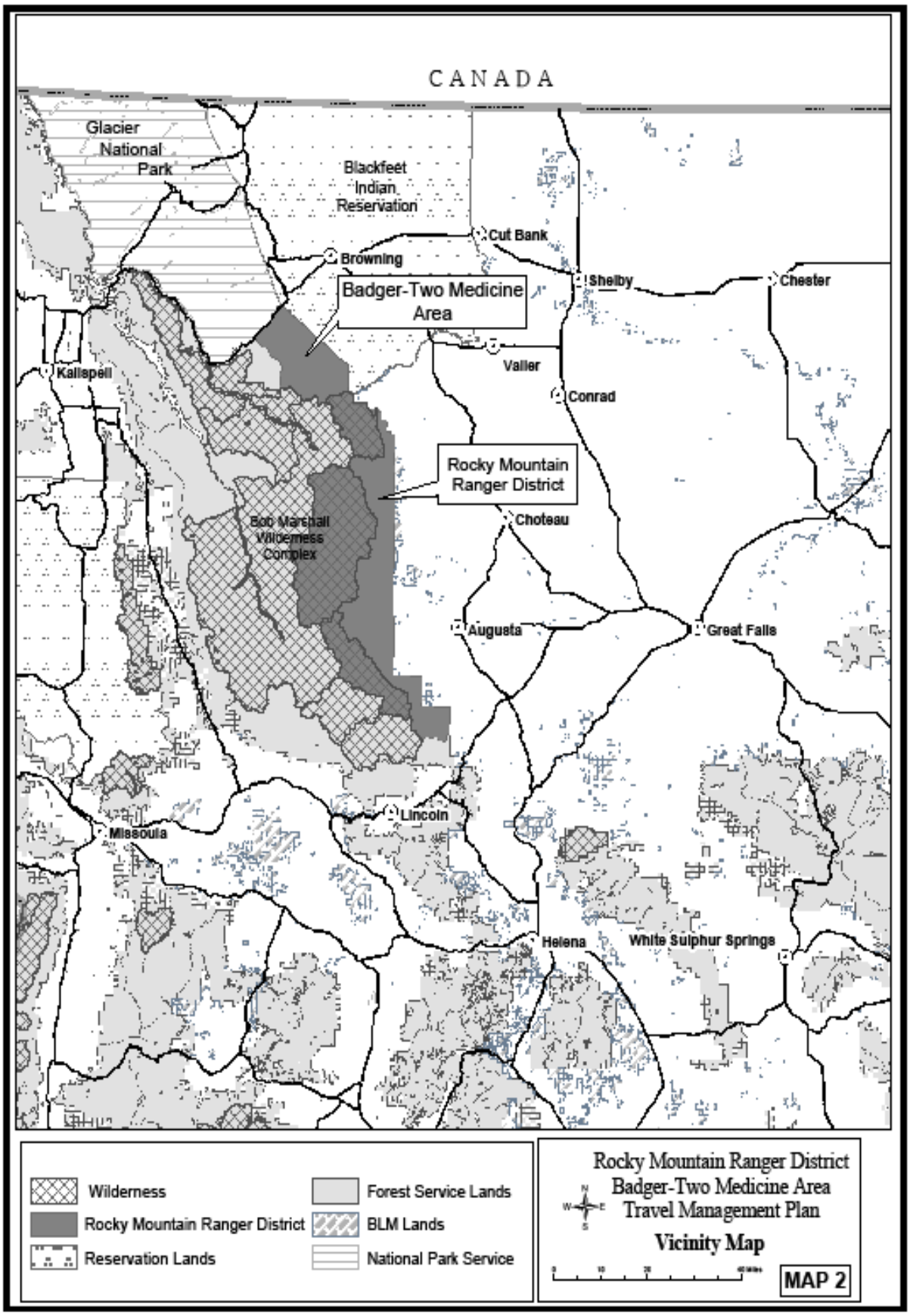
A travel plan (USDA Forest Service 2007a) was released in October 2007 for roughly 264,000 non-wilderness acres in the Birch-South area, or approximately 34% of the total RMRD. That plan is being implemented as of summer 2008.

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 RMRD has been managed for the past 20 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


Glacier National Park
US Highway 2
Blackfeet Indian Reservation
Badger-Two Medicine Decision Area
Swift Dam Road
Flathead National Forest
Blackleaf Road
Bob Marshall Wilderness Complex
Birch-South 2006 Decision Area
Teton Canyon Road
Lewis and Clark National Forest
Badger-Two Medicine Decision Area
Wilderness
Rocky Mountain Ranger District
Private Lands
Forest Service Lands
BLM Lands
National Park Service
Reservation Lands
Rocky Mountain Ranger District
Badger-Two Medicine Area
Travel Management Plan
Project Area Map
MAP 1


CANADA
Glacier National Park
Blackfeet Indian Reservation
Cut Bank
Browning
Shelby
Chester
Badger-Two Medicine Area
Valier
Kalispell
Conrad
Rocky Mountain Ranger District
Choteau
Bob Marshall Wilderness Complex
Augusta
Great Falls
Lincoln
Missoula
Helena
White Sulphur Springs
Wilderness
Rocky Mountain Ranger District
Reservation Lands
Forest Service Lands
BLM Lands
National Park Service
Rocky Mountain Ranger District
Badger-Two Medicine Area
Travel Management Plan
Vicinity Map
MAP 2

- 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

Article III.

Proposed Action (Proposed Plan)

The Lewis and Clark National Forest proposes to implement revised travel management on the portion of the RMRD north of the North Fork of Birch Creek in the area commonly known as the Badger-Two Medicine (BTM) Area. Although alternatives were considered and analyzed for the entire District in the Draft Environmental Impact Statement (DEIS) released in June 2005, and in the Final Environmental Impact Statement (FEIS) released in October 2007, a decision on travel management for the Badger-Two Medicine area was deferred until further analysis and consultation with the Blackfeet Tribe could occur. A decision was signed for the Birch-South portion of the RMRD in October 2007 and implementation of the new plan for that area began in early 2008. This Biological Assessment addresses the Proposed Plan selected for the Badger-Two Medicine (BTM) area (also referred to in this document as the Project area).

The alternative selected as the Proposed Plan is based on comments submitted by the public, analysis carried out by resource specialists, and on extensive consultation and discussion with the Blackfeet Tribe.

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.

In summary, the Proposed Plan would restrict wheeled motorized travel to limited miles of existing roads along the periphery of the BTM area. These roads access campgrounds, trailheads, and firewood cutting areas. One road (Whiterock Pass Road) of approximately 3.7 miles near the eastern boundary of the area would be open only for very occasional travel by permittees to access communication sites for maintenance or emergency repairs. This road would not be open at any time to the public or for routine administrative travel. No trails would be open to motorized travel of any kind. Snowmobile travel would not be allowed anywhere in the BTM area.

Table 2. Miles of Roads and Trails In the Badger-Two Medicine area by Type of Wheeled Vehicle Management

a.	EXISTING SITUATION	PROPOSED PLAN
Roads (open yearlong or seasonally to motorized travel)	17	9
Trails (open seasonally to ATV travel)	96	0
Trails (open seasonally to motorcycle travel)	90	0
Subtotal -- **motorized**	**203**	**9**
Roads (closed yearlong to motorized travel)	0	7
Trails (closed yearlong to motorized travel)	17	175
Subtotal--**non-motorized**	**17**	**182**

NOTE: The 2 columns above do not add up to the same grand total because of some roads and trails that would be abandoned (decommissioned) under the Proposed Plan.

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. Motorized cross-country travel could occur within a limited, designated distance from an open motorized route for the purposes of parking and turning. The 2001 decision did not address winter travel, but winter travel has been thoroughly considered and incorporated in the travel management DEIS, FEIS and the Proposed Plan.

SPECIES ASSESSMENTS

GRAY WOLF (Canis lupus)

Legal Status

The BTM area is within the Northwest Montana Recovery Area for the gray wolf (U.S. Fish and Wildlife Service 1987). Wolves within this area are classified as Endangered by the U.S. Fish and Wildlife Service (FWS), under the Endangered Species Act. Wolves in the Northwest Montana Recovery area are considered a part of the Northern Rocky Mountains Distinct Population Segment, which includes wolves in Montana, Idaho, and Wyoming. Wolves in the Northern Rockies were removed from the Endangered Species list in March 2008, but as of completion of this assessment in October 2008, they have been reinstated.

Local Population and Habitat Status

According to the Montana Fish, Wildlife, and Parks (MFWP) wolf information website (http://fwp.mt.gov/wildthings/wolf/population.html), at the end of 2007, in the Northwest Montana Recovery Area there were 36 packs of which 23 met the criteria for breeding

pairs, for an estimated total of 213 wolves (U.S. Fish and Wildlife Service et al. 2008). The wolf population in Montana is considered secure (U.S. Fish and Wildlife Service et al. 2008).

Gray wolves are resident on the RMRD south of the project area, in Glacier National Park (GNP) to the north, on the Flathead National Forest (FNF) to the west and on the Blackfeet Indian Reservation (BIR) to the northeast. There are no known den or rendezvous sites in the BTM, although it is likely that wolves from one or more packs may use portions of the area. The nearest pack is the Marias pack of about 6 animals (U.S. Fish and Wildlife Service et al. 2008), established on the BIR to the northeast of the BTM area. Occasional track and visual observations of wolves in the northern half of the BTM are likely to be from this pack (D. Carney, Blackfeet Tribal Fish and Wildlife, pers. commun.). The Great Bear pack, of about 4 animals to the south and west on the FNF (U.S. Fish and Wildlife Service et al. 2008) may also occasionally use the BTM. Other known packs in the larger area are the Livermore pack (about 10 animals, over 10 miles to the northeast), Red Shale pack (about 7 animals, over 20 miles south), and the Bennie Hill pack (possibly 4 animals, over 10 miles to the southeast).

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).

A significant elk winter and calving range occurs in the northeastern portion of the BTM area, not far from the boundary between NFS lands and BIR and private lands to the east. Additional mapped elk winter range occurs along Badger Creek in the east-central portion of the BTM, and in the vicinity of Mowitch Basin in the southeastern portion of the BTM. Ungulate winter range may have expanded beyond these areas, particularly in the northern half of the BTM, as a result of the 2007 Skyland Fire. Potential winter use of recently burned areas has not yet been documented, however.

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 by 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 nearly eliminate motorized wheeled travel in the Project area, reducing it to a total of 9 miles of main access roads along the north and east boundaries. Snowmobile travel would be eliminated entirely from the area. Non-motorized recreation would continue to occur throughout the project area. Whether these changes would have any impact on recreation use patterns or levels is unknown.

The impacts of motorized vs. non-motorized travel on wolves likely depends on the type, location, amount, and predictability of each type of travel as well as on characteristics of individual wolves. Claar et al. (1999) noted that all linear travel routes may provide easy travelways for wolves, but that there is a trade-off between easier travel and increased potential for mortality resulting from increased risk of human encounters. Non-motorized travel would continue to occur throughout the BTM area under the Proposed Plan. The possibility would continue that individual wolves could encounter humans traveling by foot or other non-motorized means in the BTM and suffer displacement or illegal mortality.

The proposed removal of motorized travel from the project area is unlikely to have any measurable impact on the known wolf packs or transient individuals that may use the BTM. The Proposed Plan is also unlikely to affect wolf prey abundance or distribution.

Compliance with the LCNF Forest Plan

The LCNF Forest Plan standard states that the gray wolf will be managed “primarily by maintaining a suitable prey base and important habitat components such as rendezvous sites”, and that management for wolf prey species will follow recommendations for big game in the Rocky Mountain Front Interagency Wildlife Guidelines (USDI Bureau of Land Management 1987), hereafter referred to as the RMF Guidelines (Forest Plan Standard C-2-9). All wolf sightings, sign, or other activities are to be documented to maintain knowledge of present distribution and population levels (Forest Plan Standard C-2-10).

As noted above, under the Proposed Plan prey would continue to be available to wolves. Wolf sightings continue to be documented and coordination continues with MFWP to maintain knowledge of wolf pack presence, numbers, distribution, etc. General measures for protection of Threatened and Endangered species and their habitats in the Forest Plan are included in the Table 7 below, in the grizzly bear analysis section.

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.

One large wildfire burned in the BTM area in 2007. The Skyland Fire burned approximately 46,000 acres on the Flathead National Forest, LCNF, and Blackfeet Indian Reservation, with the majority of acres on the LCNF in the BTM area (roughly 31,000, or about 23% of the total BTM area). This fire burned with mixed severity although about

41% of the fire area in the BTM burned at relatively high intensity, with stand-replacement fire or other similar impacts to vegetation. About one-quarter of the fire area burned at moderate intensity, and one-quarter at low intensity, including areas that did not experience fire at all. The remaining area within the fire perimeter was grassland that burned (Green and Shovic 2007). Any impacts the Skyland Fire may have on ungulate abundance or distribution remains to be seen. It is likely that additional elk winter range has been created while forage production and quality may be enhanced, and that a certain quantity of hiding cover has likely been lost. The general location of elk winter range will likely remain roughly the same, and possibly be expanded. If ungulate winter range is increased or enhanced, wolves could benefit. Any potential impacts to wolves, however, are very difficult to estimate. Additional natural and prescribed fires may occur throughout the RMRD, including the BTM, 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, all of it more than 20 miles south of the BTM area. Some firewood cutting for individual and family use occurs in specific areas near the NF boundary in the BTM area. This activity generally occurs within a very short distance of existing roads, because motor vehicle travel has not been allowed off designated roads and trails since 2001. Personal-use firewood cutting would continue to occur in these areas. Because the areas are limited in number and extent, are associated with existing roads, and occur near the NF boundary, it is unlikely that this activity has had or will have any impact on wolves or their prey.

The area to the south and southwest of the project area includes the Great Bear and Bob Marshall Wildernesses, both part of the larger 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. About half of the western boundary of the BTM adjoins non-wilderness lands on the Flathead National Forest, where maintenance of wildlife habitat is a required management concern. Across U.S. Highway 2 on the northern boundary is Glacier National Park, where management generally favors wolves and other wildlife habitat. The entire eastern boundary of the BTM area abuts the Blackfeet Indian Reservation, where livestock husbandry is an important activity. Wolf-livestock conflicts have occurred and will continue to occur on the BIR and on private lands encompassed by the BIR, posing an ongoing source of mortality for wolves in the area.

Livestock grazing currently occurs within the project area on three permitted cattle grazing allotments. One additional cattle grazing allotment has been inactive for several years but may be used again in the future. 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. It is likely that this approach would be applied in any instances of conflict with wolves, as well.

Determination of Effects

I have determined implementation of the proposed Federal Action MAY AFFECT, but is NOT LIKELY TO ADVERSELY AFFECT the Endangered 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 den/rendezvous sites of packs in adjoining areas.
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, the Proposed Plan would not result in any changes to existing grazing practices. The LCNF Forest Plan includes measures to protect Threatened and Endangered Species where conflicts with livestock may occur.
4. The Proposed Plan is expected to be in place for a minimum of 10-15 years. The possibility would continue that individual wolves could encounter humans traveling by foot or other non-motorized means in the BTM and suffer displacement or illegal mortality.

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

According to recent work by the United States Geological Survey (USGS; http://www.nrmsc.usgs.gov/files/norock/products/USGSGrizzlyBearProjectNewsRelease.pdf), approximately 765 grizzly bears inhabit the entire NCDE. Results of that work also indicate that grizzly bear numbers appear to have increased in the NCDE over the past 10 years, females appear to be well distributed throughout the area, and the population has expanded beyond the original 1993 Recovery Area boundary. An effort is currently underway to more specifically analyze grizzly bear population trend in the NCDE.

An updated population estimate specific to the RMRD and based on the work referenced above will likely be available in early 2009. The Badger-Two Medicine area has frequently been one of the most productive portions of the RMRD with respect to grizzly bears, with generally more sightings of females with cubs than other areas to the south. 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 berries. 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 Birch-South portion of the RMRD, for which a travel management decision was made in fall 2006. 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. A sizeable area of mapped spring habitat occurs on NFS lands in the northeast corner of the Badger-Two Medicine area.

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 BTM area, like the rest of the RMRD, has been divided into Bear Management Units (BMUs) and Subunits to facilitate analysis of project effects and to evaluate recovery goals. Each BMU Subunit approximates the size of an adult female grizzly bear's annual home range. The project area includes the NFS lands portions of 3 BMU Subunits out of a total of 13 on the RMRD (Map 3). Table 4 displays the acreage of each BMU subunit and the portion of each that is on NFS lands in the BTM area. The proposed travel management decision for the Badger-Two Medicine area includes only NFS lands land north of the North Fork of Birch Creek. The Heart Butte Subunit, however, extends south to the divide between the North and Middle Forks of Birch Creek, and therefore encompasses some area not included in the decision (Map 3). Nevertheless, most of the analysis with respect to grizzly bears occurs at the level of the Subunit and will therefore incorporate non-NFS lands and that portion of the Heart Butte Subunit unaffected by the decision.

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%[1]	0	--	--
Badger	82,430	56,660	69%	0	--	--
Heart Butte	71,020	33,380	47%	5,620[2]	17%	8%

[1]When private inholdings within the NF boundary are excluded, only 71% of the Two Medicine Subunit is on NFS land, managed by the USDA Forest Service

[2]The portion of the Heart Butte Subunit within Wilderness is south of the North Fork of Birch Creek, and therefore outside of the area that would be affected by the current decision.

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, and over 99% (over 129,000 acres) of the NF system lands in the BTM area 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. Less than one-half of one percent of the BTM area (approximately 390 acres) is classified as MS-3 habitat, centered around the Summit Campground and Marias Pass rest area along Highway 2. 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; over half (> 3300 acres) of this private inholding acreage is at the north end of the Badger-Two Medicine area immediately adjacent to U.S. Highway 2 and along the northeastern boundary.

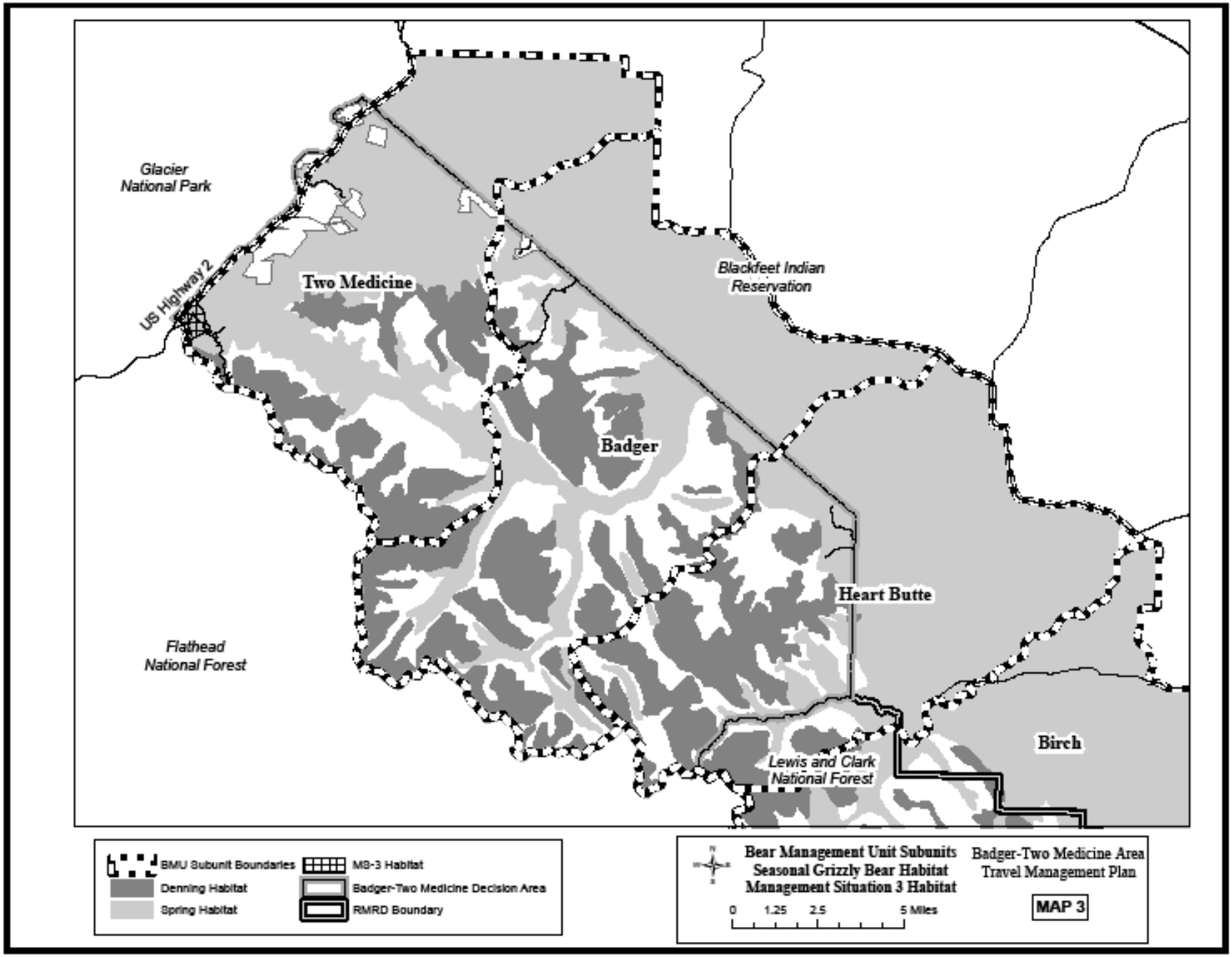
Direct, Indirect, and Cumulative Effects Analysis

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 RMF Guidelines (USDI Bureau of Land Management et al. 1987) to restrict motorized access in those habitats. Adherence to the RMF Guidelines is incorporated as a Forest-Wide Wildlife Management Standard (C-1) in the LCNF Forest Plan. Restriction dates recommended by


Glacier National Park
US Highway 2
Two Medicine
Blackfeet Indian Reservation
Badger
Heart Butte
Flathead National Forest
Lewis and Clark National Forest
Birch
BMU Subunit Boundaries
Denning Habitat
Spring Habitat
M3-3 Habitat
Badger-Two Medicine Decision Area
RMRD Boundary
Bear Management Unit Subunits
Seasonal Grizzly Bear Habitat
Management Situation 3 Habitat
0 1.25 2.5 5 Miles
Badger-Two Medicine Area
Travel Management Plan
MAP 3

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 1994 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 $\geq$ 68% of Subunit in Core on federal lands.

The Taskforce Report was updated in 1998, noting that OPMARD and Core may be calculated or identified by season, and recommending 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 (Interagency Grizzly Bear Committee 2001) was subsequently developed. The Proposed Direction 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, attempted to address seasonal changes in grizzly bear habitat needs, and used metric measures to be in line with units used in scientific research. 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 (USDA Forest Service 2002). 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 in the BTM area 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 BTM travel plan. Specific information regarding those modifications as well as other details on application of the access management analysis to the BTM area 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 BTM area are displayed by analysis category in Tables 5 and 6 below. The tables do not include the Birch-South portion of the RMRD, for which a travel management decision has already been made. The tables include figures only for the NFS portion of the affected Subunits; travel management and therefore access management values for lands outside the NF boundary would be unaffected by the proposed decision and are expected to be the same under the Proposed Plan as under the existing situation. Small private lands (inholdings) are excluded from calculations of total Subunit area as well as density and core calculations, per the FNF A-19 protocol (USDA Forest Service 2002). Therefore all 3 Subunits have less than 75% of their total area on NFS lands managed by the USDA Forest Service. MS-3 habitat, and large (>320 acre) lakes are also excluded from the area included in route density and core calculations, per the A-19 protocol (USDA Forest Service 2002).

Total Motorized Access Route Density (TOTMARD) and Open Motorized Access Route Density (OPMARD)

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.

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 for this analysis 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 BTM calculation, method of closure was not considered, and all motorized routes were treated the same.

The Proposed Direction (Interagency Grizzly Bear Committee 2001) stresses that the benefits of the proposed access management "depend heavily on effective implementation of a 'gated' *road* management system" (emphasis added). The RMRD, however, has a total of only 135 miles of road within an area of over 776,000 acres, with less than 20 road miles on roughly 133,000 acres in the BTM area under consideration in the current travel management decision. The 20 miles of roads in the BTM are largely tied to major public access points such as trailheads or campgrounds, associated with access to private inholdings, or provide access to communication sites. Many of these roads are therefore considered "uncloseable". Thus very few roads are involved in the access management issue and in TOTMARD calculations in the BTM area. 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, and specifically the BTM access issue revolves primarily around motorized trails. Very few physical closure devices are used to implement seasonal or other restrictions on trails. The majority of ATV trails are in the north half of the BTM, while the south half currently has a limited number of 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 during the spring due to snow, high water, or wet and muddy conditions

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 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. Most of the motorized routes in the south half of the BTM are currently closed to motorized access between 15

October and 1 December (general rifle hunting season). 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 hunting season restrictions begin. 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. As explained above, summer and fall OPMARD is the same as OPMARD for the entire non-denning season, and is therefore only presented once in the table below.

In Table 5 below, numbers in **bold** indicate Subunits in which the A-19 and Interim Direction numeric goal would not be met if applied under the Existing Condition.

Table 5. Percent of NFS lands in each Subunit in >2mi/mi^2 density class (TOTMARD) and >1mi/mi^2 density class (OPMARD).

	TOTMARD (>2mi/mi^2)		***OPMARD (>1mi/mi^2)***		***OPMARD – SPRING (>1mi/mi^2)***	
	Existing	***Proposed***	***Existing***	***Proposed***	***Existing***	***Proposed***
Two Medicine	**27.5**	2.62	**61.82**	6.59	13.43	6.59
Badger	10.22	0.02	**42.26**	1.11	10.36	1.11
Heart Butte	1.88	0.57	11.20	2.24	1.28	1.86[1]

[1] The Heart Butte subunit appears to increase in OPMARD under the Proposed Action due to an error in the database for one field for one trail on non-NFS land in the North Fork Birch Creek area. This is outside the BTM Decision Area; the entire Decision Area was checked for errors and none were found. Visual inspection of mapped outputs revealed that Spring OPMARD in the Decision Area would decrease under the Proposed Action as compared to the existing situation. Therefore we decided not to re-run the moving windows analysis. (See maps in project file)

In the existing situation, the Two Medicine Subunit does not meet the A-19 and Interim Direction numeric goals for TOTMARD, and it and the Badger Subunit do not meet the numeric goal for overall OPMARD in the existing situation. When OPMARD is calculated by season, however, all 3 subunits meet the numeric goal in spring, illustrating the effectiveness of existing seasonal closures in protecting important spring habitat.

Under the Proposed Plan, all 3 Subunits would meet the A-19 direction for Subunits with <75% federal ownership: in all 3, the portion of the Subunit in the applicable density category would decrease (see Table 5 footnote regarding Spring OPMARD in the Heart Butte subunit). The Interim Direction calls for moving all subunits toward $\leq$ 19% of the subunit in the applicable density category. Therefore the Interim Direction would also be met under the Proposed Action.

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 recreation 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 and Core 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 in Table 6 below are more likely to underestimate Core than to overestimate it. Both the Interim Direction guideline and the A-19 direction state that the amount of Core in subunits should not decrease (Interagency Grizzly Bear Committee 1995; USDA Forest Service 2002), and the Interim Direction recommends moving toward the numeric objective of ≥68% of Subunit in Core on federal lands (Interagency Grizzly Bear Committee 1995).

In Table 6 below, numbers in **bold** indicate Subunits in which the A-19 and Interim Direction numeric goal would not be met if applied under the Existing Condition.

Table 6. Core for Entire Non-Denning Season (1 April – 30 November) and for Spring (1 April – 30 June), Summer (1 July – 31 August), and Fall (1 September – 30 November): Percent of each Subunit in Core

	TOTAL CORE		*SPRING CORE*		*SUMMER CORE*		*FALL CORE*	
	Existing	***Proposed***	***Existing***	***Proposed***	***Existing***	***Proposed***	***Existing***	***Proposed***
Two Medicine	**27.19**	76.99	83.91	91.09	**27.19**	76.65	**27.19**	91.09
Badger	**50.25**	97.05	86.59	97.81	**50.25**	97.05	**50.25**	97.81
Heart Butte	72.40	96.62	98.26	97.75[1]	72.40	96.62	72.40	96.62

[1] The Heart Butte subunit appears to decrease in Spring Core under the Proposed Action due to an error in the database for one field for one trail on non-NFS land in the North Fork Birch Creek area. The trail in error is outside the Decision Area and travel management on that trail would not change under the Proposed Action. The entire Decision Area was checked for errors and none were found. Visual inspection of mapped outputs revealed that Spring Core in the Decision Area of the Heart Butte Subunit would remain the same under the Proposed Action as compared to the existing situation. Therefore we decided not to re-run the moving windows analysis. (See maps in project file)

In the existing situation, the Two Medicine and Badger Subunits do not meet the A-19 and Interim Direction numeric goals for Core except in spring when Core is calculated by season. This illustrates the effectiveness of existing seasonal closures in protecting important spring habitat.

Under the Proposed Plan, all 3 Subunits would meet the A-19 direction for Subunits with <75% federal ownership: in all 3, under the Proposed Action CORE would increase. The Interim Direction calls for moving all subunits toward ≥ 68% of the subunit in CORE. Under the Proposed Plan, the NFS lands portion of all 3 Subunits would meet that goal. Note that CORE would continue to be highest in spring, reflecting ongoing use of seasonal closures designed to protect grizzly bear spring habitat. CORE in the Two Medicine Subunit is lowest in the summer, reflecting the assumption that the main Two-Medicine Trail (#101) would receive high use by non-motorized recreationists during that time. Because it is not clear how or whether non-motorized travel patterns might change under the Proposed Plan, this result could be inaccurate. Nevertheless, it represents a conservative estimate of CORE that is still well above the A-19 and Interim Direction guidelines.

Cumulative Effects Model

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. In the NCDE a Cumulative Effects Model (CEM) was 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), and that adjusts the predicted value of grizzly bear habitats based on human activity occurring within them. East- and west-side versions were then created, recognizing that habitats and grizzly bear use of them appear to differ substantially east versus west of the Continental Divide. 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 East-Side CEM was run for the Biological Assessment of the 2007 Birch-South travel management decision. Because a variety of changes to travel management were made in that decision, altering the spatial pattern of motorized use over a relatively large area, the CEM provided some insight into which Subunits and areas would change most as a result of the travel management changes. Overall, however, the CEM results simply provided an additional, relatively general piece of evidence that the new travel plan would likely maintain or improve grizzly bear habitat throughout the area affected by the decision (USDA Forest Service 2007a).

The Proposed Plan for travel management in the BTM area is straightforward: eliminate all motorized travel except for an extremely limited mileage of access roads at the perimeter of the area. Because of the way the CEM is parameterized, with motorized routes decreasing the calculated effectiveness of grizzly bear habitat, it is clear without running the model that the Proposed Plan would result in an output of improved habitat effectiveness for all 3 affected subunits. Furthermore, based on the access management analysis described above, we know that the Two Medicine subunit is likely to demonstrate the smallest degree of improvement of the 3 subunits because it is where the majority of roads are that would remain open. Specific values of habitat effectiveness calculated by the CEM have no intrinsic meaning beyond providing a means to compare local areas or different activities within a single area. Therefore, outputs from running the CEM for the BTM would only provide a broad relative comparison of habitat effectiveness under the existing situation versus the Proposed Plan, confirming what we already know. The numeric output from a run of the model would provide no further value to inform management decision-making. Preparing the databases for analysis with the model is a very time-consuming, and therefore costly process. Therefore we chose not to run the CEM for this analysis, because it would not provide additional useful information with which to assess affects of the Proposed Plan that is not already provided by other analyses.

Compliance with the LCNF Forest Plan

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

Forest Plan Standards	Existing	Proposed Plan
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**
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**
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
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)	BTM stratified into MS-1 (99+%) and MS-3 (<0.5%) habitat; appropriate management based on Interagency Guidelines applied to all activities accordingly	No change
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
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
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

Forest Plan Standards	Existing	Proposed Plan
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 new project development. No timber sales in BTM in recent past and none planned in foreseeable future.	No change
Limit firewood cutting on timber harvest roads, and permanently close after 2-3 years (Timber, E-2-4)	Minimal mileage of road, all at perimeter of BTM area. No new roads for past >10 years.	No change.
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. Congressional ban on new leases on NF lands of RMRD.	No change
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**
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**

Forest Plan Standards	Existing	Proposed Plan
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**
Management Area (MA) Direction		
MA-E (34,000 acres or 25% of BTM area) 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 3.62mi/mi^2 for MA-E in BTM; motorized travel permitted on designated trails; no off-trail motorized travel allowed	**Overall open road density 0.12 mi/mi^2 for MA-E in BTM; reduced mileage of motorized trails**; no off-trail motorized travel allowed
MA-F (54,000 acres or 40% of BTM area) 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	Continue as existing; **reduced mileage of motorized trails**

Forest Plan Standards	Existing	Proposed Plan
MA-G (45,000 acres or 34% of BTM area) 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	Continue as existing; **reduced mileage of motorized trails**
MA-H (220 acres or <1% of BTM area) 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	MA-H is 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 8.15 mi/mi^2 for MA-H in BTM area (Summit Campground area)	No change

All MAs in the BTM meet Forest Plan objectives in the BTM area and would continue to do so under the Proposed Plan. Note that the relatively high open road density in MA-H reflects the very small amount of MA-H in the BTM, in the area that includes Summit Campground and the Pike Creek Road. It is unclear in the Forest Plan whether road densities are to be calculated for local segments of MA-H, as we have done here, or for the entire District or Forest. Nevertheless, presence of these facilities is consistent with Forest Plan direction for MA-H. Also, the Forest Plan direction for MAs provides density objectives only for roads, and does not specifically address motorized trails or overall motorized route density objectives. Evaluation of Forest Plan Management Area direction is one component of assessing how well current Forest Plan direction controls access and therefore protects wildlife habitat in general. 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.

Approximately 76% of the BTM area is within the Bear-Marshall-Scapegoat-Swan Inventoried Roadless Area (IRA). Regulations regarding management of IRAs is currently under litigation but are likely to either heavily restrict or completely prohibit construction of new roads in IRAs.

Cumulative Effects

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

Recreation is one of the primary uses by the public of the RMRD. In the BTM area there is one developed campground, as well as numerous dispersed campsites and several

trailhead facilities. Most visitors to the BTM travel in the backcountry where they hike, ride horseback, camp, fish, and hunt. The potential for displacement resulting from these activities and consequent reduction in the value of grizzly bear habitat exists under the Existing Condition as well as under the Proposed Plan. 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. Additionally, a backcountry ranger patrols the interior of the BTM area to carry out the same tasks. 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 in which enforcement of the Food Storage Order is a primary purpose. 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.

One large wildfire burned in the BTM area in 2007. The Skyland Fire burned approximately 46,000 acres on the Flathead National Forest, LCNF, and Blackfeet Indian Reservation, with the majority of acres on the LCNF in the BTM area (roughly 31,000, or about 23% of the total BTM area). This fire burned with mixed severity although about 41% of the fire area in the BTM burned at relatively high intensity, with stand-replacement fire or other similar impacts to vegetation. About one-quarter of the fire area burned at moderate intensity, and one-quarter at low intensity, including areas that did not experience fire at all. The remaining area within the fire perimeter was grassland that burned (Green and Shovic 2007). Two other large fires (totaling an additional roughly 74,000 acres on the RMRD) burned in 2007 well south of the BTM area. 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. Bears may be displaced for varying time frames from some burned areas. Fires often 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, all of it more than 20 miles south of the BTM area. Some firewood cutting for individual and family use occurs in specific areas near the NF boundary in the BTM area. This activity generally occurs within a very short distance of existing roads, because motor vehicle travel has not been allowed off designated roads and trails since 2001. Personal-use firewood cutting would continue to occur in these areas. Because the areas are limited in number and extent, are associated with existing roads, and occur near the NF boundary, this activity will likely have only very limited impact on individual bears that may happen to be in the area when the activity occurs.

The area to the south and southwest of the project area includes the Great Bear and Bob Marshall Wildernesses, both part of the larger 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. About half of the western boundary of the BTM adjoins non-wilderness lands on the Flathead National Forest, where maintenance of wildlife habitat is a required management concern. Across U.S. Highway 2 on the northern boundary is Glacier National Park, where management generally favors bears and bear habitat. The entire eastern boundary of the BTM area abuts the Blackfeet Indian Reservation, where livestock husbandry is an important activity. Grizzly bears are known to move among these areas and to frequent lands east of the NF boundary, particularly in spring and late summer/fall. Nearly all grizzly bear-human conflicts and consequent grizzly mortalities occurring in the area known as the Rocky Mountain Front for the past 10+ years have been on private land. Although significant efforts have been made by agencies and private groups, non-NF lands east of the NF boundary are likely to continue to be a source of grizzly bear mortality.

Livestock grazing currently occurs within the project area on three permitted cattle grazing allotments. One additional cattle grazing allotment has been inactive for several years but may be used again in the future. The LCNF Forest Plan (see Table 7 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. The grazing allotments in the BTM area occur entirely within MS-1 habitat, where the Interagency Grizzly Bear Management Guidelines (1986) state that where grizzly-livestock conflicts occur and the bear is determined not to be a “nuisance bear” per the IGBC Guidelines, the problem will be resolved immediately by “removing the man-related cause.” Known conflicts on NF allotments 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.

In October 2007 the LCNF released a new Travel Management Plan for the portion of the RMRD south of North Fork Birch Creek. Analysis and consultation for this plan was carried out in 2006. The Biological Assessment (BA) for the Birch-South plan concluded that the plan would likely maintain or improve habitat for grizzly bears by reducing the overall mileage of motorized routes on the RMRD (USDA Forest Service 2007a). The FWS concurred with the determination that the plan would not likely adversely affect grizzly bears (refer to the BA in USDA Forest Service 2007a). The Proposed Plan for the BTM would add to the overall grizzly bear habitat improvement created by the Birch-South plan.

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. The LCNF Forest Plan includes a number of prohibitions and limitations on future road-building (see Table 7), 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, and over 75% of the BTM area is in an Inventoried Roadless Area. In sum, the Proposed Plan would eliminate motorized travel from the BTM except for a few key access roads near the perimeter, and would be reinforced by additional Forest Plan restrictions and 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 in the BTM area since its inception. Extensive public education efforts are in place, and all permitted activities include provisions regarding the Order.
3. Timber harvest has not occurred for many years in the BTM area, and none is planned in the area in the foreseeable future. Fire may impact vegetation but generally in a manner that is positive for grizzly bears over the long term. 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, over 99% of which in the BTM area is designated as MS-1 habitat by the LCNF Forest Plan.
5. The Proposed Plan would continue to allow limited motorized access in a few areas potentially used by grizzly bears, and would allow unlimited non-motorized access throughout the entire BTM area. The ongoing presence of recreating humans represents a potential for disturbance or displacement of grizzly bears, as well as potential for mortality through conflicts related to improper food storage, mistaken identity during hunting season, defensive encounters, or illegal killing.

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. Management of lynx on lands managed by the LCNF is directed by the Northern Rockies Lynx Amendment (NRLA; USDA Forest Service 2007b), which adds specific management direction to Forest Plans, including the LCNF Forest, in the form of the Northern Rockies Lynx Management Direction (NRLMD). Additional recommendations and guidelines for lynx management can be found in the Lynx Conservation and Assessment Strategy (LCAS; Reudiger et al. 2000).

The RMRD is also within an area (Unit 3 – Northern Rockies) proposed as critical habitat for Canada lynx. Areas proposed as critical habitat will "require some level of management to address the current and future threats to the lynx and to maintain the physical and biological features essential to the conservation of the species" (Federal Register V.73, No.30). Critical habitat is defined as habitat that contains the primary constituent elements (PCEs), and is defined at a regional scale for lynx as boreal forest types that support deep snow throughout the winter.

Local Population and Habitat Status

As part of the requirements of the LCAS (Reudiger et al. 2000), which guided lynx habitat management on National Forests prior to the NRLMD, 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, with 5 (RM1, RM2, RM3, RM4, and RM5) in the BTM area (Map 4). The RM5 LAU, however, extends south to the Middle Fork of Birch Creek, and therefore encompasses some are not included in the decision. Nevertheless, the analysis with respect to Canada lynx occurs at the level of the LAU and will therefore incorporate that portion of the RM5 LAU unaffected by the decision.

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 or denning habitat. Coniferous forest that does not appear to meet the requirements for foraging or denning has been mapped as travel habitat, because it may provide connectivity among patches of foraging and/or

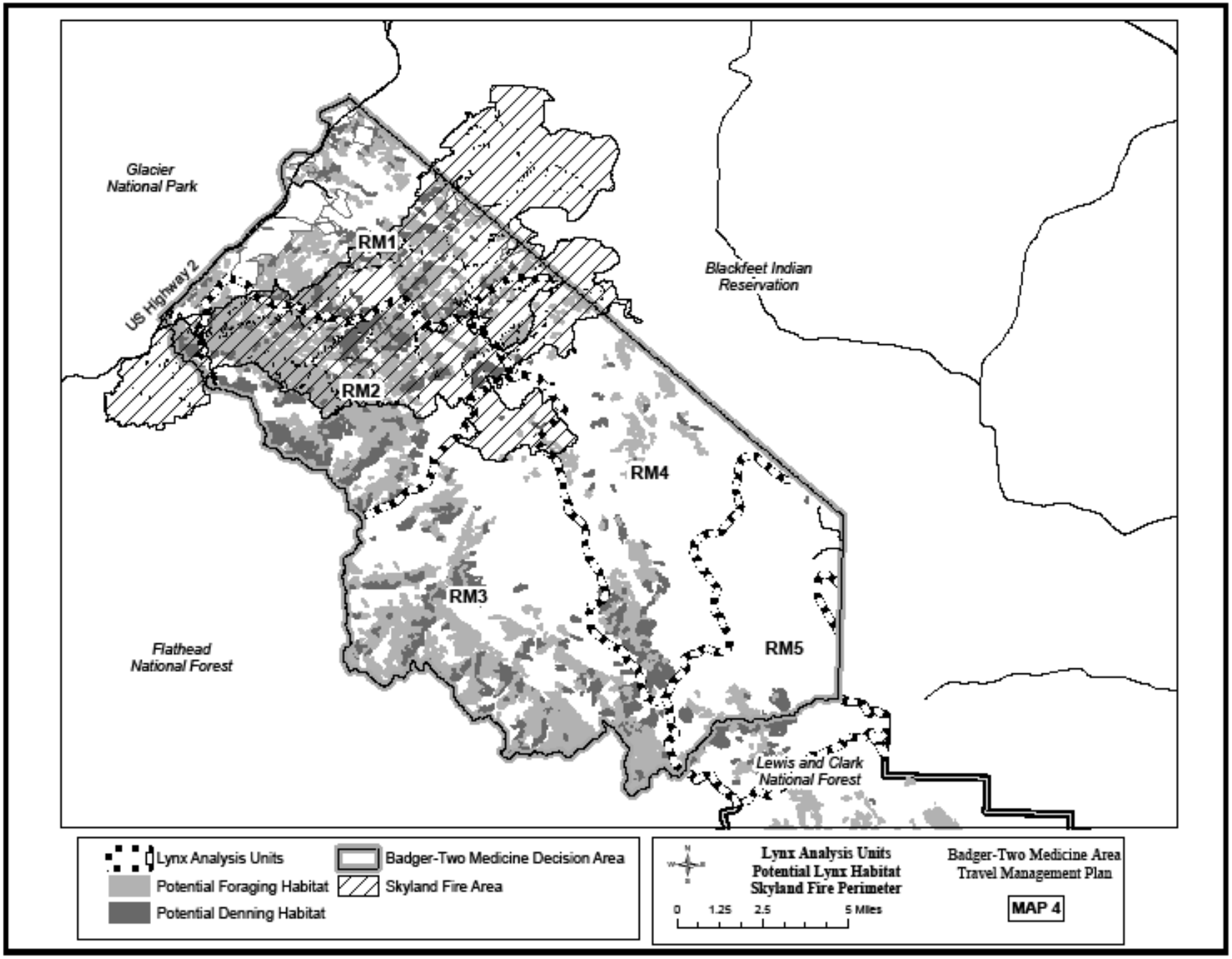
denning habitat (Federal Register V.73 No.30). About 268,000 total acres of lynx habitat (foraging +denning) has been mapped on the RMRD, with roughly 38,000 acres of foraging and denning habitat estimated in the 5 LAUs that comprise the BTM area (Map 4).

In 2007 the Skyland Fire burned approximately 46,000 acres on the FNF, LCNF, and BIR, with the majority of acres on the LCNF in the BTM area (over 31,000, or about 23% of the total BTM area). Based on fire intensity mapping carried out by the Lewis and Clark Complex BAER team (unpublished map data), roughly 34% of the mapped foraging and denning habitat in the BTM area LAUs is within the fire perimeter, although not all of it burned, and fire intensity varied in areas that did burn. About 9% of the mapped lynx habitat in the BTM LAUs experienced low intensity fire, about 6% moderate intensity fire, and about 18% experienced high intensity fire. New habitat mapping has not yet been carried out, but estimates of fire intensity indicate that approximately 10-15% of the area classified as having burned at low intensity remains unburned (Green and Shovic 2007). Although field estimates of lynx habitat have not been carried out in the BTM, based on information from the BAER Summary Report (Green and Shovic 2007) we assume that most of the areas affected by fire experienced burning of understory vegetation and debris, and therefore are no longer suitable snowshoe hare habitat or as lynx denning habitat. Therefore we adjusted map estimates of available habitat described above to remove burned areas (see Table 8 below). This likely provides a very conservative estimate of remaining lynx habitat. Further discussion of the impacts of the Skyland fire on lynx can be found below in the Cumulative Effects section.

Table 8. Total Acreage of Lynx Habitat, and Acreage and Percent of each habitat category within the 5 Lynx Analysis Units (LAUs) of the Badger-Two Medicine area

	Total Acreage – entire RMRD[1]	Acreage of Post-fire Habitat in Badger-Two Medicine	% of Total Habitat in Badger-Two Medicine	*Acres of Habitat by LAU*				
				LAU RM1	LAU RM2	LAU RM3	LAU RM4	LAU RM5
Total Lynx Habitat (Foraging + Denning)	268,000	25,300	9.4%	3,270	5,180	11,350	3,520	1,980
Lynx Foraging Habitat	171,300	17,500	10.2%	2,480	3,210	8,500	2,320	1,020
Lynx Denning Habitat	96,700	7,800	8.1%	780	1,970	2,850	1,200	960
Travel Habitat	110,500	17,800	16.1%	4,190	2,690	5,670	4,170	1,120

[1]Figures for total habitat on the RMRD have not been adjusted for fire, because 2 other large fires also burned on the RMRD in 2007 and impacts to lynx habitat in those areas have yet to be estimated. Therefore total lynx habitat estimates are likely high, and estimates of the percentage of all habitat found in the BTM are likely low, providing a conservative estimate of the portion of overall habitat present in the BTM area.


Glacier National Park
US Highway 2
RM1
RM2
RM3
RM4
RM5
Blackfeet Indian Reservation
Flathead National Forest
Lewis and Clark National Forest
Lynx Analysis Units
Potential Foraging Habitat
Potential Denning Habitat
Badger-Two Medicine Decision Area
Skyland Fire Area
Lynx Analysis Units
Potential Lynx Habitat
Skyland Fire Perimeter
0 1.25 2.5 5 Miles
Badger-Two Medicine Area
Travel Management Plan
MAP 4

Direct, Indirect, and Cumulative Effects Analysis

Direct and Indirect Effects

Objective HU 01 in the NRLMD is to reduce the potential for competition with generalist predators in winter "by discouraging the expansion of snow-compacting activities in lynx habitat" (USDA Forest Service 2007b). The acreage of area open to snowmobiling, as well as the mileage of over-snow trail under the existing situation is displayed in Table 9 below to illustrate the potential impact that snowmobiling might currently have on lynx habitat, and to provide an idea of the extent to which potential impact would be reduced under the Proposed Plan. Lynx habitat includes foraging and denning habitat combined, but not habitat potentially used only for travel by lynx. Figures are adjusted for fire as described above.

Table 9. Acres Open to Snowmobiling, Percent of Habitat in LAU Open to Snowmobiling, and Mileage of Over-Snow Route in Lynx Habitat by LAU for the Existing Condition (Habitat Adjusted for Fire)

	RM1	RM2	RM3	RM4	RM5
Open Acres in Lynx Habitat	2,700	5,180	2,560	1,090	7
Open Acres as Percent of Lynx Habitat in LAU	82.8%	100%	22.5%	30.9%	0.4%
Existing Mileage of Over-Snow Route in Lynx Habitat	<1	<1	3.4	0	0

A substantial portion of the acreage listed as open to snowmobiling under the existing situation 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 currently open to snowmobiles in lynx habitat is likely to be substantially less than that displayed above. Nevertheless, a large portion of the mapped lynx habitat in the RM1 and RM2 LAUs are currently open to snowmobiling, with somewhat less in RM3 and RM4. Under the Proposed Plan, no snowmobiling would occur in any of the 5 LAUs, eliminating those impacts.

The NRLMD refers to "areas of consistent snow compaction", which are areas or routes that get "enough human use that individual tracks are indistinguishable. In such places, compacted snow is evident most of the time" (USDA Forest Service 2007b). The Pike Creek Road and the main South Fork Two Medicine to Pool Creek trail are the only areas in the BTM that likely currently meet or come close to meeting that definition. The mileage of those routes that falls within mapped lynx habitat is displayed in Table 9 above by LAU. Very little mileage exists within mapped lynx habitat, particularly since the majority of the area those routes travel through was affected by the Skyland Fire in 2007. Nevertheless, under the Proposed Plan that limited mileage of over-snow route would be eliminated. Non-motorized travel would continue to be allowed throughout the

BTM area under the Proposed Plan. Based on current estimates of winter non-motorized activity, it is unlikely that 'areas of consistent snow compaction' would occur, with the possible exception of the northern 5 miles or so of the South Fork Two Medicine trail, in the RM1 LAU. Much of this travel would occur in areas not mapped as lynx habitat or in areas affected by the Skyland Fire.

Compliance With Northern Rockies Lynx Management Direction

Table 10 (below) provides a summary of compliance with appropriate NRMD objectives, guidelines, and standards for both the existing situation and the Proposed Plan.

Table 10. Current and Proposed Compliance and Consistency with Applicable Northern Rockies Lynx Management Direction Objectives, Guidelines and Standards

All Management Practices and Activities	**Existing Situation**	**Proposed Plan**
Objective ALL 01 – Maintain or restore lynx habitat connectivity	Large patches of lynx habitat remain undisturbed by motorized travel; habitat well distributed among LAUs	Eliminates potential for motorized travel to fragment habitat within BTM area and between BTM and other adjoining areas
Human Use Projects		
Objective HU 01 – Maintain the lynx's competitive advantage in deep snow by discouraging the expansion of snow-compacting activities	Large areas open to snowmobile travel although acreage used likely limited; limited mileage of trail open to snowmobiles	Eliminates snowmobile travel throughout BTM area
Objective HU 02 – Manage recreational activities to maintain lynx habitat and connectivity	Large patches of lynx habitat remain undisturbed by motorized travel; habitat well distributed among LAUs	Eliminates potential for motorized travel to fragment habitat within BTM area and between BTM and other adjoining areas
Objective HU 03 – Concentrate activities in existing developed areas	Majority of over-snow travel concentrated on S. Fork Two-Medicine to Pool Creek trail	Eliminates snowmobile travel throughout BTM area; majority of anticipated non-motorized winter travel in limited area within 5 miles of Summit Campground and US Highway 2

Guideline HU G7 – Avoid locating new permanent roads on ridge-tops, saddles, or other areas important for lynx habitat connectivity	No new roads planned	No motorized use in BTM area except on limited mileage of existing routes near area perimeter
Guideline HU G9 – Restrict public use on roads built for projects, and reclaim or decommission when finished	No roads planned for project work; Forest Plan Standards E-2-4, G-2-9, G-2-10, and L-4-34 restrict road construction and use of new roads in Threatened and Endangered species habitats. Over 75% of BTM area in Inventoried Roadless Area.	As described in Existing; proposed non-motorized emphasis in BTM area greatly limits possibilities for new road construction.
Guideline HU G11 – Avoid expanding over-snow routes or areas beyond baseline areas of consistent snow compaction unless to consolidate use and improve lynx habitat	Extremely limited existing areas of designated over-snow routes, and no existing designated play areas	Eliminates snowmobile travel throughout BTM area; non-motorized over-snow travel likely to occur on trails currently used for snowmobiles and non-motorized winter travel
Guideline HU G12 – Winter access for non-recreational special uses should be limited to designated routes or designated over-snow routes	Extremely limited winter access for special uses (access to one communication site and 1-2 private inholdings near BTM area perimeter)	Winter access to communication site would be on case-by-case basis, along existing road. Infrequent use would not result in area of snow compaction.

Compliance with Proposed Critical Habitat Designation

The BTM area is along the eastern boundary of Unit 3 (Northern Rockies Unit) of the Proposed critical habitat for Canada lynx (Federal Register V.73 No.30). As such, the BTM and surrounding lands to the north, west, and south have been identified as containing adequate amounts of boreal forest, with adequate annual snowfall to support viable populations of lynx. Although the Skyland Fire reduced snowshoe hare, and therefore lynx foraging habitat in the BTM area, it is recognized that forested landscapes are dynamic and that lynx home ranges will necessarily incorporate forest stands in differing stages of succession (Fed. Register V. 73 No.30). The key to maintenance of the principal constituent elements (PCEs) for lynx habitat is connectivity between patches of suitable foraging habitat, maintained at a spatial scale that allows for large disturbances such as the Skyland Fire. The BTM area encompasses over 25,000 acres of potential lynx habitat, and is adjoined to the west and south by National Forest lands that also support large acreages of lynx habitat. Glacier National Park to the north, although separated from the BTM area by a two-lane highway (US Highway 2), also contains large tracts of lynx habitat.

The Proposed Plan would not alter the amount or characteristics of boreal forest habitat in the BTM area. It would remove nearly all motorized travel from the BTM area, particularly from the interior and south portions that adjoin additional lynx habitat to the west and south. Therefore, the Proposed Plan would not affect proposed critical habitat in the BTM area.

Compliance with the LCNF Forest Plan

The Lewis and Clark National Forest Plan was completed in 1986, many years before Canada lynx were listed as a Threatened species. Therefore no specific measures for protection of Canada lynx or their habitat were included in the Plan. General measures for protection of Threatened and Endangered species and their habitats in the Forest Plan are included in Table 7, above, in the grizzly bear analysis section.

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, livestock grazing, and implementation of the Birch-South Travel Management Plan.

In 2007 the Skyland Fire burned approximately 46,000 acres on the Flathead National Forest, LCNF, and Blackfeet Indian Reservation, with the majority of acres on the LCNF in the BTM area (over 31,000, or about 23% of the total BTM area). Roughly 34% of the mapped foraging and denning habitat in the BTM area LAUs is within the fire perimeter, although not all of it burned, and fire intensity varied in areas that did burn. The result, however, is likely a reduction in available lynx foraging habitat in the BTM area for at least 3-5 years. In addition to the Skyland Fire, the Fool Creek and Ahorn Fires burned large areas further south on the RMRD in 2007. The combined total of all 3 fires was about 105,000 acres on the RMRD that were within the fire perimeters. Specific impacts

to lynx habitat of the Fool Creek and Ahorn Fires have not yet been estimated, although it is assumed that those fires also decreased the quantity of lynx habitat currently available on the RMRD. 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 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, all of it more than 20 miles south of the BTM area. Some firewood cutting for individual and family use occurs in specific areas near the NF boundary in the BTM area. This activity generally occurs within a very short distance of existing roads, because motor vehicle travel has not been allowed off designated roads and trails since 2001. Personal-use firewood cutting would continue to occur in these areas. Nearly all of the wood-cutting that occurs is in areas not mapped as lynx habitat. Therefore this activity is likely to have little to no effect on lynx or their prey.

Livestock grazing currently occurs within the project area on three permitted cattle grazing allotments. One additional cattle grazing allotment has been inactive for several years but may be used again in the future. Three of these allotments contain only limited acreage of lynx habitat, as does one pasture of the fourth. 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.

In October 2007 the LCNF released a new Travel Management Plan for the portion of the RMRD south of North Fork Birch Creek. Analysis and consultation for this plan was carried out in 2006. The Biological Assessment (BA) for the Birch-South plan concluded that the plan would reduce the overall acreage of lynx habitat available to snowmobiles, but would maintain the existing limited mileage of routes designated for use by snowmobiles (USDA Forest Service 2007a). The Birch-South plan would add to the overall reduction in snowmobile activity that would occur under the Proposed Plan for the BTM.

Determination of Effects

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

1. The project would eliminate snowmobiling from the entire BTM area.
2. Over-snow activity, such as cross-country skiing, would continue and have the potential to create limited areas of compacted snow.

3. The project would eliminate wheeled motorized travel in the BTM area except on a few access roads near the area perimeter, thus reducing potential for impacts to lynx.
4. Cumulative impacts of other projects on lynx, their habitat, and prey species would be negligible.

I have determined implementation of the proposed Federal Action WILL NOT RESULT IN DESTRUCTION OR ADVERSE MODIFICATION OF PROPOSED CRITICAL HABITAT for Canada lynx. My determination is based on the following rationale:

1. The project would not result in any vegetation changes in the area; therefore the project would not
   a. reduce or remove understory vegetation within boreal forest stands, or
   b. cause permanent loss or conversion of boreal forest.
2. The project would not increase traffic volume and speed on roads dividing critical lynx habitat; the project would in fact eliminate motorized travel from all but a very limited number of roads at the perimeter of the project area.

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 FWS personnel: A. Vandehey (Consultation Biologist). The meeting was held on 15 November 2005 in Wolf Creek, MT, and occurred at a time when the LCNF proposed to make a single decision for travel management on the entire RMRD. Discussion focused primarily around information needs for consultation on grizzly bears pertaining specifically to access management; a summary is provided in the 'Consultation' section of the Biological Assessment for the Birch-South decision (USDA Forest Service 2007a).

Concurrence was requested and received in September 2006 on the Biological Assessment for the Birch-South Travel Management Plan, after the decision had been made to separate the decision for that portion of the RMRD from the decision for the BTM area.

In July 2008, W. Maples (USDA Forest Service) initiated a telephone conversation with A. Vandehey (USDI Fish and Wildlife Service) regarding consultation on the BTM Travel Management Plan. The discussion focused on the question of whether it was necessary to complete a detailed access management analysis and CEM analysis for this decision, given its simplicity in removing all motorized travel from the BTM area. A. Vandehey felt that some type of access management or motorized route density analysis would be necessary, but that the CEM analysis was not required.

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