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Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones

Kootenai, Lolo, and Idaho Panhandle National Forests
Lincoln, Sanders, Bonner, Boundary, and Pend Oreille Counties
Montana, Idaho, and Washington

Forest Plan Amendments for Motorized Access Management Within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones
Draft Supplemental Environmental Impact Statement
Montana and Idaho

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Abstract: The Kootenai (KNF), Lolo (LNF), and Idaho Panhandle (IPNFs) National Forests have prepared a programmatic final supplemental environmental impact statement (FSEIS) to document proposed changes to their National Forest Land and Resource Management Plans by amending objectives, standards, and guidelines addressing access management in the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones. These Forest Plan amendments will guide future site-specific projects.

The three Forests completed a final EIS (FEIS) for the amendments in 2002. Alternatives analyzed in detail proposed varying levels of access management on each Forest and were related to the December 1, 1998 Interim Access Management Rule Set, issued by the Selkirk/Cabinet-Yaak Subcommittee of the Interagency Grizzly Bear Committee (IGBC). Alternative E was identified as the Forest Service's selected alternative in the subsequent Record of Decision in 2004.

Litigation in 2006 resulted in the District Court of Montana "setting aside" the 2002 FEIS and 2004 Record of Decision and directing the Forest Service to prepare a new environmental analysis. As a result, the U.S. Fish and Wildlife Service (USFWS) withdrew their 2004 Biological Opinion for Alternative E.

The draft supplemental environmental impact statement (DSEIS) addressed the District Court's decision by supplementing information presented in the 2002 FEIS and 2004 Record of Decision. **Alternative E was updated and identified as the preferred alternative in the DSEIS.** Alternative D was modified and analyzed in detailed study in part to respond to plaintiffs' arguments over the litigation of the 2002 FEIS and 2004 Record of Decision that stated the Forest Service failed to explain why Alternative D could not have been modified to reflect its feasibility on a BMU-by-BMU basis – similar to that of Alternative E.

The DSEIS was released for public comment in May 2009. Over 80 comment letters and emails were received, read, and considered in the development of the FSEIS. Comments were used to verify issues, correct and clarify information presented in the DSEIS and modify alternatives. Two alternatives were developed and considered in this FSEIS. **Alternative E has been updated and is identified as the preferred alternative.**

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Acronyms

AIRFA	American Indian Religious Freedom Act
ANILCA	Alaska National Interest Lands Conservation Act
ASQ	Allowable Sale Quantity
ATV	All Terrain Vehicle
BA	Biological Assessment
BLM	Bureau of Land Management
BMP	Best Management Practices
BMU	Bear Management Unit
BO	Biological Opinion
BORZ	Bears Outside Recovery Zones
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CNF	Colville National Forest
CWA	Clean Water Act
CYE	Cabinet-Yaak Ecosystem
CYRZ	Cabinet-Yaak Recovery Zone
DEIS	Draft Environmental Impact Statement
DHS	Department of Homeland Security
DSEIS	Draft Supplemental Environmental Impact Statement
ESA	Endangered Species Act
EA	Environmental Analysis
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FSEIS	Final Supplemental Environmental Impact Statement
FSH	Forest Service Handbook
FSM	Forest Service Manual
GIS	Geographic Information System
HFRA	Healthy Forest Restoration Act
IDL	Idaho Department of Lands
IGBC	Interagency Grizzly Bear Committee
IPNFs	Idaho Panhandle National Forests
INFRA	Infrastructure Database
INFS	Inland Native Fish Strategy
IRA	Inventoried Roadless Area
KNF	Kootenai National Forest
LAU	Lynx Analysis Unit
LNF	Lolo National Forest
LRMP	Land and Resource Management Plan
MDFWP	Montana Department of Fish Wildlife and Parks
MMBF	Million Board Feet
MMCF	Million Cubic Feet
MVUM	Motorized Vehicle Use Map
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRIS	Forest Historical Data
NVUM	National Visitor Use Monitoring
OHV	Off-highway Vehicle
OMRD	Opened Motorized Route Density
ORD	Open Road Density
ORV	Off-road Vehicle
RACR	Roadless Area Conservation Rule
ROD	Record of Decision
SEIS	Supplemental Environmental Impact Statement
SCYE	Selkirk/Cabinet-Yaak Ecosystem
T&E	Threatened and Endangered
TES	Threatened, Endangered and Sensitive
TMRD	Total Motorized Road Density
TSMRS	Timber Sale Management Report System
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	Unites States Fish and Wildlife Service
USGS	Unites States Geological Service
UTV	Utility Terrain Vehicle
WQLS	Water Quality Limited Streams

Summary

This programmatic final supplemental environmental impact statement (FSEIS) supplements the 2002 Final Environmental Impact Statement (FEIS) for Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones. It proposes to change the Kootenai (KNF), Lolo (LNF), and Idaho Panhandle National Forests (IPNFs) Land and Resource Management Plans (Forest Plans) by amending the objectives, standards, and guidelines that address grizzly bear management within the Selkirk and Cabinet-Yaak Recovery Zones.

Changes between the DSEIS and the FSEIS

Following are the primary changes between the draft and final supplemental environmental impact statements:

- Incorporation of the best and most current relevant scientific information available, to insure scientific integrity of the analysis and address limitations of such information. This includes a more in-depth examination of the applicability of Wakkinen and Kasworm's study results, DNA studies in Canada, the South Fork of the Flathead River study on grizzly bear habitat, updated mortality data, and the review of information on grizzly bear mortality and population trends (See Wildlife analysis starting on page 44).
- Implementations of site-specific road management decisions that have improved grizzly bear habitat are included in the updated existing condition to the year 2009. For example, a number of roads have been gated, barriered or removed from the road system to meet site-specific resource needs. Overall, core area has increased. See the Transportation section on page 156 and Wildlife section on page 44, for more information regarding these road and habitat changes.
- The design elements have been updated in consultation with the U.S. Fish and Wildlife Service and incorporated into Alternative D Modified and Alternative E Updated (see Design Elements starting on pages 19 and 26). The design features would allow for increases in route densities and decreases in core habitat within some individual bear management units that are better than the standards for these parameters, but only after all bear management units within the respective ecosystems included in the action area have met their individual access standards.
- For Alternate E Updated, adjustments were made to proposed standards in eight bear management units for open motorized route density, total motorized route density, or core area. The proposed adjustments are to account for GIS mapping errors, the need for private access (ANILCA, mining claims), border security, and grizzly bear habitat security.

Location

The Selkirk and Cabinet-Yaak Recovery Zones are two of six grizzly bear recovery zones identified in the *Grizzly Bear Recovery Plan* (USDI Fish and Wildlife Service 1993a). Located in northwestern Montana, northern Idaho, northeastern Washington, and British Columbia, the two ecosystems encompass 4,560 square miles of habitat. Portions of the KNF, LNF, IPNFs, the Colville National Forest, and Kootenay Lakes Forest District (B.C.) are included in the recovery areas (see Figure 1 on page 3 of the FSEIS). This FSEIS addresses the amendment of the Forest Plans for the KNF, LNF, and IPNFs. Therefore, only those portions of the Selkirk and Cabinet-Yaak Recovery Zones within the boundaries of these three national forests were analyzed.

Purpose and Need

The purpose and need for action for these Forest Plan amendments originates from several directives to update objectives and standards for access management within grizzly bear recovery areas. The overall purpose is to amend Forest Plans to include a set of motorized access and security guidelines to meet our responsibilities under the Endangered Species Act to conserve and contribute to recovery of grizzly bears. A number of other key directives that eventually led to this proposal to amend the Forest Plans are found in the 2002 FEIS on pages 1-4 through 1-5. In addition, the purpose and need to prepare this FSEIS originates from the District Court for the District of Montana, December 13, 2006 ruling, in which the Court directed the Forest Service to prepare a new analysis that complied with National Environmental Policy Act Regulations [40 CFR 1502.22 (a) and (b)].

Decision to be Made

The decision to be made by the three Forest Supervisors regarding access management within the Selkirk and Cabinet-Yaak Recovery Zones is:

- whether to change the three existing Forest Plan's direction; and
- if so, what standards should be established to guide management of wheeled motorized vehicle access within the Selkirk and Cabinet-Yaak Recovery Zones.

Previous Analysis

This FSEIS is intended to provide additional information to the decisionmakers to consider rather than duplicate information presented in the 2002 FEIS. Detailed information on the proposed action, public participation and scoping comments, issues and alternative development, and environmental analysis of the original Alternatives A, B, C and E are provided in the 2002 FEIS and are not repeated in this FSEIS. See the 2002 FEIS for additional information.

Alternatives Considered in This Final SEIS

Two alternatives were analyzed in detail in this FSEIS:

- **Alternative D Modified** provides the highest level of grizzly bear habitat security of any alternative analyzed with an open motorized route density (OMRD - less than or equal to 17 percent), total motorized route density (TMRD – less than or equal to 14 percent), and core area (greater than or equal to 72 percent). These values are based on home range data from a single female grizzly bear included the Wakkinen and Kasworm (1997) study. The maximum amount of secure grizzly bear habitat possible would be provided through restrictions on roads and motorized trails under the jurisdiction of the Forest Service.
- **Alternative E Updated**, which was selected as the alternative best meeting the purpose and need for action in the 2002 FEIS, also provides a high level of habitat security, but not as much as Alternative D Modified. Different levels of OMRD, TMRD, and core area would be set for each individual BMU, and would be provided through restrictions on

roads under the jurisdiction of the Forest Service. **Alternative E Updated is the preferred alternative.**

Affected Environment and Environmental Effects

Chapter 3 of this document presents a detailed description of the human and natural resources within the affected environment composed of the Selkirk and Cabinet-Yaak Recovery Zones and surrounding communities. The environmental effects of Alternative D Modified and Alternative E Updated are analyzed and disclosed for all elements of the affected environment. The following table displays a summary of the conclusions presented in Chapter 3 and provides a comparative overview of Alternative D Modified and Alternative E Updated.

Table 1. Summary of conclusions from Chapter 3 and comparison of Alternatives D Modified and E Updated

	Alternative D Modified	Alternative E Updated
Wildlife		
Relative ranking for grizzly bears (1 = best)	1	2
Relative ranking for other T&E species (1 = best)	1	2
Relative ranking for sensitive species.	Beneficial impact	Beneficial impact
Relative ranking for management indicator species	Improves habitat	Improves habitat
Transportation		
Estimated miles of road that might change from IGBC 4 (open) to IGBC 2 (gated)	282 - 403	18 - 54
Estimated miles of road that might change from IGBC 4 (open) to IGBC 3 (barriered)	598 - 768	16 - 48
Estimated miles of road that might change from IGBC 2 (gated) to IGBC 3 (barriered)	665 - 999	74 - 222
Estimated miles of road that might change from IGBC 2 (gated) to IGBC 4 (open)	6 - 12	86 - 258
Estimated miles of road that might change from IGBC 3 (barriered) to IGBC 4 (open)	0 - 6	24 - 72
Estimated miles of road that might change from IGBC 3 (barriered) to IGBC 2 (gated)	8 - 13	12 - 36
Estimated miles of trail that might change from IGBC 5 (motorized) to IGBC 7 (nonmotorized)	57	28
Aquatics - Watershed and Fisheries		
Change from Existing Level of Effects to Bull Trout	Greatest likelihood for negative effects.	Increased likelihood for negative effects.
Change from Existing Level of Effects to Sensitive Fish Species	Greatest likelihood for negative effects.	Increased likelihood for negative effects.
Potential for short-term negative impacts to aquatics, but long-term benefit when barriered roads are hydrologically treated first	Highest	Moderate
Opportunity to address watershed concerns through access management	High	Moderate

Table 1. Summary of conclusions from Chapter 3 and comparison of Alternatives D Modified and E Updated

	Alternative D Modified	Alternative E Updated
Vegetation and Timber Management		
Flexibility for resource management	High Decrease	Moderate Decrease
Level of administrative access	Very High Decrease	Moderate Decrease
Ability to access suitable acres	Very High Decrease	Moderate Decrease
Ability to tend to previously treated stands	Very High Decrease	Moderate Decrease
Recreation		
Effects to Motorized, Developed Recreation	Major effects. Could impact up to 22 developed sites.	No / little effects.
Estimated miles of Motorized Trails changed to Nonmotorized	57	28
Effects to Motorized, Dispersed, Summer Recreation	Greatest effects. Most open roads closed.	Slight effects. Least number of open roads closed.
Effects to Motorized, Dispersed, Winter Recreation	Groomed snow trails could be affected due to limited access during the active bear year (summer months) for maintenance. Winter groomed snow trails require summer maintenance to clear blowdowns and eliminate brush to facilitate passage by trail groomers during the winter months.	Groomed snow trails could be affected due to limited access during the active bear year (summer months) for maintenance. Winter groomed snow trails require summer maintenance. Fewer groomed routes would be affected than in Alternative D Modified.
Effect to Nonmotorized, Dispersed, Summer Recreation	Moderate effects. Could affect access to 148 trailheads; some trails will double in length; some trails could be dropped from the system.	No / little effect
Effect to Nonmotorized, Dispersed, Winter Recreation	Slight effects. Possible effect to one designed Nordic ski area and for alpine skiing.	No / little effect
Heritage		
Access to Cultural Sites for Administrative Use	Greatest Decrease	Moderate Decrease
Protection of Cultural Sites	Greatest Beneficial	Some Beneficial Effect
Access for Exercise of Tribal Treaty Rights	Greatest Decrease	Moderate Decrease
Social and Economic		
Level of Effect on Social Environment	High	Moderate
Area Economy – Recreation Jobs and Income	Decrease	No Change
Area Economy – Timber Jobs and Income	Highest Decrease	Decrease
Area Economy – Road Reclamation, Jobs and Income	Highest Temporary Increase	Temporary Increase
Area Economy – Payments to Counties	No Effect	No Effect

Table 1. Summary of conclusions from Chapter 3 and comparison of Alternatives D Modified and E Updated

	Alternative D Modified	Alternative E Updated
Fire, Fuels, Air Quality		
Rating of increased fire risk	High	Moderate
Effects to air quality from increased fire risk	High	Moderate
Level of effect to access for fire suppression	High	Moderate
Soils		
Improvement of soil productivity, hydrologic function, and sediment reduction	Very high	Moderate
Opportunity for road maintenance	Very Low	High
Chance of vegetative treatments, fuels reduction, and fire suppression	Very low	Low
Likelihood of human-caused fires and recreation impacts	Very low	High
Threatened, Endangered and Sensitive Plants		
Access to survey, locate and monitor known populations	High Decrease	Moderate Decrease
Risk to known populations due to wheeled motorized vehicle access	High Decrease	Moderate Decrease
Invasive Plants		
Chance for spread of weeds through motorized traffic	Very Low	Moderate Decrease
Chance for weed surveys and treatment opportunities	Very Low	Moderate Decrease
Chance for newly established species to be missed	High	Moderate

Contents

List of Tables

List of Figures

Chapter 1. Purpose and Need for Action

Introduction

This document supplements the 2002 programmatic *Final Environmental Impact Statement (FEIS) for Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones* (hereinafter, referred to as the Access Amendment). The Selkirk Recovery Zone and Cabinet-Yaak Recovery Zone are located in the Kootenai (KNF), Lolo (LNF), and Idaho Panhandle National Forests (IPNFs). While a small portion of this area is also located in the Colville National Forest (CNF) in the Pacific Northwest Region, these amendments apply only to the three Forests located in the Northern Region of the Forest Service[1].

A supplemental EIS (SEIS) is completed when circumstances surrounding a previously released EIS have significantly changed (FSH 1909.15, Chapter 18). In this case, the United States District Court for the District of Montana set aside the 2002 FEIS (USDA Forest Service 2002a) and 2004 Record of Decision (USDA Forest Service 2004a) and ordered the preparation of a new environmental analysis that complies with the National Environmental Policy Act (NEPA) regulations 40 CFR 1502.22(a) and (b), concerning incomplete or unavailable information that is either essential to alternative selection or relevant to the analysis of effects. This Final SEIS (FSEIS) supplements the analysis in the 2002 FEIS of **Alternative E** (the selected alternative from the 2004 Record of Decision), which is updated in this FSEIS to reflect current and/or new conditions as of 2009. This FSEIS for wheeled motorized vehicle access management on lands within the Selkirk and Cabinet-Yaak Recovery Zones also updates **Alternative D Modified** from the DSEIS.

In the National Forest System (NFS), Land Management Plans (hereinafter referred to as Forest Plans) provide guidance for resource programs, uses, and protection measures. This programmatic environmental analysis (FSEIS and Record of Decision) will provide guidance for future decisions conducted at the site-specific or project level. Site-specific access related decisions made through previous NEPA analyses and with completed U.S. Fish and Wildlife Service (USFWS) consultation (where applicable) would not be affected by these Forest Plan amendments. The decision on these Forest Plan amendments would not require consulting again on previous decisions for access or resource management projects. The standards set in this Access Amendment decision will apply to all future site-specific decisions regarding wheeled motorized vehicle use in the Selkirk and Cabinet-Yaak Recovery Zones (as described in the analysis area).

This chapter introduces information such as the location, purpose and need, and decisions to be made. It will also identify how and where to find additional information. The FSEIS is organized as follows:

- **Chapter 1. Purpose and Need for Action:** This chapter provides location maps, background information, the purpose and need for action for this supplemental document, and the consideration of "best and current science available."
- **Chapter 2. Alternatives, including the Preferred Alternative:** This chapter describes Alternative D Modified and Alternative E Updated that are considered in this FSEIS.

[1] Although they are not included in the Court Order, the CNF has agreed to coordinate with the KNF, LNF, and IPNFs on grizzly bear recovery.

- **Chapter 3. Affected Environment and Environmental Consequences:** This chapter presents the affected environment and the environmental effects of Alternative D Modified and Alternative E Updated.
- **Supporting information, which** includes a list of preparers, distribution list for the document, a glossary, references cited in the document, and appendices.

The 2002 FEIS and 2004 Record of Decision are referenced throughout this document and can be found at the following website: http://www.fs.fed.us/r1/kootenai/projects/planning/documents/forest_plan/amendments/index. They are also available for review at the Forest Supervisor's office in Libby, Montana and Coeur d'Alene, Idaho, as well as the District office in Plains, Montana.

Location

The Selkirk and Cabinet-Yaak Recovery Zones are two of six grizzly bear recovery zones identified in the Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993a) as areas with adequate space and suitable habitat to support self-sustaining populations of grizzly bears. Located in northwestern Montana, northern Idaho, northeastern Washington, and British Columbia, Canada, the Selkirk and Cabinet-Yaak Recovery Zones encompass 4,560 square miles of habitat. Portions of the KNF, LNF, IPNFs, CNF, and Kootenay Lakes Forest District (British Columbia, Canada) are included in the Selkirk and Cabinet-Yaak Recovery Zones. Figure 1 on page 3 displays the areas of northern Idaho and western Montana that comprise the Selkirk and Cabinet-Yaak Recovery Zones. Figure 2 on page 4 and Figure 3 on page 5 display Bear Management Units (BMUs) within the Selkirk and Cabinet-Yaak Recovery Zones, which will assist in understanding alternative descriptions in Chapter 2 and the grizzly bear analysis in Chapter 3. Figures 2 and 3 also identify recurring use areas or bears outside recovery zones (BORZ) established by Whittinger (2002), which were evaluated in Allen (2011).

This FSEIS conducts analysis for those portions of the Selkirk and Cabinet-Yaak Recovery Zones within the boundaries of the KNF, LNF, and IPNFs. These portions of the recovery zones are displayed in Figure 1 on page 3. The total area within the recovery zones on the three National Forests, including State and private inholdings, is 1,189,000 acres within the KNF; 163,000 acres within the LNF; and 806,000 acres within the IPNFs. Private and State land acreage is quantified and mapped together with public lands; however, this analysis and subsequent decision will apply only to lands administered by the KNF, LNF, and IPNFs.

Scope of this Analysis

This FSEIS pertains to access standards for wheeled motorized vehicle use during the active bear year (April 1 to November 15 in the Selkirk Recovery Zone; April 1 to November 30 in the Cabinet-Yaak Recovery Zone, see Kasworm and Wakkinen 2008). It does not change current management direction for winter motorized recreation such as snowmobile use. However, effects of the alternatives on winter motorized use by vehicles such as snowmobiles are considered in this analysis.

Education, sanitation, habitat identification and improvement, and law enforcement are important elements of a grizzly bear recovery program and much is being done in these areas. In addition, regulation of hunting in the United States and Canada are other important elements, but are not within the authority of the Forest Service. The proposed action only pertains to access standards for wheeled motorized vehicle use during the active bear year; therefore these other elements, such as education, sanitation, etc., are not addressed by the alternatives.

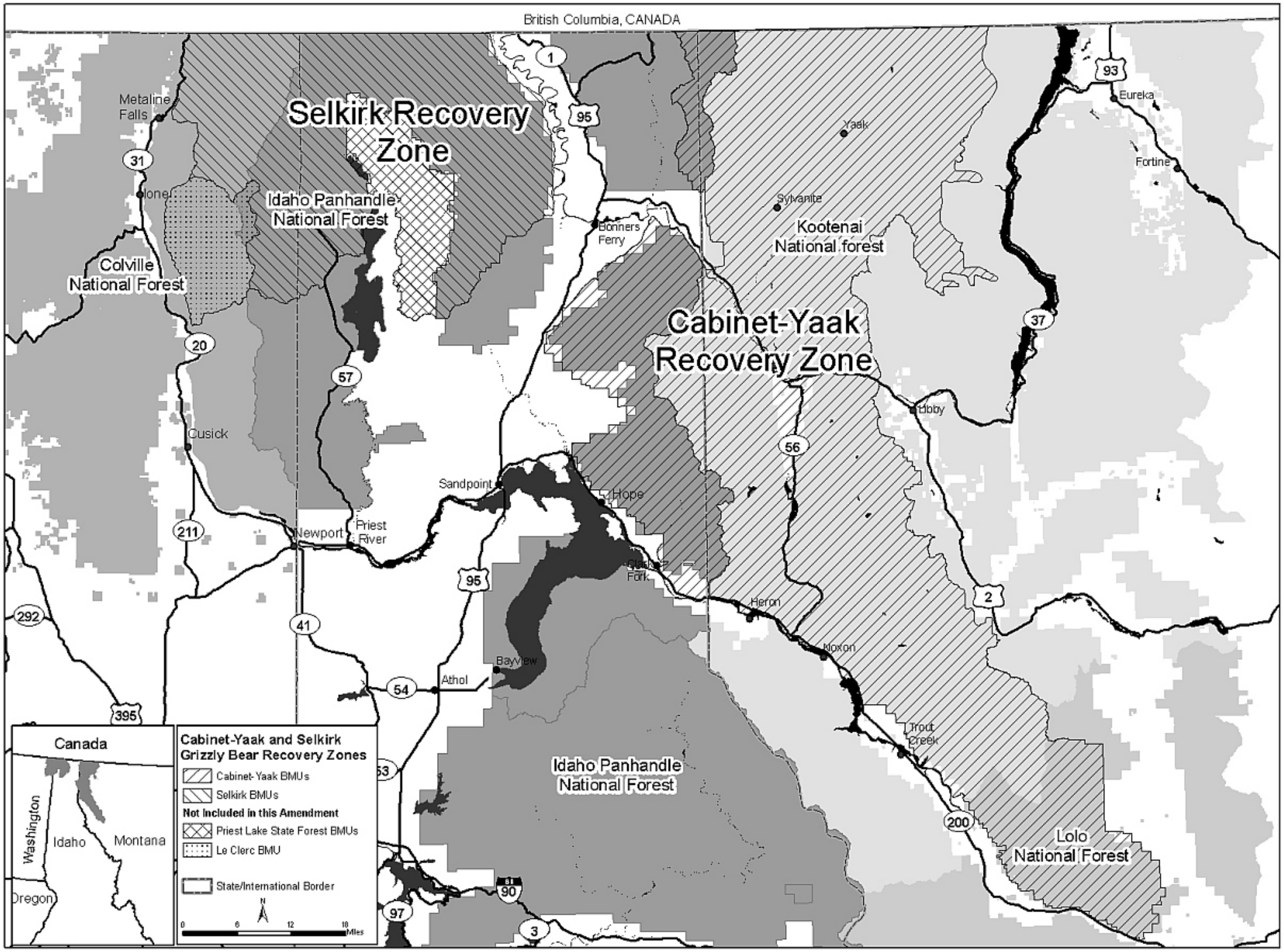

Figure 1. Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones

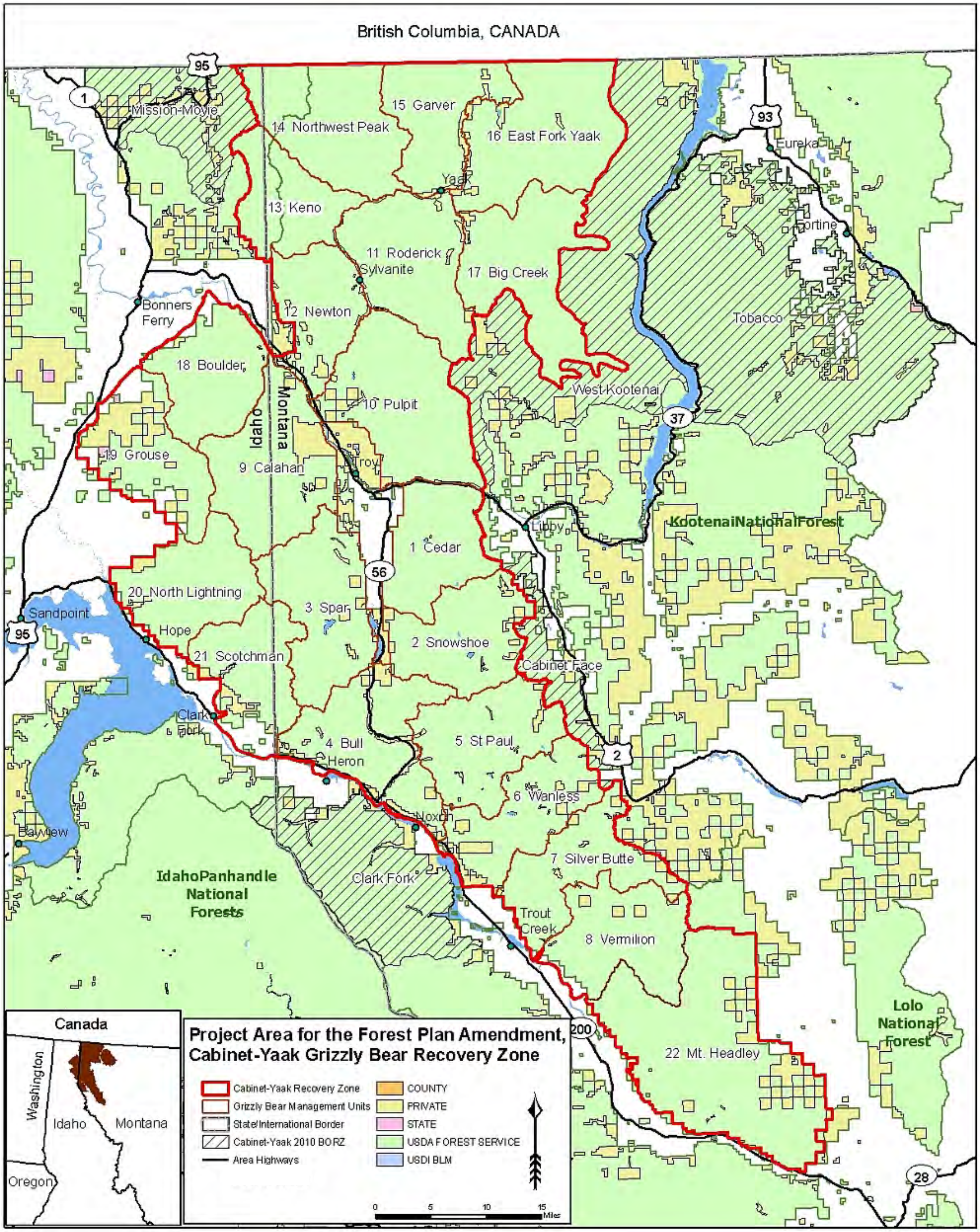

Figure 2. Cabinet-Yaak Grizzly Bear Recovery Zone and locations of grizzly bears outside recovery zones (BORZ)

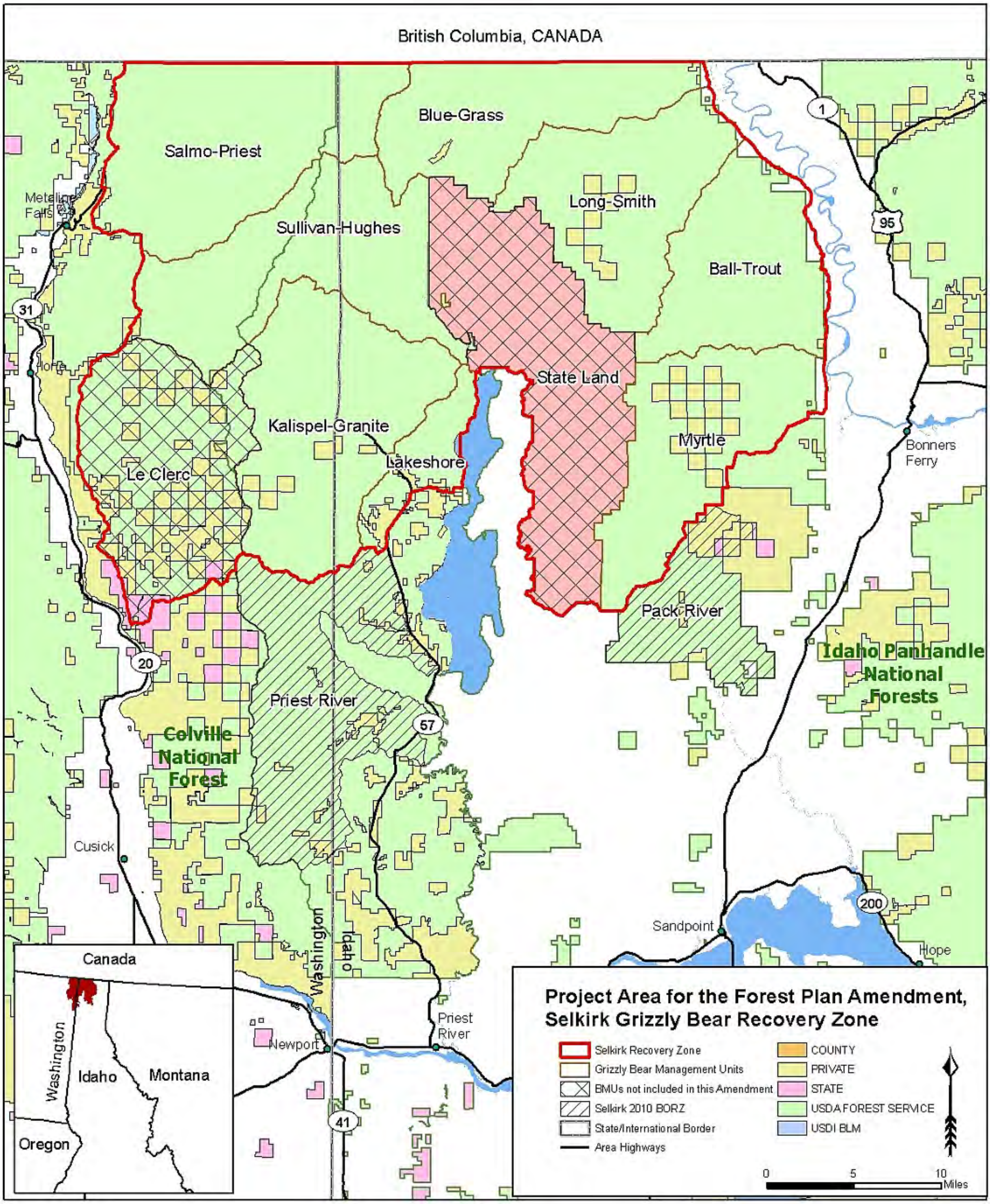

Figure 3. Selkirk Grizzly Bear Recovery Zone and locations of grizzly bears outside recovery zones (BORZ)

Biological Opinion

"Terms and conditions" for grizzly bear from the 2004 Biological Opinion (BO) were added to Alternative E Updated and Alternative D Modified in this FSEIS as "design elements" (starting on page 19). The "reasonable and prudent measures" from the 2004 BO apply to reoccurring use areas (BORZ polygons), which were updated in Allen (2011) and are shown in Figure 2 and Figure 3 on pages 4 and 5.

The reasonable and prudent measures, and the terms and conditions from the 2004 Biological Opinion, which are design elements in Alternative D Modified and Alternative E Updated in this FSEIS (see Design Elements on pages 19 and 26), have been modified in consultation with the U.S. Fish and Wildlife Service.

Overview of Grizzly Bear Management Efforts

A comprehensive program to minimize human-caused grizzly bear mortalities within the Selkirk and Cabinet-Yaak Recovery Zones involves many elements, including wheeled motorized vehicle access management, regulation of hunting, sanitation, law enforcement, and education. This document focuses on wheeled motorized vehicle access management, but at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear.

Hunting in the United States and Canada: The province of British Columbia and the states of Montana, Idaho, and Washington continue to allow hunting for black bears as well as other wildlife species, on both sides of the border within and around the Selkirk and Cabinet-Yaak Recovery Zones, although black bear hunting seasons have also been shortened in recent years. Idaho prohibits baiting and hunting bears with hounds in grizzly bear recovery zones, and has supported a grizzly bear law enforcement and education position in the Selkirk Recovery Zone to facilitate public education and hunter awareness since 1990 (Allen-Johnson 1991, Wakkinen et al. 2009). Hunting of grizzly bears in British Columbia is no longer permitted in the areas north of the recovery zones (Allen and Johnson 2008, British Columbia Ministry of Environment 2008, Mowat 2007).

Montana Fish, Wildlife and Parks instituted a voluntary bear identification course for hunters in 2001 and made it mandatory in 2002 to assist with reducing grizzly bear mortality within the state. The state wildlife management agencies for Idaho and Washington recently agreed to a request to institute similar programs in their respective states (Selkirk and Cabinet-Yaak Ecosystem IGBC 2009a and 2009b).

Sanitation: Attraction of grizzly bears to improperly stored food and garbage is identified by the Recovery Plan as one of the principal causes of grizzly bear mortality (USDI Fish and Wildlife Service 1993a). In many cases, management removals of grizzly bears are the result of bears becoming habituated to unnatural food sources such as human food or garbage. The following is a summary of sanitation measures that have taken place within the Kootenai, Lolo, and Idaho Panhandle National Forests in recent years:

> In the Kootenai National Forest portion of the Cabinet-Yaak Recovery Zone, there has been a reduction of potential unnatural food sources. In 1987, there were no bear-resistant garbage containers in any of the developed recreation sites on the Kootenai National Forest portion of the Cabinet-Yaak Recovery Zone. Currently, 27 developed recreation sites include such devices, and 12 others are slated to have them installed in 2011 (Laws and Deuker, pers. comm.

2010). In addition, the Kootenai National Forest has 12 recreation sites with food storage containers with another 22 sites planned in 2011 (ibid). In 2001, the Kootenai National Forest implemented forestwide voluntary food storage guidelines to encourage national forest users to store food in a manner that reduces human-bear conflicts.

The Lolo National Forest portion of the Cabinet-Yaak Recovery Zone includes four developed campgrounds that have a pack-it-in/pack-it-out policy so unnatural food attractants are not likely to be found at these sites (Wrobleski and Allen, pers. comm. 2010). In addition, bear resistant dumpsters were installed in the Cascade campground in 2010, although this campground is located outside the Cabinet-Yaak Recovery Zone boundary (ibid).

On the Idaho Panhandle National Forests prior to the development of the 1987 Forest Plan, no bear-resistant hardware was installed within any of the recreational sites. In 1996, all developed campgrounds on the Priest Lake Ranger District were outfitted with bear-resistant trash containers. These were later upgraded to bear-resistant dumpsters. In 1998, the four boat-or-hike-only campgrounds along the shoreline of Upper Priest Lake were outfitted with eight bear-resistant food storage lockers. By 2008, this number increased to 20. In 2004, bear-resistant dumpsters were installed at the Priest Lake Ranger District office and at Kalispell boat launch. In 2005, 12 bear-resistant food storage lockers were installed at designated campsites accessed by boat or hikers only located in another Priest Lake bear management unit. In 2006, a food storage order was implemented along the shoreline of Priest Lake and a voluntary food storage order was implemented over the remainder of the Idaho Panhandle National Forests. Both of these orders remain in effect. In 2009, 14 bear-resistant food storage lockers were installed at additional campsites around Priest Lake.

In 2005, the Priest Lake Marina and Hills Resort were required to transition to bear-resistant trash containers and dumpsters. In 2008, Elkins Resort transitioned to bear-resistant dumpsters and trashcans. Both of these resorts operate under special use permits with the Idaho Panhandle National Forests. In addition, sanitation guidelines are being added to all recreation residence special use permits issued by the Forest.

The Kootenai, Lolo, and Idaho Panhandle National Forests are implementing mandatory food storage orders for those portions of the forests included within the Selkirk and Cabinet-Yaak Ecosystems in 2011 (IGBC Subcommittee 2010 and 2011). Efforts to implement the food storage order would include information and education efforts, upgrades to developed recreational facilities, and law enforcement patrols.

Support of Research: For over 30 years, the KNF and IPNFs have provided funding in support of grizzly bear conservation and research within the Cabinet-Yaak and Selkirk Recovery Zones. On the IPNFs, funding by the Forest Service has provided for: radio telemetry flights made by Idaho Fish and Game personnel; funding for the salary of an Idaho Fish and Game Conservation Officer for law enforcement, monitoring, information and education in the Selkirk ecosystem, purchase of cameras and GPS collars for use in documenting grizzly bears; and support of DNA hair snare studies. On the KNF, funding has provided support for: grizzly bear augmentation; grizzly and black bear studies; aerial surveys and monitoring flights of grizzly bears by Montana Department of Natural Resources and USFWS; and DNA hair snare studies.

Law Enforcement: An active law enforcement program can be a deterrent against illegal grizzly bear mortality. The Forest Service actively cooperates with State and Federal law enforcement officials concerning any illegal killings of grizzly bears. Most grizzly bear poaching occurs during legal hunting seasons for other species (Knick and Kasworm 1989). In the Selkirk and

Cabinet-Yaak Ecosystems, humans have killed a minimum of 97 grizzly bears since 1982, the majority of which occurred during big-game hunting seasons. Enforcement patrols and in-field educational efforts are therefore a high priority during these periods.

In northern Idaho, the Idaho Department of Fish and Game administers the Grizzly Bear Enforcement and Education Program, the goal of which is to reduce human-caused mortalities of grizzly bears in the Selkirk and Cabinet-Yaak Ecosystems in Idaho. Under this program, extensive field patrols are conducted throughout the spring, summer, and fall.

Public Education: Public education is an important element of any program designed to reduce grizzly bear mortalities. Through education, people can learn to live in a way that is more compatible with the needs and behaviors of bears. Education programs can reduce bear mortalities in instances of self-defense and habituation to unnatural foods. The Forest Service and cooperating agencies maintain a regular program of public information and education within the Selkirk and Cabinet-Yaak Recovery Zones. For example:

- Since the inception of the Grizzly Bear Enforcement and Education Program in 1989, local conservation officers agree that public awareness concerning grizzly bears has increased significantly. The project continues to reach nearly 2,500 people every year, teaching them how to coexist with grizzlies and how to identify bears. Similarly, the Montana Department of Fish, Wildlife, and Parks staffs Bear Safety and Educational booths and provides educational programs and presentations at local fairs/festivals and schools in the northwest Montana communities adjacent to the Cabinet-Yaak Recovery Zone.
- On the Kootenai and Idaho Panhandle National Forests, districts posted grizzly bear info signs (“Hunters Know Your Bears”) at trailheads, behind gates and other access points, dispersed sites, and campgrounds. Informative literature, including "Be Bear Aware" and "Living in Bear Country" was disseminated to the public via front desks at the ranger district and Forest Supervisor offices, brochures and kiosks at ranger stations and campgrounds to emphasize the importance of proper bear identification, as well as how residents and recreationists should properly store their food, garbage and other bear attractants while in bear country.

In North Idaho, the Kootenai Valley Resource Initiative (KVRI) is a broad-based group of people whose goal is to become involved in resource-based issues that affect the community, including grizzly bear management. The Kootenai Valley Resource Initiative may allow significant progress in addressing public awareness, education, understanding of the issues, and ultimately a broad-based community effort related to grizzly bear recovery. Because the KVRI represents a broad segment of the local population, it can allow access into segments of the population that was not previously accessible. Ultimately, it will be the community’s attitudes regarding grizzly bear recovery that will determine the fate of the grizzly bear in the Selkirk and Cabinet-Yaak Ecosystems.

During July and August of 2007, a public opinion and knowledge survey was conducted in Lincoln and Sanders County, Montana (Canepa, Annis, and Kasworm 2008). The survey was designed to measure public understanding of grizzly bears and management in the Cabinet Mountains and Yaak Valley of Montana. The survey provided a snapshot of knowledge and attitudes of grizzly bears that residents of Lincoln and Sanders Counties, Montana currently hold. Communities interviewed were Libby, Troy, and Yaak in Lincoln County, and Heron, Noxon, Thompson Falls, and Trout Creek in Sanders County. One of the more controversial subjects brought up during public meetings in the last decade was implementation of motorized access restrictions on National Forest lands. In the survey, one-third of respondents stated that they were unaware of the current road restrictions on National Forest lands. In addition, 69 percent stated that grizzly bear recovery efforts had not negatively affected their employment or recreation opportunities. When asked about support for current road restrictions, 49 percent supported and 42 percent were opposed to them. Fifty-eight percent were opposed to any additional road restrictions in the future and 31 percent were in support of them. Overall, the majority of respondents indicated support for the recovery of grizzly bears in the Cabinet-Yaak ecosystem, yet concern remained over specific management actions (road restrictions, augmentation, and final population goals) proposed to achieve recovery.

Background

The Grizzly Bear Recovery Plan identifies adequate effective habitat as the most important element in grizzly bear recovery (USDI Fish and Wildlife Service 1993a). Effective habitat is a reflection of an area's ability to support grizzly bears based on the quality of the habitat and the type and amount of human disturbance imposed on it. Security habitat allows for sufficient space for grizzly bears to roam and effectively use available habitats. By definition, security habitat is an area or space outside or beyond the influence of high levels of human activity. Open roads, vegetation and fuel projects, and high-use recreational areas such as trails or campgrounds are examples of activities that reduce the amount of secure habitat that is available and may result in displacement of bears.

Controlling and directing motorized access is one of the most important tools in achieving habitat effectiveness and managing grizzly bear recovery (ibid). By controlling motorized access, certain objectives can be achieved including minimizing human interactions and potential grizzly bear mortality, reducing displacement from important habitats, and minimizing habituation to humans.

In 1994, the Interagency Grizzly Bear Committee (IGBC) issued a Task Force Report recommending the Selkirk/Cabinet-Yaak Subcommittee develop parameters for road densities and core area in the Selkirk and Cabinet-Yaak Recovery Zones using the best available biological information, and considering the social and economic impacts of those recommendations (IGBC 1994). The USFWS issued *Amended Biological Opinion and Incidental Take Statements* on the Kootenai, Lolo, and Idaho Panhandle National Forests' forest plans in 1995, 1996, and 2001, respectively, which directed the Forest Service to adopt the IGBC recommendations when developed. Additionally, in 1995 following an appeal of the Kootenai Forest Plan, the Chief of the Forest Service directed the regional forester to incorporate, through Forest Plan amendments or revisions, the IGBC Subcommittee recommendations in their entirety.

In response to the IGBC Subcommittee recommendations, an Access Management Task Group was formed in 1996, which developed a set of parameters based on best available science, public input, and social impacts. These recommendations utilized research performed by grizzly bear research scientists Wayne Wakkinen (Idaho Department of Fish and Game (IDFG)) and Wayne Kasworm (USFWS). The work of the Access Management Task Group culminated in the following recommendations:

1. Open motorized route density (OMRD) of greater than 1 mile per square mile on no more than 33 percent of a bear management unit (BMU);
2. Total motorized route density (TMRD) of greater than 2 miles per square mile on no more than 26 percent of a bear management unit;

3. Core area of at least 55 percent of the bear management unit;
4. Administrative use that would be restricted to an average of no more than one trip per day on gated roads; and
5. Road density calculations that would be determined by using the Moving Windows Analysis method.

These recommendations were presented to the IGBC Subcommittee in 1998 and Implementation Guidelines were then developed to guide how the Forests would implement the recommendations. The subcommittee proposed implementation of the recommendations as interim guidelines to be in place for the next 3 years or until the Forest Plan revisions were completed. The subcommittee approved the Interim Access Management Rule Set (IGBC 1998b) in December of 1998 (IGBC 1998a). Implementation of the Interim Access Management Rule Set was then litigated by Alliance for the Wild Rockies in 1999. The lawsuit contended that the KNF and IPNFs could not implement the Interim Access Management Rule Set without first amending their Forest Plans.

In 2001, the Forests settled the lawsuit with Alliance for the Wild Rockies by agreeing to amend their Forest Plans to address grizzly bear habitat management. The LNF, though not named in the lawsuit, was included in the planning process in order to make conforming amendments to its own Forest Plan and to provide consistent management direction throughout the Cabinet-Yaak Recovery Zone. In compliance with the settlement agreement, the Forests released an FEIS in March 2002 (see Chapter 2 on page 15). On March 24, 2004, the Record of Decision was signed that amended the Forest Plans for the KNF, LNF, and IPNFs.

The 2004 Record of Decision selected Alternative E for implementation. This alternative was modified to incorporate the terms and conditions identified in the Biological Opinion issued by the USFWS. The 2004 Record of Decision amended the objectives, standards, and guidelines in the three Forest Plans that addressed grizzly bear management within the Selkirk and Cabinet-Yaak Recovery Zones. At that time, the Forests began analyzing grizzly bear habitat using direction provided by the Biological Opinion. This included analysis of OMRD, TMRD, core area, and linear open/total road densities for areas of grizzly bear occupancy adjacent to the recovery zones (BORZ polygons). See Appendix A in the 2004 Record of Decision for information that disclosed how the three Forests have moved towards Alternative E standards. In November and December 2004, a lawsuit was filed in the U.S. District Court of Montana against the Forest Service and the USFWS by the Alliance for the Wild Rockies and The Lands Council, and another by the Cabinet Resource Group, Great Bear Foundation, Idaho Conservation League, Natural Resources Defense Council, and Selkirk Conservation Alliance. The lawsuits contended that the Access Amendment decision was adopted in violation of National Forest Management Act (NFMA), National Environmental Policy Act (NEPA), and Endangered Species Act (ESA).

On August 28, 2006, the Montana District Court ruled in favor of the Forest Service and USFWS in the lawsuit brought by the Alliance for the Wild Rockies and The Lands Council. On December 13, 2006, the Court ruled in favor of the Forest Service and USFWS on most issues, but against them on one issue in the lawsuit brought by the Cabinet Resource Group, Great Bear Foundation, Idaho Conservation League, Natural Resources Defense Council, and Selkirk Conservation Alliance. As a result, the District Court ordered that the 2002 FEIS and 2004 Record of Decision be set aside as contrary to law and that the matter be remanded to the Forest Service for preparation of a new environmental analysis that complied with 40 CFR 1502.22 (a) and (b). Specifically, the court held that the analysis must: (1) acknowledge that study authors Wakkinen and Kasworm were uncertain whether the bears they studied had chosen optimal habitat or whether they simply chose the best habitat available, (2) must take into account the misgivings of the USFWS biologists over the 33/26/55 standards, (3) must consider the findings of other studies measuring habitat parameters in other ecosystems, and (4) must address the status of grizzly bear mortality in the Selkirk and Cabinet-Yaak Recovery Zones.

On March 20, 2008, Forest Supervisors Paul Bradford (KNF), Ranotta McNair (IPNFs), and Deborah Austin (LNF) issued a project initiation letter to the interdisciplinary team to prepare a draft supplemental environmental impact statement (DSEIS) that complied with the December 2006 District Court Order. A notice of intent (NOI) to prepare a supplemental environmental impact statement (SEIS) for the Access Amendment was published in the Federal Register on May 13, 2008. A DSEIS was completed and made available for public review in May 2009. Over 80 comment letters were received by the Forest Service in response to the DSEIS.

Since January 1999 when the Forest Service began working toward achieving the Wakkinen-Kasworm recommendations within the Selkirk and Cabinet-Yaak Ecosystems, habitat conditions for grizzly bear have been steadily improving as existing road miles within the two recovery zones have been reduced. In 2002, the amount of total motorized routes (gated roads, open roads and open motorized trails) within the recovery zones for the Kootenai and Idaho Panhandle National Forests was about 3,877 miles (DSEIS, p. 120). In 2009, there were about 3,767 miles of total motorized routes on these two national forests, which is a reduction of about 110 miles (see Table 39, p. 162). In 2009, the entire Cabinet-Yaak Recovery Zone had a total of 57 percent core area versus 56 percent core area in 2002. From 2002 to 2009, there has been an increase of approximately 17,773 acres in designated core area. In 2009, the Selkirk Recovery Zone affected by this proposal had a total of 60 percent core area versus 59 percent in 2002. From 2002 to 2009, there has been an increase of approximately of 3,635 acres in designated core area.

However, the three forests have been working since the late 1980s to create secure habitat for grizzly bears. If one considers agency efforts to comply with Forest Plan direction regarding grizzly habitat effectiveness[2] since that time, overall secure grizzly bear habitat on National Forest System lands (i.e., core area) has increased in the two recovery zones by about 390,000 acres (Selkirks = 74,150; Cabinet-Yaak = 315,850 acres) from the days of maximum road construction and use to conditions in 2009 (see page 20, FSEIS Appendix C). This equates to more than an 11 and 18 percent increase in core area in the Selkirk and Cabinet-Yaak recovery zones, respectively, since implementation of habitat security measures began in the late 1980s.

Purpose and Need for Action

The overall purpose and need for action has not significantly changed from the 2002 FEIS, which is to amend the three Forest Plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency’s responsibilities under the ESA to conserve and contribute to recovery of grizzly bears. More specifically, in 2002 there was a need to incorporate wheeled motorized vehicle access and security direction based on: (1) the *1994 IGBC Task Force Report*, (2) the *Amended Biological Opinion and Incidental Take Statements* on the KNF and LNF Land and Resource Management Plans, (3) the 1995 decision by the Chief of the Forest Service on the Appeal of the Kootenai Forest Plan, and (4) the stipulations of a 2001 Settlement Agreement in a lawsuit challenging implementation of the Interim Access Management Rule Set (IGBC 1998a) developed by the Selkirk/Cabinet-Yaak Subcommittee of the IGBC. Issuance of

[2] Mimimum of 70 percent (KNF) or 70 square miles (IPNF) of security habitat within each grizzly bear Bear Management Unit (BMU) where all open roads, timber harvest activites, and high use recreational features are buffered by 0.25 miles. See page 67 of this document for additional details.

the 2002 FEIS fulfilled item 4 of the purpose and need. See the 2002 FEIS for further background regarding the specific directives related to this analysis and the background discussion above for an explanation of the purpose and need for this analysis that supplements the 2002 FEIS.

Overview of the Supplemental Analysis

This FSEIS further updates the analysis from the 2002 FEIS to address the shortcomings identified by the District Court. Alternatives D Modified and E have been updated in this FSEIS to reflect current and/or new conditions. Furthermore, the most current information and best relevant science is used to determine effects to resources, including the analysis to address grizzly bear habitat, mortality, and proposed access standards.

With the exception of a brief overview in Chapter 2, the analysis for other alternatives addressed in detail in the 2002 FEIS (Alternatives A, B, and C) will not be restated in this FSEIS. There is no new or updated information associated with the analysis area that would warrant further analysis of Alternatives A, B, and C. Additional detailed analysis of these alternatives is not required by the District Court and is not necessary to help the responsible officials choose an alternative for implementation. As a result, this FSEIS provides an analysis and comparison of Alternative D Modified with Alternative E Updated. The responsible officials will consider all information from the 2002 FEIS and this FSEIS when deciding a course of action that will best meet the purpose and need for this project.

Data Used for Analysis

To analyze effects, the interdisciplinary team used information including, but not limited to, field surveys and reviews, historical data, maps, models, research, monitoring data, and professional judgment based on experience and research data. It is important to note that statistical data provided in the analyses are the best estimates given the information currently available and are primarily used for comparative purposes.

In the 2002 FEIS, analysis was based on the existing conditions for 2000, which was the most complete data set for resources, particularly grizzly bear information, at the time analysis began in 2001. The data for this FSEIS is based on existing conditions at the end of 2009, depending on the most current information available when analysis began. The analysis for Alternative E has been updated for existing conditions as of 2009, unless otherwise stated, and Alternative D Modified uses the same existing conditions for comparison.

Data improvement and refinement since the 2002 analysis has occurred on all three Forests as a result of new field survey data on road and trail conditions, as well as updates to the Infrastructure (INFRA) database and Forest GIS layers.

Best Available Science

The ESA requires Federal agencies to base their actions on the use of best scientific and commercial data available [16 U.S.C. 1536(a) (2)]. The best available scientific information regarding the access management in grizzly bear habitat is considered to include two primary sources. One of these is the information gathered from research of the South Fork of the Flathead River regarding how road access affects grizzly bears (Mace and Manley 1993, Mace and Waller 1997). This research resulted in development of OMRD, TMRD, and core area as management measures for ensuring grizzly bear habitat security. The second source is research from local bear populations that applies to the South Fork of the Flathead River research techniques to the Selkirk and Cabinet-Yaak Recovery Zones (Wakkinen and Kasworm 1997). The Wakkinen and Kasworm report (1997) was peer reviewed by nine biologists, whose comments were incorporated in the final report. Wayne Kasworm, grizzly bear researcher with the USFWS, and Wayne Wakkinen, grizzly bear researcher with the IDFG, have over 45 years of experience monitoring grizzly bear populations in the recovery zones.

The IGBC has recommended that information on OMRD, TMRD, and core area be incorporated into the management of grizzly bears and that each grizzly bear ecosystem develop ecosystem-specific guidelines using local data where possible (IGBC 1998b). Based on the IGBC's recommendation, the Forest Service and USFWS reviewed research from the South Fork Flathead study (Mace and Manley 1993) and the Selkirk and Cabinet-Yaak study (Wakkinen and Kasworm 1997). The research data from radio-collared grizzly bears in the Selkirk and Cabinet-Yaak Ecosystems was used to determine the appropriate levels of these three parameters (Wakkinen and Kasworm 1997). These numbers were generated with local data, which the Forest Service and the USFWS considers the best available local information (see 2002 FEIS, pages 4-29 and 30, and Allen et al. 2011 in FSEIS Appendix C).

Finally, the project record contains letters received from the public that included attachments of references to literature or simply a reference to literature (see 2004 Project Record, Volumes 8 through 12). Scientists involved in this project from the USFWS, Forest Service, and IDFG reviewed all submitted references. In their review of references, scientists determined if the reference was applicable to the Selkirk or Cabinet-Yaak Recovery Zone. In addition, the Forest Service conducted a search for references identified in public letters, which were not submitted and/or attached with the comment letter. The project record documents the review process conducted by the scientists (See 2004 Project Record, Volume 14, Public Comment [Scoping and DEIS] Literature References Relevancy). For more information, see Wildlife section starting on page 44.

Key Information in the 2002 FEIS and 2004 Record of Decision

Several sources of information are essential to understanding the framework in which this supplemental analysis is conducted. The 2002 FEIS and 2004 Record of Decision originally conducted for this project are incorporated by reference within the FSEIS, and are referenced throughout this analysis. A full range of alternatives were described and analyzed in the 2002 FEIS (see Errata to the FEIS and Record of Decision) and consequently, they will not be addressed in this FSEIS analysis.

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Chapter 2. Alternatives, Including the Preferred Alternative

Introduction

This chapter provides a synopsis of the alternatives presented in the 2002 FEIS (USDA Forest Service 2002a) and a detailed description of Alternative D Modified and Alternative E Updated. Additionally, a discussion of applicable changes that have occurred since the release of the 2004 Record of Decision (USDA Forest Service 2004) and decisions to be made is included in this chapter.

Information previously presented in the 2002 FEIS and 2004 Record of Decision will be referenced in lieu of repeating information, or will be briefly summarized.

Review of the 2002 FEIS Alternatives Considered in Detail and Alternatives in this Final SEIS

Table 2 on page 16 provides an overview of the alternatives that were developed from public issues raised during scoping and considered in detail in the 2002 FEIS. See the 2002 FEIS for more detailed information on these alternatives. Alternative E, as presented in Table 1 reflects the 2002 FEIS and does not include the updates considered in the DSEIS and this FSEIS. Table 3 on page 18 provides an overview of the alternatives considered in this FSEIS. The Responsible Officials will consider all information from the 2002 FEIS and this FSEIS when deciding a course of action that will be documented in a Record of Decision.

Changes between the DSEIS and FSEIS

Following are the primary changes and/or additions to the alternatives between the draft and final supplemental environmental impact statements.

- **Incorporation of the best and most current relevant scientific information available, to insure scientific integrity of the analysis and address limitations of such information.** This includes a more in-depth examination of the applicability of Wakkinen and Kasworm's study results, DNA studies in Canada, the South Fork of the Flathead River Study on grizzly bear habitat, updated mortality data, and the review of information on grizzly bear mortality and population trends (See Wildlife analysis starting on page 44).
- **Implementations of site-specific road management decisions that have improved grizzly bear habitat are included in the updated existing condition to the year 2009.** For example, a number of roads have been gated, barriered or removed from the road system to meet site-specific resource needs. Overall, core area has increased. See the Transportation section on page 156 and Wildlife section on page 44, for more information regarding these road and habitat changes.

Table 2. Specific features of the 2002 FEIS alternatives considered in detail

Features	A: No Action, Grizzly Bear Access Mgmt as of 11/30/98, before Interim Access Rule Set	B: Proposed Action, Interim Access Rule Set	C: Habitat Security Standards Applied Across All BMUs	E: Habitat Security Standards for Individual BMUs (Preferred Alternative)
Linear Open Road Density KNF	$\leq$ 0.75 mi/mi^2 by BMU and bear analysis area	$\leq$ 0.75 mi/mi^2 by BMU and bear analysis area	No standard	No standard
Linear Open Road Density IPNFs	No standard	No standard	No standard	No standard
Linear Open Road Density LNF	$\leq$ 1 mi/mi^2 by bear management analysis area plus grizzly bear management strategy	$\leq$1 mi/mi^2 by bear management analysis area plus grizzly bear management strategy	No standard	No standard
Habitat Effectiveness (Security)	$\geq$ 70% per BMU; **KNF** less than or equal to 70 mi^2 per BMU. **LNF and IPNFs** - no standard [3]	$\geq$ 70% per BMU for all Forests	No standard	No standard
Point Source Disturbance	Covered in Habitat Effectiveness	Covered in Habitat Effectiveness	Required	Required
Open Motorized Route Density (OMRD) **(for all Forests, unless specified)**	**KNF** - No increase in density above current Forest Plan, no increase in open motorized trail density in affected BMUs. **LNF** - No increase in density above current Forest Plan and grizzly bear management strategy and no increase in open motorized trails. **IPNFs** – No standard.	No net increase on Forest lands within recovery area.	No more than 33% with density > 1 mi/mi^2 as measured by moving windows, no increase in OMRD until all BMUs in Recovery Zone meet standards for OMRD, TMRD, and core area. In BMUs not meeting OMRD, actions affecting OMRD must result in movement toward the standard and no net loss during project activities.	Numeric standard specific to each BMU. In BMUs not meeting their specific standard, projects affecting OMRD must result in post-project movement toward the standard.

[3] For Alternative A above, the IPNFs was identified as not having a standard in effect for grizzly bear habitat effectiveness (security) prior to the existence of the Interim Access Rule Set. This was incorrect in the FEIS; current IPNFs Forest Plan standards require striving for at least 70 square miles of security or established threshold level for each grizzly bear management unit. Also, see Table 19 in this document.

Table 2. Specific features of the 2002 FEIS alternatives considered in detail

Features	A: No Action, Grizzly Bear Access Mgmt as of 11/30/98, before Interim Access Rule Set	B: Proposed Action, Interim Access Rule Set	C: Habitat Security Standards Applied Across All BMUs	E: Habitat Security Standards for Individual BMUs (Preferred Alternative)
Total Motorized Route Density, (TMRD)	**KNF and LNF** - No net increase in affected BMUs or subunits**).** **IPNFs** - N/A.	No net increase on Forest lands within recovery area	No more than 26% with density > 2 mi/mi^2 as measured by moving windows. No increases in TMRD until all BMUs in recovery zone meet OMRD, TMRD, and core area. In BMUs not meeting TMRD, actions affecting TMRD must result in movement toward the standard and no net loss during project activities.	Numeric standard specific to each BMU. In BMUs not meeting their specific standard, projects affecting TMRD must result post-project movement toward the standard.
Core Area	**KNF and LNF** - No net decrease in existing amount of core area in affected BMUs, consider seasonal needs, flexibility to make major changes. **IPNFs** - no standard.	No net loss on Federal ownership in all BMUs. Criteria to replace lost existing core area, work to achieve 55% in Priority 1 BMUs, consider seasonal needs, flexibility to make major changes.	≥ 55% for each BMU, no decrease in BMUs currently ≥ 55% until all BMUs in a recovery zone meet OMRD, TMRD, and core area. Actions affecting core area must result in increased core area in BMUs less than 55%, no net loss during project activities, implementation time frame required; consider seasonal needs, fixed in place for 10 years minimum.	Numeric standard specific to each BMU. Consider seasonal needs, core area fixed in place for 10 years minimum. In BMUs not meeting their specific standard, projects affecting core area must result in increased post-project core area. In BMUs currently exceeding specified core area, no net loss of core area from existing condition except for temporary reductions.
Administrative Use	**KNF** - 121 trips **LNF -** 14 days **IPNFs** - 15 days	115 round trips divided by season	57 round trips, divided by season	57 round trips, divided by season
Habitat-based Access Management	None on any Forest	Explore habitat based access management approach	Participate in workgroup to pursue habitat based analysis	Participate in workgroup to pursue habitat analysis
Public Use Period-30 day	None	Allowed, if BMU meets criteria ≥ 55% Core Area Priority 1 BMUs; ≥ 70% Habitat Effectiveness Priority 2 and 3 BMUs; seasonal habitats not impacted, only 1 gated road	Allowed, if BMU meets criteria core area ≥ 55%, important seasonal habitats would not be impacted, only 1 gated road system/year per BMU	None

Table 3. Specific features of the Final SEIS alternatives

Features	Alternative D Modified (FSEIS)	Alternative E Updated (FSEIS)
Linear Open Road Density KNF	No standard	No standard
Linear Open Road Density IPNFs	No standard	No standard
Linear Open Road Density LNF	No standard	No standard
Habitat Effectiveness (Security)	No standard	No standard
Point Source Disturbance	Required	Required
Open Motorized Route Density (OMRD; for all Forests, unless specified)	Numeric standard specific to each BMU. Consider seasonal needs. BMUs currently not meeting their respective OMRD standard are estimated to meet all standards within eight years of the amendment decision date. In BMUs not meeting their specific standard, projects affecting OMRD must result post-project movement toward the standard.	Numeric standard specific to each BMU. Consider seasonal needs. BMUs currently not meeting their respective OMRD standard are estimated to meet all standards within eight years of the amendment decision date. In BMUs not meeting their specific standard, projects affecting OMRD must result post-project movement toward the standard.
Total Motorized Route Density, (TMRD)	Numeric standard specific to each BMU. Consider seasonal needs. BMUs currently not meeting their respective TMRD standard are estimated to meet all standards within eight years of the amendment decision date. In BMUs not meeting their specific standard, projects affecting TMRD must result in post-project movement toward the standard.	Numeric standard specific to each BMU. Consider seasonal needs. BMUs currently not meeting their respective TMRD standard are estimated to meet all standards within eight years of the amendment decision date. In BMUs not meeting their specific standard, projects affecting TMRD must result post-project movement toward the standard.
Core Area	Numeric standard specific to each BMU. Consider seasonal needs. Core area fixed in place for 10 years minimum. For those BMUs currently meeting or exceeding (being better than) the standards for core area, except as provided for road stabilization projects, no reductions in core habitat without in-kind replacements until all BMUs in the respective ecosystem are up to standard. In BMUs not meeting their specific standard, projects affecting core area must result in increased post-project core area.	Numeric standard specific to each BMU. Consider seasonal needs. Core area fixed in place for 10 years minimum. For those BMUs currently meeting or exceeding (being better than) the standards for core area, except as provided for road stabilization projects, no reductions in core habitat without in-kind replacements until all BMUs in the respective ecosystem are up to standard. In BMUs not meeting their specific standard, projects affecting core area must result in increased post-project core area.
Administrative Use	Selkirk ecosystem – 57 round trips divided by season Cabinet-Yaak ecosystem – 60 round trips divided by season	Selkirk ecosystem – 57 round trips divided by season Cabinet-Yaak ecosystem – 60 round trips divided by season
Habitat-based Access Management	Participate in workgroup to pursue habitat-based analysis	Participate in workgroup to pursue habitat-based analysis
Public Use Period-30 day	None	None

- **Change to recovery goals in place at the time of the 2009 SDEIS.** A January 14, 2009 news release from USFWS announced the removal of the Great Lakes and portions of the northern Rocky Mountains population of gray wolves from protection under the ESA. This proposal was reviewed and affirmed by the new administration on March 6, 2009. Publication of this action in the Federal Register occurred on April 2, 2009, and went into effect May 4, 2009. A subsequent court order from the U.S. District Court for the District of Montana on August 5, 2010 has vacated and set aside the U.S. Fish and Wildlife Service's April 2, 2009 Final Rule. Subsequent delisting of the gray wolf in parts of the Northern Rockies Distinct Population Section (including Idaho and Montana) occurred by the USFWS took effect on May 5, 2011 (USDI Fish and Wildlife Service 2011c).
- **The design elements have been updated in consultation with the U.S. Fish and Wildlife Service and incorporated into Alternative D Modified and Alternative E Updated** (see Design Elements starting on pages 19 and 26). The design features would allow for increases in route densities and decreases in core habitat within some individual BMUs that are better than the standards for these parameters, but only after all BMUs within the respective ecosystems included in the action area have met their individual access standards.

Alternative D Modified - Increased Security Standards for Individual Bear Management Units

Alternative D Modified primarily focuses on the biological needs of the grizzly bear, without consideration of social, valuational, and institutional needs. This alternative is designed to provide OMRD, TMRD, and core area standards by individual bear management unit (BMU) that achieve the highest security parameters for bears (where possible), as identified in Wakkinen and Kasworm (1997). The basis for these parameters comes from the 1989-1990 home range data of a single 20-year-old female grizzly bear. The conditions for OMRD (less than or equal to 17 percent), TMRD (less than or equal to 14 percent), and core area (greater than or equal to 72 percent) were set for each BMU when possible to achieve within Forest Service jurisdiction. In BMUs within Forest Service jurisdiction where it was not possible to achieve recommended levels, habitat parameters were set at the highest level practicable. See the Transportation section on page 156 for a discussion related to Forest Service jurisdiction.

The changes from the 2009 DSEIS include:

- In response to comments on the DSEIS, the BORZ areas from the DSEIS were examined and revalidated by Forest Service, Fish and Wildlife Service and Idaho Department of Fish and Game wildlife biologists. This review resulted in elimination of the Troy, Libby and Fisher BORZ areas because they did not fit the definition of a reoccurring use area. Similarly, based upon known grizzly bear distribution, adjustments to the boundaries of the remaining seven BORZ areas occurred. Finally, the Deer Ridge BORZ from the DSEIS has been renamed the Mission-Moyie BORZ.

Design Elements

I. The following access management standards would apply to individual BMUs within the Selkirk Recovery Zone on the IPNFs and Cabinet-Yaak Recovery Zone on the KNF, IPNFs, and portion of the LNF:

   A. The OMRD, TMRD, and percent core standards displayed in Table 5 would be established for the BMUs in the Cabinet-Yaak and Selkirk grizzly bear ecosystems.

B. Parameters for establishing and managing core habitat in all BMUs:

1. In accordance with IGBC (1998b) and Selkirk/Cabinet-Yaak Ecosystem Subcommittee (1998a) direction, core areas shall be established for the purpose of providing secure habitat for grizzly bears.

   a. Core areas include high quality habitat within a BMU that contains no motorized travel routes or high use trails.

   b. Core areas do not include any gated or restricted roads but may contain roads that are impassable due to re-growth of vegetation, effective barriers other than gates, or placement of logging or forest debris so as to no longer function as a motorized route.

   c. When possible, core areas would be delineated by identifying and aggregating the full range of seasonal habitats that are available in the BMU.

   d. The IGBC anticipated that minimum core area size might be determined for each recovery zone. For the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones, no scientifically based minimum effective size polygon for core area has been determined (Wakkinen and Kasworm 1997), though minimum block sizes of 2 to 8 mi^2 were suggested. Therefore, discounting small or narrow blocks of core area is not prudent at this time. Individual project analyses would disclose the percent and size of core areas in each BMU.

   e. Once route closures to create core areas are established and effective, these core areas should remain in place for at least 10 years. Therefore, except for emergencies or other unforeseen circumstances requiring independent section 7 consultation, newly created core area shall not be entered for at least 10 years after creation.

   f. Roads that are closed, decommissioned, or barriered in the future to create core area would be put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years. Until such closed roads are placed in the above-described condition, they would not be considered as contributing to core area.

2. Entering core area blocks for road decommissioning or stabilization activities:

   a. Without further section 7 consultation on grizzly bears, the Forest Service may affect underlying core area (i.e., any core habitat that is affected by the subject road and its buffer) within a BMU once per 10-year time frame, and not to exceed one bear year for the sole purpose of completing road decommissioning/stabilization activities on existing closed or barriered roads in core area habitat.

   b. Subsequent needs to re-enter individual core areas within a BMU more frequently than once per decade for the purposes of road decommissioning shall be handled on a case-by-case basis through standard section 7 consultation procedures. The effects of additional entries would be analyzed pursuant to such project level consultation. Pending the outcome of each analysis, additional measures to minimize potential effects to grizzly bears may be required.

3. Routine forest management may be proposed in a core area block after 10-years of core area benefit. However, BMUs must remain at or above the core standard. Therefore potential losses to existing core must be compensated with in-kind replacement concurrently or prior to incurring the losses. Such in-kind replacement of core would be established within the affected BMU in accordance with the direction in Part I.B.1., above. For exceptions, see specialized circumstances outlined in Part I.D. concerning BMUs that exceed standards. Following management, core areas must subsequently be managed undisturbed for 10 years.

C. Parameters for BMUs currently not meeting core area, OMRD, and/or TMRD standards:

1. Those BMUs are anticipated to be brought up to standards in the following manner: 35 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2019; 70 percent of those BMUs currently not meeting one or more standards are estimated to meet all standards by 12/31/2025, and 100 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2029.

D. For those BMUs currently meeting or exceeding (being better than) the standards for core area:

1. Except as provided above for road stabilization projects, no reductions in core habitat without in-kind replacements would be proposed until all BMUs administered by the IPNF, KNF and LNF in the respective ecosystems are up to standard (Table 5; which does not include the LeClerc BMU or the Idaho State Lands BMU in the Selkirk Recovery Zone).

2. Once all BMUs meet all standards, then subsequent projects that propose to permanently reduce core area by roads shall undergo independent section 7 formal consultation.

3. Reductions of core area within individual BMUs shall not reduce the percent core area below the minimum standards for the affected BMU without compensating with in-kind replacement concurrently or prior to incurring the losses (see Part I.B.3.)

E. Road use associated with completing administrative activities:

1. In the Selkirk ecosystem:

    a. Administrative use shall not exceed 57 vehicle round trips per active bear year per road, apportioned as follows: ≤19 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤15 round trips in fall (September 16 through November 15).

    b. If the number of trips exceeds 57 trips per active bear year in the Selkirk ecosystem, then that road would be considered “open” for analysis and reporting purposes. Likewise, if the number of trips exceeds the allowable ecosystem-specific seasonal (spring, summer, and fall) vehicle round trips per road, then that road would be considered “open” for analysis and reporting purposes.

2. In the Cabinet-Yaak ecosystem:

a. Administrative use shall not exceed 60 vehicle round trips per active bear year per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30).

b. If the number of trips exceeds 60 trips per active bear year in the Cabinet-Yaak ecosystem, then that road would be considered "open" for analysis and reporting purposes. Likewise, if the number of trips exceeds the allowable ecosystem-specific seasonal (spring, summer, and fall) vehicle round trips per road, then that road would be considered "open" for analysis and reporting purposes.

II. The following access management applies to seven grizzly bear recurring use areas (i.e., BORZ areas) located outside of the Cabinet-Yaak Grizzly Bear Recovery Zone (KNF and IPNFs) and Selkirk Grizzly Bear Recovery Zone (IPNFs):

A. The Forests shall ensure no increases in permanent linear miles of open road[4] on National Forest System lands in any individual BORZ, above the baseline conditions identified in Table 4, except in cases where the Forest Service lacks discretion to prevent road building across National Forest System lands due to legal or other obligations (examples include, but are not limited to, ANILCA claims, identification of R.S. 2477 thoroughfares[5]). Potential increases in linear miles of open roads must be compensated for with in-kind reductions in linear miles of open road concurrently with, or prior to, project implementation within the same BORZ.

Table 4. Habitat conditions for bears outside recovery zone (BORZ) occupancy areas

BORZ Name	Grizzly Bear Ecosystem	Total Size (Acres)	NFS[1] Lands (Acres)	Total Linear Miles of Roads on NFS Lands	Total Linear Miles of Open Roads on NFS Lands
Priest	Selkirk	80,733	75,793	316.4	314.4
Pack River	Selkirk	33,869	28,097	41.9	37.9
Mission-Moyie	Cabinet-Yaak	71,545	58,472	200.3	167.3
Clark Fork	Cabinet-Yaak	101,899	100,421	256.1	176.9
Cabinet Face	Cabinet-Yaak	28,052	27,093	164.1	128
West Kootenai	Cabinet-Yaak	173,122	169,705	615.3	315.9
Tobacco	Cabinet-Yaak	287,240	266,947	1,123.9	867

[1] NFS=National Forest System

Temporary increases in linear miles of open roads are acceptable under the following conditions:

1. Roads closed[6] to public motorized use or roads created or reconstructed to facilitate land management activities that are otherwise closed to public use may be "opened" to the public immediately following completion of all mechanized harvest and post-harvest slash activities requiring use of the road, to allow motorized public use during

[4] Open roads are roads that are open for all or part of the active bear year.
[5] See Glossary for R.S. 2477
[6] Closed with a closure order and/or some type of closure device such as a gate.

the bear summer season prior to the fall bear hunt (i.e., June 16-August 31) for activities such as personal firewood collection. This public access would only be provided in cases where the mechanized harvest and/or post-harvest slash activities occurred during the same active bear year.

B. The Forest shall ensure no net permanent increases in linear miles of total roads[7] in any individual BORZ area above the baseline conditions identified in Table 4, except in cases where the Forest Service lacks discretion to prevent road building across National Forest System lands due to legal or other obligations (examples include, but are not limited to, ANILCA claims, identification of R.S. 2477 thoroughfares, etc.). Otherwise, potential increases in linear miles of total roads must be compensated for with in-kind reductions in linear total road miles concurrently with, or prior to, new road construction or reconstruction of currently bermed or barriered roads.

   Temporary increases (not offset) in linear miles of total roads are acceptable under the following conditions:

   1. Temporary increases in linear miles of total roads are acceptable under the following conditions:

      a. Newly constructed roads would be effectively gated and would be restricted with a CFR closure clarifying they are not open for public use.

      b. These roads[8] shall be closed immediately upon completion of activities requiring use of the road, except as described in Part II. A.1., above. Roads must be closed with a berm, guardrail or other measure that effectively prevents motorized access, and put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years.

      c. Upon completion of a land management project, linear miles of total roads would be returned to or below the baseline levels contained in Table 4.

C. Timber harvest activities that would occur within multiple watersheds shall be scheduled such that disturbance of grizzly bears resulting from road use is minimized. The appropriate scale for scheduling harvest activities would be determined pursuant to project level consultation.

III. To ensure the effective implementation of the open road density parameter, at least 30 percent of closure devices (gates and barriers) would be monitored annually within the respective ecosystems. Monitoring techniques may include visual checks as well as road counters.

Full implementation of the actions needed to reach the prescribed standards of this alternative is estimated to take up to 18 years from the date of decision for these programmatic Forest Plan amendments. While steady progress is expected during this timeframe, actions beyond the control of the Forest Service could delay full implementation. These actions include but are not limited to a) administrative appeals or litigation of project level decisions, b) budgets to support project level decisions, or c) future and/or unforeseen priorities affecting the project level decisions.

[7] Includes roads that do not have restrictions on motorized use and roads that are closed to public motorized use.
[8] Includes temporary roads built to facilitate the completion of the project and not intended to be left on the landscape—i.e., typically for 10 years or less) as well as the re-opening of existing bermed or barried road prisms.

Table 5 displays the Year 2009 BMU status as well as the proposed levels of habitat parameters for Alternative D Modified. Table 7 on page 32 provides a summary comparison of the design features for Alternative D Modified with Alternative E Updated.

Table 5. Alternative D Modified – BMU status and proposed standards

BMU	BMU Priorities	OMRD ≥ 1 mi/mi^2 (percent)		TMRD ≥ 2 mi/mi^2 (percent)		Core Area (percent)		Percent NFS Land
		2009 Status	Proposed Standard (max)	2009 Status	Proposed Standard (max)	2009 Status	Proposed Standard (min)	
1-Cedar	2	14	17	10	14	83	72	99
2-Snowshoe	2	20	17	16	14	76	72	94
3-Spar	3	27	17	26	14	62	72	95
4-Bull	2	37	31	29	19	62	70	84
5-St. Paul	1	28	17	23	14	58	72	97
6-Wanless	1	29	22	34	23	53	65	85
7-Silver Butte-Fisher	2	32	18	23	19	62	71	92
8-Vermillion	3	33	18	24	21	55	72	93
9-Callahan	2	27	22	26	18	59	72	90
10-Pulpit	2	44	17	29	14	51	72	95
11-Roderick	1	28	17	28	14	54	72	96
12-Newton	1	42	35	29	23	58	66	92
13-Keno	1	34	17	25	14	59	72	99
14-NW Peaks	1	28	17	26	14	56	72	99
15-Garver	1	29	17	25	14	55	72	94
16-East Fork Yaak	1	29	17	27	14	54	72	96
17-Big Creek	2	30	17	16	14	58	72	99
22-Mt.Headley	3	38	17	37	14	51	72	89
18-Boulder	3	31	21	35	14	50	72	92
19-Grouse[a,b]	3	60	59	59	50	32	41	54
20-North Lightning	1	36	17	20	14	62	72	94
21-Scotchman	2	35	27	27	22	63	72	81
Blue-Grass	1	33	25	28	14	50	72	96
Long-Smith	1	21	17	14	14	73	72	92
Kalispell-Granite	1	31	17	28	14	49	72	96
Lakeshore	3	82	46	54	21	19	56	86
Salmo-Priest	2	30	30	24	26	66	66	99
Sullivan-Hughes	1	24	18	19	14	61	72	99
Myrtle	2	29	21	20	14	60	72	85
Ball-Trout	2	17	17	11	14	72	72	94

a - Less than or equal to 75 percent NFS lands

b - Due to the high level of non-Federal lands within the Grouse BMU, existing conditions and standards are calculated assuming no contribution of secure habitat from private lands.

Alternative E Updated – Security Standards for Individual Bear Management Units

Alternative E from the 2002 FEIS was developed to provide increased grizzly bear habitat security while allowing some management flexibility in response to issues related to public and administrative access, economics, and access to private inholdings. Alternative E Updated is the preferred alternative.

Alternative E Updated integrates the biological, social, valuational, and institutional forces by considering the IGBC recommendations, inherent capabilities of each bear management unit (including important habitat features), private lands and roads, and important recreation areas.

The IGBC recommended that in individual BMUs with more than 75 percent Federal ownership, the Forests are to: 1) attain 55 percent core habitat; 2) have less than 33 percent of each bear management unit with open motorized route densities exceeding 1 mi/mi^2; and 3) have less than 26 percent of each bear management unit with total motorized route densities exceeding 2 mi/mi^2. These parameters were based on the best available science of the 1997 Wakkinen and Kasworm study. However, with current land ownership constraints, and public, county, and private roads, achieving these recommendations in all bear management units is not pragmatically possible.

Given the reality of these constraints, the biologists for the Idaho Panhandle, Kootenai, and Lolo National Forests, in conjunction with grizzly bear researchers familiar with each ecosystem and the Fish and Wildlife Service, analyzed the inherent capability for individual bear management units to achieve or maintain maximum levels of core habitat, and the lowest open and total motorized route densities. Constraints accounted and deducted for, as they were considered to affect an individual bear management unit's ability to achieve specific levels of core habitat and total and open motorized route densities included: 1) non-Federal land, including corporate timber land, and private land contained within towns and municipalities; 2) public, county, and private roads; 3) some forest roads that function as "through" roads, and therefore could not be closed without significantly increasing public travel distances between destination points, and popular recreational destination; and 4) historically and culturally popular recreation destinations (e.g., campgrounds, concentrated fishing locations, etc.) with high human use. In addition, unique biological features (such as linkage zones and habitat features), grizzly bear occurrence data, and mortalities of grizzly bears were considered in the design of Alternative E Updated (see FSEIS Appendix B and Kaiser 2003). This tailored approach is what was envisioned by the IGBC and the Selkirk/Cabinet-Yaak Subcommittee when they directed land managers to develop these standards (USDI Fish and Wildlife Service 2011a).

In addition, the parameters were evaluated to see if some flexibility could be provided for vegetation management activities. Vegetation management activities consisting of silvicultural prescriptions (commercial timber harvests, commercial and noncommercial thinning, etc.) that open up the forest canopy and/or understory are tools used in the restoration and maintenance of long-term ecosystem health and ecological integrity.

For comparative purposes, Alternative E has been updated in this FSEIS to 2009 conditions that reflect changes occurring since the 2002 FEIS.

The changes from the 2009 DSEIS include:

- Adjustments to proposed standard levels in eight bear management units (BMUs) done through consultation with the USFWS. The proposed adjustments are to account for GIS mapping errors, the need for private access (ANILCA, mining claims), border security, and grizzly bear habitat security:

  - BMU 11: OMRD changed to 28 percent from 33 percent
  - BMU 13: core area decreased to 59 percent from 60 percent
  - BMU 14: OMRD changed to 31 percent from 33 percent
  - BMU 20: TMRD changed to 20 percent from 26 percent
  - BMU 21: OMRD changed to 34 percent from 35 percent
  - BMU Blue-grass: OMRD changed to 33 percent from 31 percent
  - BMU Myrtle: TMRD changed to 24 percent from 22 percent
  - BMU Sullivan-Hughes: OMRD changed to 24 percent from 23 percent and TMRD changed to 19 percent from 18 percent.

- A modified timeline (due to new decision date for this FSEIS) to achieve proposed standards.
- The BORZ areas from the DSEIS were examined and revalidated by Forest Service, Fish and Wildlife Service and Idaho Department of Fish and Game wildlife biologists. This review resulted in elimination of the Troy, Libby and Fisher BORZ areas because they did not fit the definition of a reoccurring use area. Similarly, based upon known grizzly bear distribution, adjustments to the boundaries of the remaining seven BORZ areas occurred. Finally, the Deer Ridge BORZ area from the DSEIS has been renamed the Mission-Moyie BORZ (see Appendix F of the Biological Assessment for the guidelines and data used to delineate the recurring grizzly bear use areas and Allen (2011)).

Design Elements

I. The following access management standards would apply to individual BMUs within the Selkirk Recovery Zone on the IPNFs and Cabinet-Yaak Recovery Zone on the KNF, IPNFs and portion of the LNF:

A. The OMRD, TMRD, and percent core standards displayed in Table 6 would be established for the BMUs in the Cabinet-Yaak and Selkirk grizzly bear ecosystems.

B. Parameters for establishing and managing core habitat in all BMUs:

1. In accordance with IGBC (1998b) and Selkirk/Cabinet-Yaak Ecosystem Subcommittee (1998a) direction, core areas shall be established for the purpose of providing secure habitat for grizzly bears.

a. Core areas include high quality habitat within a BMU that contains no motorized travel routes or high use trails.

b. Core areas do not include any gated or restricted roads but may contain roads that are impassable due to re-growth of vegetation, effective barriers other than gates, or placement of logging or forest debris so as to no longer function as a motorized route.

c. When possible, core areas would be delineated by identifying and aggregating the full range of seasonal habitats that are available in the BMU.

d. The IGBC anticipated that minimum core area size might be determined for each recovery zone. For the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones, no scientifically based minimum effective size polygon for core area has been determined (Wakkinen and Kasworm 1997), though minimum block sizes of 2-8 mi^2 were suggested. Therefore, discounting small or narrow blocks of core area is not prudent at this time. Individual project analyses would disclose the percent and size of core areas in each BMU.

e. Once route closures to create core areas are established and effective, these core areas should remain in place for at least 10 years. Therefore, except for emergencies or other unforeseen circumstances requiring independent section 7 consultation, newly created core area shall not be entered for at least 10 years after creation.

f. Roads that are closed, decommissioned, or barriered in the future to create core area would be put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years. Until such closed roads are placed in the above-described condition, they would not be considered as contributing to core area.

2. Entering core area blocks for road decommissioning or stabilization activities:

   a. Without further section 7 consultation on grizzly bears, the Forest Service may affect underlying core area (i.e., any core habitat that is affected by the subject road and its buffer) within a BMU once per 10-year time frame, and not to exceed one bear year for the sole purpose of completing road decommissioning/stabilization activities on existing closed or barriered roads in core area habitat.

   b. Subsequent needs to re-enter individual core areas within a BMU more frequently than once per decade for the purposes of road decommissioning shall be handled on a case-by-case basis through standard section 7 consultation procedures. The effects of additional entries would be analyzed pursuant to such project level consultation. Pending the outcome of each analysis, additional measures to minimize potential effects to grizzly bears may be required.

3. Routine forest management may be proposed in a core area block after 10-years of core area benefit. However, BMUs must remain at or above the core standard. Therefore, potential losses to existing core must be compensated with in-kind replacement concurrently or prior to incurring the losses. Such in-kind replacement of core would be established within the affected BMU in accordance with the direction in Part I.B.1., above. For exceptions, see specialized circumstances outlined in Part I.D. concerning BMUs that exceed standards. Following management, core areas must subsequently be managed undisturbed for 10 years.

C. Parameters for BMUs currently not meeting core area, OMRD, and/or TMRD standards:

   1. These BMUs are anticipated to be brought up to standards in the following manner: 33 percent of those BMUs currently not meeting one or more standard within each ecosystem are estimated to meet all standards within three years of the amendment decision date; 66 percent of those BMUs currently not meeting one or more standard within each ecosystem are estimated to meet all standards within 5 years of the amendment decision date, and 100 percent of those BMUs currently not meeting one or more standard within each ecosystem are estimated to meet all standards within eight years of the amendment decision date.

D. For those BMUs currently meeting or exceeding (being better than) the standards for core area:

   1. Except as provided above for road stabilization projects, no reductions in core habitat without in-kind replacements would be proposed until all BMUs administered by the IPNF, KNF and LNF in the respective ecosystems are up to standard (Table 6; which does not include the LeClerc BMU or the Idaho State Lands BMU in the Selkirk recovery zone).

   2. Once all BMUs meet all standards then subsequent projects that propose to permanently reduce core area by roads shall undergo independent section 7 formal consultation.

   3. Reductions of core area within individual BMUs shall not reduce the percent core area below the minimum standards for the affected BMU without compensating with in-kind replacement concurrently or prior to incurring the losses (see Part I.B.3.).

E. Road use associated with completing administrative activities:

   1. In the Selkirk ecosystem:

      a. Administrative use shall not exceed 57 vehicle round trips per active bear year per road, apportioned as follows: ≤19 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤15 round trips in fall (September 16 through November 15).

      b. If the number of trips exceeds 57 trips per active bear year in the Selkirk ecosystem, then that road would be considered "open" for analysis and reporting purposes. Likewise, if the number of trips exceeds the allowable ecosystem-specific seasonal (spring, summer, and fall) vehicle round trips per road, then that road would be considered "open" for analysis and reporting purposes.

   2. In the Cabinet-Yaak ecosystem:

      a. Administrative use shall not exceed 60 vehicle round trips per active bear year per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30).

      b. If the number of trips exceeds 60 trips per active bear year in the Cabinet-Yaak ecosystem, then that road would be considered "open" for analysis and reporting purposes. Likewise, if the number of trips exceeds the allowable ecosystem-specific seasonal (spring, summer, and fall) vehicle round trips per road, then that road would be considered "open" for analysis and reporting purposes.

II. The following access management applies to seven grizzly bear recurring use areas (i.e., BORZ areas) located outside of the Cabinet-Yaak Grizzly Bear Recovery Zone (KNF and IPNFs) and Selkirk Grizzly Bear Recovery Zone (IPNFs):

A. The Forests shall ensure no increases in permanent linear miles of open road on National Forest System lands in any individual BORZ, above the baseline conditions identified in Table 4, except in cases where the Forest Service lacks discretion to prevent road building across National Forest System lands due to legal or other obligations (examples include, but are not limited to, ANILCA claims, identification of R.S. 2477 thoroughfares). Potential increases in linear miles of open roads must be compensated for with in-kind reductions in linear miles of open road concurrently with, or prior to, project implementation within the same BORZ.

Temporary increases in linear miles of open roads are acceptable under the following conditions:

1. Roads that are closed to public motorized use or roads created or reconstructed to facilitate land management activities that are otherwise closed to public use may be "opened" to the public immediately following completion of all mechanized harvest and post-harvest slash activities requiring use of the road, to allow motorized public use during the bear summer season prior to the fall bear hunt (i.e., June 16 - August 31) for activities such as personal firewood collection. This public access would only be provided in cases where the mechanized harvest and/or post-harvest slash activities occurred during the same active bear year.

B. The Forest shall ensure no net permanent increases in linear miles of total roads in any individual BORZ area above the baseline conditions identified in Table 4, except in cases where the Forest Service lacks discretion to prevent road building across National Forest System lands due to legal or other obligations (examples include, but are not limited to, ANILCA claims, identification of R.S. 2477 thoroughfares, etc.). Otherwise, potential increases in linear miles of total roads must be compensated for with in-kind reductions in linear total road miles concurrently with, or prior to, new road construction or reconstruction of currently bermed or barriered roads.

Temporary increases (not off-set) in linear miles of total roads are acceptable under the following conditions:

1. Temporary increases in linear miles of total roads are acceptable under the following conditions:

    a. Newly constructed roads would be effectively gated and would be restricted with a CFR closure clarifying they are not open for public use.

    b. These roads shall be closed immediately upon completion of activities requiring use of the road, except as described in Part II. A.1, above. Roads must be closed with a berm, guardrail or other measure that effectively prevents motorized access, and put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years.

c. Upon completion of a land management project, linear miles of total roads would be returned to or below the baseline levels contained in Table 4.

C. Timber harvest activities that would occur within multiple watersheds shall be scheduled such that disturbance of grizzly bears resulting from road use is minimized. The appropriate scale for scheduling harvest activities would be determined pursuant to project level consultation.

III. To ensure the effective implementation of the open road density parameter, at least 30 percent of closure devices (gates and barriers) would be monitored annually within the respective ecosystems. Monitoring techniques may include visual checks as well as road counters.

Table 6 displays the Year 2009 BMU status and the proposed levels of habitat parameters for Alternative E Updated. Table 7 on page 32 provides a summary comparison of the design features for Alternative E Updated with Alternative D Modified.

Full implementation of the actions needed to reach the prescribed standards of this alternative is estimated to take up to eight years from the date of decision for these programmatic Forest Plan amendments. While steady progress is expected during this timeframe, actions beyond the control of the Forest Service could delay full implementation. These actions include but are not limited to: a) administrative appeals or litigation of project level decisions, b) budgets to support project level decisions, or c) future and/or unforeseen priorities affecting the project level decisions.

Table 6. Alternative E Updated – BMU status and proposed standards

BMU	BMU Priorities	OMRD ≥1mi/mi² (percent)		TMRD ≥2 mi/mi² (percent)		Core Area (percent)		Percent NFS Land
		2009 Status	Proposed Standard (max)	2009 Status	Proposed Standard (max)	2009 Status	Proposed Standard (min.)	
1-Cedar	2	14	15	10	15	83	80	99
2-Snowshoe	2	20	20	16	18	76	75	94
3-Spar	3	27	33	26	26	62	59	95
4-Bull	2	37	36	29	26	62	63	84
5-St. Paul	1	28	30	23	23	58	60	97
6-Wanless	1	29	34	34	32	53	55	85
7-Silver Butte-Fisher	2	32	26	23	23	62	63	92
8-Vermillion	3	33	32	24	21	55	55	93
9-Callahan	2	27	33	26	26	59	55	90
10-Pulpit	2	44	44	29	34	51	52	95
11-Roderick	1	28	28	28	26	54	55	96
12-Newton	1	42	45	29	31	58	55	92
13-Keno	1	34	33	25	26	59	59	99
14-NW Peaks	1	28	31	26	26	56	55	99
15-Garver	1	29	33	25	26	55	55	94
16-East Fork Yaak	1	29	33	27	26	54	55	96
17-Big Creek	2	30	33	16	26	58	55	99
22-Mt.Headley	3	38	33	37	35	51	55	89
18-Boulder	3	31	33	35	29	50	55	92
19-Grouse[a,b]	3	60	59	59	55	32	37	54
20-North Lightning	1	36	35	20	20	62	61	94
21-Scotchman	2	35	34	27	26	63	62	81
Blue-Grass	1	33	33	28	26	50	55	96
Long-Smith	1	21	25	14	15	73	67	92
Kalispell-Granite	1	31	33	28	26	49	55	96
Lakeshore	3	82	82	54	56	19	20	86
Salmo-Priest	2	30	33	24	26	66	64	99
Sullivan-Hughes	1	24	24	19	19	61	61	99
Myrtle	2	29	33	20	24	60	56	85
Ball-Trout	2	17	20	11	13	72	69	94

a - Less than or equal to 75 percent NFS lands;
b - Due to the high level of non-Federal lands within the Grouse BMU, existing conditions and standards are calculated assuming no contribution of secure habitat from private lands.

Comparison of the Alternative Features

Table 7 summarizes the specific features of Alternative D Modified and Alternative E Updated.

Table 7. Specific features of Alternative D Modified and Alternative E Updated

	Alternative D Modified: Highest Habitat Security Standards Possible	Alternative E Updated: Habitat Security Standards for Individual BMUs (Preferred Alternative from 2002 FEIS and 2004 ROD)
Linear Open Road Density KNF	No Standard	No standard
Linear Open Road Density LNF	No Standard	No standard
Linear Open Road Density IPNFs	No Standard	No standard
Habitat Effectiveness (Security)	No Standard	No standard
Point Source Disturbance	Project Level Analysis Required	Project Level Analysis Required
Open Motorized Route Density (OMRD) **(for all forests, unless specified)**	High numeric standard specific to each BMU. In BMUs not meeting their specific standard, projects affecting OMRD must result in post-project movement toward the standard.	Numeric standard specific to each BMU. In BMUs not meeting their specific standard, projects affecting OMRD must result in post-project movement toward the standard.
Total Motorized Route Density, TMRD	High numeric standard specific to each BMU. In BMUs not meeting their specific standard, projects affecting TMRD must result in post-project movement toward the standard.	Numeric standard specific to each BMU. In BMUs not meeting their specific standard, projects affecting TMRD must result in post-project movement toward the standard.
Core Area	High numeric standard specific to each BMU. Consider seasonal needs; fixed in place for 10 years minimum. In BMUs not meeting their specific standard, projects affecting core area must result in increased post-project core area.	Numeric standard specific to each BMU. Consider seasonal needs; fixed in place for 10 years minimum. In BMUs not meeting their specific standard, projects affecting core area must result in increased post-project core area.
Administrative Use	60 round trips, divided by season in Cabinet-Yaak Recovery Zone. 57 round trips, divided by season in Selkirk Recovery Zone.	60 round trips, divided by season in Cabinet-Yaak Recovery Zone. 57 round trips, divided by season in Selkirk Recovery Zone.
Habitat Based Access Mgmt	Participate in workgroup to pursue habitat based analysis	Participate in workgroup to pursue habitat based analysis
Public Use Period-30 day	None	None

Comparison of Effects by Alternative

Table 8 displays a summary of the conclusions presented in Chapter 3 and provides a comparative overview of Alternative D Modified and Alternative E Updated in this FSEIS. Effects common to all alternatives are not included in this table. Relative values are based on the 2009 baseline condition. For a full discussion of the anticipated environmental effects of the alternatives, see Chapter 3 starting on page 39.

Table 8. Comparison of effects of Alternative D Modified and Alternative E Updated

	Alternative D Modified	Alternative E Updated
Wildlife		
Relative ranking for grizzly bears (1 = best)	1	2
Relative ranking for other T&E species (1 = best)	1	2
Relative ranking for sensitive species.	Beneficial impact	Beneficial impact
Relative ranking for management indicator species	Improves habitat	Improves habitat
Transportation		
Estimated miles of road that might change from IGBC 4 (open) to IGBC 2 (gated)	282 - 403	18 - 54
Estimated miles of road that might change from IGBC 4 (open) to IGBC 3 (barriered)	598 - 768	16 - 48
Estimated miles of road that might change from IGBC 2 (gated) to IGBC 3 (barriered)	665 - 999	74 - 222
Estimated miles of road that might change from IGBC 2 (gated) to IGBC 4 (open)	6 - 12	86 - 258
Estimated miles of road that might change from IGBC 3 (barriered) to IGBC 4 (open)	0 - 6	24 - 72
Estimated miles of road that might change from IGBC 3 (barriered) to IGBC 2 (gated)	8 - 13	12 - 36
Estimated miles of trail that might change from IGBC 5 (motorized) to IGBC 7 (nonmotorized)	57	28
Aquatics - Watershed and Fisheries		
Change from Existing Level of Effects to Bull Trout	Greatest likelihood for negative effects.	Increased likelihood for negative effects.
Change from Existing Level of Effects to Sensitive Fish Species	Greatest likelihood for negative effects.	Increased likelihood for negative effects.
Potential for short-term negative impacts to aquatics, but long-term benefit when barriered roads are hydrologically treated first	Highest	Moderate
Opportunity to address watershed concerns through access management	High	Moderate
Vegetation and Timber Management		
Flexibility for resource management	High Decrease	Moderate Decrease
Level of administrative access	Very High Decrease	Moderate Decrease
Ability to access suitable acres	Very High Decrease	Moderate Decrease
Ability to tend to previously treated stands	Very High Decrease	Moderate Decrease
Recreation		
Effects to Motorized, Developed Recreation	Major effects. Could impact up to 22 developed sites.	No / little effects.
Estimated miles of Motorized Trails changed to Nonmotorized	57	28
Effects to Motorized, Dispersed, Summer Recreation	Greatest effects. Most open roads closed.	Slight effects. Least number of open roads closed.

Table 8. Comparison of effects of Alternative D Modified and Alternative E Updated

	Alternative D Modified	Alternative E Updated
Effects to Motorized, Dispersed, Winter Recreation	Groomed snow trails could be affected due to limited access during the active bear year (summer months) for maintenance. Winter groomed snow trails require summer maintenance to clear blowdowns and eliminate brush to facilitate passage by trail groomers during the winter months.	Groomed snow trails could be affected due to limited access during the active bear year (summer months) for maintenance. Winter groomed snow trails require summer maintenance. Fewer groomed routes would be affected than in Alternative D Modified.
Effect to Nonmotorized, Dispersed, Summer Recreation	Moderate effects. Could affect access to 148 trailheads; some trails will double in length; some trails could be dropped from the system.	No / little effect
Effect to Nonmotorized, Dispersed, Winter Recreation	Slight effects. Possible effect to one designed Nordic ski area and for alpine skiing.	No / little effect
Heritage		
Access to Cultural Sites for Administrative Use	Greatest Decrease	Moderate Decrease
Protection of Cultural Sites	Greatest Beneficial	Some Beneficial Effect
Access for Exercise of Tribal Treaty Rights	Greatest Decrease	Moderate Decrease
Social and Economic		
Level of Effect on Social Environment	High	Moderate
Area Economy – Recreation Jobs and Income	Decrease	No Change
Area Economy – Timber Jobs and Income	Highest Decrease	Decrease
Area Economy – Road Reclamation, Jobs and Income	Highest Temporary Increase	Temporary Increase
Area Economy – Payments to Counties	No Effect	No Effect
Fire, Fuels, Air Quality		
Rating of increased fire risk	High	Moderate
Effects to air quality from increased fire risk	High	Moderate
Level of effect to access for fire suppression	High	Moderate
Soils		
Improvement of soil productivity, hydrologic function, and sediment reduction	Very high	Moderate
Opportunity for road maintenance	Very Low	High
Chance of vegetative treatments, fuels reduction, and fire suppression	Very low	Low
Likelihood of human-caused fires and recreation impacts	Very low	High

Table 8. Comparison of effects of Alternative D Modified and Alternative E Updated

	Alternative D Modified	Alternative E Updated
Threatened, Endangered and Sensitive Plants		
Access to survey, locate and monitor known populations	High Decrease	Moderate Decrease
Risk to known populations due to wheeled motorized vehicle access	High Decrease	Moderate Decrease
Invasive Plants		
Chance for spread of weeds through motorized traffic	Very Low	Moderate Decrease
Chance for weed surveys and treatment opportunities	Very Low	Moderate Decrease
Chance for newly established species to be missed	High	Moderate

Alternatives Not Given Detailed Study

Alternative H – Alternative D Modified is analyzed in detail in this FSEIS and the 2009 DSEIS in part to respond to plaintiffs' arguments over the litigation of the 2002 FEIS and 2004 Record of Decision that the Forest Service failed to explain why Alternative D could not have been modified to reflect its feasibility on a BMU-by-BMU basis – similar to that of Alternative E. Here, Alternative D Modified has been designed as was requested to provide OMRD, TMRD, and core area standards by individual BMU that achieve the highest security parameters for bears (where possible), as identified in Wakkinen and Kasworm (1997). Subsequent comment on the DSEIS, identified that Alternative E Updated is not based upon the best available science and therefore, the Forest Service should consider how Alternative D Modified could be achieved with lesser impacts to recreation and timber management than those displayed in the DSEIS. An alternative that would modify Alternative D Modified to be less restrictive was not given detailed consideration in this FSEIS because after review it was determined that the alternative was not meaningfully different from other alternatives already considered and therefore, was not given detailed study. Changing Alternative D Modified to consider historically and culturally popular recreation destinations (e.g., campgrounds, concentrated fishing locations, trailheads, etc.) with high human use and road thoroughfares, and provide limited flexibility would essentially result in Alternative E Updated.

Alternative E was developed in response to the issues of public access for recreation and social uses, administrative access (includes timber management), local economic conditions, increased secure habitat for grizzly bears and access to private inholdings (FEIS, p. 2-2). With regard to public access for recreation, as discussed previously under "Alternative E Updated – Security Standards for Individual Bear Management Units" (p. 25), constraints accounted and deducted for in the design of Alternative E, included among other things; forest roads that function as "through" roads, and therefore could not be closed without significantly increasing public travel distances between destination points, popular recreational destinations, and historically and culturally popular recreation destinations (e.g., campgrounds, concentrated fishing locations, etc.). Administrative access to implement vegetation management activities within the recovery zones would be possible in those BMUs where the current condition for OMRD, TMRD or core area is better than the proposed BMU standard.

NEPA does not require a separate analysis of alternatives which are not significantly distinguishable from alternatives actually considered, or which have substantially similar consequences. From a grizzly bear security perspective, an alternative that provides a different mix of Alternatives D Modified and E Updated would not be significantly distinguishable in its effect from either Alternative D Modified or Alternative E Updated. Both alternatives provide for sufficient levels of security for grizzly bear in a manner consistent with IGBC access direction, current scientific research, and include measures for conservation outside of the recovery zones (FSEIS pp. 91-95). Both alternatives would have similar consequences for grizzly bear by contributing toward conservation of the species in accordance with Section 7(a)(1) of the Endangered Species Act (FSEIS, p. 88). Under Alternative E Updated, once access management standards are at standard, disturbance and displacement is not expected to be at levels that result in adverse effects to bears as evidenced by the available research and consultation with USFWS (Biological Assessment, p. 60). The USFWS has determined that effects of the proposed Access Amendment would not jeopardize the continued existence of the Selkirk and Cabinet-Yaak grizzly bear populations (USDI Fish and Wildlife Service 2011a, p. A-75).

The risk to the Selkirk and Cabinet-Yaak Recovery Zones grizzly bear populations is not significantly distinguishable between the alternatives considered in detail in this FSEIS (Alternatives D Modified and E Updated), as both alternatives rank high in their level of mitigation for grizzly bear mortality risk (FSEIS, p. 94). Alternative D Modified is focused on the biological needs; whereas Alterative E Updated considers biological, social, and valuational and institutional forces (USDI Fish and Wildlife Service 1993a, p. 29). Both of these alternatives also rank high in their level of mitigation for grizzly bear displacement potential, based upon the level of security they would provide (FSEIS, p. 94). Both alternatives already meet or exceed the standards derived from the best scientific and commercial data available regarding the habitat needs for grizzly bears in the Selkirk and Cabinet-Yaak Ecosystems. In the biological opinion for these amendments, the Fish and Wildlife Service concluded with regard to the proposed standards contained in Alternative E Updated (USDI Fish and Wildlife Service 2011a, page A-65):

> Given the proposed standards for core area, the proposed action is likely to result in adequate levels and distribution of core area within the action area. Based on the findings of Wakkinen and Kasworm (1997), and Allen et al. (2011), this level and distribution of core area is likely to provide levels of secure habitat for grizzly bears, including females that provide for breeding, feeding, and sheltering activities.

Therefore, any alternative between the range of these two alternatives would have substantially similar consequences for grizzly bear by providing adequate levels of secure habitat for grizzly bears and therefore, would not be significantly distinguishable from either Alternative D Modified or Alternative E Updated.

Grizzly bear habitat conditions, as related to roads, have improved in the Selkirk and Cabinet-Yaak Recovery Zones since the application of wheeled motorized vehicle access strategies began (FSEIS, p. 11). This is likely one factor contributing to the apparent shift in grizzly bear mortalities from NFS lands to private lands and areas immediately north in British Columbia (see mortality data review pages 54-59). Implementing additional wheeled motorized vehicle access management standards, beyond those indicated by the best science, would not completely remove grizzly bear mortality risk in the recovery zones due to the presence of other risk factors such as interspersion of private residences and the potential for human-bear conflicts, sanitation issues at private residences and recreation sites, agricultural food attractants, hunter identification errors, and human attitudes toward the grizzly bear. Mace et al. (1996) contended that "access management through road use restrictions on multiple-use lands will be of limited mitigative value if habituation and mortality levels are not minimized on or adjacent to private lands."

Whether a new alternative less restrictive than Alternative D Modified, but more restrictive than Alternative E Updated would be significantly distinguishable in its effects from these two alternatives would depend in part upon whether the bears in the Wakkinen and Kasworm study (1997) were selecting optimal habitat, in regard to motorized routes, or the best that was available to them[9]. At the time of their study, Wakkinen and Kasworm (1997) were unable to complete a second-order resource selection analysis in regards to home range selection and motorized routes because a GIS layer of the road system was not available for the recovery zones. Because of this, it was not possible to conclude whether the research recommended 33 percent OMRD, 26 percent TMRD, and 55 percent core area conditions in the Selkirk and Cabinet-Yaak ecosystem represent the optimal selection of habitat by bears or if these numbers simply reflect the condition of the environment from which they have to choose.

As part of the analysis for this EIS, the Forest Service revisited the habitat security conditions available to the six study bears south of the international border and discovered they did indeed have several large areas of core habitat available to them outside of their home ranges (Allen et al. 2011 in FSEIS Appendix C). These large blocks of core habitat included an array of vegetation types, elevations, slopes, and aspects. This demonstrates that the core area results from the Wakkinen and Kasworm (1997) research effort are a reflection of bears actively choosing these areas and not an indication that they had a lack of opportunity to select home ranges with fewer roads (ibid).

The review provides evidence that the Wakkinen and Kasworm study bears had at least 207,373 and 571,072 acres of these more secure areas within the Selkirk and Cabinet-Yaak recovery zones, respectively, during the study period that were available to the bears but not used during the tenure of their research. This evaluation lends additional support to our use of the Wakkinen and Kasworm (1997) study results in developing access parameters for grizzly bears in these two ecosystems.

Alternative I – This alternative would amend the respective forest plans to reverse the designation of the grizzly bear recovery zones. It was not given detailed consideration because it is beyond the scope of this analysis and would not respond to the identified purpose and need for action. The purpose and need for this proposal is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the Endangered Species Act to conserve and contribute to recovery of grizzly bears (FEIS, p. 1-4). Designation of the recovery zones is done under the authority of the USFWS.

Decisions to be Made

The decisions to be made by the three Forest Supervisors regarding wheeled motorized vehicle access management within the Selkirk and Cabinet-Yaak Recovery Zones are:

- whether to change direction in the three existing forest plans; and
- if so, what standards should be established to guide management of wheeled motorized vehicle access within the recovery zones.

[9] While roads are an important determinator in habitat selection, it is not the only variable. Home range selection and associated movements are also influenced by other factors such as the availability of key food items and reproductive status and breeding behavior (Aune and Kasworm 1989, Blanchard and Knight 1991 Mace and Waller (1997) among others).

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Chapter 3. Affected Environment and Environmental Consequences

Introduction

This chapter presents the existing condition of each resource analyzed for this FSEIS Access Amendment and the expected environmental consequences of Alternative D Modified and Alternative E Updated.

The effects analysis for the various resource sections reflects the programmatic nature of this decision and therefore, examines effects in the context of future management activities, specifically in regards to road access changes. The alternatives do not prescribe site-specific activities on the ground or irreversibly commit resources. The Council on Environmental Quality (CEQ) regulations define direct effects as those occurring at the same time and place as the proposed action and alternatives. Direct effects would result from site-specific projects and would be evaluated when those decisions are made. Indirect effects are caused by an action but occur later in time or farther removed in distance. Most of the effects identified in this analysis would be indirect effects that are related to potential access changes for wheeled motorized vehicles during the active bear year that would be needed to meet BMU standards in the future. The primary difference in effects between alternatives is the number of miles of road where access could change. It is important for the reader to understand the difference between the effects of changing a road from an open status to a gated status (i.e., where wheeled motorized vehicle access for administrative use could still occur) versus changing a road from an open or gated status to a barriered status (i.e., where no wheeled motorized vehicle access, except for emergency situations such as fire suppression, could occur). In some cases, road access changes may also change the ability to access developed recreation sites. The resource analyses address the environmental consequences of these changes. See Chapter 3 of the 2002 FEIS for the analysis of Alternatives A, B, and C, as well as Chapter 2 on page 32 of this FSEIS for a summary comparison of Alternative D Modified and Alternative E Updated.

Cumulative effects result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions (40 CFR 1508.7 and .8). Since past actions are already included in the affected environment, the cumulative effects analysis builds upon this existing condition assessment by considering the incremental addition of direct and indirect effects of the proposed action as well as ongoing and reasonably foreseeable actions.

Analysis Area

Unless otherwise stated, the analysis area for this FSEIS will be limited to the Selkirk and Cabinet-Yaak Recovery Zones boundaries within the KNF, LNF, and IPNFs. See Figure 1 on page 3 for a vicinity map of the recovery zones. The total area within the recovery zones on the three National Forests, including State and private inholdings, is approximately 2,158,000 acres with 1,189,000 acres within the KNF; 163,000 acres within the LNF; and 806,000 acres within the IPNFs. These boundaries encompass National Forest, State, corporation, and private lands; however, application of proposed standards applies only to NFS lands.

Design elements II.A, B, and C were applied to the BORZ polygons, which are located outside the recovery zones and analysis area. There are no known impacts to resources within the BORZ as a result of this programmatic amendment, as there will be no wheeled motorized vehicle access management changes within the BORZ.

Past, Present, and Reasonably Foreseeable Actions

Past, present, and reasonably foreseeable actions (40 CFR § 1508.7) that could affect the issues pertinent to this analysis were considered for the cumulative effects of implementing Alternative D Modified and Alternative E Updated.

Reasonably foreseeable actions include those Federal and non-Federal activities not yet undertaken, for which there are existing decisions, funding, or identified proposals (36 CFR 220.3). These activities may occur regardless of which alternative is selected for implementation.

The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action. Past and present activities and natural events have contributed to creating the existing condition and trends across the three Forests. In order to understand the contribution of past actions to the cumulative effects of the alternatives, this analysis relies, in part, on an examination of the current environmental conditions in order to highlight the impacts of past actions. This method is useful because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects. Additionally, some of these activities, as well as reasonably foreseeable activities, may continue to produce environmental effects that overlap in time and space with issues or resources relevant to the alternatives. Therefore, past, present, and reasonably foreseeable activities have been considered in the cumulative effects analysis for each resource area relative to potential future effects of the alternatives.

The cumulative effects analysis in this FSEIS is consistent with NEPA Regulations (36 CFR 220.4(f)) (July 24, 2008) in accordance with the CEQ Memorandum, *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*, which state, in part:

> “The analysis of cumulative effects begins with consideration of direct and indirect effects…agencies then look for present effects of past actions that are, in the judgment of the agency, relevant and useful because they have a significant cause-and-effect relationship with the direct and indirect effects of the proposal for agency action and its alternatives. CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. Once the agency has identified those present effects of past actions that warrant consideration, the agency assesses the extent that the effects of the proposal for agency action or its alternatives will add to, modify, or mitigate those effects. The final analysis documents an agency assessment of the cumulative effects of the actions considered (including past, present, and reasonable foreseeable future actions) on the affected environment. With respect to past actions, during the scoping process and subsequent preparation of the analysis, the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative effects. Cataloging past actions and specific information about the direct and indirect effects of their design and implementation could in some contexts be useful to predict the cumulative effects of the proposal. The CEQ regulations, however, do not require agencies to catalogue or exhaustively list and analyze all individual past actions. Simply because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to inform decisionmaking. (40 CFR 1508.7)”

The Forest Service determined that the following activities, decisions, and environmental documents are applicable to all or portions of the NFS lands included in the analysis area for this FSEIS. As appropriate, they were considered during the cumulative effects analyses discussed in this chapter. Potential additional activities (i.e., large-scale subdivision on corporate timber lands in Montana, watershed restoration work, etc.), management practices (i.e., mining, timber harvest, grazing, grizzly bear management in Canada, etc.), information (i.e., linkage zones for wildlife), and/or documents are not listed below but are included within individual resource sections. Activities on public, private, and other lands (i.e., Canada) have been considered. In addition, the analysis considers other programmatic actions (see FSEIS Appendix A on page 303).

The following list is divided into three sections: 1) programmatic or relatively large-scale decisions, plans, projects, and policies; 2) management practices that directly or indirectly result in ground disturbance; and 3) activities that typically do not result in ground disturbance. These lists are not all inclusive, as other activities may be considered in the given resource sections in this chapter.

Programmatic or Relatively Large-Scale Decisions, Plans, Projects, and Policies

- Bull Trout Draft Recovery Plan (USDI Fish and Wildlife Service 2002)
- Colville National Forest Biological Opinion (USDI Fish and Wildlife Service 2001c)
- Healthy Forests Initiative (http://www.fs.fed.us/projects/hfi/)
- Healthy Forests Restoration Act of 2003 (16 U.S.C. Chapter 84, § 6511 - 6518)
- Idaho Panhandle National Forests Biological Opinion (USDI Fish and Wildlife Service 2001a)
- Roadless Area Conservation: National Forest System Lands in Idaho FEIS (USDA Forest Service 2008c) and Rule (USDA Forest Service 2008d), hereinafter referred to as Idaho Roadless FEIS and Rule.
- Inland Native Fish Strategy (USDA Forest Service 1995b)
- Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin Ecosystem Management Project (ICBEMP) (USDA Forest Service 1996)
- Kootenai National Forest Biological Opinion (USDI Fish and Wildlife Service 1995)
- Kootenai National Forest Invasive Plant Management Record of Decision (USDA Forest Service 2007a)
- Lolo National Forest Biological Opinion (USDI Fish and Wildlife Service 1996)
- Memorandum of Understanding and Conservation Agreement for westslope cutthroat trout and Yellowstone cutthroat trout (Montana Department of Fish, Wildlife & Parks 2007)
- National Fire Plan (USDA and USDI 2000) (http://www.fs.fed.us/r1/nfp/links.shtml)
- Northern Rockies Lynx Management Direction Record of Decision (USDA Forest Service 2007b)
- Off-Highway Vehicle FEIS and Record of Decision and Forest Plan Amendments for Montana, North Dakota, and portions of South Dakota - 2001 (Montana portions of the KNF) (USDA Forest Service 2001a)
- Roadless Area Conservation Rule (RACR or “Roadless Rule”) [36 CFR Part 294, 2001 (USDA Forest Service 2001b)]: On August 12, 2008, the Federal District Court for the District of Wyoming, declared that the Roadless Rule was promulgated in violation of the NEPA and the Wilderness Act. The court held "the roadless rule must be set aside" and

that "[t]herefore, the Court Orders that the Roadless Rule, 36 CFR §§ 294.10 to 294.14, be permanently enjoined, for the second time." Previously, another Federal district court in California had issued an order that reinstated the 2001 roadless rule, including the Tongass-specific amendment, and specified that "federal defendants are enjoined from taking any further action contrary to the [2001] Roadless Rule. . ." On October 21, 2011, the 10th Circuit Court of Appeals reversed the Federal District Court for the District of Wyoming and upheld USDA's 2001 Roadless Rule in *Wyoming v. USDA*. The injunction against the Roadless Rule remains in place until it has been lifted by the Federal District Court for the District of Wyoming. Timing will depend on whether the parties to the case seek further review by the 10th Circuit or the Supreme Court.

- Selkirk Mountain Range Winter Travel Plan (DEIS pending)
- Travel Management Rule - 2005 (36 CFR 212), Designated Routes and Areas for Motor Vehicle Use (USDA Forest Service 2005b), which supplements the 2001 Road Management Policy (USDA Forest Service 2001a)
- Rebuild of the Libby (FEC) to Troy Section of BPA's Libby to Bonners Ferry 115-kilavolt Transmission Line (USDA Forest Service 2008e)

Management Practices That Directly or Indirectly Result in Ground Disturbance

- Road construction, reconstruction, and maintenance
- Timber harvest and associated silvicultural practices
- Mining and related activities (i.e., facility construction, exploratory drilling, Rock Creek Mine, Troy Mine, and Montanore pending mine)
- Watershed restoration (e.g., culvert removal)
- Fire suppression
- Prescribed burning
- Powerline right-of-way and maintenance
- Trail maintenance

Activities That Typically Do Not Result in Ground Disturbance

- Grazing
- Recreation (i.e., hunting, berry picking)
- Weed spraying
- Wildfire
- Tree thinning
- Snowmobile use and trail grooming
- Disabled hunter program on the Kootenai
- State and Canadian hunting regulations
- Subdivision and corresponding changes in ownership (i.e., corporate timber lands to individual ownership)

Disclosures Specific to Alternative D Modified and Alternative E Updated

Alternative D Modified and Alternative E Updated discussed in this FSEIS comply with applicable laws, regulations, and policies such as the ESA, NFMA, and NEPA. Specifics for each resource may be elaborated on below, as well as in the project record.

National Forest Management Act (NFMA) - Imposes substantive duties on the Forest Service, including the duty "to provide for diversity of plant and animal communities." However, it has been consistently acknowledged that the Forest Service must balance competing demands in managing the national forests and it has never been the case that the national forests were to be set aside for non-use. The Multiple-Use Sustained Yield Act of 1960 states that "it is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes" [16 U.S.C. §528]. NFMA requires that forest plans "provide for multiple use and sustained yield of the products and services obtained therefrom… and [must] include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness" [16 U.S.C. §1604(e)(1)].

American Indian Rights and Tribal Consultation - Federal agencies have responsibilities to tribes under treaty and under law. Guidance on tribal consultation directs the Forest Service to involve tribes in the decision-making process in the areas where our decisions affect tribes and their treaty rights and interests. The Forests are required by law to consult with all federally recognized tribes that had or continue to have traditional uses within the Forests' boundaries. Consultation with the Confederated Salish and Kootenai Tribes, the Kootenai Tribe of Idaho, the Kalispel Tribe, and the Coeur d'Alene Tribe has been initiated and is ongoing. A complete record of consultation efforts is in the project record.

American Indian Tribes are afforded special rights under the National Historic Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act (NAGPRA), and the American Indian Religious Freedom Act (AIRFA). Federal guidelines direct Federal agencies to consult with Native American Tribal Representatives who may have concerns about Federal actions that may affect religious practices and other traditional cultural uses, as well as cultural resource sites and remains associated with American Indian heritage. Any tribe whose aboriginal territory falls within a project area is afforded the opportunity to voice concerns for issues governed by NHPA, NAGPRA, or AIRFA.

The American Indian Religious Freedom Act of 1978 protects the "inherent right of the freedom to believe, express, and exercise their traditional religions" (P.L. 95-442, 92 Stat. 1065; 7 U.S.C. 2269). The three Forests have identified the four Tribes as having general concerns about the management of the analysis area. These concerns include, but are not limited to, access, use of traditional resources and the freedom to exercise their religion.

Organization of Chapter 3

This chapter contains descriptions of the various resources that could be affected by amendments to the forest plans. The affected environment for each resource is described, as well as the anticipated environmental consequences, for Alternative D Modified and Alternative E Updated. Additionally, analysis in this chapter is reflective of changes between the 2002 FEIS and 2004 Record of Decision and this FSEIS. Unless, otherwise noted, changes are limited to the changes identified in Chapter 2, which starts on page 15.

These analyses may disclose the potential for road access changes (i.e., gated roads to be opened); however, there may be resource management needs that limit these opportunities. Site-specific analysis would assess these opportunities and resource considerations. Analysis of the resources is presented in the following order, which is consistent with the 2002 FEIS:

- Wildlife
- Transportation
- Aquatics - Watershed and Fisheries
- Vegetation and Timber Management
- Recreation
- Heritage Resources
- Social and Economic
- Fire, Fuels and Air Quality
- Soils
- Threatened, Endangered and Sensitive Plants
- Invasive Plant Species

Analysis pertaining to the range (grazing) resource is found in the Social and Economic section starting on page 221. This section addresses road access for administration of permits and permittee access to their livestock through the disclosure of effects to wheeled motorized vehicle access.

Wildlife

Introduction

This section describes the effects of Alternative D Modified and Alternative E Updated on wildlife species and their habitat. For each species, there is a description of the habitat and the potential effects to that species or its habitat.

The discussion of the potential effects to wildlife is based on the decision to be made (wheeled motorized vehicle access management in grizzly bear habitat) and the disturbance and/or security effects that result from such activities.

Changes between the DSEIS and FSEIS

Data and information used in the 2009 DSEIS were from the year 2006; whereas, data and information for this FSEIS is reflective of conditions at the end of 2009, unless otherwise noted. Changes from the 2009 DSEIS also reflect corrections of errors in the roads database (INFRA), on the ground validation of road status, and project implementation of access changes required through consultations on site-specific actions. The review of the Wakkinen and Kasworm report (i.e., Johnson 2007) was also updated (Allen et al. 2011, FSEIS Appendix C). The sensitive species analysis has been revised to reflect changes in the Regional Forester’s sensitive species list since the publication of the DSEIS.

Review of the Wakkinen and Kasworm (1997) Report as Best Available Science for the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones

A detailed look at Wakkinen and Kasworm (1997) and a review of other applicable grizzly bear management scientific studies was completed (Allen et al. 2011, FSEIS Appendix C). The District Court found four deficiencies in the 2002/2004 NEPA analysis for Motorized Access Management in the recovery zones (see the background section of Chapter 1 on page 9). The following addresses the four deficiencies identified by the District Court:

1. **The District Court found the FEIS should acknowledge that the study authors (Wakkinen and Kasworm 1997), were uncertain whether the bears they studied had chosen optimal habitat or whether they simply chose the best available habitat; and assess the relevance and importance of this uncertainty.**

   The science of establishing security requirements for bears is not based on whether the habitat is “optimal” or “best available.” It is likely impossible to ever determine if habitat is “optimal” as this would be pristine habitat with no humans and unlimited food supplies for bears. Such habitat no longer exists anywhere in the United States, and indeed may never have existed anywhere on a broad geographic scale.

   That being said, the Wakkinen and Kasworm (1997) analyses examined bear habitat selection in relationship to just one element in their environment—motorized route conditions. As such, their analyses—like the one that was completed in the preliminary report for the South Fork Flathead River study (Mace and Manley 1993) which was used to develop standards for the Flathead National Forest (i.e., Amendment 19) — provides a limited view of what drives **overall** grizzly bear habitat selection. Other factors, such as the availability and seasonality of foods, the influences of topography, and social factors such as kinship, density, and population structure also influence individual grizzly bear habitat selection (Craighead and Sumner 1980, Craighead and Mitchell 1982, Blanchard and Knight 1991, Kasworm et al. 2009, Mace et al. 1996, McLoughlin et al. 1999, Nagy and Haroldson 1990, and Volson 1994 among others). Conversely, efforts such as Mace et al. (1996) in the Northern Continental Divide Ecosystem attempted to take a more comprehensive look at the complex spatial and temporal relationships in grizzly bear habitat selection by including multiple variables (i.e., seasons of use, cover type, elevation zone, land ownership and road density) in their statistical analyses[10] and results.

   The study authors acknowledged this in their report, and the Forest Service recognized that this represents a limitation in the available science used to develop access management standards for the Selkirk and Cabinet-Yaak ecosystem[11]. To date, the Forest service knows of no other studies where the multivariate nature of grizzly bear habitat selection (including roads) was used to develop access management standards on multiple use lands, although an IGBC technical committee did develop such a multivariate based proposal for the North Continental Divide Ecosystem that was never adopted (IGBC 1998, Mace 2004). A recent graduate student project to quantify Selkirk ecosystem grizzly bear seasonal habitats in relation to vegetation, topography, road densities, and human density centers was completed in 2007 (Slone 2007). However, that effort did not lend itself to

[10] Using multivariate logistic regression.
[11] As well as the Flathead Amendment 19 access standards.

providing new insights in bear selection in regards to the three access parameters used in the Wakkinen and Kasworm (1997) report.

The USFWS expressed a more specific concern about the Wakkinen and Kasworm results in their 2001 and 2004 Biological Opinions that appears to revolve around the lack of a second-order selection analyses[12] (USDI Fish and Wildlife Service 2001a and 2004). Here, they posed the following question: “Do grizzly bears in the Selkirk or Cabinet-Yaak Ecosystems have the opportunity to choose areas with less road density?”

This is a legitimate concern in regards to the Wakkinen and Kasworm (1997) study results. A second-order resource selection analysis would help explain if these bears had the opportunity to select greater levels of unroaded habitat elsewhere in the recovery zone or if their results were merely a reflection of what was available to the study bears at that time. However, an overall GIS road layer is now available for development of a map reflecting the approximate amount of core habitat available during the tenure of the research effort (1989-1994). Therefore, the home ranges of the six Selkirk and Cabinet-Yaak Ecosystem grizzly bears were reviewed in relationship to the minimum possible amount of core habitat available in the two ecosystems[13].

Figures 1 and 2 in Appendix C of this FSEIS illustrate that the Selkirk and Cabinet-Yaak Ecosystems study bears did indeed have several large areas of core habitat and low TMRD available to them within the recovery zone boundaries in the U.S. during the tenure of the research effort (1989-1994). These maps reflect the maximum possible roaded conditions that the study bears experienced as they dispersed from their mothers, matured, and/or reproduced from 1985 to 1994. In the U.S. portion of the Selkirk ecosystem, this included a large block (> 40 square miles) in the Salmo-Priest and Sullivan-Hughes BMUs (#1 on the map), a large block in the Long-Smith and Ball-Trout BMUs that was used on a limited basis by study bear 1084 (#2), the Selkirk-Crest in Myrtle and State Land BMUs which includes portions of the 1967 Sundance Burn (and associated huckleberry fields) (#3), and a smaller block of lower elevation unroaded habitat in the Sullivan-Hughes BMU (#4). All four bears in the Selkirk ecosystem had access to this array of habitats within close (1-10 miles) proximity of their existing home ranges and conceivably could have altered their selection of home range to incorporate more core habitat and less overall road density. Additional areas of core were available in areas of British Columbia.

Likewise, the Cabinet-Yaak ecosystem had numerous BMUs with large blocks of unroaded habitat available within the Cabinet Mountain portion of the recovery zone (e.g., Cedar, Snowshoe, Boulder, Callahan, Scotchman and Spar, Bull, Saint Paul, Wanless and Silver Butte-Fisher). Within the immediate vicinity of the Cabinet-Yaak ecosystem study bears in the Yaak, there was additional areas of contiguous and adjacent unroaded habitat whose use would have resulted in higher levels of unroaded use than those observed from 1990-1994. This observation was originally made by one of the researchers in responding to an unpublished report that criticized the results of the Wakkinen and Kasworm (1997) study effort (Kasworm et al. pers. comm. 2003).

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[12] See page 327 of Appendix C for an in-depth explanation of resource selection analysis and the differences between first, second, third and fourth order resource selection. Wakkinen and Kasworm (1997) were unable to conduct such an analysis due to a lack of a complete GIS roads layer for the entire ecosystems at the time of their analysis.

[13] See page 351 of Appendix C for details on the road layers and the assumptions made in this review. Core Area was used to characterize available secure habitat as it is the easiest to visualize (map) and is generally considered the most important for grizzly bears. OMRD could not be accurately constructed for this general time period due to a lack of site-specific records concerning levels of use, known barriers (natural or man-made (i.e., gates)),

These results indicate that bears were selecting habitats with the same—if not more—roads than found within the entire ecosystem. Our re-examination of roads in grizzly bear home ranges and the recovery zones (in the U.S.) demonstrates that the core area results from the Wakkinen and Kasworm (1997) research effort are a reflection of bears actively choosing these areas and not an indication that they had a lack of opportunity to select home ranges with fewer roads. This evaluation supports our use of the Wakkinen and Kasworm (1997) study results in developing access parameters for grizzly bears in these two ecosystems. Please see pages 327 to 332 of Appendix C for additional details.

2. **The District Court found that the NEPA analysis must take into account the misgivings of the USFWS biologist over the 33/26/55 standards.**

In their 2004 Biological Opinion, the USFWS stated that the average individual home ranges in the Wakkinen and Kasworm report (1997) provided the best available indication of the habitat conditions used by grizzly bears in the Selkirk and Cabinet-Yaak ecosystem (USDI Fish and Wildlife Service 2004). These values were based on: 1) a high percentage of the total ecosystem's female grizzly bear population, 2) female grizzly bears that survived to adulthood, and 3) females in the ecosystem that successfully reproduced.

Earlier in 1998, an individual USFWS biologist in the Spokane office expressed a different opinion, regarding the resulting habitat parameter values derived from the individual home range analysis that of other USFWS biologists and the agency itself (i.e., 33 percent OMRD, 26 percent TMRD, and 55 percent core area) (USDI Fish and Wildlife Service 1998a). The biologist did not concur with the 55 percent core area suggested by the Selkirk and Cabinet-Yaak Ecosystem Access Task Group and suggested using an arithmetic mean from the Selkirk and Cabinet-Yaak and North Continental Divide Ecosystem data (i.e., the Flathead National Forest Amendment No. 19--hereafter referred to as Flathead NF Amendment No. 19 (USDA Forest Service 1994a and 1994b)), without conducting any analysis or considering whether the data was compatible. Subsequent internal communications in 2001 indicated that other biologists in the Spokane office wanted to manage for criteria greater than the "Waynes" numbers because of their concerns about the data size and the availability of 'better' applicable data sets on female home ranges from the North Continental Divide Ecosystem (USDI Fish and Wildlife Service 2001a).

The USFWS acknowledged all criticisms in their Biological Opinion on the *Forest Plan Amendment for Motorized Access Management* (USDI Fish and Wildlife Service 2004) and in response, included a prohibition on net reduction in core area to compensate for the concerns identified by the biologist. As the District Court found, the USFWS then made a choice between the conflicting scientific viewpoints among its own biologists and used the authors' (which included a USFWS biologist) recommendations.

Allen et al. (2011) provides a review of the Wakkinen and Kasworm (1997) report and a comparison of the Selkirk and Cabinet-Yaak Ecosystem analysis with the South Fork Flathead River research in the North Continental Divide ecosystem (i.e., Mace and Manley (1993), Flathead National Forest Amendment No. 19 (USDA Forest Service 1994a and 1994b), and Mace et al. (1996)) (Allen et al. 2011). Their review explains why combining results from the two research efforts are not appropriate due to significant differences in analysis techniques and biological demographics. Analyses differences included: 1) GIS software used for the moving window analysis; 2) Size and shape of moving window (1 km^2 square versus 1-mi^2 round) (3) road buffering distance (0.5 mile versus 500 meters). Noted differences in local bear biology and land ownership[14] included: 1) significant differences in the observed size of female home ranges between the two study areas; and 2) contrasting differences in land ownership patterns within the composite grizzly bear home ranges.

Specifically, each of the three analyses (Mace and Manley / Flathead NF Amendment No. 19/ Wakkinen and Kasworm) were conducted using different GIS software and parameters and the three methods should not be expected to reliably produce similar results from identical data. Notable differences in the amount of core area (68 percent) (Flathead Amendment #19) versus roadless areas (46 and 56 percent) (Mace and Manley 1993; Mace et al. 1996) to describe the composite home range of South Fork Flathead River female grizzlies bears from 1987-1992 and 1990-1994, respectively, demonstrates how differences in data analysis parameters, software, and the pool of female bears used in the evaluation can contribute to very different results. Given the multiple differences in analysis methods and the biological differences (see page 49) between the two populations and differences in how the access parameters are applied on the ground in the North Continental Divide Ecosystem versus the Selkirk and Cabinet-Yaak Ecosystems (page 16, Appendix C), "pooling" of data from the six Selkirk and Cabinet-Yaak Ecosystems bears with the seven used for the Flathead National Forest Amendment No. 19 — as suggested by a USFWS biologist in 1998 — is inappropriate.

Additionally, it is unclear to the Forest Service why some USFWS biologists considered the Amendment 19 recommendations superior to those documented in Wakkinen and Kasworm in terms of sample size or "better applicable data sets" when the former was developed using seven female grizzly bears (2 percent of the overall North Continental Divide Ecosystem population) versus the six female grizzly bears (15 percent of the overall Selkirk and Cabinet-Yaak Ecosystem population) used in the Wakkinen and Kasworm study.

Alternative D Modified and Alternative E Updated do not include a prohibition on net reduction in core area. Where possible, these two Alternatives set individual BMU standards equal to or better than the average values from the 1997 research paper.

3. **The District Court found that the NEPA analysis should consider the findings of other studies measuring habitat parameters in other ecosystems.**

The 1997 Wakkinen and Kasworm study was completed using standardized techniques (IGBC 1994) that were developed from preliminary research findings for the *South Fork Flathead River Grizzly Bear Project* (Mace and Manley 1993). This research, and its subsequent publications (Mace et al. 1996 and Mace and Waller 1997), and use of some of the female study bears to develop access parameters for the Flathead National Forest Forest Plan Amendment No. 19 provides an appropriate study for comparison with the Selkirk and Cabinet-Yaak ecosystem research. A detailed comparison of the South Fork Flathead River study findings with the Wakkinen and Kasworm conclusions is available in Appendix C of this FSEIS. Key points from that review include the following observations:

[14] Land ownership influences how the area is managed including the construction of roads and homes and vegetation management.

- Like the South Fork Flathead River study, Wakkinen and Kasworm (1997) found that total road density >2 mi/mi^2 and open road density >1 mi/mi^2 were used less than expected (avoided) and unroaded areas in both categories were used more than expected (preferred). Additionally, core areas were used greater than expected (preferred).
- Mace and Manley (1993) documented TMRD of 18 percent and core area of 46 percent for nine adult female grizzly bears (no OMRD for females was calculated) in their preliminary report; the Flathead National Forest Amendment No. 19 (USDA Forest Service 1994a and 1994b) assessment included an OMRD of 19 percent, TMRD of 19 percent, and core area of 68 percent for seven adult female grizzly bears; Mace et al. (1996) documented an approximate core area[15] of 56 percent for 11 female grizzly bears; and Wakkinen and Kasworm (1997) documented an OMRD of 33 percent, TMRD of 26 percent, and core area of 55 percent for 6 female grizzly bears.
- It is difficult to directly compare the specific values that characterized female grizzly bears home ranges among the Mace et al. 1993 preliminary report, the Flathead National Forest Amendment No. 19 assessment, Mace et al. 1996, and the Wakkinen and Kasworm (1997) study for a number of reasons. Different software packages and moving windows analysis parameters have been shown to produce contradictory results up to one-third of the time.
- Wakkinen and Kasworm (1997) were unable to determine if a minimum effective core block size existed from their data. Likewise, a minimum core block size similarly was never established from the South Fork Flathead River research, although the Flathead National Forest's selection of 2,500 acres appears to have some connection with the preliminary radio-telemetry findings as of 1993.
- From a biological perspective it is worth noting that adult female home ranges from the South Fork Flathead River study were, on average, **2.5 times smaller** than the home ranges defined by the five adult females in the Selkirk and Cabinet-Yaak study (Mace and Waller 1997, Wakkinen and Kasworm 1997). This suggests a significant difference in the availability and juxtaposition of preferred seasonal habitats between the two ecosystems (Blanchard and Knight 1991; McLoughlin et al. 1999). Additionally, bear populations between the two studies are very different, with notably higher densities of bears residing in the NCDE and South Fork Flathead study area (Mace and Manley 1993; Mace and Waller 1997) than in either the Selkirk or Cabinet-Yaak Ecosystems (USDI Fish and Wildlife Service 1993a). Social factors such as kinship, density, and population structure may significantly affect the resulting size of individual bear home ranges (Nagy and Haroldson 1990). These differences help illustrate why application of standards developed in one area should not be applied to other populations arbitrarily without consideration of local conditions and variation in population parameters, habitat availability, and habitat selection.
- Another important point regarding the development of the standards relates to the juxtaposition and availability of habitat by land ownership and the presence of Federal, state, or county highways within the composite home ranges of the study bears. The Wakkinen and Kasworm study bears were selecting habitats managed by multiple entities besides the Forest Service including the state of Idaho, private industrial forest companies, private land owners, and British Columbia provincial

[15] Mace et al. (1996) reported "roadless areas" (road densities of 0 km/km^2) rather than core habitat. A cursory analysis of three Selkirk ecosystem BMUs using ARCInfo and a square window revealed that the amount of BMU within the 0 km/km^2 category underestimates core by approximately five percent on average.

forestry lands where there were virtually no restrictions on motorized route development or associated vegetation management. Conversely, the study bears in the South Fork Flathead River study selected habitats located exclusively on NFS lands.

4. **The District Court found that the FEIS should further address the status of grizzly bear mortality in the Selkirk and Cabinet-Yaak Recovery Zones.**

   Additional data on grizzly bear mortalities that occurred during and after the time of the Wakkinen and Kasworm paper (1997) is now available. This information is included in the demographics and population trends analysis (Wakkinen and Kasworm 2004) and population mortality trend calculation (Kasworm et al. 2010) research, and subsequent mortality updates (Kasworm et al. pers. comm. 2011, Wakkinen et al. pers. comm. 2011). Summaries of grizzly bear mortality occurring within and around the recovery zones are included in Table 10 through Table 13 (starting on page 55). While the plaintiffs criticized the Wakkinen and Kasworm study (1997) for considering bears that died after the study was completed, the North Continental Divide ecosystem studies (Mace and Manley 1993, Mace et al. 1996, and Mace and Waller 1997) also included data from bears that died during and after the study. Both studies considered information relative to bears that died shortly after the results of the study were determined.

   These post study mortalities do not change the levels of habitat conditions selected by grizzly bears in either ecosystem. It is not appropriate to conclude from these mortalities that selecting more secure habitat would have prevented these mortalities (as shown by the fact that some grizzly bear mortality occurs in core areas are greater than 500 meters from a road in both study areas) or that the habitat conditions proved "lethal" to bears. As suggested by McClellan et al. (2000), a more appropriate analysis to answer this question would be to complete an assessment of home range and habitat use for "successful" and "unsuccessful" bears to see if use patterns were similar or not[16].

See Chapter 2 starting on page 15 for changes between the 2002 FEIS/2004 Record of Decision and this FSEIS, which includes the change in the bear year definition for the Cabinet-Yaak Recovery Zone. The bear year for this recovery zone in the 2002 FEIS was established as April 1 through November 15. The definition has been changed for this analysis to April 1 through November 30. The project record includes documentation for this change (See Bear Year Definition for the Cabinet-Yaak Recovery Zone, Johnson et al. 2008a).

Analysis Area

The analysis area for wildlife resources consists of those portions of the Selkirk and Cabinet-Yaak Recovery Zones lying within the boundaries of the KNF, LNF, and IPNFs (see Figure 1 on page 3).The analysis area also includes areas of reoccurring grizzly bear use outside the recovery zones (BORZ areas) (see Figure 2 and Figure 3 on pages 4 and 5). These boundaries encompass National

[16] McClellan et al. 2000 provided a peer review of the South Fork Flathead River research and made the following observation, "If the 'unsuccessful' females had home range and areas of use different from 'unsuccessful' females, then the characteristics of the successful females' ranges may be considered sufficient as the basis for conservation planning. However, if the home ranges and habitat use patterns were similar, but some were just luckier or more skilled at avoiding people within their range, then the 'lucky to be successful' females may not be suitable as the basis for conservation planning. If the successful females lived in more secure areas than unsuccessful females, then it would be assumed they needed that level of security to be successful: perhaps they could have done fine with less security. Without comparing the range locations and habitat use of bears with varying levels of success" then the question of whether bears from the Swan Valley study can form the basis of a conservation strategy "remains unanswered.

Forest, State, corporate, and private lands; however, application of proposed standards only applies to NFS lands.

Analysis Method

Methods used for this analysis are primarily qualitative because of the programmatic nature of this document. Specific quantitative methods are disclosed below. Additional information is found in the project record in the wildlife and transportation sections.

Cumulative Effects Sections

The cumulative effects analyses for the wildlife section include past (completed on the ground), present (ongoing), and reasonably foreseeable (proposed) programmatic and non-programmatic actions and activities. Past and present activities are also included in the existing conditions that are described in the affected environment sections (Johnson 2006).

The cumulative effects analyses for the wildlife section includes, but is not limited to, consideration of the following on-going or reasonably foreseeable activities and actions that are associated with motorized vehicle access and have the potential to cumulatively impact wildlife with the access amendment (see the cumulative effects discussion earlier in this chapter starting on page 51):

- Activities that are associated with motorized vehicle access on NFS lands (e.g., motorized over-the-snow vehicle use and winter motorized trail grooming, including Selkirk Mountain Range Winter Travel Plan: DEIS pending)
- Activities on private lands (e.g., subdivision and road construction)
- Activities in Canada (e.g., hunting and road construction)
- Activities under State control (e.g., hunting)
- Activities considered "major" (e.g., large mines - Rock Creek, Montanore, Troy)
- Activities that generate accumulations of food and garbage associated with various recreational activities (e.g., picnicking, hiking, and camping)
- Actions from programmatic decisions (see Appendix A on page 303)

Threatened, Endangered, and Proposed Wildlife Species - Affected Environment and Disclosure of Effects

Threatened, endangered and proposed species are managed under the authority of the Federal Endangered Species Act (ESA) of 1973 (PL 93-205 as amended), which requires that Federal agencies: 1) carry out programs for the conservation of listed species [Sec. 7(a)(1)] and 2) insure that any agency action is not likely to jeopardize the continued existence of listed species [Sec. 7(a)(2)]. A Biological Assessment (BA) for ESA compliance has been prepared by the Forest Service for the preferred alternative and consultation has been completed with the USFWS.

The USFWS provided a list of Threatened, Endangered and Proposed wildlife species that are known or expected to occur within the influence area of the proposed action (The project record includes this information). Table 9 displays the legal status of these species and their occurrence within the KNF, LNF, and IPNFs.

Table 9. Threatened, endangered and proposed wildlife species

Legal Status	Species	IPNFs	KNF	LNF
Threatened	Grizzly Bear	X	X	X
Threatened	Canada Lynx	X	X	X
Endangered	Woodland Caribou	X	*	
Proposed	None			

* = extirpated in Montana; X = presence

Grizzly Bear

Grizzly bears (*Ursus arctos horribilis*) are habitat generalists, using a variety of habitats including the coniferous forests of northwest Montana and north Idaho. Habitat is generally dictated by food availability and distribution, as well as security from human disturbance and mortality. Because grizzly bears have large home ranges, large areas of habitat are required. Grizzlies occupy low-elevation riparian areas, snow chutes, meadows and big game winter ranges in the spring and late fall, and move up to higher sub-alpine forests in the summer, early fall and winter (Kasworm et al. 2009, Mace et al. 1996). Natural caves or excavated dens, often above 6,000 feet, are entered after the first snowfall and occupied for four to five months. A majority of their diet is composed of vegetation (forbs, sedges, grasses, roots, berries, pine nuts), but also includes fish, rodents, insects, ungulates and carrion.

Additional information on population ecology, biology, habitat description and relationships are described in the Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993a) and from local research efforts (Almack 1985, Kasworm et al. 2009, Slone 2007, Volson 1994, Wakkinen and Johnson 2000).

Affected Environment

Recovery Zones

The U.S. Fish and Wildlife Service (USFWS) delineated recovery zones for grizzly bears in the Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993a; Figure 1). The approximately 2,582 mi^2 Cabinet-Yaak Recovery Zone includes portions of the Kootenai (KNF), Lolo (LNF), and Idaho Panhandle (IPNF) National Forests (Kasworm et al. 2009). The approximately 2,200-square-mile Selkirk Recovery Zone includes portions of the IPNF and Colville National Forests (CNF) as well as 1,034 mi^2 of habitat in British Columbia (B.C.), Canada. While the Cabinet-Yaak Recovery Zone does not formally extend into Canada, some bears in the Cabinet-Yaak Recovery Zone are known to cross the border during their annual movements. State and private lands are included within both recovery zones, with the Selkirk Recovery Zone incorporating 174 mi^2 of habitat on the Idaho Department of Lands (Wakkinen et al. 2009). The recovery zones were established to identify the areas needed for recovery of grizzly bears within the 48 conterminous states (USDI Fish and Wildlife Service 1993a). A recovery zone is defined as the area in each grizzly bear ecosystem within which the population and habitat criteria for achievement of recovery will be measured.

Population Status

The USFWS estimated a population of 15 grizzly bears in the Cabinet-Yaak Recovery Zone in 1993 (USDI Fish and Wildlife Service 1993a). More recently, Kasworm et al. (2010) calculated a minimum population estimate of 42 bears for the Cabinet-Yaak Recovery Zone from 2004 to 2009. This included a minimum of 16 individuals in the Cabinet Mountains and 26 individuals in the Yaak portion of the recovery zone[17]. Rates of increase for the period from 1983 to 1998 suggested an increasing population (Wakkinen and Kasworm 2004); however, they calculated an overall probability of 78 percent that the population was declining from 1983 to 2009. Human-caused mortality has been a significant component in these declines and appears to be largely responsible for the decline in the rate of increase (Kasworm et al. 2010). Causes of grizzly bear mortality have generally been due to hunter mistaken identity, defense of life, poaching, and management removal due to food attractant on private land (see Table 10). Since 1999, there appears to have been an increase in the numbers of bears killed on private lands in the Cabinet-Yaak Recovery Zone as well as areas immediately north of the recovery zone boundary in British Columbia (see Table 11). Proctor et al. (2004) emphasized that improving survival by reducing human-caused mortality is crucial for recovery of this population.

In 2011, a DNA-based hair snare effort was initiated within the CYE to quantify the number of grizzly bears residing in-and-around the recovery zone (Boulanger 2011, Kendall and Allen pers. comm. 2011). Field work to identify rub stations began in the summer of 2011 with the majority of the date collection occurring in 2012.

In 1993, the USFWS estimated that there were 25 grizzly bears in the Selkirk Recovery Zone (USDI Fish and Wildlife Service 1993a). In 1999, they updated this number to 46 bears (USDI Fish and Wildlife Service 1999). Wakkinen and Kasworm (2004) estimated that the Selkirk Recovery Zone grizzly bear population has a 67 percent probability that it is increasing. Wakkinen et al. (2009) states that grizzly bears appear to be increasing in the Selkirk Recovery Zone both in numbers and distribution based on an increase of sightings of bears, and changes in the distribution of credible sightings (e.g., documented grizzly bear use in areas not previously documented).

More recent estimates for population size in the Selkirk Recovery Zone includes Michael Proctor's 2005 DNA-based hair snare project north of B.C. Highway 3 (Proctor et al. 2007). Thirty-three individual bears were trapped during this effort (Wakkinen et al. 2009), and Proctor et al. (2007) estimated a population of 58 bears for the entire South Selkirk Grizzly Bear Population Unit[18]. A similar DNA-based hair snare effort was implemented for a 466 square mile portion of the ecosystem south of B.C. Highway 3 in 2007 (Wakkinen et al. 2009, USDA Forest Service 2010a). Preliminary results indicated that 15 different grizzly bears (nine females, six males) were detected, but no population estimate has been calculated to date. Three of the 15 bears were detected in an earlier DNA hair sampling effort north of B.C. Highway 3, including one female and two males (Wakkinen 2010a and 2010b). Initial mark-recapture analysis indicated an abundance estimate of 17.9 bears for this 466 square mile portion of the recovery zone (ibid).

In the summer of 2010, a five-year DNA-based hair snare effort aimed at quantifying distribution, abundance, and genetic connectivity of grizzly bears, wolves, lynx, fisher and wolverine in the Selkirk Mountains south of the international border was initiated (Cushman 2009). This large interagency[19] effort includes the entire Selkirk Recovery Zone area located in the United States

[17] Proctor et al. (2007) reported a population estimate of 20 grizzlies in the Yaak Grizzly Bear Population Unit north of the international border but outside of the official Cabinet-Yaak Recovery Zone. This work was based on his 2005 DNA-based hair snare project.
[18] The Grizzly Bear Population Unit is larger (=1,571 square miles) than the 752 square mile study area used to sample bears. Proctor et al. (2007) did not include a population estimate for the original study area, but Wakkinen (2010a and 2010b) reported an abundance of 33 individuals with a density estimate of 16.5 bears/386 square miles (16.5 bears/1000 square kilometers) for this 2005 research north of B.C. Highway 3.
[19] U.S. Forest Service Rocky Mountain Research Station, Idaho Department of Fish and Game, Washington Department of Fish and Wildlife, U.S. Forest Service IPNF and CNF, and U.S. Fish and Wildlife Service.

and would provide a robust estimate of distribution, occupancy, abundance, and genetic characteristics of grizzly bears within the ecosystem (ibid). This project did not receive sufficient funding in 2011 to continue the assessment for grizzly bears.

Bear Augmentation: As part of an effort to maintain the existing small population of bears in the Cabinet Mountains, four subadult female grizzly bears were captured in British Columbia and released into the Cabinet Mountains from 1990 to 1994 (USDI Fish and Wildlife Service 1990, Servheen et al. 1987). Three of the four bears remained within the area for at least one year. The success of this initial effort resulted in additional augmentations of ten grizzly bears (seven females and three males) from 2005-2011 from the North and South Fork of the Flathead River (U.S.) and the Whitefish Mountain Range (Kasworm et al. 2007, Kasworm et al. 2009, Kasworm 2009, and W. Kasworm pers. comm. 2010a, W. Kasworm pers. comm. 2010b, USDI Fish and Wildlife Service 2011a). Two of the female grizzlies returned to their capture area in the Whitefish Mountains in 2010 (Kasworm and Allen pers. comm. 2010d). Augmented animals had no prior history of conflicts with humans (ibid). The success of the augmentation program is reflected in the increase in the estimated population within the Cabinet-Yaak Recovery Zone since the early 1990s.

Kasworm et al. (2009) also conducted DNA hair-snare work from 2002-2008 in order to examine the fates of the four bears transplanted into the area from the 1990-1994 effort. The results indicated that a two year-old bear released into the ecosystem in 1993 produced at least four offspring and two of those female offspring have also reproduced. See Kasworm et al. (2007) and Kasworm et al. (2009) for details on the fate of the augmented grizzly bears through 2008. Augmentation has not been used in the Selkirk Recovery Zone to date.

Bear Mortality: Grizzly bear mortalities are an important factor limiting the growth of bear populations in the Selkirk and Cabinet-Yaak Recovery Zones (U.S. Fish and Wildlife Service 1993a). The mortality goal for both Selkirk Recovery Zone and Cabinet-Yaak Recovery Zone is zero human-caused mortality (ibid). This goal has not been reached as the number of mortalities has been exceeded during many years since research began in the Selkirk and Cabinet-Yaak Recovery Zones in the early 1980s. Table 10 displays all documented grizzly bear mortalities within 10 miles of the recovery zone boundaries and their causes for the past 30 years[20]. Wakkinen and Kasworm 2004 and Kasworm et al. 2010 provide detailed summaries of the causes and timing of known grizzly bear mortalities by age and sex for the Cabinet-Yaak Recovery Zone (including Canada) for various time periods from 1983-2002 and 1982-2008, respectively.

Of the 97 human-caused mortalities that have been documented within-and-around the Selkirk and Cabinet-Yaak Recovery Zones since 1982, 75 percent (73 total) were ascribed a known cause of death. Management removal of bears involved in human health and safety issues and bears killed due to sanitation issues, legal hunting (in B.C. only) and poaching, or mistaken identity during

[20] This includes mortalities that occurred within the Selkirk and Cabinet-Yaak Recovery Zone boundaries and a 10 air-mile area surrounding both the recovery zones. This data is largely based on radio-collared animals, and as such, represents an incomplete picture of the total mortality occurring within the populations. For instance, almost all of the natural mortalities are derived from collared bears, while many of the human-caused mortalities represent a combination of radio-collared mortalities and mortalities reported by the public or documented during some law enforcement action (i.e., mistaken identity of poaching). *"We miss both human-caused and natural mortalities, but I'd bet the percentage of natural mortalities we miss is very different (higher) than the percentage of human-caused mortalities"*. Therefore, direct comparisons of the percentage of human-caused mortality to total mortality are inappropriate (Wakkinen and Johnson pers. comm. 2008). A recent review of the 1982-2011 mortality tables provided by area researchers showed that an adult male bear killed in B. C. during the legal hunting season in 2005 was counted towards the mortality totals in both ecosystems. This bear mortality was attributed to the Cabinet-Yaak ecosystem in this FSEIS. The most recent mortality tables are available in the project file.

hunting accounted for nearly 80 percent (58 total) of this subset of 73 known human-caused mortalities. Ninety-three percent (total = 26) of grizzly bears killed under the management removal category (total = 28) occurred in British Columba, with at least 20 of these mortalities associated with food attractants. Mortalities on NFS lands were typically due to mistaken bear identification, poaching, or self defense often associated with big game hunting activities.

Table 10. Number of known grizzly bear mortalities by cause from 1982 through 2011 (Kasworm et al. pers. comm. 2011, Wakkinen et al. pers. comm. 2011)

Type of Mortality[1]	Cabinet-Yaak Ecosystem[2]			Selkirk Ecosystem[3]				Total
	British Columbia (BC)	United States		British Columbia (BC)	United States			
		KNF, LNF, IPNFs	Other[4]		IPNF	CNF	Other[4]	
Natural – conspecific predation[5]	0	3	0	2	0	0	0	5
Natural - other	4	8	0	2	3	0	0	17
Subtotal (natural)	**4**	**11**	**0**	**4**	**3**	**0**	**0**	**22**
Human - poaching	0	2	6	2	1	3	1	15
Human – mistaken identity	0	4	1	0	3	0	0	8
Human – self defense	1	4	0	1	0	0	1	7
Human - management removal/sanitation	3	0	1	23	0	0	1	28
Human-legal hunting (BC only)	3	0	0	3	0	0	0	6
Human – trapping (for other species)	2	0	0	0	0	0	0	2
Human-research	1	1	0	0	0	0	0	2
Human-train collision	0	0	3	0	0	0	0	3
Human-motor vehicle	0	0	0	2	0	0	0	2
Human-unknown	2	5	2	5	6	1	3	24
Subtotal (human)	**12**	**16**	**13**	**36**	**10**	**4**	**6**	**97**
Unknown	0	2	0	0	1	0	0	3
Total	**16**	**29**	**13**	**40**	**14**	**4**	**6**	**122**

[1] Type of Mortality – some of these mortalities could be categorized into more than one type of human-caused mortality. See the Biological Assessment, Appendix B for details.
[2] The official recovery zone is located in the United States only.
[3] The official recovery zone includes habitat in the United States and British Columbia.
[4] Includes private, state, and railroad lands
[5] Conspecific = grizzly bears killing grizzly bears

Mortality Trends and Access Management: A review of grizzly bear mortality over time provides some insights into the question of whether or not grizzly bear mortality has decreased since the implementation of access management strategies on NFS lands (Table 11 and Table 12). Known grizzly deaths were categorized into three separate time periods to represent significant changes in access management approaches on NFS lands: 1) pre-1987, which reflects a lack of any access management strategies associated with the Forest Plans; 2) 1987 to 1998, which reflects implementation of respective Forest Plan habitat security measures (i.e., habitat effectiveness attained via a gate closure program instituted in the late 1980s and early 1990s), some limits on administrative use behind these gates and some restrictions on road densities in areas outside the recovery zone boundaries[21]; and 3) 1999 to 2011, which reflects the time period after implementation of the Interim Rule Set (IGBC 1998a). The latter resulted in additional road closures and additional miles of gated (restricted) roads.

Three human-caused grizzly bear mortalities were recorded for the Cabinet-Yaak Recovery Zone between 1982 and 1986, prior to the application of wheeled motorized vehicle access strategies (Table 11). During the next 12-year period (1987 to 1998), nine of the twelve grizzly bear mortalities were determined to be human-caused, while 29 of the 41 deaths within the last 13 years (1999 to 2011) were categorized as human-caused (Kasworm et al. pers. comm. 2011). As the grizzly bear population increased over the last 30 years, the average number of known grizzly bear mortalities per year and time period has increased from 0.66 during 1982 to 1986, to 3.23 bears per year during 1999 to 2011[22]. Mortalities resulting from human causes averaged 0.60 bears killed per year during 1982 to 1986, to 2.23 bears killed per year during 1999 to 2011 (Table 11). Most human-caused mortalities occurred during the fall season.

Table 11. History of known grizzly bear mortalities within-and-around the Cabinet-Yaak Recovery Zone, by time period and land ownership, 1982-2011 (Kasworm et al. pers. comm. 2011)

Time Period	Known Grizzly Bear Mortalities Total No. / Ave. No. Died Per Year		Human-Caused Mortalities by Land Ownership Total No. / Ave. No. Died Per Year (Percent of Total No. of Human-Caused Mortalities)[1]		
	Overall	Human-Caused	NFS lands	Non-NFS lands	Canada[2]
1982-1986	4 / 0.80	3 / 0.60	3 / 0.60 (100%)[3]	0 / 0 (0 %)	0 / 0 (0 %)
1987-1998	12 / 1.00	9 / 0.75	5 / 0.42 (56%)[4]	1 / 0.08 (11%)[5]	3 / 0.25 (33%)
1999-2011	42 / 3.23	29 / 2.23	8 / 0.62 (28%)	12 / 0.92 (41%)	9 / 0.69 (31%)
Totals	58 / 1.93	41 / 1.37	16 / 0.53 (39%)	13 / 0.43 (32%)	12 / 0.40 (29%)

[1] Percentages are useful for comparing within time periods only, due to differences in the length of time represented by each of the three time periods.
[2] Includes private and public lands. The official Cabinet-Yaak Recovery Zone does not extend into Canada.
[3] Includes one (1) mortality that occurred outside of the Cabinet-Yaak Recovery Zone.
[4] Includes two (2) mortalities that occurred outside of the Cabinet-Yaak Recovery Zone.
[5] Includes one (1) mortality that occurred outside of the Cabinet-Yaak Recovery Zone.

There is an apparent decreasing trend in mortalities occurring on NFS lands within and around the Cabinet-Yaak Recovery Zone over time. As the overall population increased over the last two decades (i.e., from an estimated 15 bears in 1993 to 42 bears in 2009) the average number of bears that died due to human causes has remained about the same, but the percentage of human-caused mortality occurring on NFS lands has dramatically decreased within each time period. Conversely, there is a corresponding increase in both of these parameters on non-NFS lands (Table 11) (Figure 4). Additionally, human-caused mortality in Canada immediately north of the official Cabinet-Yaak Recovery Zone has also increased in terms of the average number of bears killed per year,

[21] Kootenai National Forest only.
[22] Wayne Wakkinen and Wayne Kasworm noted that mortality rates should be examined in context of how the overall population is faring. If the population is expanding then there are scenarios where the current mortality rate could be sustainable (IGBC SCYES 2009a).

with at least 31 percent of the mortality occurring there during the last two time periods under review (Table 11) (Figure 4). Since 1999, 72 percent of the known human-caused grizzly bear mortality has occurred on non-NFS lands in this ecosystem.

These observations are consistent with grizzly bear survival modeling in the Greater Yellowstone ecosystem which suggested that survival was highest in the National Park followed by areas in the recovery zone outside the park (primarily NFS lands), and lowest outside the recovery zone (Haroldson et al. 2006). A subsequent modeling effort demonstrated that the survival of grizzly bears was best explained by the amount of human development and ungulate hunting that occurred within the home ranges of bears (Schwartz et al. 2010).

Five human-caused grizzly bear mortalities were recorded for the Selkirk Recovery Zone between 1982 and 1986, prior to the application of any wheeled motorized vehicle access strategies (Table 12). During the next 12-year period (1987 to 1998), 19 of the 24 grizzly bear mortalities were categorized as human-caused, while the last 13 years (1999 to 2011) saw 32 of the 34 known grizzly deaths determined to be human-caused (Wakkinen and Allen, pers. comm. 2010b). As the grizzly bear population has increased over the last 30 years, the average number of known grizzly bear mortalities per year and time period has increased from 1.20 during 1982 to 1986, to 2.62 bears per year during 1999 to 2011. Mortalities resulting from human causes resulted in an average of 1.00 bears killed per year during 1982 to 1986, to 2.46 bears killed per year during 1999 to 2011.

Table 12. History of known grizzly bear mortalities within-and-around the Selkirk Recovery Zone, by time period and land ownership 1982-2011 (Wakkinen et al. pers. comm. 2011)

Time Period	Known Grizzly Bear Mortalities Total No. / Ave. No. Died Per Year		Human-Caused Mortalities by Land Ownership Total No. / Ave. No. Died Per Year (Percent of Total No. Human-Caused Mortalities)[1]		
	Overall	Human-Caused	NFS lands	Non-NFS lands	Canada[2]
1982-1986	6 / 1.20	5 / 1.00	4 / 0.80 (80%)	0 / 0 (0%)	1 / 0.20 (20%)
1987-1998	24 / 2.00	19 / 1.58	6 / 0.58 (33%)	1 / 0.33 (5%)	12 /1.00 (63%)
1999-2011	34 / 2.62	32 / 2.46	4 / 0.31 (13%)	5 / 0.39 (16%)	23 / 1.77 (72%)
Totals	64 / 2.13	54 / 1.87	14 / 0.47 (25%)	6 / 0.20 (11%)	36 / 1.20 (64%)

[1] Percentages are useful for comparing within time periods only, due to differences in the length of time represented by each of three time periods.

[2] Includes private and public lands. The Selkirk Recovery Zone grizzly bear population and recovery zone extends into Canada.

There is an apparent decreasing trend in mortalities occurring on NFS lands within and around the Selkirk Recovery Zone over time. This is true both in terms of the average number of bears killed per year by time period, and the percentage of human-caused mortality within each time period. Like the Cabinet-Yaak Recovery Zone, there is a corresponding increase in these two parameters on non-National Forest System lands (Table 12, Figure 5). Additionally, human-caused mortality on the Canadian side of the Selkirk Recovery Zone increased in terms of the average number of bears killed per year with more than 63 percent of the mortality occurring there since the 1987 to 1998 time period (Table 11, Figure 5). At least one-third of this British Columbia mortality is from female grizzly bears. Since 1999, 88 percent of the known human-caused grizzly bear mortality has occurred on non-NFS lands in this ecosystem.

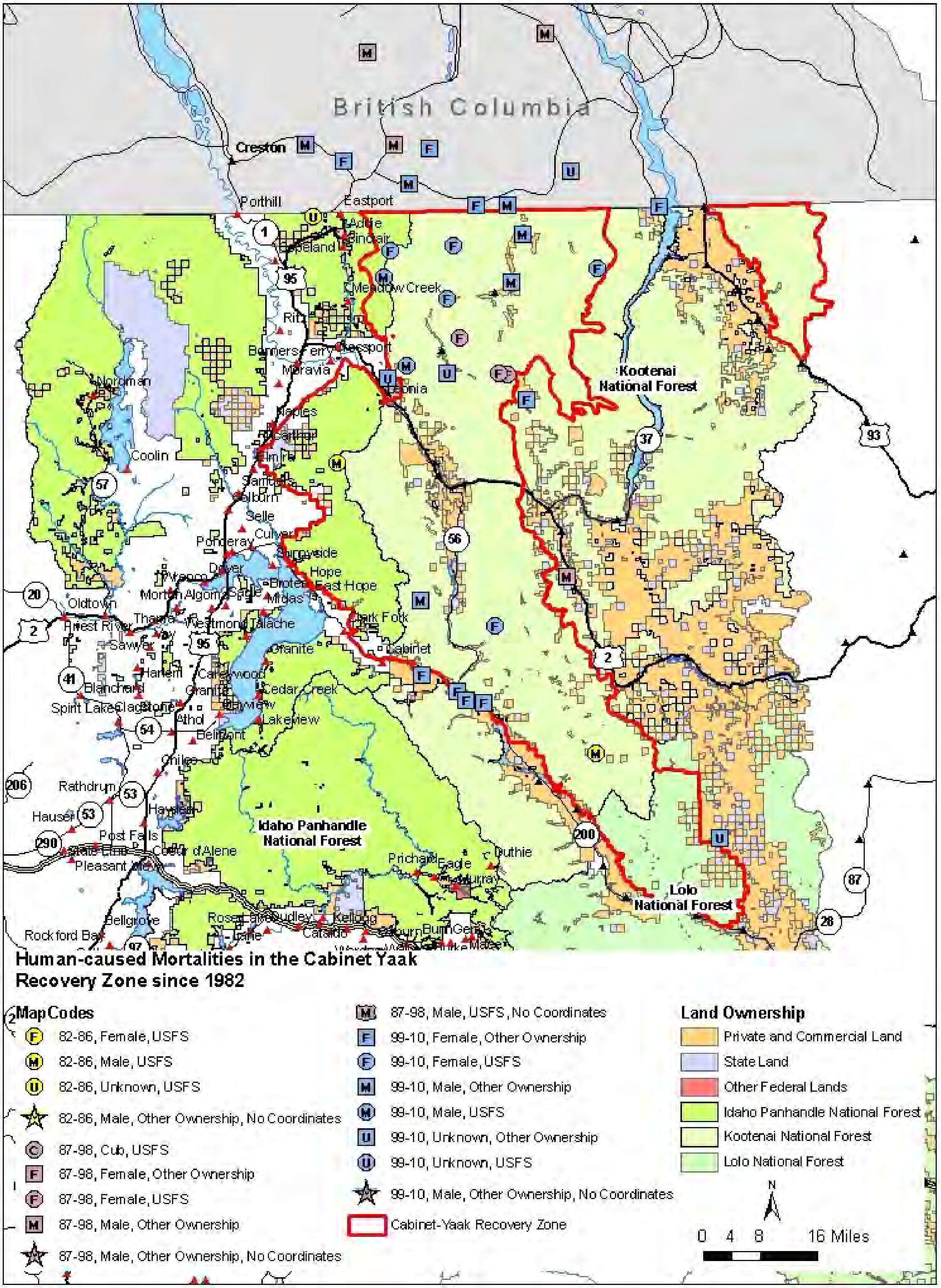

Figure 4. Grizzly bear mortalities in the Cabinet-Yaak Recovery Zone since 1982

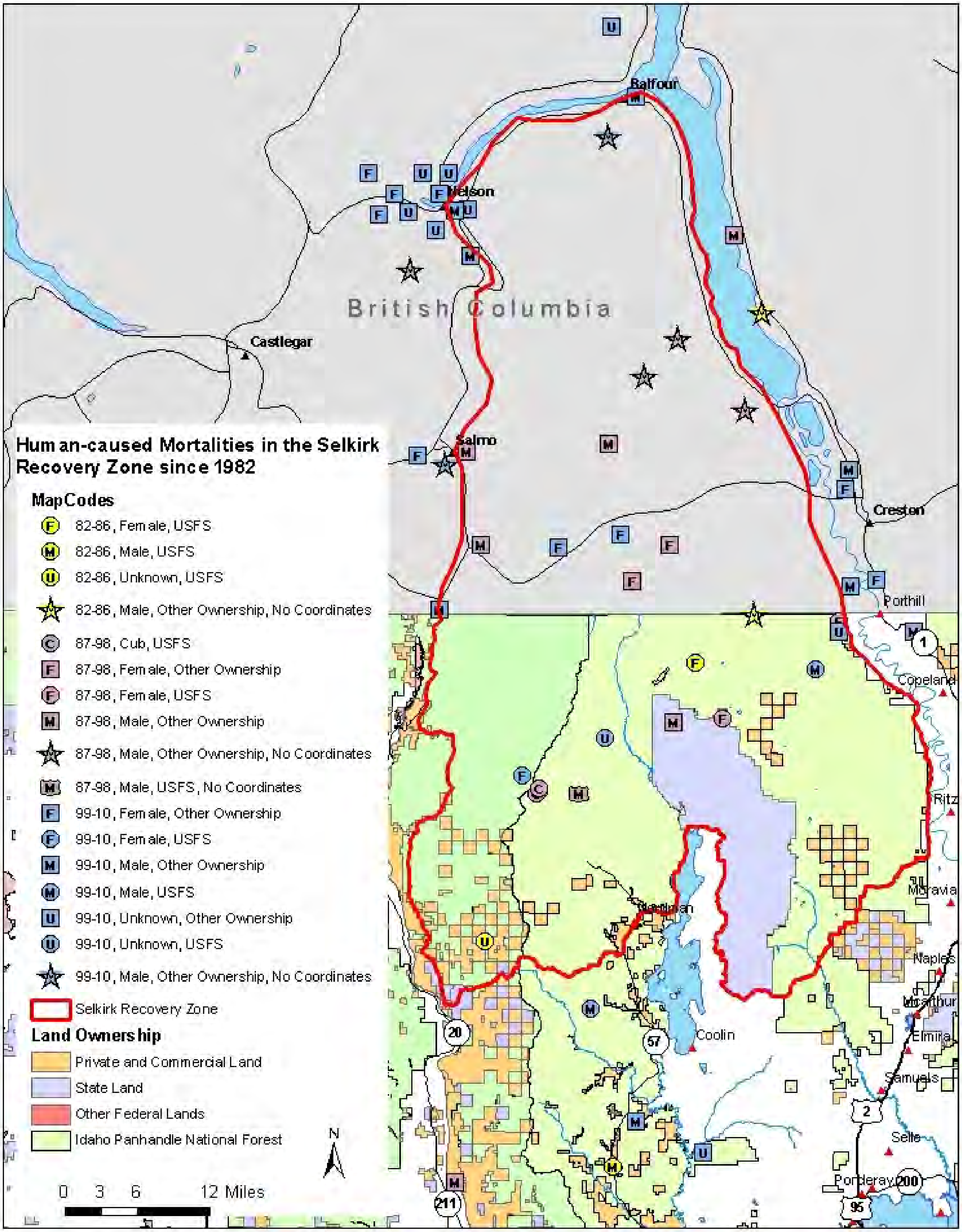

Figure 5. Grizzly bear mortalities in the Selkirk Recovery Zone since 1982

This mortality data indicates that grizzly bear habitat conditions, as related to roads, have improved in the Selkirk and Cabinet-Yaak Recovery Zones since the application of wheeled motorized vehicle access strategies began in the late 1980s. This is likely one factor contributing to the apparent shift in average bear kills per year and overall percentage of grizzly bear mortalities from NFS lands to private lands and areas immediately north in British Columbia.

Human-caused mortality on non-Federal lands and in British Columbia, contributed to the majority of bear deaths for the Cabinet-Yaak and Selkirk Recovery Zones, respectively, since 1982. To date, 73 percent (71 total) of the 97 human-caused grizzly bear mortalities occurred in British Columbia, on private, state, or railroad lands that may or may not provide restrictions on motorized access, or areas on the National Forest that were outside of the recovery area boundaries. In the Northern Continental Divide ecosystem, Mace and Waller (1998) found annual mortality rates for grizzly bears using rural areas and the wilderness zone were 21 and 15 times higher, respectively, than for bears using only multiple-use lands, which demonstrates that bear mortality is a function of numerous variables besides the amount and juxtaposition of motorized access. Some of these variables include the type and seasonality of hunting seasons, the availability of “unnatural” foods (i.e., human provided--e.g., garbage, agricultural products such as orchards/grain/livestock, or big game carcasses), and the amount and juxtaposition of private property and associated development. Likewise, Schwartz et al. (2010) found that survival of grizzly bears was best explained by the amount of human development and ungulate hunting that occurred within the home ranges of bears in the Yellowstone ecosystem. Therefore, implementing wheeled motorized vehicle access management standards, even if more restrictive, would not completely remove grizzly bear mortality risk due to the presence of other risk factors such as big game hunting[23], sanitation and agricultural food attractants, and human attitudes toward the grizzly bear. Please see pages 61 to 63 and 95 to 97 for details on these topics.

Mortality and Distance from Open Roads: The relationship between grizzly bears and roads has been studied extensively (i.e., Aune and Kasworm 1989, Kasworm and Manley 1990, Mace and Manley 1993, Mace et al. 1996, Mace and Waller 1997, Mattson et al. 1987, McLellan and Shackleton 1988, Wakkinen and Kasworm 1997, Schwartz et al. 2010). Roads can have several effects on grizzly bears, including contributing to direct mortality from vehicle strikes. Of the 97 known human-caused mortalities that occurred within-and-around the recovery zones, 73 percent (71 total) occurred near open roads (less than 500 meters), while another 17 percent (16 total) occurred in areas away from open roads (greater than 500 meters; Table 13). The remaining 10 percent (10 total) human-caused mortalities were not ascribed a known distance from an open road[24].

Again, while management of roads is one of the tools available to balance the security needs of grizzly bears with the activities of humans (USDI Fish and Wildlife Service 1993a), it is important to note that tighter access restrictions on NFS lands would not have prevented the vast majority of past human-caused mortalities that occurred in-and-around the recovery zones. For instance, of the 71 human-caused mortalities that occurred within 500 meters of an open road within and around the recovery zones, 79 percent (56 total) took place on private or Crown lands in British Columbia and private or state lands within the United States that provide only limited

[23] Including ungulate and black bear.

[24] Less than 1 percent (1 total) of natural mortalities occurred within 500 meters of an open road, while another 41 percent (9 total) occurred at distances greater than 500 meters. However, most (59 percent or 13 total) natural mortalities were of an unknown distance from an open road. A comparison of human-caused versus natural mortality distance from open roads is inappropriate due to the differences in how data was collected for these two categories of mortality data.

or no motorized access restrictions. Another seven percent (5 total) of these 71 human-caused mortalities[25] occurred within 500 meters of open roads on NFS lands located outside of the recovery zone boundaries, while the remaining 14 percent (10 total) that occurred within the recovery zones were often associated with legal big game hunting seasons[26] when hunters traverse areas within the recovery zones by motorized vehicle, horseback, bicycle and/or on foot.

Table 13. Proximity of known human-caused mortalities (total = 97) to open roads by distance category land ownership, and recovery zone, from 1982 through 2011 (Kasworm et al. pers. comm. 2011, Wakkinen et al. pers. comm. 2011)

Distance From Open Road (meters)	Total Human-Caused Mortalities	NFS within Recovery Zones		NFS outside Recovery Zones		British Columbia		Private, State, & Railroad Lands	
		CYRZ	SRZ	CYRZ	SRZ	CYRZ	SRZ	CYRZ	SRZ
< 500	71	5	5	4	1	11	31	12	2
>500	16	7	5	0	0	1	1	1	1
Subtotal	87	12	10	4	1	12	32	13	3
Unknown	10	0	3	0	0	0	4	1	2
Total	97	12	13	4	1	12	36	14	5

CYRZ – Cabinet-Yaak Recovery Zone; SRZ – Selkirk Recovery Zone

This data supports Mace et al. (1996) contention that "access management through road use restrictions on multiple-use lands will be of limited mitigative value if habituation and mortality levels are not minimized on or adjacent to private lands." In the case of these two grizzly bear ecosystems, mortality on non-Federal lands and in British Columbia, contributes to the majority of bear deaths for the Cabinet-Yaak and Selkirk Recovery Zones, respectively.

Mortality and Other Ongoing Activities within the Project Area: A comprehensive program to minimize human-caused grizzly bear mortalities involves many elements, including wheeled motorized vehicle access management, regulation of hunting, sanitation, law enforcement, and education. This document focuses on wheeled motorized vehicle access management, but at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear. While these measures are beyond the scope of this project, the following discussion is included as additional information:

- **Hunting in the United States and Canada:** The province of British Columbia and the states of Montana, Idaho, and Washington continue to allow hunting for black bears as well as other wildlife species, on both sides of the border within-and-around the Selkirk and Cabinet-Yaak Recovery Zones, although black bear hunting seasons have also been shortened in recent years. Idaho prohibits baiting and hunting bear with hounds in grizzly bear recovery zones , and has supported a grizzly bear law enforcement and education position in the Selkirk Recovery Zone to facilitate public education and hunter awareness since 1990 (Allen-Johnson 1991, Wakkinen et al. 2009). Hunting of grizzly bears in British Columbia is no longer permitted in the areas north of the recovery zones (Allen

[25] Where the location of death was known.

[26] Four cases of mistaken identification/poaching/self-defense; one research related death; five under investigation with an unknown cause of human-related death. Likewise, the 12 human-caused mortalities that occurred on NFS lands in "secure" habitat (i.e., 500 meters from an open road) were all tied to legal big game hunting seasons when hunters traverse areas within the recovery zones by motorized vehicle, horseback, bicycle and/or on foot.

and Johnson pers. comm. 2008, British Columbia Ministry of Environment 2008, Mowat 2007).

Montana Fish, Wildlife and Parks instituted a voluntary bear identification course for hunters in 2001 and made it mandatory in 2002 to assist with reducing grizzly bear mortality within the state. The states agencies for Idaho and Washington recently agreed to a request to institute similar programs in their respective states (IGBC SCYES 2009a and 2009b).

- **Sanitation:** In many cases, management removals of grizzly bears are the result of bears becoming habituated to unnatural food sources such as human food or garbage. The following is a summary of sanitation measures that have taken place within the Kootenai, Lolo, and Idaho Panhandle National Forests in recent years:
    - In the Kootenai National Forest portion of the Cabinet-Yaak Recovery Zone, there has been a reduction of potential unnatural food sources. In 1987, there were no bear-resistant garbage containers in any of the developed recreation sites. Currently, 27 developed recreation sites include such devices, and 12 others are slated to have them installed in 2011 (Laws and Dueker pers. comm. 2010). In addition, the Kootenai has 12 recreation sites with food storage containers with another 22 sites planned in 2011 (ibid). All dispersed recreation sites have a pack-it-in/pack-it-out policy. In 2001, the Forest implemented forestwide voluntary food storage guidelines to encourage national forest users to store food in a manner that reduces human-bear conflicts. As part of this effort, the Forest installed bear-resistant food storage bins in some locations outside of the recovery zone. The Kootenai NF signed a mandatory forest wide food storage order in the spring of 2011.
    - The Lolo National Forest portion of the Cabinet-Yaak Recovery Zone includes four developed campgrounds that have a pack-it-in/pack-it-out policy so unnatural food attractants are not likely to be found at these sites (Wrobleski and Allen, pers. comm. 2010). In addition, bear resistant dumpsters were installed in Cascade Campground in 2010, although this campground is located outside the recovery zone boundary (ibid). The Lolo NF signed a mandatory forest wide food storage order in the spring of 2011.
    - In the Idaho Panhandle National Forests prior to the development of the 1987 Forest Plan, no bear-resistant hardware was installed within any of the recreation sites. In 1996, all developed campgrounds on the Priest Lake Ranger District were outfitted with bear-resistant trash containers. These were later upgraded to bear-resistant dumpsters. In 1998 (two years later), the four boat-or-hike-only campgrounds along the shoreline of Upper Priest Lake were outfitted with eight bear-resistant food storage lockers. By 2008, this number increased to 20. In 2004, bear-resistant dumpsters were installed at the administrative site at the Priest Lake Ranger District and at the Kalispell boat launch. In 2005, 12 bear-resistant food storage lockers were installed at designated campsites accessed by boat-or-hike-only located in another Priest Lake BMU. In 2009, 14 bear resistant food storage lockers were installed at additional campsites around Priest Lake. In 2006, a temporary food storage order was implemented along the shoreline of Priest Lake and a voluntary food storage order was implemented over the remainder of the IPNFs. Both of these orders remain in effect within the IPNFs. The IPNF signed a mandatory food storage order for the area encompassing the Selkirk and Cabinet-Yaak Ecosystems in the fall of 2011.

- In 2005, the Priest Lake Marina and Hills Resort were required to transition to bear-resistant trash containers and dumpsters. In 2008, Elkins Resort transitioned to bear-resistant dumpsters and trashcans. Both of these resorts operate on the IPNFs under special use permit. In addition, sanitation guidelines are being added to all recreation residence special use permits issued on the IPNFs.

- **Law Enforcement:** Table 10 on page 55 discloses that at least 15 grizzly bears have been poached since 1982. An active law enforcement program can be a deterrent against this form of illegal grizzly bear mortality. The Forest Service actively cooperates with State and Federal law enforcement officials concerning any illegal killings of grizzly bears and provides financial support for an Idaho Department of Fish and Game Conservation Officer position.

- **Public Education:** Public education is an important element of any program designed to reduce grizzly bear mortalities. Through education, people can learn to live in a way that is more compatible with the needs and behaviors of bears. Education programs can reduce bear mortalities in instances of self-defense and habituation to unnatural foods. The Forest Service and cooperating agencies maintain a regular program of public information and education within the Selkirk and Cabinet-Yaak Recovery Zones and provides financial supports (equipment and salary) two state employee positions that focus on grizzly bear information and education.

Demographic Recovery Plan Targets: Cabinet-Yaak Recovery Zone: Table 14 and Table 15 display the annual population and known human-caused mortality data for the Cabinet-Yaak Recovery Zone based on the 1993 grizzly bear recovery plan criteria including: (1) minimum unduplicated counts of females with cubs; (2) distribution of females with young; and (3) known human-caused mortalities (USDI Fish and Wildlife Service 1993a). Data was provided by Kasworm pers. comm. 2010e. A status report of all captured grizzly bears in the Cabinet-Yaak ecosystem from 1999-2008 is included in Kasworm et al. 2009 and Kasworm 2009.

Demographic Recovery Plan Targets for the Selkirk Recovery Zone: Table 16 and Table 17 display the annual population and known human-caused mortality data for the Selkirk Recovery Zone from 1995 – 2008 based on the updated grizzly bear recovery plan (USDI Fish and Wildlife Service 1993a) criteria including: (1) minimum unduplicated counts of females with cubs; (2) distribution of females with young; and (3) number of known, human-caused mortalities (USDI Fish and Wildlife Service 1993a). Data was provided by Wakkinen et al. 2009 who noted “that the ability to monitor the population has declined due to funding limitations and the reduction in trapping and radio collaring activities” in the recovery area. A status report of all captured grizzly bears in the Selkirk Mountains from 1999-2008 is included in Wakkinen et al. 2009 (see Appendix B in Biological Assessment) and Wakkinen 2009.

Table 14. Annual grizzly bear population and mortality data for the Cabinet-Yaak Recovery Zone, 1988-2009 (from Kasworm pers. comm. 2010e)

Year	Annual Females w/Cubs	Annual Adult Female Mortality	Annual All Female Mortality	Annual Total Mortality	4% Total Mortality Limit[1]	30% All Female Mortality Limit	Total Mortality 6-Year Average	Female Mortality 6-year Average
1988	1	1	1	1	0	0	-	-
1989	0	0	1	1	0	0	-	-
1990	1	0	0	1	0	0	-	-
1991	1	0	0	0	0	0	-	-
1992	1	0	0	0	0	0	-	-
1993	2	0	0	0	0.9	0	0.5	0.3
1994	1	0	0	0	0.9	0.5	0.3	0.2
1995	1	0	0	0	0.9	0.3	0.2	00
1996	1	0	0	1	0.7	0.2	0.2	0
1997	3	0	0	1	1.2	0.2	0.3	0
1998	0	0	0	0	0.9	0.3	0.3	0
1999	0	0	0	1	0.7	0.3	0.5	0
2000	2	0	1	1	0.5	0.5	0.7	0.2
2001	1	1	2	2	0.5	0.7	1.0	0.5
2002	4	1	4	5	1.2	1.0	1.7	1.2
2003	2	0	0	0	1.2	1.7	1.5	1.2
2004	1	0	0	0	1.4	1.5	1.5	1.2
2005	1	0	2	3	0.9	1.8	1.8	1.5
2006	1	0	0	0	0.7	1.7	1.7	1.3
2007	4	1	1	1	1.2	1.5	1.5	1.2
2008	3	0	0	1[2]	1.6	0.8	0.8	0.5
2009	2	1	1	1	1.6	0.5	1.0	0.7

[1] Grizzly bear numbers are currently so small in this ecosystem that the mortality goal should be zero known human-caused mortality.

[2] The sex of this mortality was not known at the time of Kasworm et al. report.

Table 15. Status of the Cabinet-Yaak Recovery Zone from 2004 to 2009 in relation to the demographic recovery targets (Kasworm pers. comm. 2009e)

Delisting Parameter	Delisting Target	2009 Status
Females w/Cubs (6-year average)	≥6.0	2.0
Mortality Limit (4% of minimum estimate & 6-year average)	1.6	1.0
Female Mortality Limit (30% of total mortality & 6-year average)	0.5	0.5
Distribution of Females w/Young	18 of 22 BMUs	11 of 22 BMUs[1]

[1] Snowshoe (2), Spar (3), Bull (4), St. Paul (5), Wanless (6), Roderick (11), Keno (13), NW Peak (14), East Fork Yaak (16), Big Creek (17), and Boulder (18) BMUs were occupied by family groups in 2009.

Table 16. Annual grizzly bear population and mortality data for the Selkirk Recovery Zone, 1988-2009 (from Wakkinen and Johnson 2003 and Wakkinen et al. 2010)

Year	Annual Females w/Cubs	Annual Adult Female Mortality	Annual All Female Mortality	Annual Total Mortality	4% Total Mortality Limit	30% All Female Mortality Limit	Total Mortality 6-Year Average	Female Mortality 6-year Average
1988	0	0	1	2	-	-	-	-
1989	4	0	0	0	-	-	-	-
1990	1	0	1	2	-	-	-	-
1991	1	0	0	0	-	-	-	-
1992	1	1	1	2	-	-	-	-
1993	1	1	2	5	0.2	0.1	1.8	0.8
1994	1	0	0	1	0.2	0.1	1.7	0.7
1995	1	0	1	2	0.4	0.1	2.0	0.8
1996	1	0	0	1	0.6	0.2	1.8	0.7
1997	1	0	0	1	0.6	0.2	2.0	0.7
1998	1	0	0	1	0.6	0.2	1.8	0.5
1999	1	0	0	3	0.4	0.1	1.5	0.2
2000	2	0	0	0	0.6	0.2	1.3	0.2
2001	2	0	0	1	0.8	0.2	1.2	0
2002	0	1	2	6	0.6	0.2	2.0	0.2
2003	1	1	3	4	0.2	0.1	2.5	0.8
2004	1	0	0	1	0.2	0.1	2.5	0.8
2005	1	0	0	1	0.2	0.1	2.3	0.8
2006	0	1	2	4	0.2	0.1	3.0	1.2
2007	0	2	2	3	0	0	3.3	1.5
2008	0	0	0	1	0	0	2.5	1.2
2009	0	0	0	0	0	0.0	1.8	0.7

Table 17. Status of the Selkirk Recovery Zone from 2004 to 2009 in relation to the demographic recovery targets (Wakkinen et al. 2010)

Delisting Parameter	Delisting Target	2009 Status
Females w/Cubs (6-year average)	≥6.0	0.3
Mortality Limit (4% of minimum estimate & 6-year average)	0	1.8
Female Mortality Limit (30% of total mortality & 6-year average)	0	0.7
Distribution of Females w/Young	7 of 10 BMUs[1]	0 of 10 BMUs[2]

[1] BMUs = Bear Management Units.

[2]There were no observations of family groups in the BMUs in 2009 due in part to the lack of radio-collared grizzly bears in the U.S. portion of the recovery zone. However, Myrtle, Sullivan-Hughes, Long-Smith, and Kalispell-Granite BMUs were occupied by family groups in 2008 (Wakkinen et al. 2009).

Active Bear Year

The "active bear year" (time when a grizzly bear is active - e.g., not in the den) was previously established as April 1 through November 15 for both the Selkirk and Cabinet-Yaak Recovery Zones. The date of November 15 was a management decision that reflected road closure dates in place at that time (IGBC SCYES 1998a). A recent review of chronology data on den entrance and exit dates resulted in a refinement of the definition for the Cabinet-Yaak ecosystem. Specifically, a review of the data revealed that 82 percent of all bears were in the den by November 30 while

92 percent of all bears were in the den by December 14. When just females are considered, 77 percent and 95 percent are in the den by November 30 and December 7, respectively (Johnson 2008). While a date at the end of the first week of December would be in line with 95 percent of the female den entry dates, using the date of November 30 would provide protection during the hunting season, when human-caused mortality risk would be higher. That date matches well with existing hunting seasons and the current start date for use of motorized over-snow vehicles on roads otherwise closed to motorized vehicles on the Montana portion of the Cabinet-Yaak Recovery Zone (i.e., December 1). This change is expected to protect an additional 44 percent of females from potential disturbance immediately prior to denning (ibid).

The Yellowstone and Northern Continental Divide Ecosystems use November 30 as the ending date for their bear year. Using this ending date would make it consistent across three ecosystems. Making the active bear year consistent throughout the entire Cabinet-Yaak ecosystem (both in Montana and Idaho) affects the way that administrative use on restricted roads is calculated and administered.

A review of the available grizzly bear denning data in the Selkirk ecosystem indicated that 89 percent (23 out of 25 denning events) of all female grizzlies were in the den by November 15. The remaining two female denning events occurred by November 30 and a decision was made not to change the date. Therefore, the “active bear year” for the Selkirks remains at April 1-November 15 (Johnson et al. 2008a and Johnson et al. 2008b).

Bear Management Units

To facilitate management, each recovery zone is divided into BMUs, each of which is approximately the home range size of an adult female grizzly bear (average size about 100 square miles) (Christensen and Madel 1982). Development of individual BMUs takes into consideration five different management situation designations. The direction for the different management situation designations is summarized as follows (USDA Forest Service 1986a and USDI Fish and Wildlife Service 1993a):

- **Management Situation I (MS 1)** areas are to be managed for grizzly bear habitat maintenance and improvement and the minimization of grizzly-human conflict. Management decisions will favor the needs of the grizzly bears when grizzly bear habitat and other land use values compete.
- **Management Situation II (MS 2)** areas are where grizzly bear are an important, but not necessarily the primary use of, the area. In some cases, habitat maintenance and improvement may be important management considerations. Minimization of grizzly bear-human conflict potential is a high management priority.
- **Management Situation III (MS 3)** areas contain no suitable habitat for grizzlies, and their presence is possible but infrequent. Grizzly bear habitat maintenance and improvement are not management considerations. Grizzly use of such areas will be discouraged, and management within these areas will encourage measures that minimize the potential for human-bear conflict. These areas include developments, such as campgrounds, resorts or other high human use associated with facilities where human presence results in conditions, which make grizzly presence untenable for humans and/or grizzlies.

- **Management Situation IV (MS 4)** areas contain potentially suitable habitat for grizzly occupancy and the area is needed for the survival and recovery of the species. Grizzlies do not currently occur in the area. Habitat and human conditions making the area suitable for grizzly occupancy will not be degraded pending decisions regarding reestablishment of grizzlies.
- **Management Situation V (MS 5)** areas contain unsuitable or unavailable habitat for grizzlies but grizzlies do not occur or only rarely occur. The area lacks survival and recovery values for the species or values are unknown.

The Forest Service identified only Management Situations (MS) 1, 2, and 3 throughout the two recovery zones during their forest planning efforts in the 1980s. In the Selkirk Recovery Zone, the U.S. Forest Service and U.S. Fish and Wildlife Service delineated MS 1, 2, and 3 in the newly created Kalispell-Granite and Lakeshore BMUs in 1991 (Servheen et al. 1991). The Interagency Grizzly Bear Guidelines lists eight elements on how to minimize grizzly bear-human conflict potential as it relates to wildlife management (USDA Forest Service 1986a). If the guidelines are met, then the management direction for each management situation is met. Appendix E displays these elements for MS 1 through 3.

Figure 2 and Figure 3 on pages 4 and 5 display the locations of these BMUs. Twenty-two BMUs are contained within the Cabinet-Yaak Recovery Zone (15 BMUs on the KNF, one BMU on the LNF, four BMUs on the IPNFs, and two BMUs shared between the KNF and IPNFs). The Grouse BMU on the IPNFs is less than 75 percent Federal ownership.

The U.S. portion of the Selkirk Recovery Zone is comprised of 10 BMUs, including 5 on the IPNFs, 4 shared between the IPNFs and CNF, and 1 BMU located on the Idaho Department of Lands. One of these BMUs, LeClerc, (which is primarily on the CNF with a minor portion on the IPNF) is less than 75 percent Federal ownership. The LeClerc and Idaho Department of Lands BMU are not within the scope of the proposed Federal action and are not addressed further in this BA. Although portions of the recovery zone are within British Columbia, Canada, BMUs have not been formally designated in British Columbia.

Lakeshore BMU in the Selkirk Recovery Zone is somewhat of an anomaly in that it is small (about 28 square miles or 17,972 acres) and contains a higher percentage of developed lands than most BMUs. The need for its creation was recognized in the mid-1980s as a result of spring bear use that was found to be occurring in Bismark Meadows. It was formally added to the recovery zone when the Recovery Plan was revised in 1993 (USDI Fish and Wildlife Service 1993a). The Lakeshore BMU has been designated as a combination of MS 2 and MS 3 habitat. MS 3 designation is used when developments such as campgrounds, resorts, or other high use human facilities or human presence results in conditions that make grizzly bear presence untenable. The area mapped as MS 3 in Lakeshore BMU totals approximately 5,900 acres and is located along the eastern edge of the unit. The remainder of the BMU is designated MS 2.

Habitat Security Management for Grizzly Bears: The Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993a) identifies adequate effective habitat as the most important element in grizzly bear recovery. Effective habitat is a reflection of an area's ability to support grizzly bears based on the quality of the habitat and the type/amount of human disturbance imposed on it. Security habitat allows for sufficient space for grizzly bears to roam and effectively use available habitats. By definition, security habitat is an area or space outside or beyond the influence of high levels of human activity. Open roads, vegetation and fuel projects, and high-use recreational areas such as trails or campgrounds are examples of activities that reduce the amount of secure habitat that is available and may result in displacement of bears.

Controlling and directing motorized access is one of the most important tools in achieving habitat effectiveness and managing grizzly bear recovery (ibid). By controlling motorized access, certain objectives can be achieved including minimizing human interactions and potential grizzly bear mortality, reducing displacement from important habitats, and minimizing habituation to humans. The following includes a review of the types of habitat security parameters that have been used in the past as well as newer measures that were developed in the 1990s.

Habitat Effectiveness: The KNF and IPNF Forest Plans direct that grizzly bear management emphasize maintaining adequate security while providing seasonal habitat components. The two Forest Plans specify that management for grizzly bear recovery strive for a minimum of 70 percent (KNF) or 70 square miles (mi^2) (IPNF[27]) of security habitat or other established thresholds within each grizzly bear management unit (BMU) based on a BMU size of approximately 100 mi^2 (i.e., Christensen and Madel 1982 cumulative effects analysis process). Habitat effectiveness is calculated by buffering all open roads, timber harvest activities, and high use recreational features by 0.25 miles. Habitat outside of the buffer is considered secure. This measure would be eliminated with implementation of the either Alternative D Modified or E Updated and replaced with OMRD, TRMD, and core area standards, which the best available science indicates are the appropriate measures of habitat effectiveness for grizzly bears. Table 18 and Table 19 include Habitat Effectiveness for each BMU from 2002 to 2009.

Linear Open Road Density: The KNF and LNF Forest Plans included a linear open road density standard to be applied on a Bear Analysis Area (BAA) or Bear Management Analysis Area (BMAA), respectively. BAAs and BMAAs are subdivisions of a BMU. This measure is not part of the specific features of either Alternative D Modified or E Updated. Table 20 includes the 2009 data on Linear Road Density for the BMUs located on the KNF and LNF in the Cabinet-Yaak Recovery Zone.

Administrative Use: The three Forests have varying standards to address the level of motorized use on restricted roads (i.e., behind gates). This parameter is applied on an individual road basis, with those roads that exceed the use limits being treated as “open” for purposes of calculating OMRD. The 1998 Interim Access Rule provided for low intensity up to an average of one vehicle/day for the season (or 100 vehicle round trips), including the following administrative use levels: Spring (April 1 – June 15) = 38 round trips; Summer (June 16 – September 15) = 31 round trips; and Fall (September 16 – November 15) = 31 round trips (IGBC SCYES 1998a). Administrative use needs change from year to year.

[27] Selkirk Recovery Zone: Minimum security habitat standards for the Kalispell-Granite BMU were established at 70% of the BMU (USDA Forest Service 1995c) as opposed to 70 mi^2, as this was felt to be more appropriate for the size of the BMU (130 mi^2) and better met the intent of the cumulative effects process outlined by Christensen and Madel (1982). When the Lakeshore BMU was delineated, it was recognized as atypical since it is significantly smaller than most other BMUs (28 square miles) and would not be able to meet the 70 square miles of security standard (USDA Forest Service 1995c).

Subsequent review of Mace et al. (1996 and 1999) research data by researchers W. Wakkinen and W. Kasworm resulted in a suggested change to the Interim Rule Set to be applied to the Selkirk and Cabinet-Yaak Ecosystems as follows: Spring = 19; Summer = 23 round trips; and Fall = 15 round trips for an Active Bear Year from April 1 – November 15 for a total of 57 round trips (Wakkinen and Kasworm 1999). Administrative use for 2009 is provided in Appendix D of the Biological Assessment.

However, the best available science suggests that a change in defining the active bear year definition for the Cabinet-Yaak Recovery Zone is warranted at this time. This lengthening of the active bear year for the Cabinet-Yaak Recovery Zone necessitated a recalculation for inclusion into these Forest Plan amendments. The resulting review dictates administrative use levels of 60 round trips for the active bear year in the Cabinet-Yaak Recovery Zone as follows: Spring = 18 trips; Summer=23 trips; and Fall = 19 trips (W. Kasworm and W. Wakkinen pers. comm. 2008). Every vehicle is to be considered towards the allowable seasonal trip limits (USDA Forest Service 2008i).

OMRD, TMRD, and Core Area: Research completed after the development of the Forest Plans indicated that open road density and security habitat calculations alone are not a complete measure of the effects of motorized access on grizzly bear habitat use, since grizzly bears tend to avoid closed roads as well as open roads (Mace and Manley 1993, Mace et al. 1996, Mace et al. 1999). Results from those studies demonstrated that grizzly bear use of an area declines as total route densities (open and closed routes) exceed 2.0 mi/mi^2 and open route densities exceed 1.0 mi/mi^2 (Mace and Manley 1993). In addition, if motorized routes are located in or next to key habitat components such as riparian areas, snow chutes and shrub fields, important resources within these areas may be used less than expected by bears because of their avoidance behavior, resulting in significant habitat loss. Core area habitats are defined as areas of secure habitat within a BMU that contain no motorized travel routes or high use nonmotorized trails during the active bear year and are more than 0.31 miles (500 meters) from a drivable route. These areas are an important component for adult female grizzly bears that have successfully reared and weaned offspring (IGBC 1994 and 1998b).

Within the Selkirk and Cabinet-Yaak Ecosystems, Wakkinen and Kasworm (1997) found that grizzly bears used the following conditions in regards to motorized routes: 1) areas having total route densities (TMRD) greater than 2.0 miles per square mile less than expected; 2) areas having open route densities (OMRD) greater than 1.0 mile per square mile less than expected; and 3) used core habitat more than expected, while non-core habitat was used less than expected. This research found that within six female grizzly bear home ranges the amount of area having a total route density greater than 2.0 miles per square mile averaged 26 percent, the amount of area having an open route density greater than 1.0 mile per square mile averaged 33 percent, and the home ranges were comprised of an average 55 percent core habitat (ibid). It should be noted that four of the six bears sampled had core percents clustered around the 55 percent level (55.3, 53.4, 53.7, and 53.3) with the two remaining bears creating the range (with core area values of 40 and 71.5 percent).

Per the 1995, 1996, and 2001 Biological Opinions for the KNF, LNF, and IPNF, respectively, standards were set for each BMU (greater than ≥75 percent Federal ownership) with regards to OMRD, TMRD, and core area in order to maintain the unit in a condition that promotes viability of the grizzly bear population. It is important to note that between 1999 and 2002[28], 36,355 acres of core area was created throughout the project area[29]. Table 18 and Table 19 display the history of OMRD, TMRD, and core area in each BMU for the last eight years. Table 20 displays the existing linear open road density and habitat effectiveness for the Cabinet-Yaak Recovery Zone BMUs in 2009.

The 2009 information in these tables represents the current existing conditions for grizzly bears. It is assumed that if each individual BMU were maintained in a condition conducive to use by a female grizzly bear, then the recovery area, which is the total of all the bear management units, would also promote species viability (Christensen and Madel 1982). Additional information regarding the amount of core area on private and state lands versus National Forest System lands is provided in the project file.

Table 18. Summary of changes in access parameters for the Cabinet-Yaak Recovery Zone, 2002-2009[1]

BMU	Access Standard Type	YEAR							
		2002	2003	2004	2005	2006	2007	2008	2009
1 Cedar 56,818	OMRD (%)	12	12	13	14	12	12	14	14
	TMRD (%)	10	11	10	8	8	9	9	10
	CORE (%)	83	83	84	85	85	83	83	83
	HE	89	88	88	N/A[1]	88	88	88	88
2 Snowshoe 65,241	OMRD (%)	17	17	17	19	20	19	19	20
	TMRD (%)	14	14	14	14	15	16	15	16
	CORE (%)	77	78	78	77	77	76	76	76
	HE	83	83	83	N/A	79	79	79	79
3 Spar 75,701	OMRD (%)	27	24	25	26	27	27	27	27
	TMRD (%)	26	26	24	24	24	27	27	26
	CORE (%)	62	62	63	63	62	60	60	62
	HE	70	70	70	N/A	73	73	73	74
4 Bull 81,750	OMRD (%)	36	36	37	37	36	37	37	37
	TMRD (%)	26	26	26	26	26	26	26	29
	CORE (%)	62	62	63	63	63	62	63	62
	HE	65	65	65	N/A	64	64	64	62
5 St. Paul 70,210	OMRD (%)	26	27	26	27	27	28	28	28
	TMRD (%)	21	21	21	23	23	23	24	23
	CORE (%)	63	60	60	59	60	58	60	58
	HE	76	75	76	N/A	72	71	71	71
6 Wanless 64,148	OMRD (%)	33	37	33	34	35	32	30	29
	TMRD (%)	32	32	31	32	33	33	33	34
	CORE (%)	55	54	56	54	54	53	54	53
	HE	70	70	70	N/A	66	68	70	70

[28] Represents the time period one year after the respective national forests began considering core area in their cumulative effects analysis per IGBC direction (1998a) up until the date of the environmental baseline (i.e., 2002) used the last time motorized access standards were consulted on with the U.S. Fish and Wildlife Service (USDI Fish and Wildlife Service 2004).
[29] Selkirk Recovery Zone = 10,120 acres and the Cabinet-Yaak Recovery Zone = 26,235 acres.

Table 18. Summary of changes in access parameters for the Cabinet-Yaak Recovery Zone, 2002-2009[1]

BMU	Access Standard Type	YEAR							
		2002	2003	2004	2005	2006	2007	2008	2009
7 Silver Butte-Fisher 63,151	OMRD (%)	23	23	23	24	23	25	27	32
	TMRD (%)	20	20	20	20	21	23	23	23
	CORE (%)	66	66	66	67	67	62	63	62
	HE	80	80	80	N/A	77	76	75	71
8 Vermillion 68,567	OMRD (%)	32	32	32	32	32	33	33	33
	TMRD (%)	23	23	23	23	23	22	22	24
	CORE (%)	56	56	56	56	56	54	55	55
	HE	77	77	77	N/A	77	77	77	69
9 Callahan 85,617	OMRD (%)	32	26	26	28	28	27	27	27
	TMRD (%)	27	26	26	26	26	26	26	26
	CORE (%)	57	59	60	59	58	58	59	59
	HE	72	78	72	N/A	76	76	77	76
10 Pulpit 95,924	OMRD (%)	41	41	41	42	41	44	44	44
	TMRD (%)	32	30	31	29	28	28	28	29
	CORE (%)	50	52	52	51	51	52	52	51
	HE	65	65 N/A	65 N/A	N/A	64 N/A	62	63	62
11 Roderick 77,746	OMRD (%)	31	30	29	28	28	28	28	28
	TMRD (%)	28	28	29	29	28	29	28	28
	CORE (%)	54	53	53	53	52	52	54	54
	HE	71	71	71	N/A	75	74	74	74
12 Newton 51,562	OMRD (%)	43	41	41	42	42	42	42	42
	TMRD (%)	30	31	31	31	30	31	30	29
	CORE (%)	57	56	56	56	56	56	57	58
	HE	60	60	60	N/A	62	62	62	62
13 Keno 51,235	OMRD (%)	33	33	33	34	34	34	34	34
	TMRD (%)	24	24	23	24	25	25	25	25
	CORE (%)	62	61	61	61	59	59	59	59
	HE	72	72	72	N/A	64	71	71	71
14 NW Peak 83,027	OMRD (%)	28	27	28	28	28	28	28	28
	TMRD (%)	26	25	26	26	26	26	26	26
	CORE (%)	56	57	57	56	55	55	56	56
	HE	75	75	75	N/A	76	76	76	76
15 Garver 58,842	OMRD (%)	31	31	29	33	30	30	29	29
	TMRD (%)	30	29	29	34	33	32	25	25
	CORE (%)	50	50	48	46	45	46	54	55
	HE	70	70	70	N/A	71	71	72	72
16 EF Yaak 97,586	OMRD (%)	29	28	31	28	28	29	31	29
	TMRD (%)	38	30	25	26	26	27	27	27
	CORE (%)	45	49	55	54	53	53	54	54
	HE	72	72	72	N/A	73	73	71	73

Table 18. Summary of changes in access parameters for the Cabinet-Yaak Recovery Zone, 2002-2009[1]

BMU	Access Standard Type	YEAR							
		2002	2003	2004	2005	2006	2007	2008	2009
17 Big Creek 83,724	OMRD (%)	31	31	31	29	31	30	30	30
	TMRD (%)	26	25	25	25	20	18	15	16
	CORE (%)	50	50	50	49	54	55	59	58
	HE	74	73	73	75	74	74	74	74
18 Boulder 62,379	OMRD (%)	29	31	31	29	29	31	31	31
	TMRD (%)	35	35	35	35	35	35	35	35
	CORE (%)	49	49	49	49	50	50	50	50
	HE	60	N/A	N/A	N/A	N/A	73	73	66
19 Grouse 66,979	OMRD (%)	59	59	59	61	60	60	60	60
	TMRD (%)	59	59	59	59	59	59	59	59
	CORE (%)	32	32	32	32	32	32	32	32
	HE	60	N/A	N/A	N/A	N/A	51	52	50
20 North Lightning 65,216	OMRD (%)	38	38	39	39	40	37	36	36
	TMRD (%)	20	20	20	21	21	19	20	20
	CORE (%)	61	61	61	61	60	62	62	62
	HE	69	N/A	N/A	N/A	N/A	72	72	73
21 Scotchman 61,612	OMRD (%)	35	35	35	35	35	35	35	35
	TMRD (%)	27	27	26	26	26	27	27	27
	CORE (%)	63	63	63	63	63	63	63	63
	HE	70	N/A	N/A	N/A	N/A	67	67	67
22 Mt. Headley 162,917	OMRD (%)	38.7	37.9	38	38	38	38	38	38
	TMRD (%)	42.0	36.1	37	37	37	37	37	37
	CORE (%)	46.8	51.6	51	51	51	51	51	51
	HE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1]The 2002 FEIS and Biological Assessment were based on 2000 BMU numbers, while the subsequent Biological Opinion (USDI Fish and Wildlife Service 2004) reflected 2002 conditions.

[2]N/A (not available) - with the signing of the 2004 Record of Decision (USDA Forest Service 2004a) habitat effectiveness became obsolete until the decision was remanded in the winter of 2006.

Table 19. Summary of changes in access parameters for the Selkirk Recovery Zone, 2002-2009[1]

BMU	Access Standard Type	YEAR							
		2002	2003	2004	2005	2006	2007	2008	2009
Blue Grass 57,325	OMRD (%)	27	33	31	28	30	28	33	33
	TMRD (%)	30	30	31	28	28	28	28	28
	CORE (%)	50	50	51	51	50	50	50	50
	HE	77	N/A[2]	N/A	N/A	N/A	69	65	72
Long-Smith 65,735	OMRD (%)	23	21	22	21	21	21	21	21
	TMRD (%)	13	13	14	14	14	14	14	14
	CORE (%)	73	73	73	73	73	73	73	73
	HE	78	N/A	N/A	N/A	N/A	85	85	85
Ball-Trout 57,907	OMRD (%)	18	17	17	17	17	17	17	17
	TMRD (%)	11	11	11	11	11	11	11	11
	CORE (%)	72	72	72	72	72	72	72	72
	HE	84	N/A	N/A	N/A	N/A	77	77	77
Myrtle 63,781	OMRD (%)	30	30	31	32	31	31	33	29
	TMRD (%)	19	21	21	21	21	21	20	20
	CORE (%)	60	57	58	58	58	58	60	60
	HE	70	N/A	N/A	N/A	NA	73	70	74
Salmo-Priest 87,115	OMRD (%)	31	31	30	30	30	31	31	30
	TMRD (%)	25	26	26	25	26	25	25	24
	CORE (%)	65	65	65	66	66	66	66	66
	HE	102	N/A	N/A	N/A	N/A	102	102	102
Sullivan-Hughes 78,210	OMRD (%)	23	23	24	24	24	24	24	24
	TMRD (%)	21	21	21	20	19	19	19	19
	CORE (%)	59	59	59	59	61	61	61	61
	HE	92	N/A	N/A	N/A	N/A	99	99	99
Kalispell-Granite 85,641	OMRD (%)	31	28	29	29	29	29	32	31
	TMRD (%)	29	27	27	27	27	29	29	28
	CORE (%)	48	48	48	48	48	47	48	49
	HE	100	N/A	N/A	N/A	N/A	102	99	100
Lakeshore 17,972	OMRD (%)	78	78	80	81	79	82	82	82
	TMRD (%)	50	50	51	51	51	54	54	54
	CORE (%)	20	20	20	20	20	19	19	19
	HE	8	N/A	N/A	N/A	N/A	9	9	9

[1]The first EIS and Biological Assessment (USDA Forest Service 2002a) was based on 2000 BMU numbers, while the subsequent Biological Opinion (USDI Fish and Wildlife Service 2004) reflected 2002 conditions.

[2] N/A (not available) - with the signing of the 2004 Record of Decision (USDA Forest Service 2004) habitat effectiveness became obsolete until the decision was remanded in the winter of 2006.

Table 20. Existing linear open road density and habitat effectiveness for the Cabinet-Yaak Recovery Zone BMUs, administered by the KNF and LNF, 2009

BMU	Linear Road Density																		Habitat Effectiveness (Percent)
	Bear Analysis Area or Bear Management Analysis Area																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total	
1-Cedar	0.13	0	0.26	0	0.02	0.61	--	--	--	--	--	--	--	--	--	--	--	0.19	88
2-Snowshoe	0.23	0	0	0	0	0.66	1.0	--	--	--	--	--	--	--	--	--	--	0.31	79
3-Spar	0.90	0.52	0.10	0.90	0.58	0.26	--	--	--	--	--	--	--	--	--	--	--	0.56	73
4-Bull	0.16	0.51	0.71	0	0.05	0.07	0.55	--	--	--	--	--	--	--	--	--	--	0.34	62
5-St. Paul	0.59	0.71	0	0	1.00	0.88	--	--	--	--	--	--	--	--	--	--	--	0.55	71
6-Wanless	0.51	0.03	0	0	0.24	1.12	0.54	--	--	--	--	--	--	--	--	--	--	0.45	70
7-Silver Butte-Fisher	0.71	0.93	0.94	1.06	0.03	0.24	--	--	--	--	--	--	--	--	--	--	--	0.63	71
8-Vermillion	0.76	0.24	0.71	1.01	0.74	0.75	--	--	--	--	--	--	--	--	--	--	--	0.71	69
9-Callahan	0.59	0.72	0.21	0.62	0.75	--	--	--	--	--	--	--	--	--	--	--	--	0.54	76
10-Pulpit	1.34	0.69	0.40	0	0.74	0.90	1.24	1.22	0.91	--	--	--	--	--	--	--	--	0.82	62
11-Roderick	0.41	0.87	0.41	0.32	0.17	0.84	--	--	--	--	--	--	--	--	--	--	--	0.48	74
12-Newton	0.26	0	0.10	0.70	1.46	0.69	--	--	--	--	--	--	--	--	--	--	--	0.54	62
13-Keno	0.71	0.69	1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.84	71
14-NW Peaks	0.53	0.55	0.70	0.78	--	--	--	--	--	--	--	--	--	--	--	--	--	0.58	76
15-Garver	0.53	0.81	0.48	0.44	0.13	0.57	0.21	--	--	--	--	--	--	--	--	--	--	0.40	71
16-E.F. Yaak	0.01	0.16	0.61	0.24	0.85	0.90	1.64	0.14	0.22	0.31	--	--	--	--	--	--	--	0.53	73
17-Big Cr.	0.60	0.89	0.25	0.47	0.73	0.61	0	0	-	--	--	--	--	--	--	--	--	0.54	74
22-Mt. Headley	0.90	0.50	0.20	0	0.10	1.00	0	0.90	0	0.90	1.50	0.60	0.70	0	0	3.10	1.00	0.67	NA

Habitat Status in Relation to Roads: Following is a summary of the habitat status in relation to roads for the KNF, LNF, and IPNF:

- Habitat conditions in the recovery zones have been improving steadily since 1987 as documented by Summerfield et al. (2004), annual Forest Plan monitoring reports (USDA Forest Service 1999a, 2009c, 2010a, and the annual monitoring reports sent to the USFWS since 2004 (USDA Forest Service 2005c, 2006, 2008b, 2009c). See Figure 6 and Figure 7 on the following pages.
  - On the KNF since 1987, wheeled motorized vehicle access on open roads has decreased (USDA Forest Service 2009c). In 1987, there were 6,200 miles of road (forestwide inside and outside the grizzly bear recovery zone) of which 73 percent (4,530 miles) were open to wheeled motorized vehicle use during the bear year. In 2008, there were 7,886 miles of road (inside and outside the grizzly bear recovery zone) of which only 36 percent (2,856 miles) were open to wheeled motorized vehicle use during the bear year. This results in a difference of 1,674 miles of roads open to wheeled motorized vehicle use between 1987 and 2008. In addition, since 2002 the total miles of road on the landscape have declined. In 2002, there were 7,954 miles of road and in 2008 the total was 7,886 miles, which results in a difference of 68 miles (ibid). Summerfield et al. (2004) also demonstrated reduced wheeled motorized vehicle access across the Cabinet-Yaak Recovery Zone.
  - In the KNF portion of the Cabinet-Yaak Recovery Zone as a whole, the average percent of a BMU with open road density greater than one mile per square mile has decreased (improved) from 31 to 30 percent since the 2004 Access Amendment (USDA Forest Service 2009c). The average percent of a BMU with total road density greater than two miles per square mile has held steady at 25 percent (ibid). Since core area was first implemented in 1998, the average percent core area in a BMU across the KNF portion of the recovery zone has increased (improved) from 52 to 60 percent (not weighted) (USDA Forest Service 2002a; 2009c).
  - On the LNF in 1992, when the 1.0 mile per square mile linear road density criteria was implemented, the LNF BMU 22 was at 0.88 miles per square mile. By 2009, the BMU linear road density had decreased (improved) to 0.67 miles per square mile. Since 1998, OMRD has improved (decreased) from 41 to 38 percent, TMRD has improved (decreased) from 42 to 37 percent, and core area has improved (increased) from 47 to 51 percent (USDA Forest Service 2008f, 2009d, 2010).
  - In the IPNFs portion of the Cabinet-Yaak Recovery Zone, from 1988 to 1998, the IPNFs managed for varying levels of habitat effectiveness (security) in the six BMUs partially or completely under their jurisdiction (USDA Forest Service 1992 and 2000b). In 1988 and 1998, three BMUs contained at least 70 percent habitat effectiveness (security), while three also met the minimum standard in 2009 (see project record - IPNF wildlife). From 1999 to 2009, OMRD, TMRD, and core area improved or remained static in four of the six BMUs, with declines observed in the Northwest Peaks and Grouse BMUs (USDA Forest Service 2000b, 2010b, and project record - IPNF wildlife). The Grouse BMU contains a high proportion of non-Federal ownership, which limits effective implementation of the access parameters.

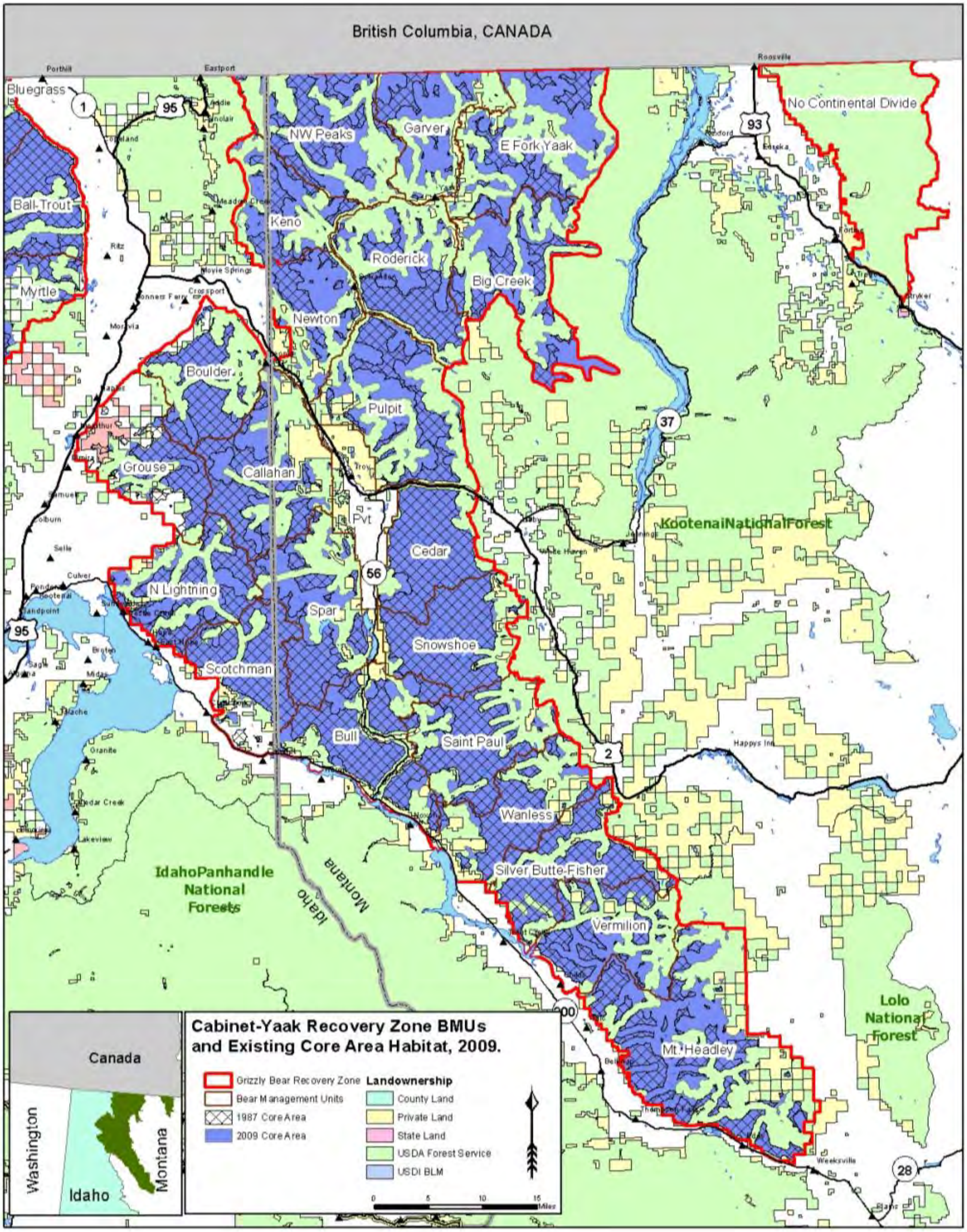

Figure 6. Improving habitat conditions in the Cabinet-Yaak Recovery Zone from 1987 to 2009

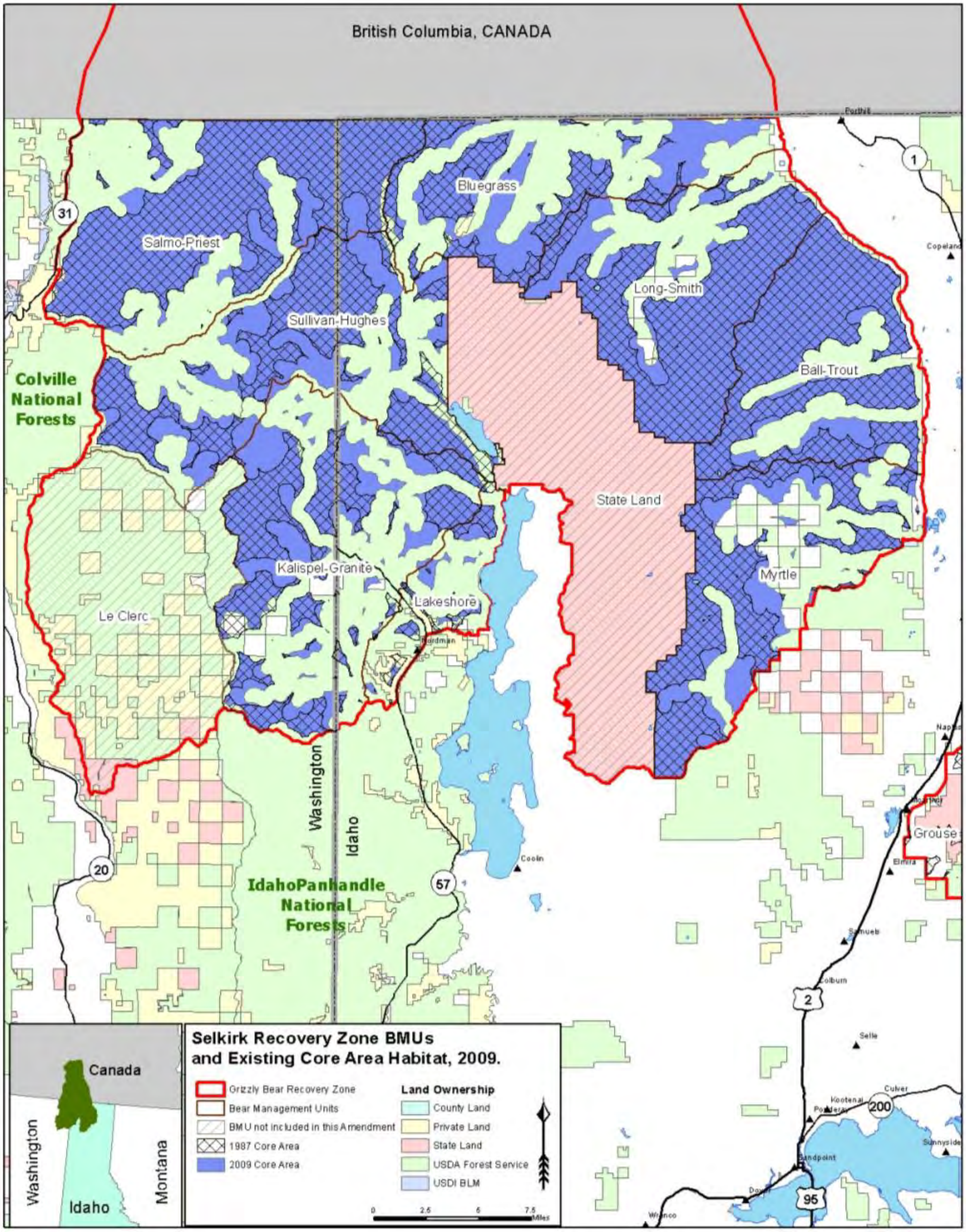

Figure 7. Improving habitat conditions in the Selkirk Recovery Zone from 1987 to 2009

- Summerfield et al. (2004) offered a more specific example of how wheeled motorized vehicle access has changed in the recovery zone upon their review of the North Lightning BMU. In 1987, there were 139 miles of open roads and core area represented only 47 percent of the BMU. By 2001, roads were reduced to 81 miles and core area increased to 61 percent of the BMU (ibid).
- These improvements have been facilitated by a combination of road closures and decommissioning. For instance, since 1987 the IPNFs has established approximately 50 closure devices (gates, guardrail barricades, and earthen berms) that have limited wheeled motorized public vehicle access within the IPNFs portion of the recovery zone (Lyndaker and Allen, pers. comm. 2008).
- In 2009, the entire Cabinet-Yaak Recovery Zone had a total of 57 percent core area versus 56 percent core area in 2002. From 2002 to 2009, there has been an increase of approximately of 18,758 acres in designated core area. Recovery Zonewide OMRD = 33 percent and TMRD = 28 percent in 2009 versus OMRD = 33 and TMRD = 29 in 2002.
- In 2009, the Selkirk Recovery Zone affected by this proposal had a total of 60 percent core area versus 59 percent in 2002. From 2002 to 2009, there has been an increase of approximately of 3,635 acres in designated core area. Recovery Zone wide OMRD = 29 percent and TMRD = 22 percent in 2009 versus OMRD = 28 and TMRD = 23 in 2002.

Core Area Block Size and Distribution: The IGBC anticipated that minimum core area size might be determined for each recovery zone. For the Selkirk and Cabinet-Yaak Ecosystems, Wakkinen and Kasworm (1997) found that use increases as block size increased, especially when size exceeds two miles square (1,280 acres). However, while 97 percent of the use within core by successfully reproducing females in the Selkirk and Cabinet-Yaak ecosystem occurred in blocks greater than two square miles, actual use occurred in blocks as small as 0.22 square miles (141 acres). Wakkinen and Kasworm (1997) suggested minimum block sizes of 2-8 mi^2 for the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones, but no scientifically based minimum effective size polygon for core area has been determined. Other researchers (Schwartz et al. 2010) defined secure habitat in the Greater Yellowstone ecosystem as any area at least 10 acres (4.05 hectares) that is 500 meters from an open or gate road based on recommendations from the IGBC (1998b) and USDI Fish and Wildlife Service (2003c).

The existing number, size, and percentage by size of core area blocks across the two ecosystems are displayed in Table 21 and Table 22. Currently, approximately 98 and 97 percent of core area in the Cabinet-Yaak and Selkirk Ecosystems, respectively, are larger than 2.0 square miles. Many of the smaller core area blocks are located at lower elevations in important potential spring habitat. See Figure 8 and Figure 9 for the existing (2009) distribution and juxtaposition of core area within the two ecosystems. Every BMU in both recovery zones contains a portion of a large, interconnected block of core area. Conversely, maintaining scattered small blocks of core habitat provides the starting point for the possibility of building larger blocks of core around those areas in the future and to connect existing core areas.

Both ecosystems, taken as a whole, currently meet or exceed the percentage of core habitat in blocks greater than two square miles in size that was preferred by reproducing female grizzly bears in the Wakkinen and Kasworm (1997) study (i.e., 97 percent). This situation has improved in both ecosystems since the 1989-1994 time periods when the bear data was being collected (see Figure 6 and Figure 7 page 76 and 77.

Table 21. Number of core area blocks by size category in the Cabinet-Yaak Recovery Zone, 2009

Administrative Boundary	Core Area Block Size (square miles)		
	< 2 square miles	2-4 square miles	> 4 square miles
	Total Number/ Acres (Percent of All Core)		
Kootenai National Forest	87 / 16,511 (2.3%)	7 / 14,017 (1.9%)	21 / 695,596 (95.8%)
IPNF portion of CYE	26[1] / 4,739 (3.6%)	1 / 1,302 (1.0%)	5[1] / 126,789 (95.4%)
Lolo National Forest [B]	16 / 2,694 (3.6%)	0	4[1] / 77,206 (92.6%)
Totals for Cabinet-Yaak ecosystem	128 / 23,944 (2.5%)	10 / 18,793 (2.0%)	27 / 899,591 (95.4%)

[1]. Indicates one core area block shared with KNF

Table 22. Number of core habitat blocks by size category in the Selkirk Recovery Zone, 2009

Administrative Boundary	Core Area Block Size (square miles)		
	< 2 square miles	2-4 square miles	> 4 square miles
	Total Number/ Acres (Percent of All Core)		
Selkirk ecosystem	46 / 9,471 (3.1%)	2 / 3,298 (1.1%)	8 / 294,467 (95.8%)

Habitat conditions in the Cabinet-Yaak and Selkirk Recovery Zones have been improving steadily since 1987 as documented by Summerfield et al. (2004), annual Forest Plan monitoring reports (USDA Forest Service 1998b, 1999a, 2002c, 2009c, 2010a), and the annual monitoring reports sent to the USFWS since 2004 (USDA Forest Service 2005c, 2006, 2008b, 2009c).

In the Cabinet-Yaak Recovery Zone, there was an increase of about 17,773 acres of designated core areas from 2002 to 2009. This translates into an increase from 56 to 57 percent core area during this time period. The corresponding recovery zone wide OMRD remained unchanged at 33 percent from 2002 to 2009 while TMRD decreased from 29 to 28 percent for the same period.

In the Selkirk Recovery Zone affected by these amendments[30], there was an increase of approximately of 3,635 acres in designated core area from 2002 to 2009. This translates into an increase from 59 to 60 percent core area from 2002 to 2009. The corresponding recovery zone wide OMRD increased from 28 percent in 2002 to 29 percent in 2009[31] while TMRD decreased from 23 to 22 percent for the same time period.

Recent Land Management Activities Effects on Habitat Security: Table 23 and Table 24 include a summary of the land management decisions and implementation activities that have occurred since 2002 or are pending for both ecosystems that have contributed to changes in OMRD, TRMD, and core area.

[30] The action area for the proposed amendments for the Selkirk Recovery Zone is portrayed on page 5 and Figure 3 of this document, and does not include the LeClerc BMU on the Colville National Forest, the Idaho Department of State Lands BMU, or the 48% of the remaining Recovery Zone located in British Columbia, Canada. IDL personnel do not have data for this BMU for release to the public at this time (Lech and Allen, pers. comm. 2010). However, data is available for the LeClerc BMU. If Core Area from this BMU is added into the overall calculations, the 2009 OMRD, TMRD, and core area habitat available in BMUs located primarily on National Forest System lands would be 31%, 31%, and 56%, respectively. Sixty-three percent of the LeClerc BMU is managed by the Colville and Idaho Panhandle NFs.

[31] OMRD increased and TMRD decreased due to implementation of management activities including road decommissioning and closures (see Table 23 and Table 24 for details).

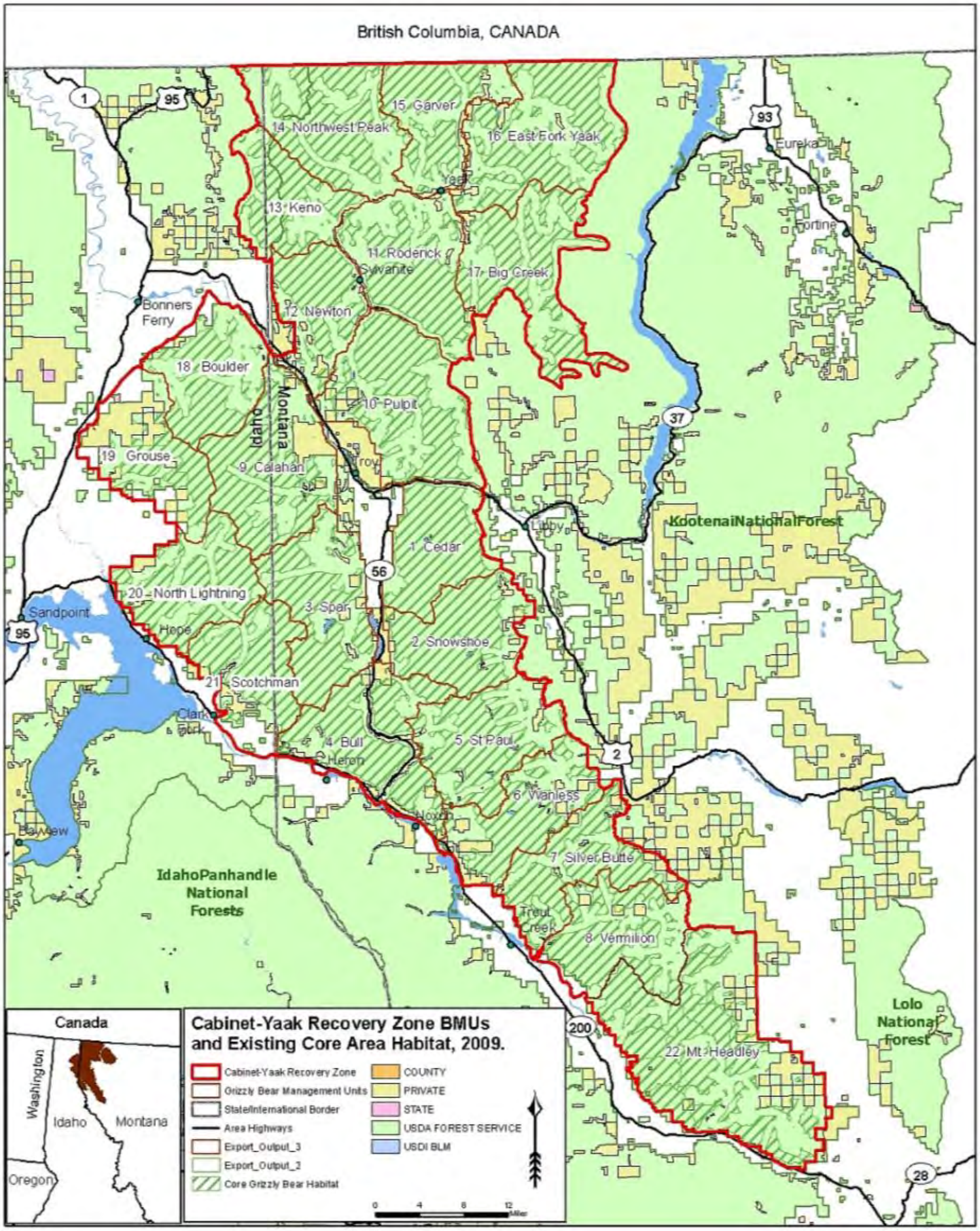

Figure 8. Cabinet-Yaak Recovery Zone bear management units and existing core area habitat, 2009

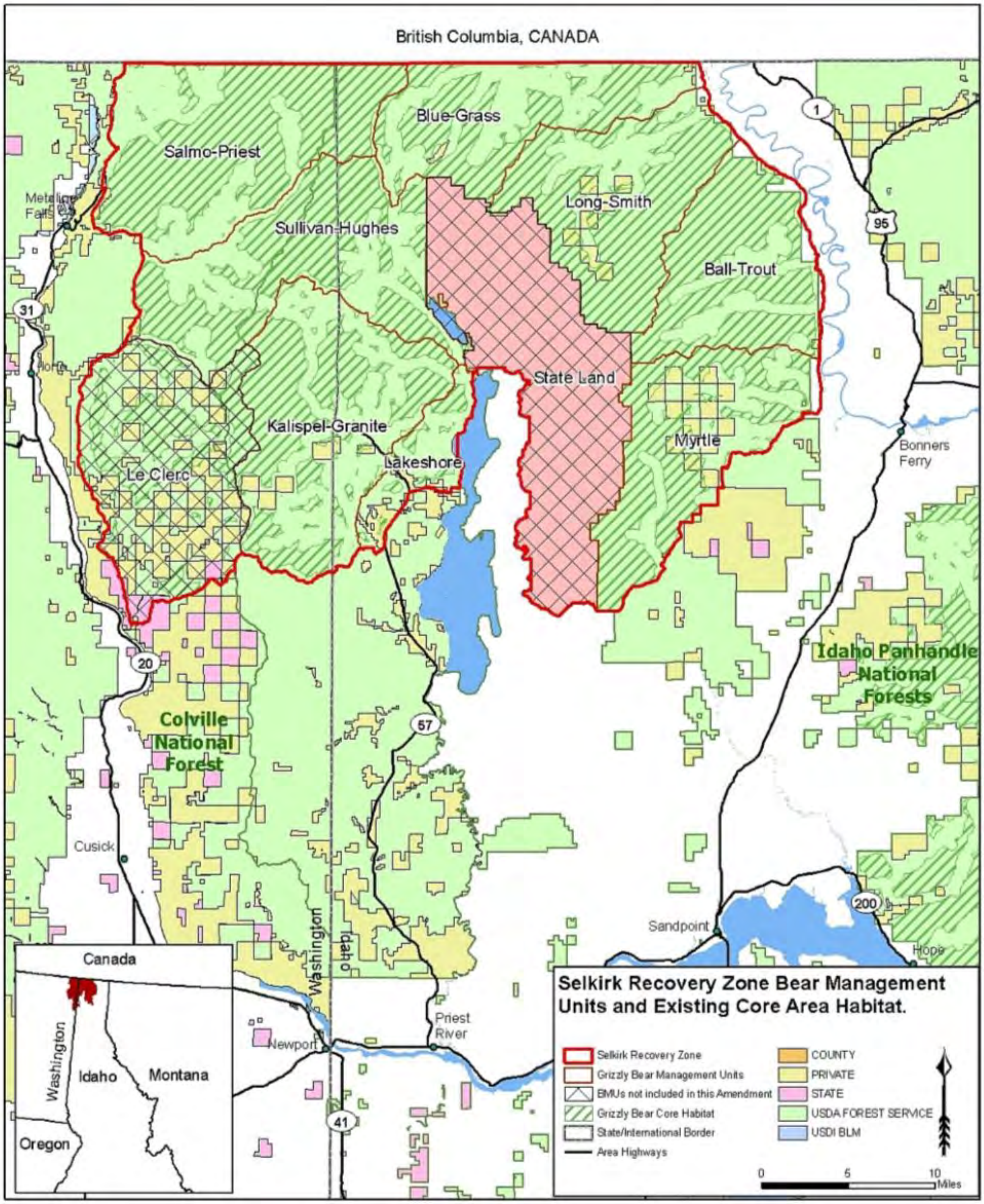

Figure 9. Selkirk Recovery Zone bear management units and existing core area habitat, 2009

Table 23. Known and anticipated changes in grizzly bear access parameters since 2002 in the Cabinet-Yaak Recovery Zone (Kootenai, Idaho Panhandle, and Lolo NFs)*

Project Name and Decision Date	Bear Management Unit	Motorized Access Parameters			Comments
		OMRD Change (%)[1]	TMRD Change (%)[2]	CORE Change (%)[3]	
Katka Peak EIS -1994	18-Boulder	NC	-2%	+2	Implementation in 2011.
Treasure Urban Interface BA 2002	1-Cedar	NC	-1	NC	Implementation completed
	2-Snowshoe	NC	NC	NC	Implementation completed
Young J EA – October 2002	16-East Fork Yaak	-1.6	-1.1	+0.8	Implementation completed
Garver EIS – 2003	15-Garver	-3.2	-6.8	+8	Implementation completed
Lower Big EIS – June 2004	17-Big Creek	-0.4	-8.5	+6	Numbers shown assume the implementation of Pipestone project on D-5
Pipestone EIS ROD June 2004	11-Roderick	-3	-2	+4	Increase of core from 52 to 56 percent; decrease in OMRD from 30 to 27 percent,; and decrease in TMRD from 26 to 25 percent.
	17-Big Creek	NC	-20	+18	Increase in core from 38 to 56 percent; OMRD maintained at 30 percent; and decrease in TMRD from 32 to 12 percent.
Obermayer CE-2006	11-Roderick	-1	NC	NC	Project is partially completed; no completion date available.
Montanore Libby Adit Drilling 2007	5-Saint Paul	-1	-3	+3	Decision on hold—not implemented at this time. OMRD dependent upon Rock Creek mitigation, 27 to 26 percent, TMRD 23 to 20 percent, core 60 to 63 percent).
Northeast Yaak EIS-2007	16-East Fork Yaak	NC	-2	+2%	Anticipated implementation 2008-2014.
Rebuild Libby Troy FEC BPA powerline 2008	1-Cedar	NC	-1	+1	TMRD decreased from 8 to 7 percent; core increased from 85 to 86 percent. Implementing mitigation in 2010.
Fishtrap EIS - 2008	22-Mt. Headley	-0.1%	-2.9%	+2.3%	Implementation in 2010-2015
Lightning Creek Restoration EIS - 2009	21-Scotchman	-2%	-1%	+3%	Implementation in 2009-2014.
	20-North Lightning	-6%	-3%	+4%	
Buckhorn Mine Access Management -2009	13-Keno	-1%	NC	NC	New gate installed in fall of 2009 for net decrease in OMRD of 1 percent in 2010.
Miller West Fisher - 2009	6-Wanless	NC	NC	+1	Implementation of the Grizzly Project was enjoined (6/29/10) by U.S District Court for the District of Montana (6/29/2010).
Grizzly Vegetation & Transportation Management Project - 2009	11-Roderick	NC	-4	+4	Implementation of the Grizzly Project was enjoined (6/29/10) by U.S District Court for the District of Montana (6/29/2010).
Young Dodge EIS – 2010	16-East Fork Yaak	N/C	N/C	+1	Anticipated decision in late 2010
Leonia Restoration Project - 2011	18-Boulder	NC	+0.5	+0.4	Anticipated decision 2011

*This does not include emergency consultation and changes to BMUs due to fire suppression activities.

[1] (-) (+) and (NC) indicates a percentage decrease, increase or no change in Open Motorized Road Density

[2] (-) (+) and (NC) indicates a percentage decrease, increase or no change in total Motorized Road Density

[3] It takes 2-6 miles of change in wheeled motorized vehicle access status to achieve a one percent increase in core area (Johnson et al. 2008b).

Table 24. Known and anticipated changes in grizzly bear access parameters since 2002 in the Selkirk Recovery Zone by Project (Idaho Panhandle NFs)*

Project Name and Decision Date	Bear Management Unit	Motorized Access Parameters			Comments
		OMRD Change (%)[1]	TMRD Change (%)[2]	CORE Change (%)[3]	
Dusty Peak EIS – 1997	Kalispell-Granite	NC	-0.8%	+1.3%	Additional road decommissioning (6.7 miles) occurred in 2008 from this 1997 decision
Blue Grass Bound EIS – 1999 (+ BOs in 2001, 2004, 2005, 2007)	Blue Grass 1999-2002 Post 2002	NC NC	-3% -2%	+5% +1%	Series of re-initiations based on modifications, litigation & settlement agreements.
Myrtle Cascade EIS - 2001	Myrtle	NC	-1%	+1%	Project activities creating core in Myrtle BMU took place in 2007 and are scheduled for the Ball-Trout BMU for 2011.
	Ball-Trout	NC	NC	+<1%	
Stimson Access EIS - 2004	Kalispell-Granite	NC	+0.9%	-0.9%	Implemented to provide Stimson Lumber Company access to their private lands under ANILCA involving construction of approximately 0.75 miles of road across NFS lands.
Willow Creek Road Restoration CE - 2004	Sullivan – Hughes Kalispell-Granite	NC NC	-0.1% - 1%	+ < 0.1% + 1.3%	Decommissioned approximately 8.4 miles of road in 2005 resulting in a core gain in the Kalispell-Granite BMU & Sullivan-Hughes BMU.
Jackson Creek Trail and Trailhead CE	Sullivan- Hughes	NC	- < 1%	+ < 0.1%	Implemented in 2005 and 2006. Converted 1.4 miles of restricted road to trail and created core area.
Upper Pack River Road Rehabilitation CE - 2005	Myrtle	-1.2%	-0.8%	+1%	Implemented conversion of motorized trail 256 to nonmotorized trail in 2006.
Hungry Deer Restoration Project EA - 2009	Kalispell -Granite	NC	-1%	+1%	Implementation in 2009 resulted in removal of 6.3 miles of road.
Lakeview Reeder Fuels Reduction Project EIS - 2009	Kalispell –Granite	NC	-5%	+5.3%	Implementation in 2010-2011 will result in removal of over 25 miles of road and increase of core area in Kalispell-Granite and Lakeshore BMUs. Once completed, both BMUs will reach proposed standards.
	Lakeshore	-1.7%	-5%	+1.9%	

*This does not include emergency consultation and changes to BMUs due to fire suppression activities. NC = no permanent change in parameter.

1 (-) (+) and (NC) indicates a percentage decrease, increase or no change in Open Motorized Road Density.

2 (-) (+) and (NC) indicates a percentage decrease, increase or no change in total Motorized Road Density.

3 It takes 2-6 miles of change in wheeled motorized vehicle access status to achieve a one percent increase in core (Johnson et al. 2008b).

Recurring Use Areas – Bears Outside of Recovery Zones (BORZ)

While the focus of the proposed standards is the Selkirk and Cabinet-Yaak Recovery Zones, grizzly bears occupy additional areas outside the recovery zones. The 1993 Recovery Plan recognized that grizzly bears will occur outside the recovery zone lines and that the mere presence of bears outside of the recovery zone line is not sufficient reason to change the recovery zone lines (USDI Fish and Wildlife Service 1993a). In recent years, credible observations of grizzly bears and radio-telemetry research data on collared grizzly bears have documented use in some areas outside of the existing recovery zones. While observation data is limited and these habitats have not been evaluated to determine if they are of significant biological value, it is recognized that on-going and future land management activities in these areas could result in adverse effects (e.g., incidental take)[32] of grizzly bears.

These reoccurring use areas are referred to as “bears outside of recovery zones” or BORZ. A review of the 1995, 1996, and 2001 Biological Opinions for the continued operation of the respective KNF, LNF, and IPNF Forest Plans indicates that the USFWS did not consider incidental take for grizzly bears in areas outside of the existing recovery zones. In order to obtain an incidental take statement, land management agencies representatives worked with local researchers to delineate grizzly bear distribution outside of official recovery zones for the Yellowstone, North Continental Divide ecosystem, Cabinet-Yaak, and Selkirk zones in 2002 (Whittinger 2002 and 2003). These areas were recognized and included in the 2004 Biological Opinion (USDI Fish and Wildlife Service 2004) for the original Forest Plan Amendment effort for KNF, LNF, and IPNF (FEIS Record of Decision 2004) as well as the 2009 DSEIS.

The biologists involved in the 2002-2003 BORZ analysis recognized that the mapping may need to be revisited and updated periodically. Subsequent scrutiny of these original designations indicated that a more rigorous and documented assessment with up-to-date bear observations was warranted. Consequently, in the summer and fall of 2009, an interagency team of biologists revisited the BORZ for the Selkirk and Cabinet-Yaak Recovery Zones to refine the maps of occupied grizzly bear habitat as part of informal consultation for these Forest Plan amendments. Delineation was generally based on three or more credible observations within the last 15 years (1994-2009) in individual 6th order watershed HUCs (Allen 2011). Adjacent HUCs with enough grizzly bear use to be considered recurring were combined to create contiguous areas of recurring use.

A total of seven BORZ areas were identified as part of this process. This includes five BORZ adjacent to the Cabinet-Yaak Recovery Zone and two BORZ adjacent to the Selkirk Recovery Zone (see Figure 2, p. 4, and Figure 3, p. 5). The IPNF administers the majority of land included in the Priest Lake, Pack, and Mission-Moyie BORZ (formally called Deer Ridge in the 2009 DSEIS), while the KNF administers the majority of land included in the Cabinet Face, Clark Fork, West Kootenai, and Tobacco BORZs. No BORZ areas were identified adjacent to the LNF boundary.

BORZ and Credible Bear Sightings: Table 25 displays a summary of the number of credible sightings of grizzly bears documented for the last 15 years (1994-2009) within the seven BORZ

[32] ESA requires that “incidental take” be considered for each threatened or endangered individual animal, regardless of whether the animal is needed for recovery or not. The Endangered Species Act (ESA Section 9-B) prohibits take of a listed species, however Section 7(o)(2) permits take if any taking is in compliance with a written statement provided under subsection 7(b)(4)(iv). The applicant must show the likely impact resulting from such take and the steps to take that will minimize such impacts.

areas. These sightings do not necessarily represent unique individuals, and in many cases, a single animal is responsible for a number of sightings that occurred across the BORZ area in a given year. However, the information in Table 25 does provide a relative index of the amount of use these areas have received over time and illustrates those BORZ with known use by females with cubs. Available radio telemetry data demonstrates that some bears incorporate portions of these areas within their seasonal home range; however, there is no indication of exclusive use of any BORZ from that data source. An estimate of number of animals that may be using these areas is not available at this time.

Table 25. History of bear sightings in the seven BORZ areas situated outside the Selkirk and Cabinet-Yaak Recovery Zones, 1994-2009

Bears Outside Recovery Zone	Grizzly Bear Recovery Zone	National Forest	Total Size (Acres)	Number of Credible Sightings 1994-2009		
				Total	Females with Cubs	Bear Mortality
Priest	Selkirk	IPNF	80,733	17	0	1
Pack River	Selkirk	IPNF	33,869	21	3	0
Mission-Moyie[1]	Cabinet-Yaak	IPNF	71,545	28	2	0
Clark Fork	Cabinet-Yaak	KNF	101,899	14	3	0
Cabinet Face	Cabinet-Yaak	KNF	27,140	14	1	1
West Kootenai	Cabinet-Yaak	KNF	173,122	56	10	3
Tobacco	Cabinet-Yaak	KNF	287,240	55	17	0

[1] Formerly called 'Deer Ridge' (Wittinger 2002).

Bears Outside Recovery Zones and Bear Mortality: There has been one human-caused bear death on National Forest System lands within the identified grizzly bear reoccurring use area shortly after they were originally created in August of 2002 (Whittinger 2002). This occurred in the fall on 2002 when a male grizzly bear was killed in Lamb Creek in the Selkirk Recovery Zone associated Priest BORZ. Four grizzly bears have been killed on private or railroad lands in the Cabinet-Yaak Recovery Zone since BORZ were originally recognized. Table 26 provides a complete history (1984-2009) of human-caused mortality in the seven areas that are now recognized as BORZ. Please see Figure 4 and Figure 5 of known human-caused mortalities for locations.

Bears Outside Recovery Zones and Motorized Access: Table 27 displays the size, land ownership, and linear miles of open and total roads for the BORZ areas, 2010. These areas are characterized by having a high percentage of miles of open road (51 to 100 percent on NFS lands) in relation to the total miles of road.

Table 26. History of human-caused mortality in the grizzly bear reoccurring use areas, 1984-2009 (data from Wakkinen and Allen, pers. comm. 2010a and Kasworm and Allen, pers. comm. 2010d)

Recovery Zone	Bears Outside of Recovery Zones	National Forest System Lands	Private, State, and Railroad Lands
Selkirk	Priest	2002-Male	None
	Pack River	None	None
Cabinet-Yaak	Mission - Moyie	1984-Male	None
	West Kootenai	1990-Male 1996-Male	2004-Female 2005-Female
	Cabinet Face	None	1997-Male
	Tobacco	None	None
	Clark Fork	None	2001-Female 2008-Female 2008-Female

Table 27. Habitat conditions for grizzly bears outside recovery zone (BORZ) occupancy areas

Bears Outside Recovery Zone	Grizzly Bear Recovery Zone	National Forest	Total Size (Acres)	National Forest Lands			Private and State Lands		
				Total Area (Acres)	Total Roads (Miles)	Open Roads (Miles)	Total Area (Acres)	Total Roads (Miles)	Open Roads (Miles)
Priest	Selkirk	IPNF	80,733	75,793	316.4	314.4	4,940	36.1	33.6
Pack River	Selkirk	IPNF	33,869	28,097	41.9	37.9	5,772	6.9	6.9
Mission-Moyie*	Cabinet-Yaak	IPNF	71,545	58,472	200.3	167.3	13,073	112.8	105.7
Clark Fork	Cabinet-Yaak	KNF	101,899	100,421	256.1	176.9	1,478	13.0	10.4
Cabinet Face	Cabinet-Yaak	KNF	28,052	27,093	164.1	128.0	963	6.9	6.9
West Kootenai	Cabinet-Yaak	KNF	173,122	169,705	615.3	315.9	3,417	30.3	16.0
Tobacco	Cabinet-Yaak	KNF	287,240	266,947	1,123.9	867.0	20,291	179.8	168.0

* Formerly called "Deer Ridge" (Whittinger 2002)

In general, these areas have less secure habitat and a higher risk of displacement, disturbance, and mortality to grizzly bears due to the total amount of motorized access and the proportion of open to total roads on the landscape. These conditions are in contrast to areas available to grizzly bears within the respective recovery zones. The observational data indicates that there are very few bears using these areas of higher motorized access outside the recovery zone boundaries. Therefore, it is likely these degraded conditions are affecting very few bears.

The IPNF Forest Plan did not contain specific standards pertaining to the management of grizzly bears or the maintenance of their habitat in areas outside the recovery zone boundaries. However, the KNF Forest Plan does contain management area direction concerning motorized access standards for grizzly bears on a limited number of acres located within two BORZ (i.e., Management Area 14). Both of these Forest Plans include motorized access standards and/or direction pertaining to the management of other wildlife species, which could be beneficial to grizzly bears. In general, management area direction and standards relate to road restrictions and closures to enhance wildlife habitat. Appendix G of the Biological Assessment contains details on the management area standards and direction in regards to access management for BORZ areas that may be used to offset the risk of disturbance, displacement, and mortality to grizzly bears.

Alternative D Modified and E Updated include design elements to address access management in these BORZ. These include no increases in existing levels of total and open roads and timing restrictions for implementation of projects covering multiple watersheds.

Habitat Connectivity

Habitat connectivity within and between the Selkirk and Cabinet-Yaak Recovery Zones has been identified as a possible factor that influences habitat (Servheen et al. 2003; Proctor et al. 2002 & 2005). Habitat connectivity or "linkage" is associated with major highways and railways and the habitat within the approach zones near these features. The main "fracture zones" identified in Servheen et al. (2003) of concern are: 1) In the Cabinet-Yaak Recovery Zone - Highways 2 and 56 and the railway lines that parallel Highway 2; 2) In the Selkirk Recovery Zone - Highway 3 (in Canada); 3) Between the recovery zones -, Highway 95 and the parallel railway; 4) Between the Cabinet-Yaak Recovery Zone and the Bitterroot Mountains - Highway 200 and the parallel railway; and 5) Between the Cabinet-Yaak and the North Continental Divide Recovery Zones - Highways 2 and 93. Additional work is ongoing throughout the Cabinet-Yaak, Selkirk, and Bitterroot Recovery Zones to further our understanding linkage and movement (Kasworm et al. 2009). Habitat connectivity was taken into consideration when setting the individual BMUs access parameters (Kaiser 2003) as well as the development of the BORZ (Allen 2011).

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on grizzly bears or their habitats. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

Wheeled motorized use of roads and trails within occupied grizzly bear habitat may produce or facilitate several kinds of adverse effects to grizzly bears, including the following:

- Direct shooting mortality may occur through mistaken identity for black bears or other game animals, through defense of life actions, through poaching for trophy animals, and through malicious killings.
- Attractants (human and animal foods and garbage) that arrive in grizzly bear habitat in wheeled motorized vehicles may result in habituated bears that must eventually be destroyed.
- Some bears may become conditioned to the presence of vehicles and humans on roads and thus become more vulnerable to direct mortality through the means identified above.
- Other bears may be displaced from preferred habitat by the human disturbance associated with road use, with a resultant reduction in habitat availability and quality and potential effects on nutrition and reproduction.
- Direct vehicle collision mortality may occur along major highways within and between the Selkirk and Cabinet-Yaak Recovery Zones, both on NFS and private lands.

In general, alternatives that place greater limitations on use of motorized roads and trails would tend to minimize the above potential effects, while those alternatives that place lesser limitations on such use would tend to provide less mitigation for the potential effects. Alternative D Modified and Alternative E Updated would eventually result in lower levels of wheeled motorized vehicle access routes and increased core area. However, implementation of either of these alternatives would not eliminate the risk of mortality, as this risk is not limited to association with roads or availability of remote habitats. Other factors, such as food attractants on private land and people's attitudes toward grizzly bears also contribute to mortality risk and thus, contribute to the risk of extinction.

Alternative D Modified and E Updated would allow for increases in route densities and decreases in core habitat within some individual BMUs that exceed the standards (being better than) for OMRD, TMRD, and core area, but only after all BMUs within the respective ecosystems included in the Action Area have met their individual access standards (see Transportation section on page 156). Depending on where these roads are located, there is a very small possibility of increased mortality risk to grizzly bear in those BMUs under Alternative E Updated. The opening of some roads is likely to be offset by the closing of roads in other BMUs across the Selkirk and Cabinet-Yaak Recovery Zones.

Managing motorized vehicle access using the adjusted bear year of April 1 to November 30 in the Cabinet-Yaak Recovery Zone would directly reduce administrative access due to the additional two weeks of the bear year (from November 16 to November 30) where administrative use would be included in the limited fall season trip numbers.

Several indicators were used to estimate the effects of Alternative D Modified and Alternative E Updated on grizzly bears.

Effects Indicators

Quantitative Effects Indicators within Recovery Zones and BORZ: Table 28 summarizes the quantitative measures used to assess, by alternative, how the proposed standards for OMRD, TMRD, and core area, meet the access levels identified by Wakkinen and Kasworm (1997). The identified averages in Wakkinen and Kasworm (1997) are less than 33 percent OMRD, less than 26 percent TMRD, and greater than 55 percent core area. The extent of administrative use allowed is also used as a measure for assessing habitat security. In addition, implementation of the Alternative D Modified or Alternative E Updated would ensure no further degradation in BORZ from motorized vehicle use and/or route construction on NFS lands over the existing condition except for ANILCA situations.

1. for OMRD – how many BMUs have a standard of less than or equal to 33 percent;
2. for TMRD – how many BMUs have a standard of less than or equal to 26 percent;
3. for core area – how many BMUs have a standard of greater than or equal to 55 percent;
4. how many BMUs have standards that meet or exceed all three of the recommended minimum standards;
5. what is the average OMRD across the recovery zones;
6. what is the average change (compared to 2009 conditions) in OMRD across the recovery zones;
7. what is the average TMRD across the recovery zones;

Table 28.Rating of alternatives by quantitative indicators (shaded is highest degree of habitat security)

Effects Indicator	Alternative D Modified	Alternative E Updated
Cabinet-Yaak Recovery Zone (22 BMUs)		
Number of BMUs meeting less than or equal to 33 percent OMRD	20	15
Number of BMUs meeting less than or equal to 26 percent TMRD	21	16
Number of BMUs meeting greater than or equal to 55 percent core area	21	20
Number of BMUs meeting 33, 26, and 55 percent (all three)	20	13
Average percent OMRD at standard (all BMUs)	21	33
Average percent OMRD at standard (all BMUs, minus Grouse BMU)	19	≤32
Average percent OMRD change per BMU**	-11	1
Average percent TMRD at standard (all BMUs)	17	28
Average percent TMRD at standard (all BMUs, minus Grouse BMU)	15	26
Average percent TMRD change per BMU**	-9	-1
Average percent core area at full implementation	71	58
Average percent core area at standard (all BMUs)	70	57
Average percent core area at standard (all BMUs, minus Grouse BMU)	71	58
Net core acres change for Cabinet-Yaak Recovery Zone at full implementation**	241,767 / 223,009	37,538 / 19,771
Net core acres change for Cabinet-Yaak Recovery Zone at standard**	232,907 / 214,149	23,749 / 5,981
Total core acres for Cabinet-Yaak Recovery Zone at full implementation	1,166,211	961,982
Total core acres for Cabinet-Yaak Recovery Zone at standard	1,157,351	948,193
Allowable administrative use per road *	60 round trips	60 round trips
Selkirk Recovery Zone (8 BMUs)		
Number of BMUs meeting less than or equal to 33 percent OMRD	7	**7**
Number of BMUs meeting less than or equal to 26 percent TMRD	8	7
Number of BMUs meeting greater than or equal to 55 percent core area	8	7
Number of BMUs meeting 33, 26, and 55 percent (all three)	7	**7**
Average percent OMRD at standard (all BMUs)	22	31
Average percent OMRD change per BMU**	-10	-2
Average percent TMRD at standard (all BMUs)	16	23
Average percent TMRD change per BMU**	-9	less than -1
Average percent core area at full implementation	71	61
Average percent core area at standard (all BMUs)	70	59
Net core acres change for Selkirk Recovery Zone at full implementation**	58,592 / 54,957	11,779 / 8,144
Net core acres change for Selkirk Recovery Zone at standard**	57,935 / 54,300	1,586 / -2,049
Total core acres for Selkirk Recovery Zone at full implementation	362,409	315,596
Total core acres for Selkirk Recovery Zone at standard	361,752	305,403
Allowable administrative use per road *	57 round trips	57 round trips

LeClerc BMU not included (less than75 percent Federal and mostly on CNF).
* Round trip: each vehicle counts as 1 round trip. Multiple vehicles = multiple trips.
** Change proposed or allowed from 2002 (section 7 consultation baseline) and 2009 status, respectively.

8. what is the average change in TMRD (compared to 2009 conditions) across the recovery zones;
9. what is the average core area across the recovery zones; and
10. what is the limitation on administrative use in the recovery zones.

It is important to note that some permitted changes (i.e., increases in road densities or decreases in core area in BMUs that are currently better than standards), are unlikely to occur because changes to one standard affects the others. For example:

1. The OMRD and TMRD standards are measured in a spatial context so that the location of roads is part of the determination of whether a standard is achieved. If increases in OMRD or TMRD occurred, but still met proposed standards, the resulting conditions would be better than the existing condition. This is because the existing condition includes no standards for these three parameters and when measurements are made the results show only half of the BMUs meeting all three standards (see Alternative E in Table 6 on page 31). Regardless, any proposed project that includes changes that would make the condition worse than the existing condition (but not drop below proposed standards) would require a site-specific analysis, including public involvement and consultation with USFWS. In contrast, proposed changes needed to bring deficient BMUs up to standard would be mandatory.
2. Decreases in core area would not be able to occur until all BMUs within the respective ecosystem have met their individual standards.

The above information is summarized in Table 28. Note that the difference in administrative use levels between the Selkirk and Cabinet-Yaak Recovery Zones is due to the difference in the bear year (April 1 to November 15 in Selkirk Recovery Zone; April 1 to November 30 in Cabinet-Yaak Recovery Zone), which is based on best available science (Wakkinen and Kasworm 1999; and Kasworm and Wakkinen 2008) as summarized by Johnson et al. (2008a).

As displayed in Table 28, values for core area have been provided for when the access amendment is fully implemented[33]. For Alternative D Modified, full implementation of the proposed standards would be estimated to occur in about 18 years. For Alternative E Updated, full implementation would occur in about 8 years. The changes that would occur in core area within the BMUs to reach full implementation would be required to achieve the proposed standards. The second set of values (at standard) could occur only after all the BMUs in each respective recovery zone achieved at least all of their assigned standards. When the individual BMU standards in each recovery zone have been achieved, based upon the design criteria for both alternatives (see design element I.D), those BMUs that are better than their assigned standard for core area could be considered for management activities that decrease core area down to the respective BMU standard. However, these are opportunities, not requirements, and would receive their own scrutiny at the time such actions may be proposed, including public comment and consultation with the U.S. Fish and Wildlife Service.

Any project that proposes to permanently reduce core would undergo independent section 7 consultation (as appropriate) with the U.S. Fish and Wildlife Service and would be analyzed by the Fish and Wildlife Service given the prevailing conditions and information at the time, including grizzly bear population and habitat indices (USDI Fish and Wildlife Service 2011a, p. A-85)

[33] Full implementation - BMUs in each respective ecosystem either are better than (proposed BMU standard(s) are at levels less that the existing condition) or have achieved their assigned standard.

For the Selkirk and Cabinet-Yaak Recovery Zones as a whole, values for OMRD, TMRD, and core area at standard would be better than the best science recommended levels for these parameters (33-26-55) for Alternative D Modified and would provide a higher degree of habitat security than Alternative E Updated.

The parameter values for Alternative E Updated in the Cabinet-Yaak Recovery Zone would meet or exceed the research recommended level for OMRD and core area at standard, while the research recommended level for TMRD would not be achieved, due to the Grouse BMU. The Grouse BMU is comprised of only 54 percent NFS lands. Inclusion of this BMU in the calculations contributes high values for OMRD and TMRD as well as low core area values. This skews the recovery zone averages (lower) for OMRD and TMRD. Without the Grouse BMU included in the calculations for the recovery zone, the averages for OMRD, TMRD, and core area improve by one to two percent. In all cases, the resultant values meet or exceed the best science recommended levels for OMRD, TMRD, and core area.

For the Selkirk Recovery Zone, Alternative D Modified provides a higher degree of habitat security as a whole than Alternative E Updated. However, both alternatives provide values that are better than the research recommended levels for OMRD, TMRD, and core area.

The average values for OMRD, TMRD, and core area across the two recovery zones as a whole for alternatives D Modified and E Updated would be 21-17-72 and 33-27-58, respectively, at standard.

The following qualitative indicators were used to assess potential effects to grizzly bears:

1. **Contributes to achieving Grizzly Bear Recovery Plan objectives and consistent with Interagency Grizzly Bear Committee (IGBC) access direction.** This indicator determines whether Alternative D Modified or Alternative E Updated are consistent with administrative direction for recovery of grizzly bears, including the Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993a) and Interagency Grizzly Bear Committee (IGBC) wheeled motorized vehicle access management direction (IGBC 1994 and 1998b). The Grizzly Bear Recovery Plan identifies recovery goals, objectives, and tasks necessary for recovery of the species. Many of these items relate to reducing human-caused mortality because human access by wheeled motorized roads and trails can be a contributing factor to human-caused mortality of bears. There are also items in the recovery plan related to the human social factors involved in grizzly bear recovery. As stated in the recovery plan:

   > "[L]ocal communities must be owners of the concept of grizzly bear conservation. Value systems that are imposed on local communities will not foster support for the conservation of the grizzly. Local values and traditions must be integrated into grizzly bear preservation to enhance local support. A management system that seeks to integrate all biological, social, valuational, and institutional forces toward a common effort involving grizzly bear conservation will have the highest chance of success."

   The IGBC (1994 and 1998b) provided direction for developing consistent management standards related to management of wheeled motorized vehicle access within the Selkirk and Cabinet-Yaak Recovery Zones. The direction includes consideration of research results along with social and other land management considerations.

Alternatives that were found to contribute strongly to Recovery Plan objectives and be highly consistent with IGBC direction were rated **YES**. Those alternatives that partially met these sources of direction would be rated **PARTIAL**.

Alternative D Modified incorporates IGBC direction for OMRD, TMRD, and core area, but uses the least roaded levels used by one of the six study bears as the standard to achieve in individual BMUs (Wakkinen and Kasworm 1997). In a few BMUs, recommended levels of OMRD, TMRD, or core area cannot be met due to the lack of legal authority to close access to private lands, highways, county roads, or the high percentage of non-Federal lands (see Transportation section on page 156 for discussion of Forest Service jurisdiction). Considering all BMUs, this alternative would provide the highest level of habitat security for bears on NFS lands, but it does not address the human and social factors involved in grizzly bear recovery as directed by IGBC (1994 and 1998b) and the Grizzly Bear Recovery Plan (1993). This alternative is rated **PARTIAL**.

Alternative E Updated incorporates IGBC direction for OMRD, TMRD, and core area, and goes beyond research recommended levels for these measures in many BMUs, although not to the higher levels possible as in Alternative D Modified. In a few BMUs, recommended levels of OMRD, TMRD, or core area cannot be met due to a lack of legal authority to close highways and county roads (see Transportation section on page 156 for discussion of Forest Service jurisdiction), the high percentage of non-Federal lands, or the social consequences of closing certain important forest roads. Alternative E Updated also incorporates direction from IGBC (1994 and 1998b) and the Grizzly Bear Recovery Plan (1993) to integrate all biological, social, valuational, and institutional forces toward a common effort involving grizzly bear conservation. This alternative is rated **YES**.

2. **Contributes toward conservation in accordance with ESA Section 7(a)(1) requirement to conserve listed species.** Section 7(a)(1) requires Federal agencies to carry out programs for the conservation of listed species. While all alternatives contain elements of programs for managing human access in grizzly bear habitat, the question is to what level do Alternative D Modified and Alternative E Updated contribute to conserving grizzly bears? Alternatives that include conservation measures that are less than the current state-of-the-art (i.e., based on current research) or that did not include measures outside the recovery zones, were found to only partially contribute to the conservation of bears and were rated Partial. Alternatives which included higher levels of conservation for bears in a manner consistent with current scientific research and that included measures for conservation outside the recovery zones (i.e., in BORZ) were rated **YES**.

Alternative D Modified provides the highest habitat security as measured by OMRD, TMRD, and core area. Overall, across the recovery zones, the level of security is better than in Alternative E Updated. This alternative includes conservation measures in BORZ areas that would ensure no further reduction of current motorized access conditions from the existing environmental baseline. This alternative is rated **YES**.

Alternative E Updated provides very good habitat security as measured by OMRD, TMRD, and core area. Overall, across the recovery zones, the level of security is high. This alternative also includes conservation measures in BORZ areas that would ensure no further degradation of current motorized access conditions from the existing environmental baseline. This alternative is also rated **YES**.

3. **Consistent with ESA Section 7(a)(2) requirement to avoid jeopardizing continued existence of listed species.** In addition to the obligation to conserve listed species, ESA requires Federal agencies to insure that any agency action does not jeopardize the continued existence of the species. The determination of jeopardy or non-jeopardy is made in consultation with USFWS through the ESA Section 7 consultation process. Based on ongoing informal consultations and an estimate of how well Alternative D Modified and Alternative E Updated would provide for habitat security of bears and the expected results in terms of human-caused mortality, it is possible to rate the alternatives as to their probable risk of jeopardizing the populations. Alternatives that are believed to be inconsistent with the jeopardy criteria of Section 7(a)(2) are rated NO while those that are believed to avoid jeopardizing the grizzly bear populations are rated **YES**.

   Alternative D Modified provides the highest overall level of habitat security on NFS lands and contributes towards ensuring that the species will not be jeopardized. This alternative is rated **YES**.

   Alternative E Updated provides an overall high level of habitat security on NFS lands and contributes towards ensuring that the species will not be jeopardized. This alternative is also rated **YES**.

4. **Utilizes best available scientific information.** The best available scientific information (see project record) regarding wheeled motorized vehicle access management in grizzly bear habitat is considered to include sources from two areas. The first of these is the research from the South Fork of the Flathead River regarding how road access affects grizzly bears (Mace and Manley 1993, Mace and Waller 1997). This research resulted in development of OMRD, TMRD, and core area as management measures for ensuring grizzly bear habitat security. It also resulted in development of the moving windows computer technique for assessing OMRD and TMRD. The second source is research from local bear populations that applies the South Fork technology to the recovery zones (Wakkinen and Kasworm 1997). This second source is considered the best available science to be applied directly to the recovery zones (Allen et al. 2011). Alternatives that apply this scientific information are rated YES. Alternatives that partially apply the information are rated **PARTIAL**.

   Alternative D Modified includes higher (improved conditions for bears) BMU-specific standards than Alternative E Updated for OMRD, TMRD, and core area in all BMUs. The basis for these parameters comes from the home range data of a single female grizzly bear. This alternative is rated **YES**.

   Alternative E Updated also includes BMU-specific standards for OMRD, TMRD, and core area in all BMUs. Standards in some BMUs are set at the level recommended by researchers as needed to maintain bear populations (33 percent OMRD, 26 percent TMRD, and 55 percent core), while in other BMUs standards are set above or below the recommendations, depending on site-specific capability of the BMUs. The recommendations were based on an average of conditions used by grizzly bears in the Cabinet-Yaak and Selkirk Recovery Zones. This implies some bears required less secure habitat and some bears required more security. The BMU-specific standards in this alternative apply similar conditions across the landscape as required by individual bears within the population[34]. In some BMUs that exceed the

[34] Five of six bears utilized habitat with core area values of less than or equal to 55. Three of six bears used habitat with TMRD values greater than or equal to 26 percent. Four of six bears used habitat with OMRD values of greater than or equal to 33 percent.

recommendations, standards for the proposed action have been set slightly lower than the existing condition. This will provide for the needs of grizzly bears while allowing some flexibility for forest management activities. This alternative is also rated **YES**.

5. Level of mitigation for grizzly bear mortality risk. The greater the level of security provided by an alternative, the greater the resulting mitigation for mortality risk. Alternative D Modified and Alternative E Updated were rated as **HIGH, MEDIUM,** or **LOW** in mitigating mortality risk. It should be noted that some past mortalities have no relationship to forest roads and that most human-caused mortalities do not occur on NFS lands. For examples, see the mortality discussion above.

Alternative D Modified is based on the habitat selection by one grizzly bear (Wakkinen and Kasworm 1997) and would establish the highest standards for OMRD, TMRD, and core area, on average, for all BMUs. These standards are set by individual BMU to achieve (where possible) the highest security requirements for bears. Standards were set at less than or equal to 17 percent OMRD, less than or equal to 14 percent TMRD, and greater than or equal to 72 percent core area where possible, or at the highest level achievable within Forest Service jurisdiction control if research values are not reachable (see Table 5 on page 24). This alternative is rated **HIGH**.

Alternative E Updated is based on the biological, social, valuational, and institutional needs of grizzly bears. Alternative E Updated contains one of the best conditions for OMRD, TMRD, and core area, on average, for all BMUs. These standards are set individually by BMU, and many are set above the research recommended values (see Table 6 on page 31). Under this alternative, motorized access to high-use recreation sites would be maintained. Appropriate sanitation is associated with these sites and no grizzly bear mortalities have been associated with these sites in the past. Since this alternative considers a management system that integrates the biological needs of grizzly bears with the needs of the communities, it is also rated **HIGH**.

6. Level of mitigation for grizzly bear displacement potential. This indicator parallels indicator 5 very closely. Like the mortality indicator, the greater the level of security provided by an alternative, the greater the mitigation for potential displacement of bears from preferred habitat. Therefore, Alternative D Modified and Alternative E Updated are rated the same as for indicator 5.

7. Provides for future development of habitat-based wheeled motorized vehicle access management approach. Not all habitats are of equal value to bears. From a bear management standpoint, it makes sense to place access restrictions in habitat that has the greatest biological value. New techniques are becoming available for this habitat-based approach to wheeled motorized vehicle access management, but the techniques are not currently available in the Cabinet-Yaak or Selkirk Recovery Zone. Therefore, this indicator assesses whether Alternative D Modified or Alternative E Updated are expected to promote application of this approach as new information becomes available in the future. Alternatives are rated **YES** or **NO**.

Alternative D Modified and Alternative E Updated includes direction to pursue, and if possible, implement a habitat-based wheeled motorized vehicle access management approach, and are both rated **YES**.

The effects of Alternative D Modified and Alternative E Updated on grizzly bears as determined through non-numerical indicators are summarized in Table 29.

Table 29. Rating of alternatives by non-numerical effects indicators

Effects Indicator	Alternative D Modified	Alternative E Updated
Contributes to achieving Grizzly Bear Recovery Plan objectives and consistent with IGBC Access Direction	PARTIAL	YES
Contributes toward conservation in accordance with ESA Section 7(a)(1) requirement to conserve listed species	YES	YES
Consistent with ESA Section 7(a)(2) requirement to avoid jeopardizing continued existence of listed species	YES	YES
Utilizes best available scientific information	YES	YES
Level of mitigation for grizzly bear mortality risk	HIGH	HIGH
Level of mitigation for grizzly bear displacement potential	HIGH	HIGH
Provides for future development of habitat-based wheeled motorized vehicle access management approach	YES	YES

Managing motorized vehicle access using the adjusted bear year of April 1 to November 30 in the Cabinet-Yaak Recovery Zone extends the time period that administrative use must be accounted for within a limited number of fall season trips. This extension of the bear year may reduce administrative access that might have occurred in the past after November 15. Likewise, the lengthening of the bear year would reduce public access on restricted roads where gates were previously opened on November 16 to allow for various activities such as firewood collection and/or hunting. The proposed changes would provide for a small reduction in the potential for displacement, disturbance, and/or mortality risk to grizzly bear.

Summary

Table 30 provides a summary of the advantages and disadvantages of Alternative D Modified and Alternative E Updated with respect to grizzly bear conservation. In summary, implementation of either Alternative E Updated or Alternative D Modified would improve habitat conditions for grizzly bears and thus, should contribute toward an improvement in population trend.

Interaction of Social and Biological Effects

Recovery of grizzly bears involves both biological and social aspects. The future of the grizzly bear will depend on integrating those socioeconomic and utilitarian values of the general [local] population into the establishment and management of preservation programs. Local values and traditions must be integrated into grizzly bear preservation to enhance local support. A management system that seeks to integrate all biological, social, valuational, and institutional forces toward a common effort involving grizzly bear conservation will have the highest chance of success. Social tolerance can increase effective habitat in areas where bears and humans must coexist, whether it be in backcountry wilderness or in areas of human settlement on the edges of wild lands (USDI Fish and Wildlife Service 1993a).

Table 30. Advantages and disadvantages of alternatives with respect to grizzly bear conservation

Alternative	Advantages	Disadvantages
D Modified	Includes OMRD, TMRD, and core area standards set individually for each BMU based on site-specific capability. core area would meet researchers' highest level of 72 percent in 23 BMUs and be better than 55 percent average in 6 additional BMUs. OMRD would meet the lowest level in 16 BMUs and be better (lower) than the average 33 percent in an additional 11 BMUs. TMRD would meet the lowest research level of 14 percent in 20 BMUs and be better than the average (26 percent) in another nine BMUs. Includes a moderate administrative use standard. Consistent with Recovery Plan and IGBC direction. Provides the highest level of design for reducing the potential for displacement, disturbance and mortality on NFS lands. The average amount of core over all BMUs would be 70 percent, TMRD would be 17 percent and OMRD would be 21 percent at standard. Pursues habitat-based wheeled motorized vehicle access management in the future.	Maximum recommended standard for OMRD would not be met in three BMUs. Maximum recommended standard for TMRD would not be met in one BMU. Minimum recommended standard for core area would not be met in 1 BMU. This alternative does not consider the human and social factors involved in grizzly bear recovery.
E Updated	Includes OMRD, TMRD, and core area standards set individually for each BMU based on site-specific capability. Core area would meet researchers' recommended level of 55 percent in 13 BMUs and exceed it in 14 BMUs. OMRD would meet the recommendation of 33 percent in 12 BMUs and be better (lower) than the recommended amount in 10 BMUs. TMRD would meet the recommendation of 26 percent in 13 BMUs and be better (lower) than the recommendation in 10 BMUs. Includes a moderate administrative use standard. Consistent with Recovery Plan and IGBC direction. Provides a high level of design for reducing the potential for displacement, disturbance and mortality on NFS lands, while considering biological, social, valuational, and institutional needs involved in grizzly bear recovery. The average amount of core over all BMUs would be 58 percent, TMRD would be 26 percent, and OMRD would be 33 percent at standard. Pursues habitat-based wheeled motorized vehicle access management in the future.	Maximum recommended standard for OMRD would not be met in eight BMUs. Maximum recommended standard for TMRD would not be met in seven BMUs. Minimum recommended standard for core area would not be met in three BMUs.

A segment of the public is opposed to grizzly bear recovery because of perceived adverse effects on lifestyles and the economy (see Social and Economic section, Perceptions on Grizzly Bear and Road Management on page 228). It is often contended that instituting management standards that restrict the public's use of the national forests will have a backlash effect, resulting in people intentionally killing bears. The term "social jeopardy" has been used to describe this potential effect. No scientific data has been collected to document the extent of grizzly bear mortalities that may be due to this form of illegal activity. However, this situation is recognized in the Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993a).

Managers face a difficult decision in trying to balance the need for scientifically based resource management standards against potential consequences of the illegal activities of a few individuals opposed to the standards. It is possible that increased restrictions on access may make it more difficult to find and kill bears, even for those people who set out to intentionally do so. However, some level of illegal human-caused mortality may always occur, simply because some individuals do not accept grizzly bears under any circumstances. Therefore, it is possible that those alternatives that result in the greatest restriction of wheeled motorized vehicle access may result in a higher risk of illegal shooting mortalities. Alternative D Modified would potentially have higher risk to grizzly bears from a social standpoint than Alternative E Updated because Alternative D Modified could reduce access to 22 existing developed recreation sites. No grizzly bear mortalities have been associated with these sites in the past; therefore, the public may not understand the need to restrict access to these areas. Whether the increased risk of "social jeopardy" outweighs the potential benefit to bears of increased access controls is unknown because this relationship has never been scientifically studied. Other elements of grizzly bear recovery, such as education and law enforcement, may serve to mitigate some of the effects of social jeopardy.

During July and August of 2007, a public opinion and knowledge survey was conducted in Lincoln and Sanders County, Montana (Canepa et al 2008). The survey was designed to measure public understanding of grizzly bears and management in the Cabinet Mountains and Yaak Valley of Montana. The survey provided a "snapshot" of knowledge and attitudes of grizzly bears that residents of Lincoln and Sanders Counties, Montana currently hold. Communities interviewed were Libby, Troy, and Yaak in Lincoln County, and Heron, Noxon, Thompson Falls, and Trout Creek in Sanders County. One of the more controversial subjects brought up during public meetings in the last decade was implementation of motorized access restrictions on National Forest lands. In the survey, one-third of respondents stated that they were unaware of the current road restrictions on National Forest lands. In addition, 69 percent stated that grizzly bear recovery efforts had not negatively affected their employment or recreation opportunities. When asked about support for current road restrictions, 49 percent supported and 42 percent were opposed to them. Fifty-eight percent were opposed to any additional road restrictions in the future and 31 percent were in support of them. Overall, the majority of respondents indicated support for the recovery of grizzly bears in the Cabinet-Yaak ecosystem, yet concern remained over specific management actions (road restrictions, augmentation, and final population goals) proposed to achieve recovery.

Cumulative Effects

Past management actions on NFS lands related to motorized access (e.g., timber sales and associated road construction, road maintenance, and watershed improvements through sediment reduction from roads – including road decommissioning) have led to the existing wheeled motorized vehicle route system on the landscape. In 1995, the USFWS determined that road densities are "impairing essential behavioral patterns, increasing mortality risk, and resulting in significantly less use of habitat than expected" on the KNF (USDI Fish and Wildlife Service 1995b). These conditions were determined to contribute to incidental take of grizzly bears.

Cumulative effects to grizzly bear, such as displacement and mortality risk, are not limited to association with roads and trails or availability of remote habitats. Other actions have the potential to increase human interactions with grizzly bears across the ecosystem and result in direct mortality, displacement from preferred habitats, or habituation (and its associated public safety management actions—relocation or destruction of the habituated animal). Past, present, and reasonably foreseeable future actions within the cumulative effects area includes: 1) food attractants on NFS or private land, 2) legalized hunting of wildlife, including black bears, on both sides of the international border, 3) people's attitudes toward grizzly bears, 4) motorized over-the-snow vehicle use, 5) major ground disturbing activities such as mining, 6) activities on private and state lands located within the Selkirk and Cabinet-Yaak Recovery Zones, and 7) programmatic actions (see Appendix A on page 303). Following is additional discussion of each of these factors:

1) Food attractants on NFS or private land - The presence of food attractants may result in bear/human encounters that often lead to the relocation or the death of the bear. To date, there have been no grizzly bear deaths associated with food attractants on NFS lands in the Selkirk or Cabinet-Yaak Recovery Zone. There has been a concerted effort to improve sanitation on NFS lands throughout the ecosystem, with many campgrounds now having bear resistant garbage and/or food storage containers to reduce such encounters and the potential for subsequent habituation. Additionally, a change in wheeled motorized vehicle access may result in a reduction of dispersed campsites where food attractants might occur or a concentration of dispersed camping with more food attractants in fewer sites. All three Forests have implemented mandatory food storage orders that would minimize this impact. Hence, mortality risk due to food attractants is not likely to significantly change on NFS lands.

2) Hunting in the United States and Canada - Hunting on both sides of the international boundary within the recovery zones has the potential to add cumulatively to legal, illegal, or mistaken identity mortality of grizzly bears within the cumulative effects area. The province of British Columbia and the states of Montana, Idaho, and Washington continue to allow hunting for black bears, as well as other wildlife species, on both sides of the border within and around the recovery zones. Hunter encounters with grizzly bears may result in a bear death due to mistaken bear identification, self defense, or opportunistic poaching. Changes in access availability with implementation of the Access Amendment may influence habitat use and attendant mortality risk by reducing wheeled motorized access within the United States portion of the recovery zones. This may result in a net cumulative decrease in mortality risk throughout the recovery zones.

3) People's attitudes toward grizzly bears - Some people's attitudes toward grizzly bears are associated with how they view management actions (e.g., changes in motorized vehicle access) done to benefit grizzly bears (Canepa et al. 2008). If viewed as a loss of "freedom" to use their national forest, it may result in a higher mortality risk for grizzly bears. Reducing wheeled motorized vehicle access may increase this type of attitude, which could result indirectly in higher bear mortality risk.

4) Motorized over-the-snow access - Motorized over-the-snow vehicle use is occurring in the Selkirk and Cabinet-Yaak Recovery Zones (see project record). Overall, effects of motorized over-the-snow vehicle use currently may be occurring on about 5 percent of each recovery zone. This FSEIS and subsequent decision and amendments will not directly change current management direction regarding this activity. When this use occurs during the active bear year (April 1 to November 15 or November 30 - depending on recovery zone), grizzly bears may be disturbed and potentially displaced from preferred habitats. It is assumed that the impacts may be more important during the den emergence period (basically the month of April), particularly for female bears with cubs of that year. There could be the potential of separating a mother and cub, which could result in cub mortality, although such effects have never been documented and there are no known scientific papers supporting this potential impact.

Within the Selkirk and Cabinet-Yaak Recovery Zones, winter motorized activity currently occurs on 14 to 59 miles of groomed routes, respectively, and on 11 to 281 miles of ungroomed routes, respectively, across modeled den habitat. Off-route use occurs on approximately 7,438 acres in the Selkirk Recovery Zone and 44,557 acres in the Cabinet-Yaak Recovery Zone. Within the recovery zones, on and off-route use occurs on about six to nine percent of modeled den habitat. However, in the Selkirk Recovery Zone, use is not permitted during the post-den period (after April 1) on a portion of those acres.

The IPNFs is in the process of completing a Winter Travel Plan that addresses the Selkirk Mountain Range. There is an existing protective closure for woodland caribou (court order # CV-05-0248-RHW) limiting motorized over-the-snow vehicle access within the Selkirk Recovery Zone, until a Winter Travel Plan is completed. Once in place, the Winter Travel Plan would provide direction on motorized over-the-snow vehicle use that would address potential disturbance and/or temporary displacement effects to the grizzly bear population in the Selkirk Recovery Zone.

5) Major ground-disturbing activities such as mining - Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or are planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that addresses multiple risk factors including changes in wheeled motorized vehicle access, potential displacement, attractants, law enforcement, and small population numbers. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but rather are expected to assure achievement of proposed standards, which result in an improvement over existing conditions.

6) Activities on private and state lands located within the recovery zones - The recovery zones include approximately 229,000 acres of private and state lands. Development of these lands would likely continue in the future and has the potential to increase wheeled motorized vehicle access and the human development interface within the cumulative effects area. This may result in avoidance of these areas, or conversely, increase the potential for habituation and subsequent removal or death of these bears for public safety. To date, there have been two incidents of grizzly bears becoming habituated to homes and food attractants that have resulted in relocation or mortality of problem bears[35].

The decision for this FSEIS will establish management direction for NFS lands within grizzly bear habitat. However, the recovery zones also include State, corporate and private lands. Decisions made by these landowners regarding management on their lands could potentially result in cumulative disturbance or displacement effects to grizzly bears. Usually, the Forest Service may compensate for these effects through additional access management steps on Federal lands within the individual BMU. However, it is possible that the amount of core area that is being considered for development on private or state property may exceed the Forest Service's ability to compensate on NFS lands. The numbers used for road densities and core area in this analysis include consideration of roads on State and private lands within grizzly bear habitat, even though any standards that may be set by this decision will apply only to NFS lands. Therefore, this analysis includes the consideration of cumulative effects on State and private lands within the analysis area.

7) Programmatic actions - Other programmatic decisions issued by the Forest Service may contribute to cumulative effects to grizzly bears. The Northern Rockies Lynx Management Direction (NRLMD) decision may beneficially affect grizzly bears by constraining future activities that would result in maintaining riparian habitat, reducing the disturbance associated with minerals and human uses, reducing habitat fragmentation, and providing for animal movement (USDA Forest Service 2007b).

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987

[35] This includes one management control action in each of the recovery zones south of the international border.

Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) directs the Forest Service to designate roads, trails, and areas open to motor vehicle use by vehicle class and, if appropriate, by time of year. Through implementation of this Rule, there may be cumulative beneficial effects on grizzly bear. This may contribute to a change in miles available for wheeled motorized vehicle use. Once the motor vehicle use maps are published, the foundation for enforcement of prohibition will change from the current condition where motorized use is allowed unless otherwise prohibited (prohibitions under current 36 CFR 261.54(a)(b)). Instead, enforcement will be based on the motor vehicle use maps and wheeled motorized vehicle use is prohibited unless designated as open (under (36 CFR 261.13). This could reduce dispersed motorized temporary displacement effects.

The Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands on the KNF. While the potential for such use is limited in grizzly bear habitat in the decision area, any limitations could potentially result in positive cumulative effects to bears.

The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. It also directs the Forest Service in a similar manner as the 2005 Travel Management Rule. This policy is complimentary to road management objectives in grizzly bear habitat and may serve as a method for implementing road management decisions rather than cumulatively adding to the effects of those decisions on grizzly bears.

Montana Department of Natural Resources and Conservation Lands released a final environmental impact statement in September of 2010 as part of their development of a habitat conservation plan for their lands (Federal Register, Volume 75, Number 180). Likewise, the Idaho Department of Lands is currently working on a habitat conservation plan with funding provided by the USFWS for that portion of the SRZ that includes the IDL BMU (U.S. Fish and Wildlife Service 2003a; Lech and Allen, pers. comm. 2010). When completed, these habitat conservation plans should provide additional protection for grizzly bears and their habitat that would minimize or mitigate for some cumulative effects on these state lands.

Determination of Effects

Prior to all BMUs meeting standards, implementation of Alternative D Modified or Alternative E Updated **may affect, and is likely to adversely affect the grizzly bear or their habitat**. Both alternatives would implement programmatic decisions that would amend Forest Plan direction to improve grizzly bear secure habitat over existing conditions. This finding is based on the following rationale:

- Human use of forest roads has the potential to result in adverse effects to grizzly bears (USDI Fish and Wildlife Service 1995a, 1996, and 2001a).

- Research in the Cabinet-Yaak and Selkirk Recovery Zones has identified a level of forest roading compatible with continued use and productivity of grizzly bears (i.e., average OMRD <33 percent, TMRD <26 percent, core >55 percent; Wakkinen and Kasworm 1997).
- However, some BMUs in the Cabinet-Yaak Recovery Zone do not currently meet these levels of security, thus adverse effects may currently be occurring and would continue to occur.
- The proposed Federal action would set BMU-specific standards for OMRD, TMRD and core area that, through consultation with USFWS, have been determined to minimize the adverse effects of motorized human access. However, the agreed upon levels of security would not be fully reached while implementation of the proposed Federal action is occurring.
- During this implementation period, displacement, disturbance and mortality that may be occurring as a result of the environmental baseline would likely continue at some level. This identified potential for adverse effects can result in incidental take of grizzly bears.
- Within the BORZ, existing conditions related to wheeled motorized access may result in displacement and/or disturbance of the grizzly bears that occasional use these areas. However, the available data suggest that mortality risk is minimal for these areas.

Human use of roads may contribute to disturbance and displacement of grizzly bears. Research has shown that bears can co-exist and survive with a certain level of roads (Wakkinen and Kasworm 1997) without apparent adverse effects. Once access management standards are at standard, disturbance and displacement is not expected to be at levels that result in adverse effects to bears as evidenced by the available research and consultation with USFWS.

The Interagency Grizzly Bear Guidelines lists eight elements on how to minimize grizzly bear-human conflict potential as it relates to wildlife management (USDA Forest Service 1986a). If the guidelines are met, then the management direction for each management situation is met. Appendix E displays these elements for MS 1 through 3.

Canada Lynx

Lynx (*Lynx canadensis*) population ecology, biology, and habitat description and relationships are described in Ruggiero et al. 2000 and Ruediger et al. 2003. The final lynx listing rule (Clark 2000) gives population and habitat status on a national scale.

Lynx and lynx habitat are most abundant in the classic boreal forest ecosystem known as taiga in Canada and Alaska. Lynx extend south from this into the conterminous United States in a peninsular fashion and inhabit areas that are considered more marginal. The further south one moves, the habitats become less suitable and less abundant. They occur primarily in moist, cold habitat types above 4,000 feet in elevation, where snow depths are generally deep throughout the winter. Lynx have been documented in numerous locations throughout the analysis area where lynx habitat has been delineated by Lynx Analysis Units (LAUs).

Snowshoe hares are an important food source, comprising 35 to 97 percent of the diet throughout the range of lynx. In periods of low snowshoe hare densities, starvation can account for up to two-thirds of all natural lynx mortality. Other prey species include red squirrel, northern flying squirrel, grouse, marten, voles and occasionally small birds. The primary limiting factor for this species appears to be suitable winter foraging habitat. Primary winter foraging habitat is found in multi-story mature or late successional forests that hold good populations of snowshoe hare.

Recent research in northwest Montana demonstrates that mature, multi-storied forests provide important winter snowshoe hare habitat and are more important than younger stands (USDA Forest Service 2007b). Red squirrels may be an important prey species, especially when hare populations are low. Ongoing research on the KNF and IPNFs is identifying which types of stands support snowshoe hares in a high enough density to support lynx populations.

Summer foraging habitat (also good summer hare habitat) consists of early successional stages of dense, young (approximately 15 to 30 year old) forests. This short time frame (about 15 years) does not last long on the landscape before growing into a structure that does not provide good foraging for lynx. A regular influx of early successional vegetation is critical to maintain a level of summer foraging habitat through time. This can be created by any disturbance process, such as fire, windthrow, or vegetation management activities. Generally, maintaining no more than 30 percent of a lynx home range in early succession habitat is considered good for lynx management.

Denning habitat generally consists of mature stands of spruce, subalpine fir, lodgepole pine, cedar, or hemlock forest with a complex structure of large down trees to provide cover for lynx kittens. Lynx with kittens need well-distributed patches of denning habitat throughout their home range.

Ongoing research efforts document that most radio-collared animals die from starvation, especially in the winter. Mortality risk factors include incidental trapping and predation especially on kittens by coyotes, wolves, mountain lions, bobcats, and birds of prey (USDA Forest Service 2007b). Other risk factors include increased competition from other predators (mountain lion, bobcat, coyote, red fox, and several species of hawks/owls) for hare and displacement from human activity such as snowmobile use.

Road and trail access and recreational use are risk factors that can impact lynx populations. Roads and trails facilitate human access, thereby escalating the likelihood for lynx and human interactions and increasing lynx vulnerability to trapping and shooting loss. Conversely, roads also facilitate trapping and hunting of predator species that may prey on lynx kittens (e.g., mountain lions, wolves, bobcats, coyotes) or compete with lynx (e.g., mountain lions, bobcats, coyotes, red fox). Although uncommon, lynx have been trapped or shot (legally, illegally, and incidentally) in the Northern Rocky Mountains geographic area (Ruediger et al. 2003). Currently, trapping or shooting lynx is illegal in Montana, Idaho, and Washington.

While there is some concern that predation on lynx could occur due to the abundance of mountain lions in the region, predation is not known to be a factor that is threatening lynx. In addition, wolf packs are now well established within the Selkirk and Cabinet-Yaak Recovery Zones. It is possible that the higher population numbers of wolves will increase the potential for predation on lynx, although the risk is probably low (Ruediger et al. 2003). It is hypothesized that coyotes, bobcats, and mountain lions could also be competitors with lynx. Historically where the ranges of these species overlapped with the lynx, deep snow excluded them from winter habitats for the lynx. Alteration of forests and development of compacted trails through the snow could facilitate movement of potential lynx competitors. Plowed roads and snow compaction of roads and trails associated with a variety of forest management and recreational activities may also increase the potential for competitors to move into lynx habitat. One research project (Kolbe et al. 2006) found that the overall influence of snowmobile trails on coyote movements and lynx foraging success during winter appeared to be minimal.

Affected Environment

The Final EIS for the Northern Rockies Lynx Management Direction was completed in March 2007 with the Record of Decision signed on March 23, 2007 (USDA Forest Service 2007b). This decision amends the Forest Plans by providing lynx habitat management objectives, standards, and guidelines. It replaces the interim application of the Lynx Conservation Assessment and Strategy. The most recent lynx distinct population segment status is found in the Biological Opinion on the effects of the Northern Rockies Lynx Management Direction (USDI Fish and Wildlife Service 2007a).

On February 28, 2008, the USFWS (USDI Fish and Wildlife Service 2008a) issued a proposed rule revising critical lynx habitat. The USFWS released a revised designation of critical habitat for Canada lynx on February 25, 2009 (USDI Fish and Wildlife Service 2009b). This analysis area partially falls in designated critical lynx habitat. Critical lynx habitat has been designated north of U.S. Highway 2 on the KNF. A small portion of the IPNF lynx habitat north of U.S. Highway 2 and east of the Moyie River is also designated critical lynx habitat. No designated critical lynx habitat occurs on the portion of the LNF in the analysis area. However, a July 28, 2010 ruling remanded this designation back to the USFWS for further consideration while keeping the original 2009 designations in place. The USFWS has been instructed by the courts to reanalyze areas in National Forests considered currently unoccupied for potential inclusion as designated critical habitat, including the Lolo National Forest.

The direction provided in the Northern Rockies Lynx Management Direction is applied to lynx habitat at the lynx analysis unit (LAU) scale. All three forests remapped their LAU boundaries based on the Canada Lynx Biology Team recommendations to have LAUs of 16,000 to 25,000 acres in size with at least 6,400 acres of primary habitat within each LAU. The IPNF has delineated 25 LAUs, which approximate a female lynx home range size, while the KNF and LNF have identified 47 and 5 LAUs, respectively, in the analysis area. Table 31, Table 32, and Table 33 display the current lynx habitat conditions across the analysis area by Forest, in relation to the Northern Rockies Lynx Management Direction criteria. Three LAUs on the KNF are not included because they are associated with the Northern Continental Divide grizzly bear ecosystem and are not affected by this Federal action. In addition to the LAUs, there are 12 identified linkage areas for lynx in the analysis area (USDA Forest Service 2001d).

Table 31. Lynx habitat by LAU on the Lolo National Forest

LAU	Total Lynx Habitat in LAU (Acres)	Stand Initiation Structural Stage Habitat Acres (percent) [1]	Habitat Changed to Stand Initiation Structural Stage Over past 10 years by timber Management with regeneration harvests Acres (percent) [2]	Number of adjacent LAUs that exceed 30 percent lynx habitat in a Stand Initiation Structural Stage
Mantrap	16,983	2,124 (12%)	0 (0%)	0
West Fork Fishtrap	16,592	1,071 (6%)	0 (0%)	0
Thompson	19,516	0 (0%)	0 (0%)	0
Cougar	24,946	92 (less than 1%)	92 (less than 1%)	0
Big Hole	18,864	708 (3.8%)	0 (0%)	0

[1] These acres are lynx habitat that currently does not provide sufficient vegetation quantity or quality (height) to be used by snowshoe hare and lynx. No additional regeneration harvest allowed if more than 30 percent of lynx habitat in an LAU is in a stand initiation structural stage that does not provide winter snowshoe hare habitat, except for fuel treatments in the wildland-urban interface.

[2] Percent is the percent of total LAU acres that provide lynx habitat (suitable + unsuitable acres). No more than 15 percent of lynx habitat on NFS lands in an LAU may be changed by regeneration harvest in a 10-year period.

Table 32. Lynx habitat by LAU on the North Zone of the Idaho Panhandle National Forests

LAU	Total Lynx Habitat in LAU (Acres)	Stand Initiation Structural Stage Habitat Acres (percent) [1]	Habitat Changed to Stand Initiation Structural Stage Over past 10 years by timber Management with regeneration harvests Acres (percent) [2]	Number of adjacent LAUs that exceed 30 percent lynx habitat in a Stand Initiation Structural Stage
Katka	9,872	446 (5)	55 (1)	0
Boulder	14,755	437 (3)	0 (0)	0
Grouse	12,407	0 (0)	0 (0)	0
Lunch	15,043	235 (2)	97 (1)	0
Trestle	19,296	11 (0)	0 (0)	0
Lightning	16,201	143 (1)	143 (1)	0
Scotchman	10,936	0 (0)	0 (0)	0
American Canuck	22,133	1,364 (6)	40 (0)	0
Deer Skin	14,132	72 (1)	24 (0)	0
Round Prairie	14,452	695 (5)	200 (1)	0
Blue Grass	18,298	385 (2)	188 (1)	0
Saddle Cow	16,705	116 (1)	32 (0)	0
Upper Smith	17,698	0 (0)	0 (0)	0
Parker	16,266	123 (1)	0 (0)	0
Trout	17,962	655 (4)	0 (0)	0
Cascade	15,707	22 (0)	0 (0)	0
Snow	15,224	0 (0)	0 (0)	0
Pack River	10,613	0 (0)	0 (0)	0
Upper Priest	30,210	221 (1)	0 (0)	0
Hughes	19,633	148 (1)	0 (0)	0
Hemlock	27,157	631 (2)	0 (0)	0
Willow	33,290	1,246 (4)	30 (0)	0
Sema	19,178	107 (1)	0 (0)	0
Kalispel	22,376	1,559 (7)	128 (1)	0
Tola Pelke	13,827	167 (1)	35 (0)	0

See Footnotes 1 and 2 under Table 31

Table 33. Lynx habitat by LAU on the Kootenai National Forest

LAU	Total Lynx Habitat in LAU (Acres)	Stand Initiation Structural Stage Habitat Acres (percent) [1]	Habitat Changed to Stand Initiation Structural Stage Over past 10 years by timber Management with regeneration harvests Acres (percent) [2]	Number of adjacent LAUs that exceed 30 percent lynx habitat in a Stand Initiation Structural Stage
Young/Dodge	18,092	622 (3.4)	408 (2.3)	0
Boulder/Sullivan	23,815	1,701 (7.1)	673 (2.8)	0
Good	14,595	1,555 (10.7)	211 (1.4)	0
North Fork Big	18,248	334 (1.8)	0 (0)	0
Lookout	18,600	399 (2.1)	227 (1.2)	0
South Fork Big	23,406	296 (1.3)	108 (0.5)	0
Parsnip	15,436	561 (3.6)	86 (0.6)	0
McGuire/Tenmile	23,144	599 (2.6)	438 (1.9)	0
Sutton	17,516	1989 (11.4)	524 (3)	0
Pinkham	26,368	3665 (13.9)	3106 (11.8)	0
Edna	18,812	262 (1)	233 (1)	0
Swamp	20,157	77 (.4)	0 (0)	0
Fortine	18,226	530 (3)	331(2)	0
Sunday/Trego	34,597	1096 (3.2)	50 (0.1)	0
Robinson	44,746	4,719 (10)	268 (1)	1
Hawkins	53,260	7,246 (14)	208 (0)	0
Baldy	32,455	1,713 (5)	54 (0)	0
Lost Horse	30,373	2,718 (9)	900 (3)	1
Skookum	38,015	4,281 (11)	327 (1)	0
Thunder	30,988	2,731 (9)	10 (0)	0
China	28,386	4,386 (15)	800 (3)	0
Callahan	45,052	2,613 (6)	0 (0)	0
Crowl	18,203	5,588 (31)	12 (0)	0
Keeler	18,686	2,167 (12)	60 (0)	1
Ross	29,635	10,941(37)	45 (0)	0
McElk	12,816	709 (6)	0 (0)	0
Silver Butte	23,627	69 (< 1)	0 (0)	0
West Fisher	22,489	949 (4)	225 (1)	0
Crazy	35,456	1,361 (4)	355 (1)	0
Treasure	32,098	2,437 (8)	2,247 (7)	1
Lower Quartz	12,039	920 (8)	602 (5)	0
Upper Quartz	19,887	2,157 (11)	597 (3)	0
Upper Pipe	19,174	1,275 (7)	192 (1)	1
Lower Pipe	22,760	2,867 (13)	910 (4)	0
Bristow	18,763	2,577 (14)	1,313 (7)	0
Cripple	30,528	4,941 (16)	916 (3)	0

Table 33. Lynx habitat by LAU on the Kootenai National Forest

LAU	Total Lynx Habitat in LAU (Acres)	Stand Initiation Structural Stage Habitat Acres (percent) [1]	Habitat Changed to Stand Initiation Structural Stage Over past 10 years by timber Management with regeneration harvests Acres (percent) [2]	Number of adjacent LAUs that exceed 30 percent lynx habitat in a Stand Initiation Structural Stage
Dry Fork/Weigel	17,799	3,633 (20)	712 (4)	0
Upper Wolf	17,335	4,411 (25)	1,734 (10)	0
Bull	20,856	918 (4)	12 (< 1)	1
Rock	29,451	695 (2)	656 (2)	0
Vermilion	37,184	1,819 (2)	0 (0)	0
Beaver/Whitepine	27,142	0 (0)	1500 (5)	0
Trout/Martin	34,111	303 (1)	495 (1)	0
Elk/Pilgrim	21,049	405 (2)	0 (0)	0

See Footnotes 1 and 2 under Table 31

There are 12 identified linkage areas (USDA Forest Service 2001d: KNF Lynx Taskforce 1997) for lynx in the analysis area (see project record).

Direct and Indirect Effects

This analysis includes only those objectives, standards, and guidelines of the Northern Rockies Lynx Management Direction that apply to this project. Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, would have no direct effects on Canada lynx or their habitats. However, the treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a) poses the potential for indirect effects through disturbance to any lynx that may be in the vicinity of the treatment site. The effects from this activity would tend to be isolated and of short duration (less than one year). In addition, closed road corridors that have grown in with vegetation (i.e., young trees and shrubs) may provide habitat for snowshoe hares and summer foraging habitat for lynx. However, the effects of removing this vegetation to facilitate the movement of heavy equipment for completing road stabilization activities would impact very few acres per Lynx Analysis Unit and be of short duration (less than 3-4 years). Implementation of either alternative would not cause the loss of, or adversely modify, designated critical habitat.

Any other additional direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

Objectives, Standards, and Guidelines Applicable to All (ALL) Management Projects in Lynx Habitat

Objective ALL 01: Maintain or restore lynx habitat connectivity in and between LAUs and in linkage areas.

Reductions in wheeled motorized vehicle access could improve conditions for lynx movement in and between LAUs. Therefore, the alternative that reduces wheeled motorized vehicle access the most would be most beneficial to lynx movement. Alternative D Modified and Alternative E Updated would improve conditions; however, Alternative D Modified would improve lynx connectivity in and between LAUs more than Alternative E Updated.

Standard ALL S1: New or expanded permanent development and vegetation management projects must maintain habitat connectivity in an LAU and/or linkage area.

This standard would be met because Alternative D Modified and Alternative E Updated do not expand permanent development (e.g., roads). Habitat connectivity within the impacted LAUs could be improved following changes in wheeled motorized vehicle access. Connectivity with other LAUs could also be improved for both alternatives.

Guideline ALL G1: Methods to avoid or reduce effects on lynx should be used when constructing or reconstructing highways or forest highways across NFS land. Methods could include fencing, underpasses, or overpasses.

Changes in road access that could be approved through site-specific analysis would normally be done during the summer months, when winter mortality risk would not be a factor. This timing of management actions should reduce effects on lynx in both alternatives.

Objectives, Standards, and Guidelines Applicable to Vegetation (VEG) and Livestock (GRAZ) Management Projects in Lynx Habitat

The Northern Rockies Lynx Management Direction vegetation and livestock management objectives, standards, and guidelines do not apply to this analysis. They would be analyzed at the site-specific scale.

Objectives, Standards, and Guidelines Applicable to Human Use (HU) Projects in Lynx Habitat

Objectives HU 01, 02 and Guidelines HU G11 (see Northern Rockies Lynx Management Direction for description): This project does not include expansion of snow compacting activities in lynx habitat, therefore objective HU 01 and guideline HU G11 would be met.

Wheeled motorized recreation activities would potentially be reduced due to road closures in Alternative D Modified and Alternative E Updated. In addition, Alternative D Modified would reduce wheeled motorized trail access. This meets Objective HU 02 and HU G11.

All other human use project objectives and guidelines are not applicable for this proposal and would be applied, when appropriate, at the site-specific scale during project-specific analysis.

Objectives, Standards and Guidelines Applicable to all Projects in Linkage Areas (LINK), in Occupied Habitat, Subject to Valid Existing Rights

Objective LINK 01: The proposal makes no site-specific changes to access NFS land or private ownership land, but establishes standards that would be applied at the project-specific scale to provide or pursue linkage habitat. Site-specific projects would comply with appropriate linkage area objectives, standards, and guidelines. Lynx habitat conditions in linkage areas should improve as the standards are achieved. Conditions would be best in the alternative that sets habitat security at the best level for grizzly bear. Although both alternatives provide improved linkage habitat, Alternative D Modified would be best for lynx movements through linkage areas.

According to the Lynx Conservation Assessment and Strategy (Ruediger et al. 2003), there is no compelling evidence that lynx avoid roads, at least on lower traffic-volume forest and backcountry roads. Though uncommon, lynx have been trapped or shot (legally, illegally and incidentally) in the Northern Rocky Mountains geographic area (Ruediger et al. 2003). Road access could contribute to any mortality that does occur. Those alternatives that reduce wheeled motorized vehicle access in lynx habitat would probably provide a higher degree of habitat security and lower mortality risk to Canada lynx in proportion to their limitations on access.

It has been suggested that compacted winter travel routes created by snowmobiles, cross-country skiing, etc. may serve as transport routes for potential predators and competitors of lynx (Ruediger et al. 2003). However, the only known research on the subject (Kolbe et al. 2006) did not support this suggestion. Regardless, alternatives that reduce opportunities for winter recreation use within lynx habitat may also reduce the potential for conflicts with lynx and its competitors. Alternative D Modified and Alternative E Updated do not directly propose to reduce winter access. However, alternatives that would result in road obliteration or heavily vegetated roads may indirectly reduce winter access by making these roads inaccessible to snowmobiles

Alternative D Modified and E Updated would allow for the possibility of opening some closed roads in BMUs that meet all three grizzly bear access parameters (OMRD, TMRD, and core area) sometime in the future (i.e., more than 8 years; see Transportation section starting on page 156). Depending on where these roads are located, there is a very small possibility of increased mortality risk to lynx under this alternative. However, these are opportunities, not requirements, and would receive their own scrutiny at the time those actions are proposed. The opening of some roads is likely to be offset by the closing of roads in other BMUs across the lynx use area.

Alternative D Modified would not increase mortality risk to lynx. Alternative D Modified and Alternative E Updated would maintain or improve habitat security for lynx. Both of these alternatives would indirectly result in conversion of a number of roads to a more restrictive condition; however, Alternative D Modified would convert the most roads and consequently would provide the highest degree of habitat security and a lower mortality risk to the Canada lynx.

None of the proposed alternatives would cause the loss of, or adversely modify, proposed critical lynx habitat. In the long term, reduced road miles could improve conditions in proposed critical habitat areas.

Cumulative Effects

Effects to lynx, such as displacement and mortality risk, are not limited to association with roads or availability of remote habitats. Other factors also contribute cumulatively to displacement and mortality risk, such as: 1) hunting and trapping in the United States and Canada, 2) motorized over-the-snow vehicle use, 3) major ground disturbing activities such as mining, 4) activities on private land like subdivisions and associated road construction and use; and 5) programmatic actions may also result in cumulative effects to lynx (see Cumulative Effects Sections starting on page 51). Following is additional discussion of each of these factors:

1) **Hunting and trapping in the United States and Canada -** Canada has a legal trapping season just north of the Selkirk and Cabinet-Yaak Recovery Zones (British Columbia Ministry of Environment 2008). The states of Montana, Idaho, and Washington prohibit trapping of lynx; however, legal trapping of other species occurs in these three states. Some lynx home ranges overlap the international border. Changes in wheeled motorized vehicle access in the United States would not change the mortality risk from legal trapping in Canada, however wheeled motorized vehicle access may be reduced south of the international border; thus cumulatively, mortality risk from accidental trapping may decrease. Hunting for other wildlife species occurs on both sides of the border. Hunter encounters with lynx may result in a lynx death from malicious shooting. Reducing wheeled motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for hunters to reach lynx use areas, while facilitating a slight increase in predation risk due to a reduction in hunting opportunities of lynx kitten predator species, such as mountain lions.

2) **Motorized over-the-snow vehicle use -** Motorized over-the-snow vehicle use is occurring in the recovery zones that overlap lynx habitat (see Grizzly Bear Cumulative Effects section on page 97). The access amendment does not change current management direction regarding this activity. When this use occurs, lynx may be disturbed in and potentially temporarily displaced from preferred habitats. The area of disturbance is limited due to the dense forest vegetation conditions used by lynx. The IPNFs is in the process of completing the Winter Travel Plan that covers the Selkirk Mountain Range. Once in place, the Winter Travel Plan would provide direction on motorized over-the-snow vehicle use that would address disturbance and/or temporary displacement effects to the lynx population in the Selkirk Recovery Zone. Currently, a court order restricts motorized over-the-snow vehicle access in portions of the recovery zone until the Winter Travel Plan is completed.

3) **Major ground disturbing activities such as mining -** Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or are being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but rather are expected to assure achievement of proposed standards, which result in an improvement over existing conditions.

4) **Activities on private and state lands located within the recovery zones -** The decision for this FSEIS will establish management direction for NFS lands within the recovery zones, which overlap lynx habitat. However, the recovery zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands, as well as vegetation changes could potentially result in cumulative effects to lynx. The numbers used for road densities and core area in this analysis include consideration of roads on State and private lands within grizzly bear habitat, even though standards set by the decision for this FSEIS will apply only to NFS lands. Therefore, the lynx analysis includes the consideration of cumulative effects on State and private lands within the analysis area.

5) **Programmatic actions -** Other programmatic decisions that guide future management may contribute to cumulative effects to lynx (see Appendix A starting on page 303). The Northern Rockies Lynx Management Direction decision may beneficially affect lynx by

maintaining riparian habitat, reducing the disturbance associated with minerals and human uses, reducing habitat fragmentation, and providing for animal movement (USDA Forest Service 2007b).

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. While the potential for such use is limited in lynx habitat in the analysis area, any limitations could potentially result in positive cumulative effects to lynx. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in lynx habitat, and may serve as a method for implementing road management decisions benefiting lynx.

Other programmatic actions relevant to a cumulative effects discussion for lynx are described in the Wildlife Introduction section starting on page 44. No adverse cumulative effects were identified. While these programmatic decisions have been designed in a manner that supports and promotes a protected environment for security dependent wildlife, especially for Canada lynx, they are not expected to reduce road densities or increase security beyond what is achieved by Alternative D Modified and Alternative E Updated. The 2001 Off-Highway Vehicle FEIS and Record of Decision would be a minor exception for the portion of the Cabinet-Yaak Recovery Zone that is located in Montana on the KNF (the decision is only applicable to lands in Montana) because the 2001 Off-Highway Vehicle FEIS and Record of Decision prohibits wheeled motorized cross-country travel to protect natural resource values, such as security. However, implementing the 2001 Off-Highway Vehicle FEIS and Record of Decision would have only minimal influence on increased security due to the area’s terrain and vegetation.

Determination of Effects

Alternative D Modified and Alternative E Updated may affect individual lynx but are not likely to adversely affect the population. Alternative D Modified and Alternative E Updated that restrict access beyond the current condition may result in: 1) a reduction in direct mortality from hunting, trapping, and competition from other species by improving habitat effectiveness; and 2) a slight increase in the potential for predation by species that are typically hunted or trapped from existing roads (e.g., mountain lions and bobcats). This determination is based on the fact that there would be no direct effects and indirectly, subsequent site-specific decisions are planned and implemented under this amendment may include some short-term displacement effects to lynx during site-specific project activities. Long-term effects may be beneficial due to improved security conditions created by wheeled motorized vehicle access changes.

Alternative D Modified and Alternative E Updated would not result in adverse modification of proposed critical lynx habitat and would comply with the Northern Rockies Lynx Management Direction Record of Decision and Biological Opinion.

Woodland Caribou

The woodland caribou (*Rangifer tarandus caribou*) population is generally found above 4,000 feet elevation in the Selkirk Mountains in Engelmann spruce/subalpine fir and western red cedar/western hemlock forest types. They are highly adapted to upper elevation boreal forests where they feed almost exclusively on arboreal lichen during the winter months. In contrast to the seasonal long-distance migrations undertaken by some caribou subspecies, mountain caribou make seasonal elevational movements in response to factors such as snow levels, food availability, and predator avoidance (USDI Fish and Wildlife Service 2008d).

U.S. Fish and Wildlife Service in their 5-year status report states that caribou population is threatened by habitat fragmentation and loss, over-hunting, and predation (USDI Fish and Wildlife Service 2008d). Predation on caribou by mountain lion[36] has been identified as the greatest mortality threat to caribou within the Southern Selkirk Mountains (Compton et al. 1995 and Katnick 2002). Caribou have also been predated on by bears within this recovery area (Compton et al. 1995), and wolves are considered an additional predation threat (USDI Fish and Wildlife Service 2008d). Poaching has been a lesser concern in the past two decades but was considered a serious threat that led, in part, to their listing in the 1980s (USDI Fish and Wildlife Service 1994c). Highway-caused mortality resulting from caribou crossing Highway 3 in British Columbia remains a continued threat with three caribou killed by motorists during the 2008/2009 winter season (Quinn 2009).

Affected Environment

As part of the plan for their recovery, caribou were augmented into the ecosystem from populations[37] in British Columbia (USDA Forest Service 1985). In 1987, 1988, and 1990, 60 caribou were augmented into the Idaho portion of the ecosystem. As a result of these efforts, the population within the southern Selkirk Mountains increased to approximately 55 to 70 animals by 1990. However, the population declined in 1996 in what is believed to be the result of increased rates of predation (Wakkinen and Johnson 2000). A subsequent augmentation effort was conducted in 1996 and 1997 to place 32 caribou into the Washington portion of the ecosystem, followed by a 1998 effort to release 11 additional caribou into the British Columbia portion of the recovery area (Almack 2000, USDI Fish and Wildlife Service 2008d). However, similar declines were noted in the Washington portion of the recovery area (Almack 2000). Idaho Fish and Game documented only 1 to 3 caribou in the vicinity of Snowy top and Little Snowy Top during the last 5 years of late winter census efforts. The Selkirk caribou population is currently estimated at 43 animals, with 41 of these animals residing in British Columbia based on the late winter aerial surveys (Wakkinen et al. 2010).

Woodland caribou historically occurred on the KNF. Caribou are classified as a game animal with a closed season in Montana (Williams and Johnson, pers. comm. 2008). Caribou are considered extirpated in Montana.

[36] Idaho Fish and Game instituted a liberalized mountain lion hunting season to assist in caribou recovery efforts. Mountain lions are typically hunted via motorized access routes using passenger vehicles, ATVs, and snowmobiles to transport hunters and their dogs.
[37] Augmented caribou included both mountain and northern ecotypes based on the availability of animals from several source populations in British Columbia.

Woodland caribou typically occupy mature and old growth cedar/hemlock and subalpine fir/spruce forests. These vegetation types occur at mid to high elevations. Mature stands produce the most abundant arboreal lichens, which caribou feed primarily on for six to eight months out of the year. After a stand-replacing disturbance, it usually takes over 100 years for the forest to develop the stand structure and lichen growth, which caribou prefer. Stand-replacing fires are probably the largest threat to caribou habitat. There have been essentially no changes to caribou habitat on NFS lands in the past 20 years as a result of timber harvest. On NFS lands in the caribou recovery area, wildfire and the impact of insects and disease are the primary factors affecting changes in caribou habitat conditions.

Thirty-nine percent of the caribou habitat in the Selkirk ecosystem and 53 percent of the caribou habitat in the U.S. portion of the Selkirk ecosystem is on the IPNFs (USDI Fish and Wildlife Service 1994b). A stand-based habitat suitability index (HSI) and habitat capability index (HCI) was developed as part of the 1987 IPNF Forest Plan (USDA Forest Service 1987b). Subsequent updates and evaluation of the Idaho/Washington portion of the recovery area have been used for land management decisions from 1994 to 2007 (Allen and Deiter 1993, and Allen 1998) A landscape level habitat priority model was recently developed to facilitate a unified assessment of caribou habitat throughout the Selkirk Recovery Zone (Kinley and Apps 2007). Figure 10 illustrates the juxtaposition of the caribou recovery area to the Selkirk grizzly bear recovery zone. Table 34 displays the acreage on the IPNFs and State lands managed by the Idaho Department of Lands that is currently providing caribou habitat.

Table 34. Woodland caribou habitat on the Idaho Panhandle National Forests and the State lands managed by Idaho Department of Lands; from Kinley and Apps (2007) landscape habitat priority model

Priority Rating	Seasonal Habitat (Acres)				
	Spring	**Calving**	**Summer**	**Early Winter**	**Late Winter**
High	25,623	19,134	16,209	19,693	18,606
Medium	144,376	116,865	120,343	120,307	76,636
Low	147,167	190,864	191,552	188,092	199,457
Total	**317,166**	**326,863**	**328,104**	**328,092**	**294,699**

Direct and Indirect Effects

Oberg et al. (2000) demonstrated that woodland caribou avoid both natural linear features and roads, with caribou avoidance decreasing as the distance from streams and roads increased. In a fine scale investigation, caribou avoided streams up to 250 meters. Roads were avoided to a 500 meters distance in a coarse scale investigation, but that avoidance level should be interpreted cautiously, due to the small sample size of caribou used in that analysis and the location of roads in the landscape (i.e., roads occurred on the fringes of caribou ranges). Nevertheless, a 100-meter avoidance of roads, when caribou came within 500 meters of roads, was noted using both preference indices and compositional analysis. The mechanism for such avoidance is not known, but one theory is that caribou perceive roads in the same way as natural linear features; as travel corridors for predators and other ungulates associated with these areas. Oberg et al. (2000) also observed that roads classified as “inactive” were avoided to a distance of 250 meters, signaling that the mechanism for avoidance may be more than just a response to increased human activity.

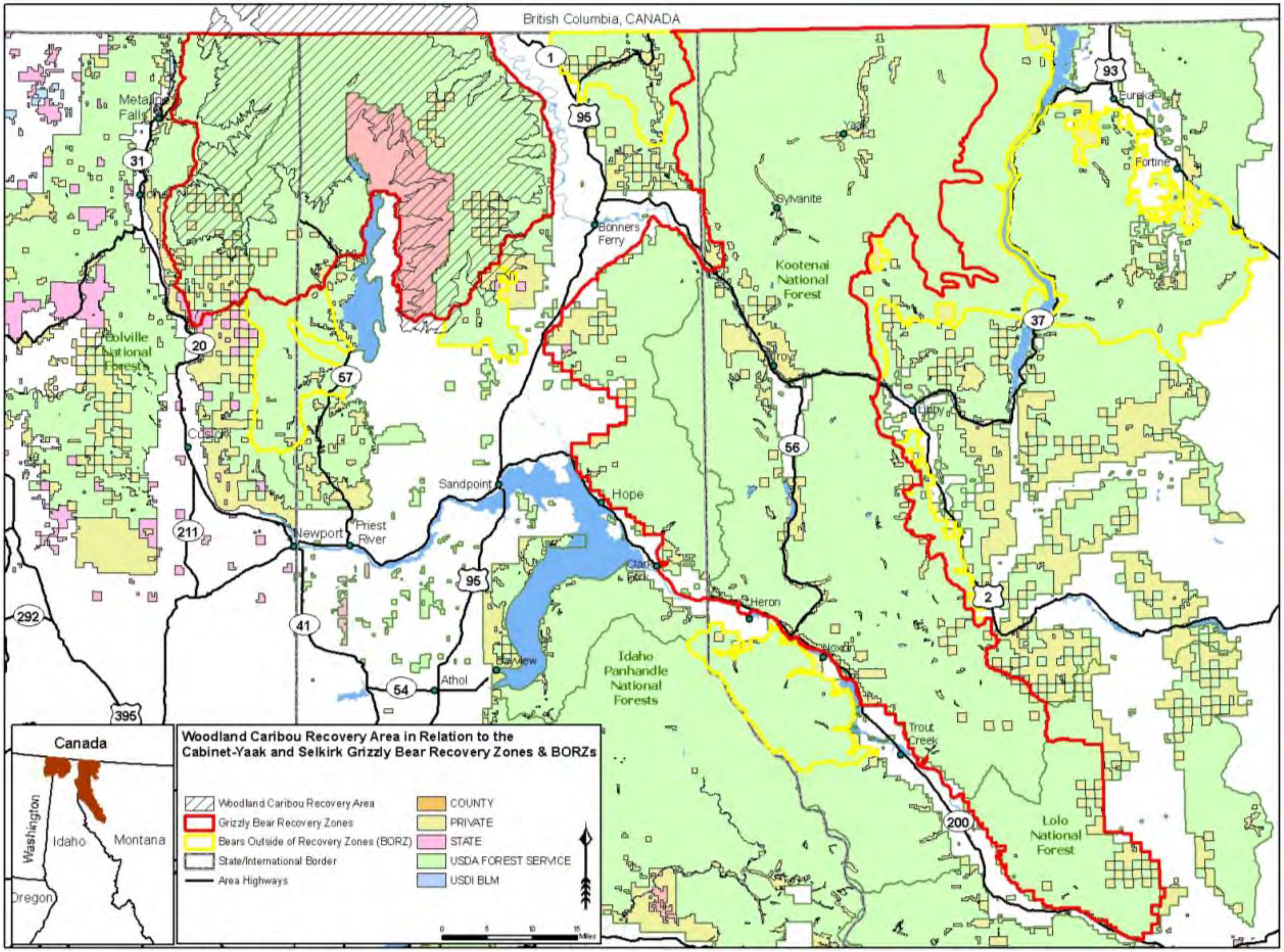

Figure 10. Woodland caribou recovery area in relation to the Cabinet-Yaak and Selkirk Recovery Zones

There would be no direct effects from Alternative D Modified or Alternative E Updated. The treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a) poses the potential for indirect effects through disturbance to any caribou that may be in the vicinity of the treatment site. However, the effects from this activity would tend to be isolated and of short duration (less than one year). Woodland caribou population numbers are very low throughout the IPNFs portion of the action area and their habitat use tends to be in areas located away from roads and associated vegetation treatments. Therefore, it is highly unlikely these animals would be affected by any treatment of barriered roads. The potential indirect effects on woodland caribou were determined by evaluating the effects on habitat security and the potential for increased mortality. Controlling and/or managing access improves woodland caribou habitat use by reducing the risk of displacement and poaching.

All alternatives offer a relatively secure environment for woodland caribou due to existing wheeled motorized vehicle access management strategies for grizzly bear. Alternative D Modified and Alternative E Updated promote lower levels of wheeled motorized vehicle access, which in turn provides a more secure environment for caribou. Similarly, both increase core area for grizzly bear, which also provides higher levels of habitat security for caribou. Alternative D Modified provides better secure habitat than Alternative E Updated.

Alternative D Modified and E Updated would allow for the possibility of opening some closed roads in BMUs that meet all three grizzly bear access parameters (OMRD, TMRD, and core area) sometime in the future (i.e., more than 8 years) (see Transportation section on page 156). Depending on where these roads are located, there is a very small possibility of increased poaching mortality risk to caribou under Alternative E Updated. However, these are opportunities, not requirements, and would receive their own scrutiny at the time those actions are proposed.

Cumulative Effects

Other programmatic actions relevant to a cumulative effects discussion are described in the Wildlife Introduction section starting on page 44. While these programmatic decisions have been designed to support and promote a protected environment for security dependent wildlife, especially for woodland caribou, they are not expected to reduce road densities beyond what these alternatives propose in this FSEIS.

Effects to caribou, such as displacement and mortality risk, are not limited to association with roads or availability of remote habitats. Other factors also contribute cumulatively to displacement and mortality risk, such as: 1) hunting in the United States and Canada, 2) motorized over-the-snow vehicle use, 3) activities on private and state lands within the Selkirk and Cabinet-Yaak Recovery Zones, and 4) programmatic actions may also result in cumulative effects to the caribou (see Cumulative Effects Sections on page 51). Following is additional discussion of each of these factors:

1) **Hunting in the United States and Canada –**Hunting for other wildlife species occurs on both sides of the border. Hunter encounters with caribou may result in a caribou death due to mistaken caribou identification. Reducing motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for hunters to reach caribou use areas. Conversely, limiting hunting access may slightly increase the risk of predation to caribou from species like mountain lions and gray wolves.

2) **Motorized over-the-snow vehicle use –** Motorized over-the-snow vehicle use is occurring in the Selkirk Recovery Zone, which includes portions of the woodland caribou recovery area. The decision for this FSEIS does not change current management direction regarding this

activity. When this use occurs, caribou may be disturbed in and potentially temporarily displaced from preferred habitats. The IPNFs is in the process of completing a Winter Travel Plan that addresses the Selkirk Mountain Range. There is an existing protective closure for woodland caribou (court order No. CV-05-0248-RHW) limiting motorized over-the-snow vehicle access within the recovery zone until a Winter Travel Plan is completed. Once in place, the Winter Travel Plan would provide direction on motorized over-the-snow vehicle use that would address disturbance and/or temporary displacement effects to the caribou population in the Selkirk Recovery Zone. Any reduction in motorized over-the-snow access may facilitate a slight increase in predation risk to this species from mountain lions due to a reduction in hunter access. Mountain lion harvest is very dependent on snow conditions, which facilitates congregation of big game onto their winter ranges and enables hunters to track them with hounds and snowmobiles (Hayden et al. 2007).

3) **Activities on private and state lands located within the recovery zones –** The decision for this FSEIS will establish management direction for NFS lands within grizzly bear habitat that overlaps caribou habitat. However, the Selkirk Recovery Zone also includes State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects to caribou. The numbers used for road densities and core area in the caribou analysis include consideration of roads on State and private lands within grizzly bear habitat, even though standards set by the pending decision for this FSEIS will apply only to NFS lands. Therefore, this analysis includes the consideration of cumulative effects on State and private lands within the analysis area.

4) **Programmatic actions -** Other programmatic decisions that guide future management may contribute to cumulative effects to caribou (see Appendix A starting on page 303). The Northern Rockies Lynx Management Direction decision may beneficially affect caribou by maintaining riparian habitat, reducing the disturbance associated with minerals and human uses, reducing habitat fragmentation, and providing for animal movement (USDA Forest Service 2007b).

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. While the potential for such use is limited in caribou habitat in the analysis area, any limitations (access related) could potentially result in positive cumulative effects to caribou. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in woodland caribou habitat and may serve as a method for implementing road management decisions benefiting caribou.

Determination of Effects (for the Idaho Panhandle National Forests only)

Alternative D Modified and Alternative E Updated may affect, but are not likely to adversely affect woodland caribou. This determination of effects applies to woodland caribou listed as an endangered species on the IPNFs. The alternatives may affect individuals but are not likely to adversely affect the population. The alternatives that restrict access beyond the current condition may result in positive impacts to individuals. This determination is because there would be no direct effects and indirectly, subsequent site-specific decisions that adhere to this amendment may include some short-term displacement effects to caribou during site-specific project activities. Long-term effects may be beneficial due to increased security from human disturbance.

Endangered Species Act Compliance for Threatened and Endangered Species

Alternative D Modified and Alternative E Updated would comply with the Endangered Species Act. Consultation with the USFWS will be completed. The effects analyses show there is no deterioration of the status quo and in fact shows an improvement.

Sensitive Wildlife Species - Affected Environment and Disclosure of Effects

Sensitive species are managed under the authority of the NFMA (PL 94-588) as part of assuring species diversity. They are administratively designated by Regional Foresters (FSM 2670) and are those species for which population viability is a concern. Table 35 displays the status of sensitive wildlife species that are known or suspected to occur within the influence area of the analysis area (per Region 1 Sensitive Species List, dated February 25, 2011). The sensitive species analysis in this FSEIS meets the requirements for a biological evaluation as outlined in FSM 2672.42.

Table 35. Sensitive wildlife species and status (USDA Forest Service 2011)

Species	IPNFs	KNF	LNF
Common loon	K	K	S
Harlequin duck	K	K	K
Black-backed woodpecker	K	K	K
Flammulated owl	K	K	K
Peregrine Falcon	K	K	K
Townsend's big-eared bat	K	K	K
Northern bog lemming	K	K	S
Gray Wolf	K	K	K
Fisher	K	K	K
Wolverine	K	K	K
Bald eagle	K	K	K
Coeur d’Alene salamander	K	K	K
Western toad	K	K	K
Fringed Myotis	K	NA	NA
Black Swift	K	NA	NA
Pygmy Nuthatch	K	NA	NA

Status Key: K = known to occur in analysis area; S = suspected to occur; NA = not applicable

Alternative D Modified and Alternative E Updated are expected to have no direct, indirect or cumulative effects on these species. Species known or suspected to occur because of suitable habitat within the analysis area are further evaluated for effects. It displays the existing condition of the affected environment and the effects determinations for each alternative for each sensitive species.

Common Loon

Loons (*Gavia immer*) eat fish and depend on clear water to be able to find and catch their prey. Loons build their nests close to the water's edge. They prefer to nest on islands or in bays that are protected from waves and where there is little or no human activity. Immediately after hatching, the adults move the chicks to nursery areas, which are typically shallow water with emergent vegetation protected from wind and wave action.

Affected Environment

Most large lakes on the three National Forests provide potential loon habitat. However, actual use is affected by human activities, especially in or near nesting habitat. Loons have been confirmed on lakes in BMUs 10, 11, and 16.

All potential loon nesting lakes on the IPNFs have been developed for recreational uses and are unlikely to provide the security that loons require for successful nesting without additional proactive management for loons. Loons have nested on Upper Priest Lake in 1998 and Lake Pend Oreille in 1996. A month-long loon survey of ten different lakes during the 2001 nesting season found individuals but no loons nesting in northern Idaho. Several lakes are important for non-breeding and migrating loons, especially Priest, Upper Priest, and Pend Oreille Lakes in Idaho.

On the LNF, loons have nested at Fishtrap Lake but were not successful in fledging chicks. On the KNF, loons nest at Kilbrennan and Alvord Lakes in BMU 10, Rene Lake in BMU 11, and Harding Ponds and Hoskins Lake in BMU 16. Non-breeding and migrating loons use several of the large lakes and reservoirs that border BMUs. These include the Noxon Reservoir, Cabinet Gorge Reservoir, Bull Lake, and the Kootenai River.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Human disturbance to loons during the nesting and chick-rearing seasons (May through July) is one of the highest threats to loon viability. The effects of changes in wheeled motorized vehicle access management are very site-specific and dependent on site-specific access changes. If roads that currently provide wheeled motorized vehicle access to loon nesting lakes are restricted or barriered, there could be a reduction in human disturbance, or a beneficial effect on loons. If Montana Department of Fish, Wildlife and Parks or Idaho Department of Fish and Game stocks fish in lakes used by loons, closing access to those lakes could have the indirect effect of curtailing fish stocking, which could have a negative effect on loon productivity. At most lakes the beneficial effects of restricting access is greater than the potential negative effect of loss of prey for loons by not allowing access for fish stocking.

Alternative D Modified and Alternative E Updated provide different levels of habitat security based on the relative amount of wheeled motorized vehicle access provided. Alternatives that increase core area or reduce road density for grizzly bears could contribute to a cumulative increase in habitat security for loons because timber sales, other ground disturbing activities, or vegetation management activities would be less likely to occur in these areas. Alternative D Modified would provide more secure habitat than Alternative E Updated.

Cumulative Effects

The issuance of special use or road use permits to use existing or build new roads to access private land may add to cumulative effects. As shoreline development on private land and recreation use on lakes, especially boat and personal watercraft traffic, continue to increase, the cumulative effect is likely to be more habitat becoming unsuitable for nesting loons.

Determination of Effects

For Alternative E Updated and Alternative D Modified, the effect on loons depends on which roads are selected for restricting wheeled motorized vehicle use. If none of these roads access loon nesting lakes, there would be no impact. If roads that do access loon nesting lakes are selected to change access status to meet grizzly bear standards, there could be a beneficial impact.

Harlequin Duck

Harlequin ducks (*Histrionicus histrionicus*) usually nest within several meters of the stream bank on fast-flowing streams with little human activity. Potential breeding habitat is identified as second order or larger streams with riffle habitat, clear water, gravel to boulder-sized habitat, and forested bank vegetation.

Affected Environment

Harlequin duck surveys have been conducted for this species on several streams, but data is insufficient to determine the population trend for this species and its habitat. Twenty-seven streams have had documented use by harlequin ducks in the IPNFs' north zone and breeding has been documented on 12 of these streams. These include four in the Priest River watershed, three in the Kootenai River Basin and five in the Pend Oreille Basin. Two harlequin duck nests found in the analysis area were in cedar/hemlock forests on third and fourth order streams.

On the KNF, approximately eight streams within the analysis area have documented harlequin duck use. These streams are found in the Yaak, Kootenai, and Clark Fork River Basins. Harlequin ducks have been documented in Graves Creek on the LNF portion of the analysis area, but suitable habitat exists along the Thompson River and several other larger streams.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Human disturbance during the nesting and chick-rearing seasons (April through June) is one of the highest threats to harlequin duck viability. The effects of changes in wheeled motorized vehicle access management are very site-specific, depending on which wheeled motorized access changes. If roads, which currently provide wheeled motorized vehicle access along harlequin duck streams, are restricted or barriered there would be a reduction in human disturbance, or a beneficial effect on harlequin ducks. Many of the roads along harlequin duck streams are major arterials providing access to an entire drainage and are less likely to be closed than roads that receive less traffic.

Alternative D Modified and Alternative E Updated provide different levels of habitat security based on the relative amount of wheeled motorized vehicle access provided. Alternatives that increase core area or reduce road density for grizzly bears could contribute to a cumulative increase in habitat security for harlequin ducks because timber sale, other ground disturbing activities, or vegetation management activities would be less likely to occur in these areas. Alternative D Modified could provide slightly more secure habitat than Alternative E Updated.

Cumulative Effects

Harlequin ducks are potentially susceptible to several forms of cumulative effects. As traffic from recreation and commercial uses on the national forests increase, more habitats could become unsuitable for harlequin ducks. Streamside road construction or reconstruction, placer mining and other sources of sediment along harlequin duck streams could impact the production of aquatic insects on which the ducks feed. During the nesting period, increasing use of riparian habitats and streams, including boating, fishing, camping, and hiking, also pose a threat to harlequin ducks, since this species selects nest sites away from human activity.

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. The Rock Creek project also includes specific measures for harlequin duck protection. These access changes are not expected to provide security levels above those proposed in this FSEIS, but rather are expected to assure achievement of proposed standards, which result in an improvement over existing conditions. The mitigations for the harlequin duck are designed to eliminate or minimize adverse effects.

Determination of Effects

Alternative D Modified and Alternative E Updated may have a beneficial impact on harlequin duck habitat security, since wheeled motorized vehicle access would be reduced to varying degrees. In addition, when roads are decommissioned in or near riparian areas it is likely to reduce sediment in the streams, which could improve water quality and aquatic insect populations on which the harlequin ducks feed.

Black-backed Woodpecker

Habitat for black-backed woodpeckers (*Picoides arcticus*) consists of boreal and montane forest where the birds feed primarily on bark beetles infesting a variety of conifer tree species. Where bark beetle populations are low, black-backed woodpecker populations remain present but at very low numbers. Where wood boring beetle populations increase to epidemic levels, such as following a wildfire, blowdown, or other disturbance events, black-backed woodpecker populations increase dramatically.

Affected Environment

Black-backed woodpeckers are distributed broadly across the analysis area on all three Forests within suitable habitat types. They have been confirmed in BMUs 3, 9, 11, 14, 15, and 16 in recent years. They are strongly associated with suitable feeding habitat and are not particularly vulnerable to human disturbance associated with wheeled motorized vehicle use of roads and trails. Suitable habitat is well distributed across the three Forests and the northern region of the Forest Service (Samson 2006; Bush and Lundburg 2008).

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access and, thereby, a reduction in firewood cutting and snag removal. Alternative D Modified and Alternative E

Updated provide differing levels of habitat security based on the relative amount of wheeled motorized vehicle access provided. Habitat security increases as wheeled motorized vehicle access is reduced.

Alternative D Modified or Alternative E Updated that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for black-backed woodpeckers because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. No indirect effects are expected from the treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a). Newly dead trees that support wood boring beetle populations would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified could provide more secure habitat than Alternative E Updated.

Cumulative Effects

There are potential cumulative effects to black-backed woodpeckers on acres accessible to firewood cutters. If people cannot harvest firewood on roads due to new road closures, they may remove more snags in other stands where wheeled motorized vehicle access is still available. This would likely lead to a loss of suitable nesting habitat for black-backed woodpeckers in areas where roads are open to wheeled motorized vehicle use. In wildfire areas where roads would be closed, it may result in reduced salvage opportunities and thus, reduce habitat loss from logging activities. The level of impact of each alternative will vary, depending on the amount of open roads in black-backed woodpecker habitat.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual black-backed woodpeckers but will not contribute to a trend toward federal listing or a loss of population viability. This determination is based on the presence of well-distributed habitat across the three Forests and the Northern Region of the Forest Service.

Townsend’s Big-eared Bat

This bat species (*Corynorhinus townsendii*) is found in a wide variety of habitats but requires key roosting habitat associated with mines, caves, or abandoned buildings. Occasional use of snags for day roosts also occurs. Most use occurs in mines in north Idaho and northwest Montana where caves are very rare. Buildings occasionally are used. This species feeds on moths, usually in forested areas or forest edges, and are extremely sensitive to human disturbances, especially in hibernation or in maternal colonies.

Affected Environment

The only known maternity colonies for this species within the analysis area are on the IPNFs. Two mines in the Thompson River area of the LNF have summer and winter use and entrances to these sites were closed with bat friendly gates in 2007. Maternity use is unknown, but possible. Bats require roosting and maternity sites where they can roost in temperature and moisture regimes without significant energy expenditure.

The analysis area provides suitable roosting habitat where there are abandoned mines that are not disturbed by people, as well as foraging habitat in open forest stands. Bats are subject to disturbance from human intrusion into roost sites. Normal human access on forest roads and trails is likely to have minimal potential for disturbance unless it allows access to bat roosts in mines or abandoned buildings.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access and, thereby, a reduction in firewood cutting and snag removal. Habitat security increases as wheeled motorized vehicle access is reduced.

Alternatives that increase core area for grizzly bears, such as Alternative D Modified and Alternative E Updated, could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Snags would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified could provide more secure habitat than Alternative E Updated.

Cumulative Effects

There are potential cumulative effects to bats. If people cannot harvest firewood on roads due to new road closures, they may remove snags in other stands where wheeled motorized vehicle access is still available. This would likely lead to a loss of a limited amount of suitable roosting habitat for bats in areas where roads are open to wheeled motorized vehicle use. Loss of snags as roost sites for Townsend's big-eared bat is not likely to be a major impact, as their use is primarily in caves, mines, and old buildings.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual bats but will not contribute to a trend toward federal listing or a loss of population viability. The level of impact of each alternative will vary, depending on the amount of open roads in Townsend's big-eared bat habitat.

Flammulated Owl

Flammulated owls (*Otus flammeolus*) nest in open ponderosa pine dominated forests with large diameter snags. They also nest in open, large-diameter Douglas-fir forests. Flammulated owls depend on pileated woodpeckers and flickers to excavate the cavities in which they nest. Their nest trees are at least 15 inches in diameter. They select nest sites with 35 percent to 65 percent canopy closure. Flammulated owls may be tolerant of some human disturbances (Hayward and Verner 1994).

Affected Environment

Most flammulated owl habitat occurs at low elevations outside BMUs. Flammulated owl surveys have been conducted in several BMUs, including BMUs 6-10, 12, 13, 22, Boulder, Myrtle, Ball-Trout, and Lakeshore BMUs. Surveys in BMUs 9, 12, 13, 22, and the Lakeshore BMU found flammulated owls. Suitable habitat also exists in several BMUs including some areas where no flammulated owl surveys have been done and it is possible that flammulated owls occupy these habitats. Only a few flammulated owl nests have been found on the KNF, LNF, and IPNFs, although repeated positive responses to surveys on all three Forests suggest that flammulated owls are nesting in the surveyed areas. Suitable habitat is well distributed across the three Forests and the Northern Region of the Forest Service (Samson 2006; Bush and Lundburg 2008).

On some ponderosa pine sites, forest management favors the growth and regeneration of ponderosa pine. However, without a substantial increase in restoration (thin from below) and/or fires, ponderosa pine will continue to decline because dense forest canopies prevent regeneration of this species. Forest growth and succession are changing these habitats and resulting in loss of ponderosa pine forests faster than restoration harvest and fires are regenerating it.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access and, thereby, a reduction in firewood cutting and snag removal. Snag habitat is maintained or increased as wheeled motorized vehicle access is reduced. However, if roads that currently provide wheeled motorized vehicle access to ponderosa pine stands are restricted, there would be a reduction in opportunities to thin from below and underburn these stands to maintain and restore open grown conditions with large snags that are favored by the flammulated owl. This may result in a potential loss of habitat for this species. No indirect effects are expected from the treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a).

Alternative D Modified and Alternative E Updated that increase core area for grizzly bears could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Snags would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified would provide more secure habitat than Alternative E Updated.

Cumulative Effects

There are potential cumulative effects to flammulated owls for owl habitat located outside of the Selkirk and Cabinet-Yaak Recovery Zones. If people cannot harvest firewood on roads due to access changes, they may remove more snags in other stands where wheeled motorized vehicle access is available. This situation would likely lead to a loss of suitable nesting habitat for flammulated owls in areas where roads are open to wheeled motorized vehicle use. There may be an increased demand for firewood from the national forests as rural populations and utility costs increase. The level of impact of each alternative will vary, depending on the amount of open roads in flammulated owl habitat.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual owls but will not contribute to a trend toward federal listing or a loss of population viability. This determination is based on the presence of well-distributed habitat across the three Forests and the Northern Region of the Forest Service.

Peregrine Falcon

Peregrine falcons (*Falco peregrinus*) prefer to hunt in and around large rivers or other areas that concentrate waterfowl and other birds, which are their main prey. They nest on tall cliffs and occasionally on artificial platforms placed in suitable foraging habitat.

Affected Environment

The majority of wetland habitats in the vicinity of the analysis area occur in privately-owned valley bottoms or in low elevations outside of the Selkirk and Cabinet-Yaak Recovery Zones. However, some suitable wetland habitat does occur within the recovery zones.

Few suitable nesting sites occur on the KNF or IPNFs. Suitable nesting areas exist on the LNF. Two eyries have been documented on or immediately adjacent to IPNFs NFS lands, but both are outside the recovery zones. Seven are known to occur along the Clark Fork River on the LNF near the KNF boundary (one known and one suspected in the recovery zone), and three on the KNF (with one in the Cabinet-Yaak Recovery Zone). Peregrines have been observed in BMUs 3, 4, 10, 12, and 22 in the past few years.

From 1990 to 1995, the Forest Service and the Peregrine Fund worked together to hack (release) young peregrine falcons near a historical eyrie on the IPNFs. The reintroduction program was considered a success in 1997 when a pair of falcons returned to the area where they had been released. Another pair of peregrine falcons that had been released near Clark Fork, Idaho successfully fledged three chicks near Spokane in 1997.

Idaho Department of Fish and Game's Idaho Peregrine Falcon Survey and Nest Monitoring 1998 Annual Summary states, “Idaho's peregrine falcon population is probably continuing to increase based upon productivity figures and increased sightings of peregrines outside of known nesting areas during the nesting season. However, continued funding restrictions and logistical difficulties have limited our ability to locate new nesting territories and accurately assess Idaho peregrine falcon population trends" (Levine et al. 1998).

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access, providing improved habitat security. The effects of changes in wheeled motorized vehicle access management are very site-specific and dependent on specific access changes. If roads that currently provide wheeled motorized vehicle access near a nest site are restricted, there would be a reduction in human disturbance resulting in a potential beneficial effect on peregrine falcons. No indirect effects are expected from the treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a). Alternative D Modified and Alternative E Updated provide different levels of habitat security based on the relative amount of wheeled motorized vehicle access provided.

Cumulative Effects

Alternatives that increase core area for grizzly bears, such as Alternative D Modified and Alternative E Updated, could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Alternative D Modified would provide more secure habitat than Alternative E Updated.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual peregrine falcons but will not contribute to a trend toward federal listing or a loss of population viability. The level of impact of each alternative will vary, depending on the amount of open roads in peregrine falcon habitat.

Northern Bog Lemming

The northern bog lemming (*Synaptomys borealis*) is a small, grayish brown, vole-like animal with a boreal distribution, including portions of Montana and Idaho. It inhabits sphagnum bogs and fens but is occasionally found in other habitats such as mossy forests, wet subalpine meadows, and alpine tundra.

Affected Environment

Bog lemmings are known to occur in four locations in Idaho, all within fifty miles of the Canadian border. In Montana, approximately eighteen sites have been documented, most of these in the northwestern corner of the State. Bog lemmings seem to occur in disjunct populations probably as a result of the patchy nature of their primary habitat (sphagnum bogs), which occur as glacial relicts. Populations may range from a few individuals to perhaps a few hundred. Bog Lemmings have been documented at Hawkins Lake and Horse Lakes within the analysis area.

Because bog lemmings are localized primarily in bog habitats where roads and trails would not normally occur, they are not expected to be subject to human disturbance on wheeled motorized roads and trails.

Direct and Indirect Effects

Northern bog lemmings and their habitat are not known to be influenced by levels of wheeled motorized vehicle access on roads. Therefore, none of the alternatives would have any direct or indirect effects on this species.

Cumulative Effects

Based on known suitable habitat and population locations (outside the recovery zones), there are no anticipated cumulative effects to the northern bog lemmings.

Determination of Effects

Alternative D Modified and Alternative E Updated would have no impact on northern bog lemmings or their habitat.

Gray Wolf

The gray wolf (*Canis lupus*) is a year-round resident of all three Forests' portions of the analysis area. Wolves within this area are within the Northwest Recovery Zone (USDI Fish and Wildlife Service 1987). In December 2002, the northern Rocky Mountain wolf population attained the population recovery goal of 30 breeding pairs of wolves well distributed throughout the states of Idaho, Montana, and Wyoming for three consecutive years (USDI Fish and Wildlife Service 2003c). Under Federal law, initiation of a delisting process could occur when the northern Rocky Mountain wolf population met recovery goals and each state developed USFWS-approved wolf management plans and enacted legislation and regulations to ensure long-term conservation of wolves. Idaho and Montana had USFWS-approved wolf management plans and adequate state laws in place by the time population recovery goals were met in 2002.

The gray wolf was removed from the endangered species list in March of 2008, but a court ruling on July 18, 2008 imposed a preliminary injunction on the delisting and reinstated its endangered status in areas north of Interstate 90. However, effective May 4, 2009 the U.S. Fish and Wildlife Service officially delisted the Northern Rockies Distinct Population Segment of gray wolves. Once delisted, regulated legal hunting of gray wolves was allowed during the 2009 hunting season in Montana and Idaho. However, on August 5, 2010 the District Court ordered the USFWS to reclassify the wolf as an endangered species. Subsequent delisting of the gray wolf in parts of the Northern Rockies Distinct Population Section (including Idaho and Montana) occurred by the USFWS took effect on May 5, 2011 (Federal Register 2011).

In addition to the *Gray Wolf Recovery Plan* (USDI Fish and Wildlife Service 1987), strategies to protect and manage the recovered wolf populations in Montana, as well as the ecology, biology and habitat descriptions are outlined in the *Montana Gray Wolf Conservation and Management Plan FEIS* (MDFWP 2003). Upon delisting, populations in Idaho would be managed under the *Idaho Wolf Population Management Plan* (IDFG 2008). Information for this population segment (Montana and Idaho) is provided by the *Rocky Mountain Wolf Recovery 2006 Annual Report* (USDI Fish and Wildlife Service 2007c).

Wolves are highly social animals and form packs of two to twenty individuals. Their primary prey species is white-tailed deer but they are opportunistic predators of elk, mule deer, moose, and to a lesser extent, small vertebrates. Dens are located in underground burrows dug into steep hillsides, in hollow logs, or in abandoned beaver lodges. Isolated meadows within forested areas are used as rendezvous sites for the pack. The two key factors that determine the ability of habitat to support wolves include the availability of big game populations as prey, and security from human-caused mortality and disturbance. Wolves are known to avoid habitats with high road densities (Mech et al. 1988, Thiel 1985, and Whittington et al. 2005).

Affected Environment

Established wolf packs are known or presumed to use a portion of the analysis area. (see Figure 11). As of 2009, the home ranges of the Murphy Lake, Lydia, Kootenai South, Thirsty, Bearfite, Candy Mountain, Pulpit Mountain, Cabinet, Fishtrap, Corona, Silcos, Mckay, Twilight, Calder Mountain, Soloman Mountain, Copper Falls, and Boundary packs overlap the Cabinet-Yaak Recovery Zone and associated BORZ (IDFG Conservation Database 2008, Sime et al. 2010). Two of these packs are located in Idaho (i.e., Boundary and Calder Mountain) while the remaining 15 are located in Montana. The home ranges of Diamond, Snowy Top, and Cutoff Peak wolf packs overlap with the Selkirk Recovery Zone and associated BORZ (IDFG Conservation Database 2008, IDFG 2008). Additionally, single or multiple wolves occasionally pass through or use nearly any portion of the analysis area for short periods. Reports of wolf sightings are received from within the area on a frequent basis. See IDFG (2008) and Sime et al. 2010 for details on pack size and minimum population estimates for the areas that encompass the project area.

Prey species are generally abundant throughout much of the analysis area. Habitat suitability for prey species within the analysis area varies from low to high, depending on location. Big game prey availability is adequate to support transient or resident wolves in much of the area.

Security afforded by access restrictions in grizzly bear habitat also benefit wolves. The level of security currently existing in the analysis area is adequate to support a resident wolf population, and wolf sightings have increased in recent years. While they do occur, the number of documented human-caused wolf mortalities in the analysis area is relatively low.

Conservation requirements for wolf populations include the availability of prey and reducing risk of human-caused mortality as key components (USDI Fish and Wildlife Service 1987). The risk of human-caused mortality can be directly related to the density and distribution of open roads.

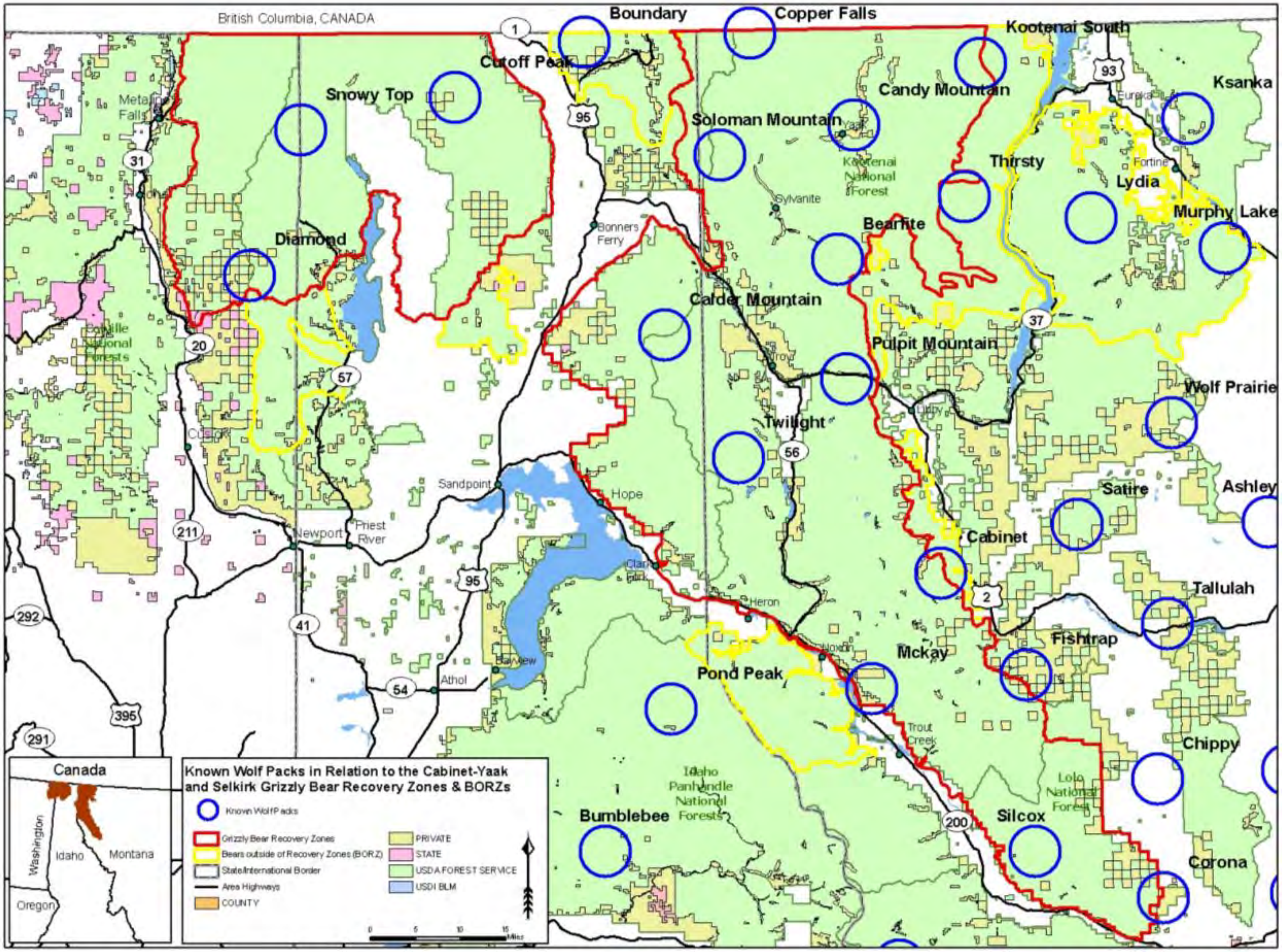

Figure 11. Known gray wolf packs in relation to the Cabinet-Yaak and Selkirk Recovery Zones

Human tolerance is probably the most important factor in the management of wolves. Unrestricted road access generally increases the chances of human/wolf interactions, thereby, increasing the risk of human-caused mortality. The potential effects on gray wolves were determined by evaluating the effects on wolf habitat security and effects on habitat security for prey species.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access, providing improved habitat security. The two alternatives provide a favorable environment for wolves and their prey. Because protection measures are already in place to support the conservation of the gray wolf (e.g., Montana Gray Wolf Conservation and Management Plan, Idaho Wolf Population Management Plan, and the KNF, LNF, and IPNFs Forest Plans), none of the alternatives would have adverse effects on gray wolves. Security afforded by access restrictions in grizzly bear habitat also benefit wolves. The level of security currently existing in the analysis area is adequate to support a resident wolf population, and wolf sightings have increased in recent years. Alternative D Modified would provide a higher degree of habitat security than Alternative E Updated because it would reduce human access more. Both alternatives would reduce open road densities across the Selkirk and Cabinet-Yaak Recovery Zones and would provide a higher degree of habitat security and lower mortality risk to gray wolves than currently exists. The treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a) poses the potential for indirect effects through disturbance to any wolves that may be in the vicinity of the treatment site. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

Alternative D Modified and Alternative E Updated would promote healthy ungulate populations that provide prey for wolves. See the white-tailed deer, elk, and moose sections for more in depth discussions on prey base effects.

Alternative D Modified and E Updated would allow for the possibility of opening some closed roads in BMUs that meet all three grizzly bear access parameters (OMRD, TMRD, and core area) sometime in the future (i.e., more than 8 years).(see Transportation section starting on page 156). Depending on where these roads are located there is a very small possibility of increased mortality risk to wolves under Alternative E Updated. However, these are opportunities, not requirements, and would receive their own scrutiny at the time those actions are proposed. The opening of some routes is likely to be offset by the closing of other routes in other BMUs across the wolf use areas.

Cumulative Effects

Effects to wolves, such as displacement and mortality risk, are not limited to association with roads or availability of remote habitats. Other factors also contribute cumulatively to displacement and mortality risk, such as: 1) food attractants on NFS or private land, 2) people's attitudes toward wolves, 3) hunting in the United States and Canada, 4) motorized over-the-snow vehicle use, 5) major ground disturbing activities such as mining, 6) activities on private land like subdivisions and associated road construction and use, and 7) programmatic actions may also result in cumulative effects to the wolf (see Cumulative Effects Sections on page 51). Following is additional discussion of each of these factors:

1) Food attractants on NFS or private land - The presence of food attractants (e.g., domestic livestock) may result in wolf and/or human encounters that often end with the death of a wolf. To date, there have been no wolf deaths associated with food attractants on NFS lands in the Selkirk or Cabinet-Yaak Recovery Zones, however they have occurred on NFS and private lands in or adjacent to the recovery zones. Based on expected human population growth and the associated creation of subdivisions, an increase in food attractants (i.e., domestic livestock and pets) on private lands is possible, with a potential subsequent increase risk of wolf mortalities. Mortality risk due to food attractants is not likely to significantly change on NFS lands.

2) People's attitudes toward wolves – Some people's attitudes toward the wolf are associated with how they view management actions (e.g., changes in wheeled motorized vehicle access) done to benefit wolves or other wildlife. If viewed as a loss of "freedom" to use their national forest, it may result in a higher mortality risk for the wolf. Reducing wheeled motorized vehicle access may increase this type of attitude, which could result indirectly in higher wolf mortality risk.

3) Hunting in the United States and Canada – Canada has a legal wolf hunting season, but in areas located much further north in British Columbia than the immediate international border (Mowat 2007 and British Columbia Ministry of Environment 2008). Current wolf numbers in the South Selkirk Mountains probably do not exceed 13 animals (Mowat 2007). Changes in wheeled motorized vehicle access in the United States would not change the mortality risk from legal hunting in Canada, but it may make habitats south of the international border more attractive resulting in animals shifting use patterns to include more habitat in the United States. Hunting for other wildlife species occurs on both sides of the border. Hunter encounters with wolves may result in a wolf death. Reducing wheeled motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for hunters to reach wolf use areas.

4) Motorized over-the-snow vehicle use – Motorized over-the-snow vehicle use is occurring in the recovery zones that overlap wolf habitat (see Grizzly Bear Cumulative Effects Section on page 97). The pending decision for this FSEIS does not change current management direction regarding this activity. When this use occurs, wolves may be disturbed in and potentially temporarily displaced, from some use areas.

5) Major ground disturbing activities such as mining – Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or are being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the pending decision for this FSEIS but rather are expected to assure achievement of proposed standards, which result in an improvement over existing conditions.

6) Activities on private and state lands located within the recovery zones – The pending decision for this DSEIS will establish management direction for NFS lands within grizzly bear habitat that overlaps wolf habitat. However, the recovery zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects to wolves. The numbers used for road densities and core area in the wolf analysis include consideration of roads on State and private lands within grizzly bear habitat, even though standards set by the pending decision for this FSEIS will apply only to NFS lands. Therefore, this analysis includes the consideration of cumulative effects on State and private lands within the analysis area.

7) Programmatic actions - Other programmatic decisions that guide future management may contribute to cumulative effects to wolves (see Appendix A starting on page 303). The Northern Rockies Lynx Management Direction decision may beneficially affect wolves by maintaining riparian habitat, reducing the disturbance associated with minerals and human uses, reducing habitat fragmentation, and providing for animal movement (USDA Forest Service 2007b).

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. While the potential for such use is limited in wolf habitat in the analysis area, any limitations could potentially result in positive cumulative effects to wolves. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in gray wolf habitat and may serve as a method for implementing road management decisions benefiting wolves.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individuals but is not likely to adversely affect the wolf population. The level of impact of each alternative will vary, depending on the amount of open roads in wolf habitat. The determination is based on the potential for temporary, indirect displacement during road closure activities and the resulting long-term improved security conditions for wolf when grizzly bear habitat standards are met.

Fisher

Fishers (*Martes pennanti*) use a diverse range of habitat types and succession stages, but prefer mesic environments. They select riparian areas for travel, resting, and denning. Denning and resting are associated with a mature-to-complex stand structure including snag cavities, large down woody debris and dense canopies. Research in Montana noted that fishers prefer gentle slopes (less than fifteen percent). In the summer, fisher use mature and old stands with moderate-to-dense canopies, and in the winter, they use both young and old stands. Habitat meeting this description is variably distributed throughout the analysis area.

The fisher was petitioned for listing as a threatened or endangered species but was found to be unwarranted by USFWS on June 30, 2011 (Federal Register: June 30, 2011; Volume 76, Number 126). As stated in the Federal Register, past habitat loss due to logging, fire, and clearing of land for agriculture or settlement, together with trapping, contributed to the near extermination of fisher populations over much of their former range in the United States and much of eastern Canada by the early 1900s. Presently, the fisher representation in Montana and Idaho includes a recently discovered remnant native population and descendants of fishers relocated from the

Midwest and British Columbia in the 1960s and 1990s. In their decision to conduct a status review, the USFWS stated that listing the fisher population in the Northern Rocky Mountains may be warranted due to two factors: 1) over-utilization by trapping, and 2) the present or threatened destruction, modification, or curtailment of its habitat.

Home ranges of fishers are generally six to fifteen square miles and may increase in the winter. Fishers are capable of long-range movements in a short period of time, but may be restricted by deep snow. They have also been noted to avoid large openings and highly fragmented forests.

Affected Environment

During the early 1990s, fishers from Wisconsin were transplanted into the Cabinet Mountains in an attempt to reestablish a population. These releases were within the analysis area. Predation and trapping mortality were initially high but some fishers have persisted. A study is currently ongoing to ascertain the current population status. A fisher reintroduction program started in 1996 in the East Kootenay area of British Columbia, Canada and some of these animals have moved into the north end of the analysis area. There is one historic trapping record from the 1990s of a fisher from the Mt. Headley BMU (22) on the LNF.

Fishers do not appear to be disturbed by human activity on roads and trails, but roads could provide access for trappers who could remove individual fishers from naturally low populations.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access, providing improved habitat security. Indirectly, risk of trapping, which generally is related to the level of wheeled motorized route access within suitable habitat, may be reduced as roads are closed. Indirectly, site-specific projects that reduce access routes—including projects to stabilize existing barriered roads—may temporarily disturb or displace fisher. However, the effects from this activity would tend to be isolated and of short duration (less than one year). Alternative D Modified and Alternative E Updated provide different levels of habitat security based on the relative amount of wheeled motorized vehicle access.

Cumulative Effects

Effects to fishers, such as displacement and mortality risk, are not limited to association with roads or availability of remote habitats. Other factors also contribute cumulatively to displacement and mortality risk, such as: 1) trapping in the United States and Canada, 2) motorized over-the-snow vehicle use, 3) major ground disturbing activities such as mining, 4) activities on private and state land, and 5) programmatic actions may also result in cumulative effects to the fisher (see Cumulative Effects Sections on page 51). Following is additional discussion of each of these factors:

1) Trapping in the United States and Canada – Canada does not have a legal trapping season for this species within the Kootenay Wildlife Management Unit located north of the international border (British Columbia Ministry of Environment 2008). However, trapping for other wildlife species does occur on both sides of the border and reducing motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for trappers to reach fisher use areas.

2) Motorized over-the-snow vehicle use – Motorized over-the-snow vehicle use is occurring in the Selkirk and Cabinet-Yaak Recovery Zones that overlap fisher habitat (see Grizzly Bear

Cumulative Effects section on page 97). The Access Amendment does not change current management direction regarding this activity. When this use occurs, fisher may be disturbed and potentially displaced from preferred habitats. The IPNFs is in the process of completing a Winter Travel Plan that covers the Selkirk Mountain Range. Once in place, the Winter Travel Plan would provide direction on motorized over-the-snow vehicle use that would address disturbance and/or temporary displacement to the fisher population in the Selkirk Recovery Zone. Currently, there is a court order preventing motorized over-the-snow use in portions of the Selkirk Mountain Range.

3) **Major ground disturbing activities such as mining –** Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but rather are expected to assure achievement of proposed standards, which result in an improvement over existing conditions.

4) **Activities on private and state land located within the recovery zones –** The decision for this FSEIS will establish management direction for NFS lands within fisher habitat. However, the recovery zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects to fishers.

5) **Programmatic actions -** Other programmatic decisions that guide future management may contribute to cumulative effects to fishers (See Appendix A starting on page 303). The Northern Rockies Lynx Management Direction decision may beneficially affect fishers by maintaining riparian habitat, reducing the disturbance associated with minerals and human uses, reducing habitat fragmentation, and providing for animal movement (USDA Forest Service 2007b).

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. While the potential for such use is limited in fisher habitat in the analysis area, any limitations (access related) could potentially result in positive cumulative effects to fisher. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in fisher habitat and may serve as a method for implementing road management decisions benefiting fishers.

Alternatives that increase core area for grizzly bears, such as Alternative D Modified and Alternative E Updated, could contribute to a cumulative increase in fisher habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Alternative D Modified would provide more secure habitat than Alternative E Updated.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual fishers but will not contribute to a trend toward federal listing or a loss of population viability. The level of impact of each alternative will vary, depending on the amount of open roads in fisher habitat.

Wolverine

The wolverine (*Gulo gulo*) naturally occurs in low-density populations in remote, undisturbed areas. Wolverines spend summers in higher elevations (average 6,300 feet) and winters in lower elevations (average 4,500 feet). Habitat types used in northwest Montana and north Idaho include subalpine fir, Douglas-fir, lodgepole pine and western larch, with a higher percentage in the subalpine fir forest types. Low- to moderately-stocked stands of mature timber are frequently used. Foraging cover types include subalpine habitat where big game spend the summer and fall, and lower-elevation winter ranges, both of which provide big game carrion from un-retrieved hunter kills and winter mortality. Most forested areas provide travel habitat but quality is affected by distribution of cover, large openings and human activity both on and off roads and trails. Denning and resting habitat includes high elevation cirques and talus slopes in north-facing subalpine fir slopes near foraging areas, or in timber stands in close proximity to talus slopes.

The wolverine was petitioned for listing as a threatened or endangered species and was found to be warranted for listing but precluded by higher priority actions on December 14, 2010 (Federal Register December 14, 2010, Vol. 75, No. 239). As stated in the Federal Register, climate change was identified as the primary threat to wolverine. The impact of climate change on wolverines is expected to be through changes to the availability and distribution of wolverine habitat. Wolverines were likely extirpated from the entire contiguous United States in the first half of the 20^{th} Century, but have expanded in recent years into two functioning populations in the North Cascades (Washington) and Rocky Mountains (Idaho, Montana, and Wyoming) (ibid).

Affected Environment

Wolverines are distributed in low numbers in the Cabinet, Purcell, and Selkirk Mountain ranges that make up the analysis area. Wolverine tracks were observed in BMU 22 on the LNF in 2006, and wolverine tracks were observed in the early 2000s in BMUs 16 and 17 during lynx track surveys. Research has documented that wolverines are subject to human disturbance from wheeled motorized roads and trails (summarized by Butts 1992). Disturbance may cause displacement and home range modification and in certain situations, den abandonment.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access, providing improved habitat security. Alternative D Modified and Alternative E Updated provide differing levels of habitat security based on the relative amount of wheeled motorized vehicle access provided. Indirectly, site-specific projects that reduce access routes may temporarily disturb or displace wolverines.

Cumulative Effects

Effects to wolverines, such as displacement and mortality risk, are not limited to association with roads or availability of remote habitats. Other factors also contribute cumulatively to displacement and mortality risk, such as: 1) trapping in the United States and Canada, 2) motorized over-the-snow vehicle use, 3) major ground disturbing activities such as mining, 4) activities on private and state land, and 5) programmatic actions may also result in cumulative effects to the wolverines (see Cumulative Effects Sections on page 51). Following is additional discussion of each of these factors:

1) Trapping in the United States and Canada – Canada has a legal trapping season just north of the recovery zones (British Columbia Ministry of Environment 2008). Some wolverine's home ranges may overlap the international border. Changes in motorized vehicle access in the United States would not change the mortality risk from legal trapping in Canada. Trapping for other wildlife species occurs on both sides of the border. Reducing motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for trappers to reach wolverine use areas.

2) Motorized over-the-snow vehicle use – Motorized over-the-snow vehicle use is occurring in the recovery zones that overlap wolverine habitat. The access amendment does not change current management direction regarding this activity. When this use occurs, wolverines may be disturbed in and potentially temporarily displaced from preferred habitats. This impact may be more important around natal den sites. The IPNFs is in the process of completing the Winter Travel Plan that covers the Selkirk Mountain Range. Once in place, the Winter Travel Plan would provide direction on motorized over-the-snow vehicle use that would address disturbance and/or temporary displacement to the wolverine population in the Selkirk Recovery Zone. Currently, a court order restricts motorized over-the-snow vehicle access in portions of the recovery zone until the Winter Travel Plan is completed.

3) Major ground disturbing activities such as mining – Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but rather are expected to assure achievement of proposed standards, which result in an improvement over existing conditions.

4) Activities on private and state land located within the recovery zones – The decision for this FSEIS will establish management direction for NFS lands within grizzly bear habitat that overlaps wolverine habitat. However, the recovery zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects to wolverine.

5) Programmatic actions - Other programmatic decisions that guide future management may contribute to cumulative effects to wolverines (see Appendix A on page 303). The Northern Rockies Lynx Management Direction decision may beneficially affect wolverines by maintaining riparian habitat, reducing the disturbance associated with minerals and human uses, reducing habitat fragmentation, and providing for animal movement (USDA Forest Service 2007b).

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987

Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. While the potential for such use is limited in wolverine habitat in the analysis area, any limitations (access related) could potentially result in positive cumulative effects to wolverines. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in wolverine habitat and may serve as a method for implementing road management decisions benefiting wolverines.

Alternatives that increase core area for grizzly bears, such as Alternative D Modified and Alternative E Updated, could contribute to a cumulative increase in wolverine habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Alternative D Modified would provide more secure habitat than Alternative E Updated.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual wolverines but will not contribute to a trend toward federal listing or a loss of population viability. The level of impact of each alternative will vary, depending on the amount of open roads in wolverine habitat.

Bald Eagle

Eagle population ecology, biology, habitat description and relationships identified by research are described in USDI Fish and Wildlife Service (2007d) and Montana Bald Eagle Working Group (MBEWG 1991 and 1994). This information is incorporated by reference and is found in the project record.

Bald eagles (*Haliaeetus leucocephalus*) are residents of larger lakes and rivers that provide most of their foraging opportunities (i.e., fish, waterfowl). In the winter when lakes and river freeze over, natural mortality or road-killed animals may become a larger part of their diet. They select isolated shoreline areas with larger trees to pursue such activities as nesting, feeding and loafing. Nesting habitat usually includes dominant trees that are in close proximity to a sufficient food supply and within line-of-sight of a large body of water. Nest trees typically are large ponderosa pine, Douglas-fir, western larch or cottonwood trees with open crowns in areas that are relatively free from human disturbance (MBEWG 1994). During migration and at wintering sites, eagles tend to concentrate on locally abundant food and tend to roost communally. Roost sites are usually located in stands of mature or old growth conifers that provide protection from inclement weather.

The bald eagle was officially removed from the threatened species list on August 8, 2007. It was immediately placed on the Forest Service Northern Region’s sensitive species list for a period of five years, after which a status review will be made to determine the need to remain on or be removed from that list.

The *National Bald Eagle Management Guidelines* (USDI Fish and Wildlife Service 2007b) provide recommendations for avoiding disturbance to bald eagles. The *Montana Bald Eagle Management Plan* (MBEMP) states that the Plan "will also serve as the conservation and management plan when bald eagles are delisted" (MBEWG 1994). The guidelines provided in the MBEMP meet the recommendations from the National guidelines; therefore the management guidelines from the MBEMP serve as the measure for bald eagle habitat management and disturbance impacts on all three National Forests. The effect of any proposed activity on potential eagle habitat and any known eagle nests located within the bald eagle habitat area agreed to by the USFWS (2001d) will be discussed in relation to the MBEMP.

Affected Environment

Bald eagles are seasonal and year-round residents of northern Idaho and northwestern Montana. They are attracted to the area's larger lakes and rivers, which provide fish and waterfowl. Some eagles migrate to the area in the winter when other smaller lakes or streams freeze over. Bald eagles are common and expanding along shorelines of the area's larger bodies of water (e.g., Lake Pend Oreille, Kootenai, and Clark Fork Rivers in Idaho). In Montana, bald eagles have increased and are considered stable along the major rivers and largest lakes (e.g., Koocanusa, Cabinet Gorge and Noxon Reservoirs, Kootenai, and Clark Fork Rivers). Bald eagles occasionally forage in the Selkirk and Cabinet-Yaak Recovery Zones, but most use occurs outside the BMUs in the larger valley river bottoms and/or near lakes.

Direct and Indirect Effects

The potential effects on bald eagles were determined by evaluating the effects on nesting, feeding and winter roosting habitat security. None of the alternatives will have direct effects on bald eagles or their habitat.

Most bald eagle nesting, feeding and roosting occurs at elevations below grizzly bear habitat. An exception would be those areas where the recovery zones lay adjacent to major river valleys. Access restrictions on forest roads are expected to have little to no effect on bald eagles because eagles do not extensively use the forested environments where most of these roads occur. Effective protection measures are in place to support the conservation of the bald eagle (e.g., the Montana Bald Eagle Management Plan, and the KNF, LNF, and IPNFs Forest Plans). None of the alternatives are expected to have measurable indirect effects on bald eagles or their nesting, feeding or roosting habitats.

Cumulative Effects

Based on the location of suitable bald eagle habitat and the known use areas, there are no anticipated cumulative effects to this species.

Determination of Effects

Alternative D Modified and Alternative E Updated would have no impact on bald eagles or their habitat. This determination is based on effective protection measures being in place and the limited potential to change wheeled motorized vehicle access status on roads or trails in suitable bald eagle habitat.

Fringed Myotis

The fringed myotis (*Myotis thysanodes*) is a member of the group of bats referred to as the "long-eared" bats. Fringed myotis use a fairly broad range of habitats usually represented by open areas (e.g., grasslands) interspersed with mature forests (usually ponderosa pine, pinyon-juniper, or oak) at middle elevations that contain suitable roosts sites and are near water sources (Keinath 2004). Fringed myotis feed on insects during flight and glean insects off of vegetation, usually near the top of the forest canopy, with beetles and moths making up the majority of their diet (Keller 2000, O'Farrell and Studier 1980, Wisdom et al. 2000). Where available, fringed myotis use caves, mines, buildings, and rock crevices as maternity (day and night) and hibernation roost sites (Ellison et al. 2004). They also roost underneath the bark and inside hollows of snags, particularly larger ponderosa pine and Douglas-fir snags in medium stages of decay (O'Farrell and Studier 1980; Rabe et al. 1998; Weller and Zabel 2001; Rasheed et al. 1995). The area used by fringed myotis varies substantially based on the location of water sources, foraging areas (which fluctuates with insect abundance) and appropriate roost sites. However, it is thought that these habitat components need to occur within approximately one-half mile to 2 ½ miles of each other in a configuration that minimizes total commuting time (Keinath 2004).

The main risks to fringed myotis are the loss of suitable habitat for foraging or roosting and human disturbance of roost sites. Fringed myotis, like many bat species, are sensitive to disturbance or habitat modification and any change in conditions altering the microclimate (e.g., airflow, thermal regime) close to roosts can have a substantial impact (Keinath 2004). Fringed myotis are perhaps more vulnerable to alterations of mature or old growth forest conditions than most bat species because of their close association with these forests that contain abundant, large snags for roosting (Keinath 2004). Tree harvest can also affect bats by potentially reducing foraging areas, as insect prey tends to concentrate just above the canopy and along forested edges, and can impact the thermal properties of the remaining forest. In addition, riparian areas help to retain natural stream hydrology and healthy riparian vegetation to allow for sufficient water sources and to promote use by emergent insects.

Affected Environment

Fringed myotis are listed as a sensitive species for the IPNFs only. All three Forests provide suitable habitat for this bat species; however, most of that is in the lower elevations of the forests outside the analysis area and documented occurrences are few. The IPNFs has one known roosting location in a mine outside the Selkirk and Cabinet-Yaak Recovery Zones. Fringed myotis have been located on the KNF in BMUs 2 and 6 (Hendricks and Maxell 2005), but only as observations (capture or audio identification). No known roosting sites have been identified. The LNF also has had observations in BMU 22.

On some ponderosa pine sites, forest management favors the growth and regeneration of ponderosa pine. However, without a substantial increase in restoration (thin from below) and/or fires, ponderosa pine will continue to decline because dense forest canopies prevent regeneration of this species. Forest growth and succession are changing these habitats and resulting in loss of ponderosa pine faster than restoration harvest and fires are regenerating it.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access and, thereby, a reduction in firewood cutting and snag removal. Habitat is maintained or increases as wheeled motorized vehicle access is reduced. If roads that currently provide wheeled motorized vehicle access to ponderosa pine stands are restricted or barriered, there would be a reduction in opportunities to restore these stands to conditions favored by the fringed myotis bat. This could result in a potential loss of habitat. In most areas, the beneficial effects of restricting access are greater than the potential negative effect of loss of ponderosa pine restoration opportunities. No indirect effects are expected from the treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a).

Alternatives that increase core area for grizzly bears, such as Alternative D Modified and Alternative E Updated, could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Snags would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified would provide more secure habitat than Alternative E Updated.

Cumulative Effects

Potential cumulative effects to fringed myotis include increased removal of snags in other stands where wheeled motorized vehicle access is still available. This would likely lead to a reduction of suitable nesting habitat for fringed myotis in areas where roads are still open to wheeled motorized vehicle use. The level of impact of each alternative will vary, depending on the amount of open roads in fringed myotis habitat.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual fringed myotis' but will not contribute to a trend toward federal listing or a loss of population viability. This finding is based on the IPNFs currently meeting its Forest Plan snag standards.

Black Swift

Black swifts (*Cypseloides niger*) are a migratory bird that arrives in late May or early June and departs in September. They typically nest in small colonies, but have also been known to nest as a solitary pair. They have a strong fidelity to past nest sites (Marin 1997) and have shown a preference for higher elevation mountains (Montana Partners in Flight 2000). Nest sites are strongly associated with falling or dripping water, high relief, inaccessibility to ground predators, unobstructed flyways in the immediate vicinity of the nest, suitable nest niches (i.e., moss-covered ledges) and sites that are in the shade for most of the day (Knorr 1961, 1993). Their close association with waterfalls has led to a patchy distribution throughout their range in North America (Wiggins 2004). Black swifts lay only one egg and have extremely long incubation (24 to 27 days) and nestling (45 to 49 days) periods for a small-bodied temperate-zone bird (Colorado Partners in Flight 2000; Wiggins 2004). They feed mainly on flying ants and termites, along with other flying insects such as bees, wasps, beetles and a variety of flies (MDFWP 2004; Karl 2000; Wiggins 2004). Black swifts forage primarily at high altitudes in blooms of aerial insects during the day, but move down to lower heights in late afternoon or during inclement weather (Marin 1999).

Information regarding factors that may directly affect black swift populations is somewhat lacking. However, the main risks appear to be the lack of water flow in late summer and decreases in prey densities (Wiggins 2004). Lesser risks to the species include nest site disturbance and the use of pesticides near nest sites (Wiggins 2004; Montana Partners in Flight 2000; Colorado Partners in Flight 2000). Water flow, particularly in late summer, can have a substantial impact on the quality of nesting habitat and prey densities. Water flow and runoff can be affected by management activities (i.e., logging, road building and/or livestock grazing), which can lead to an increase in the rate of runoff and a decrease in late summer water flow (Wiggins 2004; Kovalchik and Elmore 1992). In addition, management actions that reduce vegetative species diversity (i.e., fire suppression) likely decrease the availability and diversity of insect prey, which can negatively affect black swift populations. Therefore, management actions should maintain hydrologic integrity to allow for natural water flow regimens and promote vegetative species diversity. Given the location of black swift nest sites on cliffs with limited accessibility and the relatively low level of recreation around possible black swift nesting sites, the potential for nest site disturbance is relatively low.

Affected Environment

The IPNFs has a number of suitable falls with potential nesting habitat near or within the boundary of the analysis area. There are two documented sites, one in the North Lightning BMU and the other within or just outside the Scotchman BMU. In addition, there are potential sites in Myrtle BMU, Long-Smith BMU (along the Blue-Grass/Salmo-Priest BMU boundary), and the Kalispell-Granite BMU in the Selkirk Recovery Zone; and Grouse BMU and Boulder BMU in the Cabinet-Yaak Recovery Zone.

Black swifts are not identified as sensitive species on the LNF and KNF. There are suitable nesting sites on both forests, but only one documented nesting site in BMU 2 on the KNF. Black swift sightings on the KNF are rare, while there are no known observations from the LNF portion of the Cabinet-Yaak Recovery Zone.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Wheeled motorized vehicle access on roads and trails is not known to affect this species or its habitat. While motorized routes can provide access to the vicinity of nest sites, the sites themselves are generally inaccessible to all but the most determined hiker/climber given their position on steep, rocky waterfalls. Therefore, reductions in wheeled motorized vehicle access may slightly decrease the potential for human disturbance. In addition, alternatives that increase grizzly bear core areas or reduce road densities would contribute to habitat security by reducing the number of existing crossings that can alter stream hydrology.

Cumulative Effects

Based on suitable habitat locations and in place measures (i.e., Inland Native Fish Strategy), there are no anticipated cumulative effects to this species.

Determination of Effects

Alternative D Modified and Alternative E Updated may have a beneficial impact on this species because reductions in wheeled motorized vehicle access could potentially reduce human disturbance of nest sites and contribute toward restoration of normal stream hydrology.

Pygmy Nuthatch

The pygmy nuthatch (*Sitta pygmaea*) is a sedentary, year round resident of ponderosa pine forests (Ghalambor 2003). It relies heavily on the foliage of live, larger ponderosa pines as foraging habitat and on larger ponderosa pine snags for nesting and roosting cavities (McEllin 1979). Their almost exclusive association with ponderosa pine, particularly mature stands that are fairly open (less than 70 percent canopy closure), leads to a patchy distribution of the pygmy nuthatch as they mirror ponderosa pine distribution (Kingery and Ghalambor 2001; Engle and Harris 2001). Pygmy nuthatch abundance is directly correlated with snag density and foliage volume (Ghalambor 2003). They generally excavate their own nest cavity, but at times are a secondary cavity nester and locate their nest cavities in dead trees or in dead sections of live trees

(Ghalambor 2003). The pygmy nuthatch is somewhat unique among North American songbirds in that it breeds cooperatively in small units (Norris 1958). During the non-breeding season, these units form family flocks, which join other family flocks and roost communally in the same cavity to reduce heat loss during cooler temperatures (Sydeman et al. 1988). Their diet consists mainly of insects during the breeding season, and in some areas they forage almost exclusively on pine seeds in the non-breeding season (Ghalambor 2003).

The main threats to this species are the loss of ponderosa pine dominated forests and low snag densities (Ghalambor 2003). There has been a substantial decline of mature ponderosa pine forests in recent years (Wisdom et al. 2000). This decline is largely due to fire suppression, which has replaced natural regimens of frequent, low intensity fires that maintained relatively open ponderosa stands and has allowed for a marked increase in the density of shade-tolerant tree species (i.e., Douglas-fir), thereby reducing the availability of habitat for the pygmy nuthatch. The encroaching shade tolerant species are also shorter-lived and more susceptible to insect and disease, thereby increasing the amount of ladder fuels and the probability of a stand-replacing fire, which could lead to the loss of mature ponderosa pine habitat (Wisdom et al. 2000). In addition, studies have shown that due to the high dependence of pygmy nuthatch on snags, reducing the number of snags greatly reduces pygmy nuthatch densities by decreasing the availability of suitable nest and roost cavities (Balda et al. 1983; Scott 1979).

Affected Environment

Suitable habitat (low elevation ponderosa pine) for pygmy nuthatches is generally found in elevations below the Selkirk and Cabinet-Yaak Recovery Zones, and sightings are rare. Ponderosa pine stands on the IPNFs are also uncommon, and where they occur they are often ingrown with other species, such as Douglas-fir, and do not provide the open-stand conditions favored by the pygmy nuthatch. Some of these are within the analysis area, but in general, this species is not associated with habitat found within the BMUs.

Pygmy nuthatches are not listed as a sensitive species for the KNF or LNF; however, they do occur in low-elevation ponderosa pine stands found on the KNF and LNF. Like the IPNFs, these stands are generally outside the analysis area. In suitable habitat, they are an uncommon species.

On some ponderosa pine sites, forest management favors the growth and regeneration of ponderosa pine. However, without a substantial increase in restoration (thin from below) and/or fires, ponderosa pine will continue to decline because dense forest canopies prevent regeneration of this species. Forest growth and succession are changing these habitats and resulting in loss of ponderosa pine faster than restoration harvest and fires are regenerating it.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access and, thereby, a reduction in firewood cutting and snag removal. Habitat is maintained or increased as wheeled motorized vehicle access is reduced. If roads that currently provide wheeled motorized vehicle access to ponderosa pine stands are restricted or barriered, there would be a reduction in opportunities to restore these stands to conditions favored by the pygmy nuthatch. This could result in a potential loss of habitat. No indirect effects are expected from the treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a).

Cumulative Effects

Alternatives that increase core area for grizzly bears, such as Alternative D Modified and Alternative E Updated, could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Snags would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified would provide more secure habitat than Alternative E Updated.

Potential cumulative effects to the pygmy nuthatch include increased removal of snags in other stands where wheeled motorized vehicle access is still available. This would likely lead to a loss of suitable nesting habitat for pygmy nuthatch in areas where roads are still open to wheeled motorized vehicle use.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual pygmy nuthatches but will not contribute to a trend toward federal listing or a loss of population viability. The level of impact of each alternative will vary, depending on the amount of open roads in pygmy nuthatch habitat.

Coeur d’Alene Salamander

Coeur d’Alene salamander (*Plethodon idahoensis*) population ecology, biology, habitat description and relationships identified by research are described in Cassirer et al. (1994) and Maxell (2000) and are incorporated by reference. Coeur d’Alene salamander occurrence data comes from recent district wildlife observation records and forest historical data (NRIS Wildlife Database) and other agencies (i.e., MDFWP, IDFG).

Affected Environment

Johnson (1999) shows Coeur d’Alene salamander presence confirmed on the Kootenai at 13 different sites. Additional sites located since 1999 bring the total to 36. BMUs 1 and 8 have survey data confirming this species presence. Known populations on the KNF are isolated by miles of unsuitable habitat that can’t be accessed (based on Maxell 2000 and Maxell et al. 2003).

On the IPNFs, Coeur d'Alene salamander presence has been documented on eight sites, mainly near the eastern boundary of the Forest (Purcell and Cabinet mountain ranges). Occurrences in the analysis area include BMUs 13, 14, 18 and 20. The LNF has documented three known sites in the analysis area in BMU 22.

Direct and Indirect Effects

Maxell (2000) reviews the risk factors relevant to this species. Road and trail maintenance, vehicle use on roads, and isolation are important factors.

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Alternatives contain potential road management changes as well as treatment of barriered roads in core areas to facilitate stabilization (see Design Element I.B.2a) that could affect salamanders and their habitat. Some stream crossings are associated with road closures, and reductions in wheeled motorized travel would benefit this species by reducing potential mortality from vehicles. At the same time, those activities could remove culverts and reshape stream banks. Future culvert installation or removal could result in incidental mortality if salamanders were present. Although there is a low risk that individuals could be impacted, it would have minimal effect on the overall population and thus not be expected to affect the continued viability of the Coeur d'Alene salamander within the analysis area.

Both alternatives have the potential to affect downstream riparian habitat. Peak flow increases would be maintained within standards thus preventing adverse water quality changes or physical changes in channel morphology. There should be no adverse cumulative effects on the Coeur d'Alene salamander population from any reasonably foreseeable programmatic activities within the analysis area.

Reducing wheeled motorized vehicle use on roads that pass through or near this species habitat would reduce potential mortality risk. Closing roads in these same areas could reduce sediment potential. Should roads in this habitat have culverts removed there is a potential to cause mortality of individual salamanders, however, in the long-term, habitat connectivity would be improved. Alternative D Modified would restrict more roads in suitable habitat than Alternative E Updated, and would benefit this salamander more than Alternative E Updated.

Cumulative Effects

Based on suitable habitat location and in place measures (i.e., Inland Native Fish Strategy: USDA Forest Service 1995b), there are no anticipated cumulative effects to this species.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual Coeur d'Alene salamanders but will not contribute to a trend toward federal listing or a loss of population viability. The level of impact of each alternative will vary, depending on the amount of open roads in Coeur d'Alene salamander habitat.

Western Toad

Western toad (*Bufo boreas*) ecology, biology, habitat use, status and conservation are described and summarized in Maxell (2000) and Reichel and Flath (1995). Western toad occurrence data comes from district wildlife observation records and forest historical data (NRIS Wildlife Database) and other agencies (i.e., Montana Natural Heritage Program).

Western toads require over-wintering, breeding/rearing and foraging habitat, and may also be dependent on habitats suitable for migration if the three required habitat types are isolated spatially (Maxell 2000). As summarized in Maxell (2000), over-wintering may take place in underground caverns or in rodent burrows; breeding/rearing takes place in aquatic sites such as shallow areas of large and small lakes or temporary ponds; and foraging habitat is largely found in terrestrial uplands. The highest elevation where the species has been documented is in Montana at 9,220 feet.

Affected Environment

Suitable habitat for western toads is widespread across the three forests. A KNF status summary of the western toad was documented by Johnson (1999). The population size is unknown and direct measures of population trend on the Kootenai are not available (ibid). Forestwide, approximately 35 breeding sites were verified between 1995 and 1998 (ibid). Many sites have been located since 1999 throughout the analysis area. A permanent amphibian monitoring site at Horse Lakes (BMU 17) documents western toads nearly every year.

On the northern end of the IPNFs western toad presence has been documented in nearly 40 locations. They are considered uncommon, but where found, are locally abundant. Locations range from valley bottoms to all but the highest elevations (Maxell 2000). The LNF has documented four known breeding sites within BMU 22.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Reducing wheeled motorized vehicle use on roads that pass through or near this species habitat would reduce potential mortality risk. Closing roads in these same areas could reduce sediment potential. Should roads in this habitat have culverts removed there is a potential indirect effect of mortality of individual western toads; however, in the long-term, habitat connectivity would be improved. Alternative D Modified, which closes the most miles of road in suitable habitat, would be the preferred alternative for the western toad.

Cumulative Effects

Based on suitable habitat location and in place measures (i.e., INFS; USDA Forest Service 1995b), there are no anticipated cumulative effects to this species.

Determination of Effects

Alternative D Modified and Alternative E Updated may impact individual western toads but will not contribute to a trend toward federal listing or a loss of population viability. The level of impact of each alternative will vary, depending on the amount of open roads in western toad habitat.

Management Indicator Wildlife Species - Affected Environment and Disclosure of Effects

Management indicator species are managed based on the NFMA and resulting direction in forest plans (Madison and Kertis 2011). Management indicator species represent potential effects to other species with similar habitat requirements. Table 36 identifies the management indicator species for the KNF, LNF, and IPNFs.

Table 36. Management indicator species

Species	IPNFs	KNF	LNF
Bald Eagle *	X	X	X
Grizzly Bear *	X	X	X
Woodland Caribou *	X		
Gray Wolf *		X	X
Northern Goshawk	X		X
Elk	X	X	X
White-tailed Deer	X	X	X
Moose	X		
Mountain Goat		X	
Pileated Woodpecker	X	X	X

* These management indicator species were previously covered in the section on threatened, endangered, and sensitive species; therefore, they are not included in the following discussion.

Northern Goshawk

The northern goshawk (*Accipiter gentilis*) is a management indicator species on the LNF and IPNFs. The northern goshawk is a forest habitat generalist that uses a wide variety of forest ages, structural conditions and successional stages, inhabiting mixed coniferous forests in much of the northern hemisphere (Reynolds et al. 1992). Throughout North America, goshawk nest sites have consistently been associated with the later stages of succession (mature and old growth trees) with moderate to high tree densities (Warren 1990). Foraging habitat includes a wider range of forest age structures that provide a relatively open forest environment for unimpeded movement or flight through the understory.

Affected Environment

Goshawk habitat is found throughout the analysis area on all three forests. Models have been developed to identify goshawk habitat on the KNF, LNF, and IPNFs. Surveys confirm goshawks in BMUs 6, 9, 11, 12, 14, 16, and 22 on the KNF and LNF. On the IPNFs, goshawk territories have been documented in BMUs 18, 19, and 20 in the Cabinet-Yaak Recovery Zone and in the Blue-Grass, Long-Smith, and Kalispell-Granite BMUs in the Selkirk Recovery Zone. They have also been documented in areas adjacent to both recovery zones. Suitable habitat is well distributed across the three Forests and the Northern Region of the Forest Service (Samson 2006; Bush and Lundburg 2008).

Human activities can alter the behavior of certain raptors. These activities can alter the distribution of raptors, disrupt nesting attentiveness, cause abandonment of breeding territories and alter foraging behavior (Braun et al. 1996). Therefore, unrestricted road access associated with breeding territories could impact nesting productivity and foraging behavior.

Direct and Indirect Effects

The potential effects on goshawks were determined by evaluating the changes to open road densities. There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Alternative D Modified and Alternative E Updated provide different levels of habitat security based on the relative amount of open wheeled motorized vehicle access provided. Habitat security increases as wheeled motorized vehicle access decreases. Alternative D Modified closes the most miles of road in suitable habitat and would provide the greatest benefits for the goshawk. Indirectly, site-specific projects aimed at stabilizing existing barriered roads or reduce access routes may temporarily disturb or displace northern goshawks if these sites are located in close proximity to occupied nesting habitat. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

Cumulative Effects

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but instead are expected to assure achievement of proposed standards that result in an improvement over existing conditions. Alternatives that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for goshawks because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas.

The decision for this FSEIS will establish access management direction for NFS lands within grizzly bear habitat that overlaps goshawk habitat. However, the Selkirk and Cabinet-Yaak Recovery Zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects (habitat loss and disturbance or displacement) to goshawks.

Elk

Elk (*Cervus elaphus*) are widespread within the analysis area and occur at varying population densities. Winter ranges typically occur at lower elevations and provide forage and protective cover. Summer ranges include spring, summer, and fall seasons and provide calving areas, forage needed to reproduce and grow, and adequate cover for both thermal regulation and hiding. Winter range provides forage and protective cover during severe weather conditions. The management emphasis for big game is to increase seral shrub forage and provide mature forest for cover and security during periods of deep snow. Management for elk involves providing thermal/hiding cover and secure areas at least 250 acres in size (Hillis et al. 1991). The key habitat factor for elk may be the loss/maturing of low elevation shrub fields, according to the Idaho Department of Fish and Game (IDFG 2007b). With fire suppression, natural fires are not creating new elk foraging areas as they did historically. As a result, winter range conditions are deteriorating in some areas.

Among large mammals, elk are one of the most sensitive to wheeled motorized vehicle access in their habitat. Elk security related to road densities and road management is considered the primary limiting factor on elk populations. In Montana and Idaho, management of wheeled motorized vehicle access in elk habitat plays a key role. Numerous studies have documented the positive correlation between increased road densities and increased elk mortality during hunting season (Christensen et al. 1993). People using highly roaded areas are the single largest threat to big game populations, making them vulnerable to poaching, stress, hunting loss, accidents and displacement (Wisdom 2000).

Affected Environment

Summer range is widely available over all three forests and is not considered a limiting factor for elk. Winter range for this species is limited on the IPNFs because most winter range is off the Forest on lower elevation private lands. The best winter range on the IPNFs occurs outside the Selkirk and Cabinet-Yaak Recovery Zones. On the KNF and LNF, winter range is common on NFS lands, but tends to be in lower elevations (4,000 feet or less), and is sometimes below and outside the BMU boundaries. Some winter use does occur in the recovery zones.

The recovery zones have road management and habitat security requirements for bears that are higher than what would be recommended for elk habitat effectiveness and security. Therefore, conditions for elk are very good within the recovery zones, and elk benefit from these management actions.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Indirect effects may take two forms. One is disturbance from human activities that affect how elk use their habitat (habitat effectiveness). The second is the level of wheeled motorized vehicle access, which affects how secure elk are, and how vulnerable they are during the hunting season (habitat security). Indirectly, site-specific projects aimed at stabilizing existing barriered roads or reducing access routes may temporarily disturb or displace elk if these sites are located in preferred elk habitats. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

Alternative D Modified and Alternative E Updated provide differing levels of habitat effectiveness and habitat security based on the relative amount of wheeled motorized vehicle access provided. Both habitat effectiveness and habitat security increase as open wheeled motorized vehicle access is reduced. Alternative D Modified, which closes the most miles of road in suitable habitat, would be the best Alternative for elk.

Cumulative Effects

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or are being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but rather are expected to assure achievement of proposed standards that result in an improvement over existing conditions. Alternatives that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for elk because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas.

The decision for this FSEIS will establish access management direction for NFS lands within grizzly bear habitat that overlaps elk habitat. However, the Selkirk and Cabinet-Yaak Recovery Zones include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects (habitat loss and disturbance or displacement) to elk.

Canada has a legal elk hunting season north of the recovery zones (British Columbia Ministry of Environment 2008). Some elk home ranges may overlap the international border. Changes in motorized vehicle access in the United States would not change the mortality risk from legal hunting in Canada, thus cumulatively mortality risk is increased. Hunting for elk and other wildlife species occurs on both sides of the border. Hunter encounters with elk may result in a legal elk death or result in death due to mistaken elk identification or poaching. Reducing motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for hunters to reach elk use areas.

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. Any limitations could potentially result in positive cumulative effects to elk. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in elk habitat, and may serve as a method for implementing road management decisions rather than cumulatively adding to the effects of those decisions on elk.

Alternatives that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for elk because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas.

White-tailed Deer

White-tailed deer (*Odocoileus virginianus*) occupy a variety of forest habitats and are primarily distributed on the lower elevations and valley bottoms. Their diet is quite varied. During the winter, they select ranges with a dense forest canopy. The snow is not as deep in these stands because the canopy intercepts much of the snow. This snow intercept function is not evident sometimes on white-tailed deer winter ranges when timber harvest opens up the forest canopy beyond optimal levels. Thermal cover, probably the most important feature of winter range, is provided by tree crowns that help moderate the effects of severe weather. As winter temperatures decrease and snow depths increase, animals select these areas to minimize energy expenditures to maintain the most positive energy accumulation (Pauley 1990). Optimum thermal cover is 60 to 80 percent of the critical winter landscape.

Affected Environment

As with elk, summer range for white-tailed deer is not limited. Existing wheeled motorized vehicle access management strategies for grizzly bear provide good security and habitat effectiveness. Low-elevation winter range may occur on a limited basis as previously discussed for elk.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access.

White-tailed deer appear less sensitive to displacement from wheeled motorized human activities than some other species such as elk. However, the level of wheeled motorized vehicle access can influence white-tailed deer’s vulnerability to illegal and legal shooting loss. Deer would benefit from road closures, especially during the fall and winter season. Indirectly, site-specific projects aimed at stabilizing existing barriered roads or reducing access routes may temporarily disturb or displace white-tailed deer if these sites are located in preferred deer habitats. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

Alternative D Modified and Alternative E Updated offer a relatively secure environment for white-tailed deer due to existing wheeled motorized vehicle access management strategies for grizzly bear. This analysis and the subsequent decision would not identify specific roads targeted from access restrictions. Project level decisions concerning management of individual roads and trails on the lower elevations and valley bottoms would benefit white-tailed deer.

Cumulative Effects

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but instead are expected to assure achievement of proposed standards that result in an improvement over existing conditions. Alternatives that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for deer because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas.

The decision for this FSEIS will establish access management direction for NFS lands within grizzly bear habitat that overlaps white-tailed deer habitat. However, the Selkirk and Cabinet-Yaak Recovery Zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects (habitat loss and disturbance or displacement) to deer.

Canada has a legal deer hunting season north of the recovery zones (British Columbia Ministry of Environment 2008). Some deer home ranges may overlap the international border. Changes in motorized vehicle access in the United States would not change the mortality risk from legal hunting in Canada. Hunting for deer and other wildlife species occurs on both sides of the border. Hunter encounters with deer may result in a legal deer death or death due to mistaken deer identification or poaching. Reducing motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for hunters to reach deer use areas.

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. Any limitations could potentially result in positive cumulative effects to deer. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in deer habitat, and may serve as a method for implementing favorable road management decisions for deer.

Moose

Moose (*Alces alces*) are widely distributed within the analysis area but are a management indicator species only on the IPNFs. Like deer and elk, moose move seasonally in response to weather patterns and food availability. However, because of their greater foraging ability and mobility, moose will use higher elevations more than deer during the winter period. Moose are fairly abundant and occupy a variety of forested and riparian habitats. Winter range provides forage and protective cover during severe weather conditions.

People using highly roaded areas are the single largest threat to big game populations, making them vulnerable to poaching, stress, hunting, accidents and displacement (Wisdom 2000). High open road densities have increased moose vulnerability to legal and illegal hunting loss.

Affected Environment

The IPNFs Forest Plan emphasizes management of moose in the Kalispell basin area (Kalispell-Granite BMU) because it includes the nucleus and winter range for Washington's only viable resident moose population (USDA Forest Service 1987b). Although not a management indicator species for the KNF and LNF, moose are yearlong residents of both Forests and suitable moose habitat (summer and winter) is widely available.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Site-specific projects aimed at stabilizing existing barriered roads or reducing access routes may temporarily disturb or displace moose if these sites are located in preferred habitats. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

While Alternative D Modified and Alternative E Updated offer a relatively secure environment for moose due to existing wheeled motorized vehicle access management strategies for grizzly bear, Alternative D Modified would provide the highest level of security and reduced vulnerability to shooting loss as a result of the number of miles of road moving into a more restrictive status. Alternative E Updated would provide some security and reduced vulnerability, but not as much as Alternative D Modified.

Cumulative Effects

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but instead are expected to assure achievement of proposed standards that result in an improvement over existing conditions. Alternatives that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for moose because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas.

The decision for this FSEIS will establish access management direction for NFS lands within grizzly bear habitat that overlaps moose habitat. However, the recovery zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects (habitat loss and disturbance or displacement) to moose.

Canada has a legal moose hunting season north of the recovery zones (British Columbia Ministry of Environment 2008). Some moose home ranges may overlap the international border. Changes in motorized vehicle access in the United States would not change the mortality risk from legal hunting in Canada. Hunting for moose and other wildlife species occurs on both sides of the border. Hunter encounters with moose may result in a legal moose death or a death due to mistaken moose identification or poaching. Reducing motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for hunters to reach moose use areas.

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. Any limitations could potentially result in positive cumulative effects to moose. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in moose habitat, and may serve as a method for implementing favorable road management decisions for moose.

Mountain Goat

Mountain goats (*Oreamnos americanus*) are creatures of alpine and subalpine habitats in association with very rugged terrain that provides security. They are found at the highest elevations during summer and move lower in winter to cliff faces and steep terrain where snow depths are less and security from predators is available.

Mountain goats are subject to human disturbance, and range abandonment can occur when disturbance becomes severe. They are also subject to population reductions from extensive hunting. Both these situations can be exacerbated by wheeled motorized road and trail access into their habitats.

Road densities and associated disturbance is generally less for mountain goats due to the limited number of roads in the high, steep, rugged nature of their habitat. However, like most big game that is disturbed by wheeled motorized activity, mountain goats do benefit from the existing road management strategies for grizzly bear.

Affected Environment

The mountain goat is a management indicator species only on the KNF, where year-round populations exist in the east and west Cabinet Mountains. These populations are hunted and are regulated by MDFWP. Mountain goats may also be found within the analysis area on the LNF, on the IPNFs in portions of the Cabinet Mountains, and in the Selkirk Mountains in Idaho.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Site-specific projects aimed at stabilizing existing barriered roads or reducing access routes may temporarily disturb or displace goats if these sites are located in preferred habitats. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

Alternative D Modified and Alternative E Updated provide differing levels of habitat security based on the relative amount of wheeled motorized vehicle access provided. Habitat security increases as wheeled motorized vehicle access is reduced and habitat security decreases as motorized access is increased. Habitat security is provided by a combination of open and total road density limitations as well as grizzly bear core areas. Although Alternative D Modified and Alternative E Updated would benefit mountain goats, Alternative D Modified would improve security and reduce the risk of displacement more than Alternative E Updated.

Cumulative Effects

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those in the decision for this FSEIS, but rather are expected to assure achievement of proposed standards, which result in an improvement over existing conditions. Alternatives that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for mountain goats because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. In addition, these projects include specific mitigation measures designed to eliminate or minimize effect to this species.

The decision for this FSEIS will establish access management direction for NFS lands within grizzly bear habitat that overlaps mountain goat habitat. However, the recovery zones also include State and private lands. Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects (habitat loss and disturbance or displacement) to mountain goats.

Canada has a legal mountain goat hunting season north of the recovery zones (British Columbia Ministry of Environment 2008). Some mountain goat home ranges may overlap the international border. Changes in motorized vehicle access in the United States would not change the mortality risk from legal hunting in Canada, thus cumulatively mortality risk is increased. Hunting for mountain goats and other wildlife species occurs on both sides of the border. Hunter encounters with goats may result in a legal goat death or death from poaching. Reducing motorized vehicle access may slightly reduce this mortality risk factor by making it more difficult for hunters to reach goat use areas.

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) regarding travel management on NFS lands and the Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. Any limitations could potentially result in positive cumulative effects to mountain goats. The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. This policy is complimentary to road management objectives in mountain goat habitat, and may serve as a method for implementing road management decisions rather than cumulatively adding to the effects of those decisions on mountain goats.

Pileated Woodpecker

Pileated woodpeckers (*Dryocopus pileatus*) are relatively common in both cut and uncut mid-elevation forests and appear to do well in a variety of forest types (Hutto 1995). However, since foraging habitat represents a wider ecological range of forest age structure, nesting habitat is considered the most critical and limiting feature for pileated woodpeckers.

Pileated woodpeckers require tall, large diameter (at least 20 inches diameter at breast height) live or dead trees for nesting. Ponderosa pine, western larch, Douglas-fir, cottonwood, and mature western white pine (where available) are used for nesting. Pileated woodpecker nest stands should be a minimum of 50 to 100 contiguous acres of suitable habitat. Heart rot appears to be an important feature of suitable nest trees (Aney and McClelland 1990). Cavities created by pileated woodpeckers for feeding or nesting are important to dozens of other species that use them for cover, roosting and nesting.

This species forages in younger stands and more open stands than it selects for nesting. Shelterwood and clearcut harvest areas are suitable for foraging, but not preferred. Foraging in harvested areas occurs if logs and slash provide carpenter ants, beetles and the other insects. In Montana, carpenter ants make up the bulk of the pileated woodpeckers' diet (Aney and McClelland 1990). Foraging habitat is abundant in the analysis area.

The pileated woodpecker was originally designated as a management indicator species because it was generally regarded as an old growth indicator due to its need for large dead trees (snags) for nesting (Bull et al. 1990). Pileated woodpeckers are no longer considered to be a good indicator of old growth, although the importance of large snags remains a key component of their habitat regardless of the stand age.

Snag habitat on the Forest has been strongly influenced by vegetation succession, fire suppression, firewood cutting and insect and disease, along with natural fire events to a lesser degree. Activities that impact larger diameter trees and late-succession forests are the primary threats to the pileated woodpecker.

Affected Environment

Habitat for pileated woodpeckers (snags, late-succession forests) is available across all three forests, although some site-specific areas may lack features important to this species. Pileated woodpeckers are expected to occur in almost every BMU within the Selkirk and Cabinet-Yaak Recovery Zones. Forest plan provisions (or forest-specific policies) are designed to maintain adequate levels of snag habitat, down woody debris and old-growth habitat.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access and, thereby, a reduction in firewood cutting and snag removal. Alternative D Modified and Alternative E Updated provide differing levels of habitat security based on the relative amount of wheeled motorized vehicle access provided. Habitat security increases as wheeled motorized vehicle access is reduced.

Alternatives that increase core area for grizzly bears, such as Alternative D Modified and Alternative E Updated, could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas. Newly dead trees that support bark beetle populations would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified would provide more secure habitat than Alternative E Updated.

There are potential cumulative effects to pileated woodpeckers. If people cannot harvest firewood on roads due to new road closures, they may remove snags in other stands where wheeled motorized vehicle access is still available. This would likely lead to a loss of suitable nesting habitat for pileated woodpeckers in areas where roads are open to wheeled motorized vehicle use.

Cumulative Effects

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but instead are expected to assure achievement of proposed standards that result in an improvement over existing conditions.

Other Species

Pine Marten

Although marten were not specifically identified as a management indicator species in the IPNFs Forest Plan, the IPNFs has treated them as one in the past. The IPNFs no longer identify marten as a management indicator species, but will continue to analyze the effects of projects on marten as a species that is commonly hunted, fished, or trapped (Madison and Kertis 2011). The pine marten (*Martes americana*) is a solitary carnivore that inhabits mature stands of coniferous forest throughout North America. In the western United States, martens are most abundant in mature to old growth true fir or spruce-fir forests and generally avoid open, dryer coniferous forests (Warren 1990). Pine marten prefer forest stands with greater than 40 percent tree canopy closure that protects them from predators and enhances the moist conditions favorable for prey species (Warren 1990). They require large snags, stumps, and logs for resting sites and natal (birth) dens. Martens eat snowshoe hares and rodents, including voles and squirrels. The size of home ranges is inversely proportionate to food availability (Patton and Escano 1990).

Affected Environment

Pine marten habitat is widely available within the Selkirk and Cabinet-Yaak Recovery Zones on all three Forests and pine marten are known or suspected to occur over much of the analysis area. Forest plan provisions (or forest-specific policies) are designed for maintaining an adequate level of snag habitat, down woody debris and old-growth habitat.

Direct and Indirect Effects

There would be no direct effects from Alternative D Modified or Alternative E Updated. Potential indirect effects would occur from a reduction in wheeled motorized vehicle access. Risk of trapping is normally related to the level of wheeled motorized vehicle access and especially snowmobile access within suitable habitat. Site-specific projects aimed at stabilizing existing barriered roads or reducing access routes may temporarily disturb or displace marten if these sites are located in preferred habitats. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

Alternative D Modified and Alternative E Updated provide differing levels of habitat security based on the relative amount of wheeled motorized vehicle access provided. Although both alternatives would benefit pine martens, Alternative D Modified would improve security more than Alternative E Updated.

Cumulative Effects

Motorized over-the-snow vehicle use is occurring in the recovery zones that overlap pine marten habitat. The pending decision for this FSEIS does not change current management direction regarding this activity. When this use occurs, pine marten may be disturbed in and potentially displaced from, preferred habitats. The IPNFs is in the process of completing the Winter Travel

Plan that covers the Selkirk Mountain Range. Once in place, the Winter Travel Plan would provide direction on motorized over-the-snow vehicle use that would address disturbance and/or temporary displacement to the pine marten population in the Selkirk Recovery Zone.

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the pending decision for this FSEIS, but instead are expected to assure achievement of proposed standards that result in an improvement over existing conditions.

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Any road construction or road reconstruction under either rule would be subject to the requirements in the Access Amendment (see Appendix A starting on page 303). If the Roadless Rule is not in effect in Montana, then more road construction could be done under the 1987 Forest Plans; however any road construction would be subject to the Access Amendment.

Alternatives that increase core area for grizzly bears could contribute to a cumulative increase in habitat security for pine martens because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in core areas.

Migratory Birds

Executive Order #13186 (January 10, 2001): “Responsibilities of Federal Agencies to Protect Migratory Birds” was issued by President Bill Clinton in furtherance of the purposes of the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Acts, the Fish and Wildlife Coordination Act, the Endangered Species Act, and the National Environmental Policy Act. This order requires including effects of Federal actions on migratory birds as part of the environmental analysis process. On December 8, 2008, the Forest Service signed a Memorandum of Understanding with the USFWS to complement the Executive Order (USDA Forest Service 2008h).

The NFMA requires that forest plans "preserve and enhance the diversity of plant and animal communities . . . so that it is at least as great as that which can be expected in the natural forest.” Additional direction states that "management prescriptions, where appropriate and to the extent practicable, shall preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, so that it is at least as great as that which could be expected in a natural forest". Furthermore, implementation regulations for the NFMA specify that, "Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area.”

Affected Environment

Neotropical migratory birds are those bird species that migrate to more northerly latitudes to breed each summer. Come fall, these species migrate south to spend the winter months. Of the approximately 205 bird species known to occur on the Forest as breeders, migrants, winter visitors, or transients, about 70 species could be classified as neotropical migratory land birds.

Direct and Indirect Effects

Response of migrant birds to changes in wheeled motorized vehicle access depends upon their individual habitat preferences and needs. Those species that may be sensitive to disturbance from wheeled motorized vehicles activity would benefit from increased restrictions. Reduced access may indirectly result in reduced regeneration harvest activities that remove forest cover used by some species (e.g., brown creeper, golden-crowned kinglet, hermit thrush). Increased restriction would benefit these species. At the same time harvest activity could create grass, forbs, and shrub habitat used by other bird species (e.g., American kestrel, calliope hummingbird, and chipping sparrow). Increased restriction may not benefit these species. Regeneration harvest also produces "edge" habitat that other bird species use (e.g., dark-eyed junco, western tanager, Townsend's warbler). Edge habitat often is similar to forest stands created with partial cutting (e.g., commercial thinning, shelterwood). Species using edge are often found in partial cut stands, so this management practice may provide additional habitat for these species (Hutto and Young 1999). With reduced access, indirectly these vegetation management actions may be reduced thus indirectly reducing habitat for edge-associated species. Site-specific projects aimed at stabilizing existing barriered roads or reducing access routes may temporarily disturb or displace some species of migratory birds if these sites are located in preferred nesting habitats. However, the effects from this activity would tend to be isolated and of short duration (less than one year).

Cumulative Effects

Major mining activities (i.e., Rock Creek, Montanore, and Troy mines) are active or being planned in the Cabinet-Yaak Recovery Zone. Each of these projects includes a substantial mitigation plan that includes changes in wheeled motorized vehicle access. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but instead are expected to assure achievement of proposed standards that result in an improvement over existing conditions.

Effects Common to All Alternatives

Management indicator species have been designated for the three Forests (see the Affected Environment and Disclosure of Effects - Management Indicator Species section on page 142). Management indicator species selected to represent species that utilize general forest habitat conditions would also represent the habitat needs for migratory birds. By maintaining suitable habitat conditions for general forest management indicator species, it is expected that sufficient habitat for neotropical migratory land birds is also being maintained.

Forest Plan Consistency

Wildlife - Management Indicator Species

Alternative D Modified and Alternative E Updated will not change any of the current programmatic direction to manage for viable populations of wildlife management indicator species. The programmatic changes designed for grizzly bear are expected to provide a higher level of security than existing Forest Plan direction for management indicator species. The level of improved security depends on the site-specific locations of changes in wheeled motorized vehicle access management. Based on the expected improved security, Alternative D Modified and Alternative E Updated are therefore considered consistent with the respective Forest Plans for management indicator species.

Wildlife - Sensitive Species

Alternative D Modified and Alternative E Updated will not change any of the current programmatic direction to manage for viable populations of sensitive wildlife species. The programmatic changes designed for grizzly bear are expected to provide a higher level of security than existing Forest Plan direction for sensitive species. The level of improved security depends on the site-specific locations of changes in wheeled motorized vehicle access management. Based on the expected improved security, Alternative D Modified and Alternative E Updated are therefore considered consistent with the respective Forest Plans for sensitive species.

Wildlife – Threatened and Endangered

Alternative D Modified and Alternative E Updated will amend the respective Forest Plans to incorporate new grizzly bear habitat security standards for OMRD, TMRD, and core area. The new standards provide an overall higher level of habitat security than current Forest Plan direction and are an improvement over current standards. The amendments incorporate the best available science and are consistent with the Forest Plans.

Alternative D Modified and Alternative E Updated will not change any other current programmatic direction related to managing for the recovery of species listed under ESA (lynx or woodland caribou). The programmatic changes designed for grizzly bear are expected to provide a higher level of security than existing Forest Plan direction for these species. The level of improved security depends on the site-specific locations of changes in wheeled motorized vehicle access management. Based on the expected improved security, Alternative D Modified and Alternative E Updated are therefore considered consistent with the respective Forest Plans for threatened and endangered species.

The Forest Plans require that in Management Situation 1 (see Glossary starting on page 271), habitat management decisions favor the needs of grizzly bear when grizzly bear habitat and other land use values compete. The IGBC Guidelines provide that "The FS will manage habitats essential to bear recovery for multiple land use benefits, to the extent these lands uses are compatible with the goal of grizzly recovery. Land uses which cannot be made compatible with the goal of grizzly recovery, and are under Forest Service control will be redirected or discontinued." Alternative D Modified and Alternative E Updated meet this requirement, because both alternatives are compatible with the goal of grizzly bear recovery. Alternative D Modified achieves this by providing the highest security parameters for bears (where possible), as identified in Wakkinen and Kasworm (Wakkinen and Kasworm 1997). Alternative E Updated achieves this by integrating the unique features of the biological and social environment. Alternative E Updated may have a higher chance of success because it incorporates a management system that integrates biological, social, valuational, and institutional forces toward a common effort involving grizzly bear conservation.

Transportation

Introduction

The Forest Transportation System is comprised of the National Forest System roads (NFSR), National Forest System trails (NFST), and airfields on National Forest System (NFS) lands (36 CFR 212.1). These roads and trails are also referred to as travel routes.

For the purpose of this document, travel routes and the level of wheeled motorized vehicle access on these travel routes, are defined by the Interagency Grizzly Bear Committee (IGBC) Task Force Report titled *Grizzly Bear/Motorized Access Management* (IGBC 1998b) and the *Interim Access Management Rule Set* approved by the Selkirk/Cabinet-Yaak Subcommittee (IGBC 1998a). Following are IGBC definitions for roads and trails, which are also found in the Glossary:

- Road - all created or evolved routes that are greater than 500 feet long, which are reasonably and prudently drivable with a conventional passenger car or pickup.
- Trail - all created or evolved access routes that do not qualify as a "road." They are not reasonably and prudently drivable with a conventional passenger car or pickup.

The IGBC further distinguishes these roads and trails regarding the level of wheeled motorized vehicle use that these travel routes may receive. Each inventoried road and trail is assessed and assigned the appropriate IGBC code. Table 37 displays these IGBC codes and their definition.

Table 37. IGBC codes* for travel routes based on level of motorized use

IGBC Code[1]	Definition
1	**Impassable Roads:** roads not reasonable or prudently passable by conventional 4-wheeled passenger vehicles, all-terrain vehicles or motorcycles. These roads include roads that have grown in and are no longer passable.
2	**Restricted Roads:** a road on which motorized vehicle use is restricted seasonally or yearlong. The road requires effective physical obstruction (generally gated). Administrative motorized use may occur on these roads.
3	**Reclaimed/Obliterated and Barriered Roads:** a road that is managed with the long-term intent for no motorized use, and has been treated in such a manner to no longer function as a road. An effective means to accomplish this is through one or a combination of several means, including recontouring to original slope, placement of logging, or forest debris, planting shrubs or trees, obliterating/putting barriers at the entrance, etc. No administrative use may occur on these roads.
4	**Open Roads:** a road without restriction on motorized vehicle use.
5	**Open Motorized Trails:** a trail that receives motorized use. Trails used by 4-wheelers, 4-wheel drive vehicles, and motorized trail bikes are examples of this type of access route.
6	**Open Nonmotorized Trails:** trails that are not reasonable or prudently passable by motorcycles or all-terrain vehicles and are not legally restricted.
7	**Restricted Trails:** a trail on which motorized use is restricted during the active bear year. Motorized use is effectively/physically restricted.
8	**Nonmotorized High Intensity Trails:** averages greater than 20 parties per week of nonmotorized use; this number is from the Unified Cumulative Effects Model document (April, 1990)

* Source: Interim Access Management Rule Set (IGBC 1998a; approved 12/1/98 by Selkirk/Cabinet-Yaak Subcommittee)

1. For clarity in tables and text, IGBC 2 will be referred to as a “gated” road, IGBC 3 will be referred to as a “barriered” road, and IGBC 7 will be referred to as a “nonmotorized” trail.

Wheeled motorized vehicle access status for roads and trails are quantified for each BMU within the Selkirk and Cabinet-Yaak Recovery Zones. Wheeled motorized vehicle access status refers to which IGBC category a particular route fits into. IGBC categories are determined by both the time when wheeled motorized vehicle use is occurring and the method used for controlling wheeled motorized vehicle use (i.e., gated, barriered, impassable).

Changes between the DSEIS and FSEIS

The transportation system's existing condition of miles of road and trail was updated from 2006 to 2009 data.

Regulatory Framework

Forest and Rangeland Renewable Resources Planning Act of 1974 (as amended by the National Forest Management Act of 1976)

Sec. 10. [16 U.S.C. 1608] Transportation System - (a) The Congress declares that the installation of a proper system or transportation to service the National Forest System, as is provided for in Public Law 88–657, the Act of October 13, 1964 (16 U.S.C. 532–538), shall be carried forward in time to meet anticipated needs on an economical and environmentally sound basis, and the method chosen for financing the construction and maintenance of the transportation system should be such as to enhance local, regional, and national benefits, except that the financing of forest development roads as authorized by clause (2) of section 4 of the Act of October 13, 1964, shall be deemed ''budget authority'' and ''budget outlays'' as those are defined in section 3(a) of the Congressional Budget and Impoundment Control Act of 1974 and shall be effective for any fiscal year only in the manner required for new spending authority as specified by section 401(a) of that Act. (b) Unless the necessity for a permanent road is set forth in the forest development road system plan, any road constructed on land of the National Forest System in connection with a timber contract or other permit or lease shall be designed with the goal of reestablishing vegetative cover on the roadway and areas where the vegetative cover has been disturbed by the construction of the road, within ten years after the termination of the contract, permit, or lease either through artificial or natural means. Such action shall be taken unless it is later determined that the road is needed for use as a part of the National Forest Transportation System. (c) Roads constructed on NFS lands shall be designed to standards appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources.

The Forest Plans for the KNF (USDA Forest Service 1987c), LNF (USDA Forest Service 1986), and IPNFs (USDA Forest Service 1987b) provide direction regarding the development and management of the Forest transportation system.

Kootenai National Forest Intermittent Stored Service/Decommissioning Policy (USDA Forest Service 2005a)

"Over time, the KNF has modified its transportation system by treating roads and described those treatments as storage, decommissioning, obliterating, recontouring, restoration, etc. using these terms interchangeably with no consistency. In an effort to improve efficiency and communication, I instructed an interdisciplinary group to research existing FSM direction and definitions regarding Travel System Management and summarize that information, in a clear and concise manner, to provide guidance when discussing roads on the KNF. That group has completed their review and the resulting summary is attached as the 'KNF Intermittent Stored Service/Decommissioning Policy'. My expectation is that District and Forest Interdisciplinary

Teams will implement this direction and use the appropriate language when developing projects" (8/15/05 Forest Supervisor letter of direction in the project record).

2005 Travel Management Rule (USDA Forest Service 2005b)

In December of 2005, the Forest Service revised regulations at 36 CFR 212, 251, 261, and 295. Regulations at 36 CFR part 212 governing administration of the forest transportation system and regulations at 36 CFR part 295 governing the use of motor vehicles off NFS roads are combined and clarified as part 212 Travel Management (Ref. 36 CFR 212).

Affected Environment

The transportation system is in a constant state of change. Forest plans and associated EIS' describe the forestwide transportation systems in 1986 and 1987; however, since then many changes have occurred. Field validation and corrections to data, as well as implementation of site-specific decisions have been ongoing since the approval of the Forest Plans and the 2002 FEIS. Table 3-19 in the 2002 FEIS used the best available information (See 2002 FEIS pages 3-56 and as updated on page 82 in the 2004 Record of Decision) to show the existing conditions for wheeled motorized vehicle access status (based on IGBC codes) for roads and trails. The Forest Service does not have the latitude to make changes on all routes within a BMU. For example, the Forest Service may have jurisdiction on a particular road or trail but may not have the opportunity to change the wheeled motorized vehicle access status if the road or trail provides access to private property. State highways, roads on State lands, county roads, private roads, and roads with written agreements or roads that fall under ANILCA[38] are not always available to contribute to security for the grizzly bear. Therefore, not every road in every BMU can be considered for changes in wheeled motorized vehicle access status. Changes in the levels of wheeled motorized vehicle access status, for the most part, are limited to the roads and trails under Forest Service jurisdiction while considering other obligations (i.e., written agreements) and resource values.

Table 38 displays the miles of road within each BMU under all jurisdictions and under Forest Service jurisdiction. Because of the variability in land ownership and other influencing factors (e.g., county roads) there are some BMUs which show a high percentage of roads that are under Forest Service jurisdiction (e.g., BMU 5 St. Paul) and others where Forest Service jurisdiction is limited (e.g., BMU 22 Mt. Headley).

Table 39 on page 162 displays a comparison of wheeled motorized vehicle access status between 2002 and 2009. Numbers in this table are displayed for all jurisdictions and displays changes in wheeled motorized vehicle access status that have occurred in individual BMUs and cumulatively across the recovery zones since 2002. The 2009 condition is based on the latest information available.

The potential effects of Alternative D Modified and Alternative E Updated on wheeled motorized vehicle access status are determined by comparing the estimated changes in wheeled motorized vehicle access status with 2009 conditions. The numbers in this table are the cumulative linear miles of road and trail in the recovery zone BMUs by IGBC Code (see Table 37 on page 156 for IGBC code definitions).

[38] ANILCA: Alaska National Interest Lands Conservation Act (PL 96-487) Sec. 1323 provides statutory authority for access to non-federal lands located within the boundaries of federal land administered by the USDI Bureau of Land Management (BLM) and the USDA Forest Service (FS).

Table 38. Existing miles of road per BMU, road status, and jurisdiction

BMU	Forest	Impassable Roads (IGBC 1) All Jurisdictions 2009	Impassable Roads (IGBC 1) USFS Jurisdiction 2009	Gated Roads (IGBC 2) All Jurisdiction 2009	Gated Roads (IGBC 2) USFS Jurisdiction 2009	Barriered Roads (IGBC 3) All Jurisdictions 2009	Barriered Roads (IGBC 3) USFS Jurisdiction 2009	Open Roads (IGBC 4) All Jurisdictions 2009	Open Roads (IGBC 4) USFS Jurisdiction 2009
Cabinet-Yaak Recovery Zone (CYRZ)									
1 – Cedar	KNF	7	7	12	12	19	19	23	15
2 – Snowshoe	KNF	2	2	15	7	10	10	51	34
3 – Spar	KNF	117	113	59	50	65	60	80	65
4 – Bull	KNF	56	52	26	20	39	31	142	43
5 – St. Paul	KNF	45	43	42	40	30	29	81	72
6 – Wanless	KNF	30	21	87	44	24	23	92	52
7 – Silver Butte	KNF	14	14	31	10	3	3	72	32
8 – Vermillion	KNF	106	106	61	46	9	7	81	43
9 – Callahan	KNF	71	69	98	37	89	69	76	63
10 – Pulpit	KNF	88	88	58	47	102	91	146	110
11 – Roderick	KNF	84	84	68	67	51	51	84	65
12 – Newton	KNF	50	50	16	16	80	70	94	40
13 – Keno	KNF/IPNF	23	23	22	22	38	38	70	62
14 – NW Peak	KNF/IPNF	129	129	81	81	42	42	78	73
15 – Garver	KNF	44	44	39	39	143	143	71	43
16 – East Fork Yaak	KNF	79	77	76	76	212	212	112	83
17 – Big Creek	KNF	39	39	44	44	78	78	77	74
18 – Boulder	IPNF	27	26	61	61	11	11	81	67
19 – Grouse	IPNF	32	27	43	42	28	16	220	44
20 – North Lightning	IPNF	43	42	12	12	34	33	76	58
21 – Scotchman	IPNF	8	6	11	11	6	5	111	25
22 – Mt. Headley	LNF	570	563	231	154	8	1	460	161
CYRZ Subtotal		**1,664**	**1,625**	**1,193**	**938**	**1,121**	**1,042**	**2,378**	**1,324**

Table 38. Existing miles of road per BMU, road status, and jurisdiction

BMU	Forest	Impassable Roads (IGBC 1) All Jurisdictions 2009	Impassable Roads (IGBC 1) USFS Jurisdiction 2009	Gated Roads (IGBC 2) All Jurisdiction 2009	Gated Roads (IGBC 2) USFS Jurisdiction 2009	Barriered Roads (IGBC 3) All Jurisdictions 2009	Barriered Roads (IGBC 3) USFS Jurisdiction 2009	Open Roads (IGBC 4) All Jurisdictions 2009	Open Roads (IGBC 4) USFS Jurisdiction 2009
Selkirk Recovery Zone (SRZ)									
Blue-Grass	IPNF	77	73	73	72	14	13	42	38
Long-Smith	IPNF	47	38	22	15	11	10	51	47
Kalispell-Granite	IPNF	272	257	88	69	7	6	88	85
Lakeshore	IPNF	34	32	9	9	9	8	61	44
Salmo-Priest	IPNF/CNF	58	58	45	45	0	0	101	98
Sullivan-Hughes	IPNF/CNF	144	144	50	49	5	5	68	67
Myrtle	IPNF	94	59	32	22	4	2	66	43
Ball-Trout	IPNF	39	39	27	27	2	2	27	26
SRZ Subtotal		**765**	**700**	**346**	**308**	**52**	**46**	**504**	**448**
Both Recovery Zones Combined Total		**2,429**	**2,325**	**1,539**	**1,246**	**1,173**	**1,088**	**2,882**	**1,772**

Data source: IPNF/KNF/Lolo - Infra / travel routes / linear events / as of 12/31/09, 02/04/2010, and 12/31/09.

In Table 39 on page 162, the level of wheeled motorized vehicle access status is displayed in several ways. For each BMU, the number of miles of road/trail in each of the eight IGBC categories is shown. In addition, each BMU displays the cumulative miles of Open Motorized Routes (IGBC 4 + IGBC 5) and the cumulative miles of Total Motorized Routes (IGBC 2 + IGBC 4 + IGBC 5).

The miles displayed in the column titled Open Motorized Routes (IGBC 4 + IGBC 5) are roads and trails that are legally open yearlong or open seasonally and available for public and administrative use. This column includes routes that may have yearlong legal prohibitions (written legal order prohibiting use) but have been assessed as having received wheeled motorized vehicle use in excess of established use levels (e.g., exceeded administrative use levels). These roads and trails are used for the spatial analysis in determining OMRD.

The miles displayed in the column titled Total Motorized Routes (IGBC 2 + IGBC 4 + IGBC 5) include roads and trails in the Open Motorized Routes column (IGBC 4 + IGBC 5) with the addition of gated roads (IGBC 2). These gated roads have a yearlong prohibition in effect and are not available for the public to use. However, these roads are available for administrative use in the active bear year (See the Wildlife section on page 44 for a discussion of administrative use.). These roads and trails are used for the spatial analysis in determining TMRD and core area.

In the Cabinet-Yaak Recovery Zone, the changes in Open Motorized Routes from 2002 to 2009 have resulted in an decrease of 38 miles (2,475 – 2,437 = 38), which is an decrease of approximately two percent. The changes in Total Motorized Routes have resulted in a decrease of 234 miles (3,864 – 3,630 = 234), which is a decrease of approximately 6 percent.

In the Selkirk Recovery Zone, the changes in Open Motorized Routes from 2002 to 2009 have resulted in a decrease of 29 miles (533 - 504 = 29), which is a decrease of approximately five percent. The changes in Total Motorized Routes have resulted in a decrease of 16 miles (from 866 to 850 = 16), which is a decrease of approximately 2 percent.

Across the Selkirk and Cabinet-Yaak Recovery Zones, the trend has been a net decrease in number of miles of Open Motorized Routes and a decrease in the miles of Total Motorized Routes. In 2009, there were 67 less miles of Open Motorized Routes (3,008 – 2,941 = 67) and 250 fewer miles of Total Motorized Routes (4,730 – 4,480 = 250) than in 2002. More information concerning changes to existing conditions can be found in the project record – 2009 BMU compliance reports. Also, see the Wildlife section starting on page 44.

Table 39. Comparison of existing conditions for miles of road and trail by IGBC Code by BMU 2002 to 2009 (all jurisdictions)

BMU	Natl. Forest	Impassable Roads (IGBC 1)		Gated Roads (IGBC 2)		Barriered Roads (IGBC 3)		Open Roads (IGBC 4)		Open Motorized Trails (IGBC 5)		Open Non-motorized Trails (IGBC 6)		Non-motorized Trails (IGBC 7)		Non-motorized High Intensity Trails (IGBC 8)		Open Motorized Routes (IGBC 4 + 5)		Total Motorized Routes (IGBC 2 + 4 + 5)		Amount of change to IGBC 4 + IGBC 5	Amount of change to IGBC 2 + IGBC 4 + IGBC 5
		2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009		
Cabinet-Yaak Recovery Zone																							
1 – Cedar	KNF	6	7	13	12	16	19	23	23	1	0	0	12	0	59	0	0	24	23	37	35	-1	-2
2 – Snowshoe	KNF	4	2	19	15	17	10	40	51	0	0	0	3	19	20	0	2	40	51	59	66	11	7
3 – Spar	KNF	131	117	93	59	25	65	71	80	2	0	12	25	8	0	0	1	73	80	166	139	7	-27
4 – Bull	KNF	89	56	19	26	23	39	126	142	5	11	10	2	31	35	0	0	131	153	150	179	22	29
5 – St. Paul	KNF	54	45	43	42	32	30	71	81	0	1	4	13	28	41	0	0	71	82	114	124	11	10
6 – Wanless	KNF	56	30	64	87	17	24	95	92	0	0	0	0	69	101	0	4	95	92	159	179	-3	20
7 – Silver Butte	KNF	13	14	44	31	2	3	53	72	0	0	46	15	22	69	0	0	53	72	97	103	19	6
8 – Vermillion	KNF	83	106	47	61	12	9	72	81	6	7	17	14	22	32	0	0	78	88	125	149	10	24
9 – Callahan	KNF	99	71	62	98	66	89	121	76	0	0	30	26	0	0	0	0	121	76	183	174	-45	-9
10 – Pulpit	KNF	134	88	85	58	79	102	147	146	0	0	47	52	22	23	0	0.1	147	146	232	204	-1	-28
11 – Roderick	KNF	48	84	64	68	59	51	83	84	0	0	26	37	3	6	0	0	83	84	147	152	1	5
12 – Newton	KNF	56	50	8	16	58	80	110	94	0	0	30	35	0	0	0	0	110	94	118	110	-16	-8
13 – Keno	KNF/ IPNF	116	23	25	22	26	38	68	70	0	6	24	29	0	0	0	0	68	76	93	98	8	5
14 – Northwest Peak	KNF/ IPNF	153	129	87	81	23	42	78	78	0	3	32	40	0	0	0	0	78	81	165	162	3	-3
15 – Garver	KNF	50	44	59	39	104	143	75	71	0	0	18	24	0	0	0	0	75	71	134	110	-4	-24
16 – East Fork Yaak	KNF	76	79	135	76	149	212	109	112	0	0	61	58	0	23	0	0	109	112	244	188	3	-56
17 – Big Creek	KNF	69	39	84	44	71	78	83	77	0	0	18	4	47	86	0	0	83	77	167	121	-6	-46
18 – Boulder	IPNF	30	27	60	61	17	11	76	81	0	0	60	54	0	0	0	0	76	81	136	142	5	6
19 – Grouse	IPNF	26	32	54	43	24	28	211	220	0	0	42	33	0	0	0	0	211	220	265	263	9	-2
20 – North Lightning	IPNF	58	43	15	12	30	34	78	76	6	9	55	48	0	0	0	0	84	85	99	97	1	-2
21 – Scotchman	IPNF	9	8	13	11	3	6	108	111	0	0	43	41	0	0	0	0	108	111	121	122	3	1
22 – Mt. Headley*	LNF	0*	570	296*	231	0*	8	557*	460	0	22	0	0	0	94	0	0	557	482	853	713	-75	-140

Table 39. Comparison of existing conditions for miles of road and trail by IGBC Code by BMU 2002 to 2009 (all jurisdictions)

BMU	Natl. Forest	Impassable Roads (IGBC 1)		Gated Roads (IGBC 2)		Barriered Roads (IGBC 3)		Open Roads (IGBC 4)		Open Motorized Trails (IGBC 5)		Open Non-motorized Trails (IGBC 6)		Non-motorized Trails (IGBC 7)		Non-motorized High Intensity Trails (IGBC 8)		Open Motorized Routes (IGBC 4 + 5)		Total Motorized Routes (IGBC 2 + 4 + 5)		Amount of change to IGBC 4 + IGBC 5	Amount of change to IGBC 2 + IGBC 4 + IGBC 5
		2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009	2002	2009		
Cabinet -Yaak Subtotal		**1,360**	**1,664**	**1,389**	**1,193**	**853**	**1,121**	**2,455**	**2,378**	**20**	**59**	**575**	**565**	**271**	**589**	**0**	**7**	**2,475**	**2,437**	**3,864**	**3,630**	**-38**	**-234**
Selkirk Recovery Zone																							
Blue-Grass	IPNF	124	77	65	73	21	14	61	42	0	0	25	1	9	8	0	0	61	42	126	115	-19	-11
Long-Smith	IPNF	52	47	17	22	10	11	54	51	0	0	54	54	0	0	0	0	54	51	71	73	-3	2
Kalispell-Granite	IPNF	236	272	113	88	34	7	77	88	0	0	5	1	54	61	0	1	77	88	190	176	11	-14
Lakeshore*	IPNF	49	34	1	9	14	9	50	61	0	0	0	0	1	1	0	8	50	61	51	70	11	19
Salmo-Priest*	IPNF/ CNF	45	58	43	45	0	0	112	101	0	0	12	54	57	9	0	0	112	101	155	146	-11	-9
Sullivan-Hughes*	IPNF/ CNF	144	144	45	50	17	5	69	68	0	0	43	47	0	31	0	4	69	68	114	118	-1	4
Myrtle	IPNF	119	94	21	32	4	4	75	66	3	0	36	28	0	14	0	0	78	66	99	98	-12	-1
Ball-Trout	IPNF	39	39	28	27	1	2	32	27	0	0	33	33	0	0	0	0	32	27	60	54	-5	-6
Selkirk Subtotal		**808**	**765**	**333**	**346**	**101**	**52**	**530**	**504**	**3**	**0**	**208**	**218**	**121**	**124**	**0**	**13**	**533**	**504**	**866**	**850**	**-29**	**-16**
Cabinet-Yaak and Selkirk Total		**2,168**	**2,429**	**1,722**	**1,539**	**954**	**1,173**	**2,985**	**2,882**	**23**	**59**	**783**	**783**	**392**	**713**	**0**	**20**	**3,008**	**2,941**	**4,730**	**4,480**	**-67**	**-250**

Data source: IPNF/KNF/Lolo - Infra / travel routes / linear events / as of 12/31/09, 02/04/2010, and 12/31/09. All measures are in miles

*In 2002, Lolo NF road data was not available by IGBC classification and was therefore, displayed only in restricted and open categories. The miles of impassable and barriered roads were included in the restricted road miles displayed for BMU 22.

* Changes between the 2002 FEIS and this document reflect corrections of errors in the roads database (INFRA), on the ground validation of road status and project implementation of access changes required through consultations on site-specific actions.

Analysis Methods

The effects analysis for the Transportation section has been completed in a quantitative manner where Alternative D Modified and Alternative E Updated have been compared to 2009 conditions. Seven potential changes in the level of wheeled motorized vehicle access status have been compared and include:

1. The estimated miles of road that might change from IGBC 4 (open) to IGBC 2 (gated);
2. The estimated miles of road that might change from IGBC 4 (open) to IGBC 3 (barriered);
3. The estimated miles of road that might change from IGBC 2 (gated) to IGBC 3 (barriered);
4. The estimated miles of road that might change from IGBC 2 (gated) to IGBC 4 (open);
5. The estimated miles of road that might change from IGBC 3 (barriered) to IGBC 4 (open);
6. The estimated miles of road that might change from IGBC 3 (barriered) to IGBC 2 (gated); and
7. The estimated miles of trail that might change from IGBC 5 (motorized) to IGBC 7 (nonmotorized).

Implementation of this programmatic decision would be accomplished through project level decisions; it is not possible to predict the actual effect of each alternative. A series of computer simulations are run in order to determine an approximation of what changes in wheeled motorized vehicle access status may be necessary to meet the standards for OMRD, TMRD, and core area.

The dataset used for these simulations are the routes that the Forest Service may consider for making changes in wheeled motorized vehicle access status. As discussed above, not every road or trail within every BMU can be considered for changes in wheeled motorized vehicle access status.

A Moving Windows computer application is used for OMRD and TMRD simulations. Core area simulations are performed using a GIS buffering routine. Each simulation produces a different numerical result in the number of miles of change in wheeled motorized vehicle access status it may take to move towards the standards for OMRD, TMRD, and core area. The degree of change in OMRD, TMRD, and core area varies from BMU to BMU. It is relative to the degree of change in wheeled motorized vehicle access status and the variability of spatial relationships resulting from those changes. For example, the buffering of a switchback road can have a different result in core area compared to buffering an equal length of road that traverses in a continuous manner across a hillside. As a result of the simulations, resource specialists concluded that it takes approximately two to six miles of change in wheeled motorized vehicle access status to achieve a one percent change in OMRD, TMRD, or core area.

Due to limitations in the ability of the Forest Service to make changes in wheeled motorized vehicle access status (because of lack of jurisdiction or where the Forest Service must meet other obligations), there are some BMUs where it is not possible to attain the identified standards for OMRD, TMRD, and core area. In those BMUs, the method of using two to six miles of change in wheeled motorized vehicle access status for each one percent change in OMRD, TMRD, or core area is not applicable. For these BMUs, the opportunity is limited to the routes where the Forest

Service has the ability to change the wheeled motorized vehicle access status. Therefore, these BMUs show a single number that represents the mileages where wheeled motorized vehicle access status could change rather than a range as displayed in other BMUs.

Using two to six miles of change in wheeled motorized vehicle access for each one percent change in OMRD, TMRD, or core area, it is possible to estimate the range of the total amount of change in wheeled motorized vehicle access status it may take to attain standards.

Direct, Indirect, and Cumulative Effects

Effects Common to All Alternatives

Effects disclosed in this section are specific to the transportation system. Whether or not roads and trails would be opened is dependent on project level analysis that considers all resources. See the Wildlife section starting on page 44 for a discussion of progress towards attainment of habitat standards (e.g., improvements in core area).

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on the transportation system. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

The indirect effects are the potential impacts of project level management actions that move the BMUs towards the standards for OMRD, TMRD, and core area. Effects to OMRD, TMRD, and core area vary, depending on what kind of change is being made in wheeled motorized vehicle access status:

- When an IGBC 4 (open) road is changed to IGBC 2 (gated), it only affects OMRD (OMRD is reduced). It does not result in any change to TMRD or core area. However, when an IGBC 4 (open) road is changed to IGBC 3 (barriered), it has an effect on OMRD (OMRD is reduced), TMRD (TMRD is reduced), and core area (core area is increased).
- When an IGBC 2 (gated) road is changed to IGBC 3 (barriered) it has an effect on TMRD (TMRD is reduced) and core area (core area is increased). It does not affect OMRD.
- Conversely, when an IGBC 3 (barriered) road is changed to IGBC 2 (gated,) it affects TMRD (TMRD is increased) and core area (core area is reduced). When an IGBC 3 (barriered) road is changed to IGBC 4 (open) it affects OMRD (OMRD is increased), TMRD (TMRD is increased), and core area (core area is reduced).
- When an IGBC 2 (gated) road is changed to IGBC 4 (open), it does not affect TMRD or core area but it does have an effect on OMRD (OMRD is increased).
- When an IGBC 5 (motorized) trail is changed to IGBC 7 (nonmotorized) trail, it affects OMRD (OMRD is reduced), TMRD (TMRD is reduced), and core area (core area is increased).

Cumulative Effects

Access management actions over the past 15 to 20 years (see Affected Environment starting on page 158) have resulted in a reduction in the number of miles of road that are available for wheeled motorized vehicles access (2007 KNF monitoring and Evaluation Report, p.70-71, USDA Forest Service 2007d).

Some management actions (specific to wheeled motorized vehicle access) approved in current NEPA decisions, have not yet taken place. When these site-specific management actions are taken, they would have a cumulative effect on the transportation system in that the miles of road that are available for wheeled motorized vehicle access may change. In the short-term, some roads would become available for wheeled motorized vehicle access due to project needs. This would usually occur on a temporary basis, as the roads are often only needed for a short period of time in order to complete other resource management activities. Additionally, other roads would not be available for wheeled motorized access since they are managed to compensate for those roads that are opened. In the long-term, the total miles of road available for wheeled motorized vehicle access would be reduced as restrictions are implemented to meet OMRD, TMRD, and core area standards.

Several management decisions have been made or are being developed that resulted in (or may result in) wheeled motorized vehicle access changes, including the following:

- The 2001 OHV Record of Decision and Plan Amendment for Montana, North Dakota, and portions of South Dakota (USDA Forest Service 2001a) contributes to the cumulative effects to the transportation system. Within the Selkirk and Cabinet-Yaak Recovery Zones, this action only affects lands managed by the KNF. It does not affect lands in Idaho or on the LNF (USDA Forest Service 2001a). The 2001 Off-Highway Vehicle FEIS and Record of Decision amended the Kootenai Forest Plan and established a new standard that restricts yearlong, wheeled motorized cross-country travel, where it is not already restricted. This decision has no effect on current wheeled motorized vehicle use on roads and trails where such use is already authorized. Wheeled motorized access was reduced by this decision through the prohibition of wheeled motorized cross-country travel.
- The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Neither Roadless Rule affects current wheeled motorized vehicle use on roads and trails where such use is already authorized, but they may cumulatively constrain the ability to expand wheeled motorized vehicle access.
- The 2001 Roads Management Policy (USDA Forest Service 2001c), incorporated in 36 CFR 212, provides the Forest Service direction about its transportation system and gives managers an analysis process to inform their decision-making. It directs the Agency to maintain a safe, environmentally sound road network that is responsive to public needs and affordable to manage. In addition, it calls for a determination of a minimum transportation system needed for public and agency access. Implementing this policy may have a cumulative effect on the transportation system in the recovery zones through the identification of unneeded roads. Two options may be considered when a road is identified as unneeded: 1) it can be decommissioned, or 2) converted to another use (usually a trail). Either of the options results in fewer miles of road available for wheeled motorized vehicle access.

- The 2005 Travel Management Rule (USDA Forest Service 2005b) governs motor vehicle use on national forests and grasslands. Under the final rule, each national forest or ranger district will designate those roads, trails, and areas open to motor vehicle use by class of vehicle and, if appropriate, by time of year. As designation is completed on a national forest or ranger district, motor vehicle use off the designated system will be prohibited. Designated routes and areas will be identified on a motor vehicle use map. Motor vehicle use outside of designated routes and areas will be provided for fire, military, emergency, and law enforcement purposes, and for use under Forest Service permit. Valid existing rights are honored. The rule also maintains the status quo for snowmobile use, as determined in individual forest plans. The 2005 Travel Management Rule will:
    - Likely have minimal impacts to the transportation systems because it does not affect permits or valid existing rights;
    - Likely lead to fewer roads in the future;
    - Likely affect the amount and type of roads available for wheeled motorized vehicle use.

  Travel management decisions are made under separate travel planning processes and are ongoing. Cumulatively, this may contribute to a reduction in the miles of road available for wheeled motorized vehicle use in the Selkirk and Cabinet-Yaak Recovery Zones.
- Changes in land ownership (from commercial to private) may continue to result in new road construction on private ownerships as people build new homes and other improvements. It is uncertain as to how much or when new roads may be constructed on these lands, but if roads are constructed within a BMU, they are categorized as IGBC 4 (open) roads and would influence the calculations for OMRD and TMRD. It is not possible to estimate how much or where this might occur but in order to meet standards for OMRD, TMRD, and core area, it may become necessary for additional NFS travel routes to be considered for compensating for these new roads and result in a reduction in the miles of road available for wheeled motorized vehicle access status.

A likely cumulative effect of past, present, and reasonably foreseeable future actions is that the maintenance needs of roads in the transportation system will decrease. As road access status changes, the operational maintenance levels are likely to go from higher maintenance levels to lower maintenance levels. The ability and the need to perform periodic recurrent maintenance and deferred maintenance will change depending on whether a road is barriered or gated. Gated roads will offer limited ability to perform regular work dependent on staying within the terms of Design Element 1.E. In accordance with meeting the terms as described in Design Elements I.B.1 and I.B.2, it can be expected that roads that have access status changed so as to contribute to core area (i.e., barriered) will be treated such that access for maintenance is not anticipated for at least 10 years. Access for emergency work in newly created core areas would be allowed under the terms of Design Element I.B.1 (see pages 19 and 26 in Chapter 2 for lists of design elements).

Effects of Alternatives

Alternative D Modified

Direct and Indirect Effects

The indirect effect of attaining the standards for OMRD, TMRD, and core area is a change in the amount of roads and trails that would be available for wheeled motorized vehicle use. In the analysis for Alternative D Modified, any estimated changes to wheeled motorized vehicle access status are modeled such that the standards for OMRD, TMRD, and core area are achieved while retaining the greatest degree of public and administrative access. Table 40 on page 169 summarizes the estimated miles of roads and trails (under Forest Service jurisdiction) that would need changes made to the wheeled motorized vehicle access status in each of the BMUs.

Each BMU is assessed for its unique situation. Based on the 2009 status for OMRD, TMRD, and core area, there are 27 BMUs that do not currently meet one or more of the standards as proposed in Alternative D Modified (see Table 5 on page 24). Management actions would be needed in these BMUs to change the current wheeled motorized vehicle access status in order to meet the proposed standards. For example: The existing conditions for BMU 2-Snowshoe in 2009 are OMRD equals 20 percent, TMRD equals 16 percent, and core area equals 76 percent. Since existing OMRD equals 20 percent and the standard is an OMRD of less than or equal to 17 percent, it would take a three percent reduction in OMRD to achieve the standard. Likewise for TMRD, since existing TMRD equals 16 percent and the proposed standard is a TMRD of less than or equal to 14 percent, it would take a 2 percent reduction in TMRD to achieve the proposed standard. The existing condition for core area is that it is currently at 76 percent and would not need any adjustment as it already exceeds the standard of greater than or equal to 72 percent by four percent.

Based on the methodology described above, 4 to 12 miles of IGBC 2 (gated) road would be changed to IGBC 3 (barriered), which would result in reducing TMRD from 16 percent to the 14 percent standard.

In this same example, both TMRD and core area standards are met or exceeded but OMRD does not meet the standard. Using the methodology described above, it would require that 6-18 miles of IGBC 4 (open) road be changed to IGBC 2 (gated). There would be no need to change any IGBC 4 (open) roads to IGBC 3 (barriered) since TMRD and core area standards would already have been met.

The two to six miles of change in wheeled motorized vehicle access status for each one percent change in OMRD, TMRD, or core area is applied to all BMUs (that have the potential to attain the Wakkinen and Kasworm identified standards for OMRD, TMRD, and core area). Any potential changes to wheeled motorized vehicle access status are done such that the standards are attained while retaining the greatest degree of public and administrative access.

In Alternative D Modified, once all BMUs administered by the Kootenai, Lolo and Idaho Panhandle National Forests in the respective ecosystems meet standard (full implementation), those BMUs with conditions that are better than the standard may be able to accommodate some reductions in core area by roads.

Table 40. Alternative D Modified – Estimated change in wheeled motorized vehicle access status for roads and trails

BMU	OMRD 2009 Status (%)	OMRD Proposed Standard (%)	TMRD 2009 Status (%)	TMRD Proposed Standard (%)	CORE 2009 Status (%)	CORE Proposed Standard (%)	Roads open to gated (mi.)	Roads open to barriered (mi.)	Roads gated to barriered (mi.)	Roads gated to open (mi.)	Roads barriered to open (mi.)	Roads barriered to gated (mi.)	Trails motorized to non-motorized (mi.)
1 – Cedar (% Change)	14	17 **3**	10	14 **4**	83	72 **11**	0	0	0	6-12	0-6	8-13	0
2 – Snowshoe (% Change)	20	17 **-3**	16	14 **-2**	76	72 **4**	6-13	0-5	4-7	0	0	0	0
3 – Spar (% Change)	27	17 **-10**	26	14 **-12**	62	72 **-10**	16-38	4-22	20-50	0	0	0	0
4 – Bull (% Change)	37	31 **-6**	29	19 **-10**	62	70 **-8**	2	22	20	0	0	0	11
5 – St. Paul (% Change)	28	17 **-11**	23	14 **-9**	58	72 **-14**	22	0-44	28-40	0	0	0	0
6 – Wanless (% Change)	29	22 **-7**	34	23 **-11**	53	65 **-12**	6	12	27	0	0	0	0
7 – Silver Butte (% Change)	32	18 **-14**	23	19 **-4**	62	71 **-9**	12	5	3	0	0	0	0
8 – Vermillion (% Change)	33	18 **-15**	24	21 **-3**	55	72 **-7**	0	32	45	0	0	0	7
9 – Callahan (% Change)	27	22 **-5**	26	18 **-8**	59	72 **-13**	0	44	18	0	0	0	0
10 – Pulpit (% Change)	44	17 **-27**	29	14 **-15**	51	72 **-21**	42-31	12-79	30-47	0	0	0	0
11 – Roderick (% Change)	28	17 **-11**	28	14 **-14**	54	72 **-18**	14-25	8-41	28-67	0	0	0	0
12 – Newton (% Change)	42	35 **-7**	29	23 **-6**	58	66 **-8**	0	25	10	0	0	0	0
13 – Keno (% Change)	34	17 **-17**	25	14 **-11**	59	72 **-13**	30-6	4-56	22	0	0	0	2
14 – NW Peak (% Change)	28	17 **-11**	26	14 **-12**	56	72 **-16**	22-51	0-15	32-81	0	0	0	0
15 – Garver (% Change)	29	17 **-12**	25	14 **-11**	55	72 **-17**	12-0	12-43	22-39	0	0	0	0
16 – E. F. Yaak (% Change)	29	17 **-12**	27	14 **-13**	54	72 **-18**	14-40	10-32	26-76	0	0	0	0
17 – Big Creek (% Change)	30	17 **-13**	16	14 **-2**	58	72 **-14**	26-34	0-40	28-44	0	0	0	0

Table 40. Alternative D Modified – Estimated change in wheeled motorized vehicle access status for roads and trails

BMU	OMRD 2009 Status (%)	OMRD Proposed Standard (%)	TMRD 2009 Status (%)	TMRD Proposed Standard (%)	CORE 2009 Status (%)	CORE Proposed Standard (%)	Roads open to gated (mi.)	Roads open to barriered (mi.)	Roads gated to barriered (mi.)	Roads gated to open (mi.)	Roads barriered to open (mi.)	Roads barriered to gated (mi.)	Trails motorized to non-motorized (mi.)
18 – Boulder (% Change)	31	21 **-10**	35	14 **-21**	50	72 **-22**	0	24	64		0	0	0
19 – Grouse (% Change)	60	59 **-1**	59	50 **-9**	32	41 **-9**	0	1	45	0	0	0	0
20 – N. Lightning (% Change)	36	17 **-19**	20	14 **-6**	62	72 **-10**	30-17	8-41	5-12	0	0	0	9
21 – Scotchman (% Change)	35	27 **-8**	27	22 **-5**	63	72 **-9**	0	17	12	0	0	0	0
22 – Mt. Headley (% Change)	38	17 **-21**	37	14 **-23**	51	72 **-21**	14-72	0-26	18-84	0	0	0	28
Cabinet-Yaak Subtotal							**268-369**	**508-626**	**507-801**	**6-12**	**0-6**	**8-13**	**57**
Blue-Grass (% Change)	33	25 **-8**	28	14 **-14**	50	72 **-22**	0	5	81	0	0	0	0
Long-Smith (% Change)	21	17 **-4**	14	14 **0**	73	72 **1**	8-24	0	0	0	0	0	0
Kalispell-Granite (% Change)	31	17 **-14**	28	14 **-14**	49	72 **-23**	6-10	22-74	24-64	0	0	0	0
Lakeshore (% Change)	82	46 **-36**	54	21 **-33**	19	56 **-37**	0	28	9	0	0	0	0
Salmo-Priest (% Change)	30	30 **0**	24	26 **2**	66	66 **0**	0	0	0	0	0	0	0
Sullivan-Hughes (% Change)	24	18 **-6**	19	14 **-5**	61	72 **-11**	0	14	28	0	0	0	0
Myrtle (% Change)	29	21 **-8**	20	14 **-6**	60	72 **-12**	0	21	16	0	0	0	0
Ball-Trout (% Change)	17	17 **0**	11	14 **3**	72	72 **0**	0	0	0	0	0	0	0
Selkirk SUB-TOTAL							**14-34**	**90-142**	**158-198**	**0**	**0**	**0**	**0**
Cabinet-Yaak and Selkirk Combined Total							**282-403**	**598-768**	**665-999**	**6-12**	**0-6**	**8-13**	**57**

The columns “Roads open to gated”, “Roads open to barriered”, “Roads gated to barriered”, and “Trails motorized to nonmotorized” in Table 41 are mandatory actions that would occur with implementation of this alternative. Implementing this alternative is expected to result in gating about 282 to 403 miles of currently open road, placing barriers on about 1,263 to 1,757 miles of open or gated road and converting about 57 miles of motorized trail to nonmotorized status in order to achieve the standards for OMRD, TMRD, and core area associated with this alternative. The columns “Roads gated to open”, “Roads barriered to open”, and “Roads barriered to gated” reflect opportunities and are not necessary actions for implementing this alternative. There may be other resource management considerations, which limit these opportunities.

The potential management actions that would result in the attainment of the standards for OMRD, TMRD, and core area would then affect the total miles of roads and trails remaining in the eight IGBC categories. For instance, in the Cabinet-Yaak Recovery Zone, when OMRD, TMRD, and core area standards are attained, the total miles of IGBC 4 (open) roads under Forest Service jurisdiction would change from the 2009 existing condition of 1,324 miles to a range between 554 and 347 miles. This would be a net reduction of 770 miles (a 58 percent reduction) and 977 miles (a 74 percent reduction).

Table 41 displays the estimated net change in wheeled motorized vehicle access status (for routes under Forest Service jurisdiction) for the Selkirk Recovery Zone, the Cabinet-Yaak Recovery Zone, and both recovery zones combined, for all eight IGBC categories for Alternative D Modified.

Cumulative Effects

When combined with past, present, and reasonably foreseeable future actions, Alternative D Modified is likely to result in fewer miles of road available for wheeled motorized vehicle access than Alternative E Updated (see Table 40 on page 169and Table 42 on page 172).

Alternative E Updated

Direct and Indirect Effects

The indirect effect of attaining the standards for OMRD, TMRD, and core area is a change in amount of road and trail that would be available for wheeled motorized vehicle use. In the analysis for Alternative E Updated, any estimated changes to wheeled motorized vehicle access status are modeled such that the standards for OMRD, TMRD, and core area are achieved while retaining the greatest degree of public and administrative access. Table 42 on page 173 summarizes the estimated miles of road and trails (for routes under Forest Service jurisdiction) that would need changes to the wheeled motorized vehicle access status in each of the BMUs.

Table 41. Alternative D - Projected conditions in wheeled motorized vehicle access status for the Selkirk Recovery Zone, Cabinet-Yaak Recovery Zone, and both zones combined, when OMRD, TMRD, and core area standards are attained

IGBC Code	2009 Existing Condition* (miles)	Conditions when Standards are Attained (miles)	Net Change (miles)
Cabinet-Yaak Recovery Zone			
IGBC 1 (impassable) road	1,625	1,625	0
IGBC 2 (gated) road	938	701 - 507	(237 - 431)
IGBC 3 (barriered) road	1,042	2,049 - 2,450	1,007 - 1,408
IGBC 4 (open) road	1,324	554 - 347	(770 - 977)
IGBC 5 (open motorized) trail	59	2	(57)
IGBC 6 (open nonmotorized) trail	565	565	0
IGBC 7 (restricted nonmotorized) trail	589	646	57
IGBC 8 (nonmotorized high intensity) trail	7	7	0
Selkirk Recovery Zone			
IGBC 1 (impassable) road	700	700	0
IGBC 2 (gated) road	308	164 - 144	(144 – 164)
IGBC 3 (barriered) road	46	294 - 386	248 - 340
IGBC 4 (open) road	448	344 - 272	(104 - 176)
IGBC 5 (open motorized) trail	0	0	0
IGBC 6 (open nonmotorized) trail	218	218	0
IGBC 7 (restricted nonmotorized) trail	124	124	0
IGBC 8 (nonmotorized high intensity) trail	13	13	0
Selkirk and Cabinet-Yaak Recovery Zones Combined			
IGBC 1 (impassable) road	2,325	2,325	0
IGBC 2 (gated) road	1,246	865 - 651	(381 – 595)
IGBC 3 (barriered) road	1,088	2,343 - 2,836	1,255 - 1,748
IGBC 4 (open) road	1,772	898 - 619	(874 - 1,153)
IGBC 5 (open motorized) trail	59	2	(57)
IGBC 6 (open nonmotorized) trail	783	783	0
IGBC 7 (restricted nonmotorized) trail	713	770	57
IGBC 8 (nonmotorized high intensity) trail	20	20	0

Note: numbers in parenthesis ( ) represent a net decrease in miles.
* = Routes under Forest Service jurisdiction

Table 42. Alternative E Updated – Estimated change in wheeled motorized vehicle access status for roads and trails

BMU	OMRD 2009 Status (%)	OMRD Proposed Standard (%)	TMRD 2009 Status (%)	TMRD Proposed Standard (%)	CORE 2009 Status (%)	CORE Proposed Standard (%)	Roads open to gated (mi.)	Roads open to barriered (mi.)	Roads gated to barriered (mi.)	Roads gated to open (mi.)	Roads barriered to open (mi.)	Roads barriered to gated (mi.)	Trails motorized to non-motorized (mi.)
1 – Cedar (% Change)	14	15 **1**	10	15 **5**	83	80 **3**	0	0	0	0	2-6	4-12	0
2 – Snowshoe (% Change)	20	20 **0**	16	18 **2**	76	75 **1**	0	0	0	0	0	2-6	0
3 – Spar (% Change)	27	33 **6**	26	26 **0**	62	59 **3**	0	0	0	12-36	0	0	0
4 – Bull (% Change)	37	36 **-1**	29	26 **-3**	62	63 **-1**	2-6	0	6-18	0	0	0	0
5 – St. Paul (% Change)	28	30 **2**	23	23 **0**	58	60 **-2**	0	0	4-12	4-12	0	0	0
6 – Wanless (% Change)	29	34 **5**	34	32 **-2**	53	55 **-2**	0	0	4-12	10-30	0	0	0
7 – Silver Butte (% Change)	32	26 **-6**	23	23 **0**	62	63 **-1**	12-36	0	2-6	0	0	0	0
8 – Vermillion (% Change)	33	32 **-1**	24	21 **-3**	55	55 **0**	0	2-6	6-18	0	0	0	0
9 – Callahan (% Change)	27	33 **6**	26	26 **0**	59	55 **4**	0	0	0	12-36	0	0	0
10 – Pulpit (% Change)	44	44 **0**	29	34 **5**	51	52 **-1**	0	0	2-6	0	0	0	0
11 – Roderick (% Change)	28	28 **0**	28	26 **-2**	54	55 **-1**	0	0	4-12	0	0	0	0
12 – Newton (% Change)	42	45 **3**	29	31 **2**	58	55 **3**	0	0	0	2-6	4-12	0	0
13 – Keno (% Change)	34	33 **-1**	25	26 **1**	59	59 **0**	2-6	0	0	0	0	0	0
14 – NW Peak (% Change)	28	31 **3**	26	26 **0**	56	55 **1**	0	0	0	6-18	0	0	0
15 – Garver (% Change)	29	33 **4**	25	26 **1**	55	55 **0**	0	0	0	8-24	0	0	0
16 – E. F. Yaak (% Change)	29	33 **4**	27	26 **-1**	54	55 **-1**	0	0	2-6	8-24	0	0	0
17 – Big Creek (% Change)	30	33 **3**	16	26 **10**	58	55 **3**	0	0	0	6-18	0	6-18	0

Table 42. Alternative E Updated – Estimated change in wheeled motorized vehicle access status for roads and trails

BMU	OMRD 2009 Status (%)	OMRD Proposed Standard (%)	TMRD 2009 Status (%)	TMRD Proposed Standard (%)	CORE 2009 Status (%)	CORE Proposed Standard (%)	Roads open to gated (mi.)	Roads open to barriered (mi.)	Roads gated to barriered (mi.)	Roads gated to open (mi.)	Roads barriered to open (mi.)	Roads barriered to gated (mi.)	Trails motorized to non-motorized (mi.)
18 – Boulder (% Change)	31	33 **2**	35	29 **-6**	50	55 **-5**	0	0	12-36	4-12	0	0	0
19 – Grouse (% Change)	60	59 **-1**	59	55 **-4**	32	37 **-5**	0	2-6	8-24	0	0	0	0
20 – N. Lightning (% Change)	36	35 **-1**	20	20 **0**	62	61 **1**	2-6	0	0	0	0	0	0
21 – Scotchman (% Change)	35	34 **-1**	27	26 **-1**	63	62 **1**	0	2-6	0	0	0	0	0
22 – Mt. Headley (% Change)	38	33 **-5**	37	35 **-2**	51	55 **-4**	0	10-30	0	0	0	0	28
Cabinet-Yaak Subtotal							**18-54**	**16-48**	**50-150**	**72-216**	**6-18**	**12-36**	**28**
Blue-Grass (% Change)	33	33 **0**	28	26 **-2**	50	55 **-5**	0	0	10-30	0	0	0	0
Long-Smith (% Change)	21	25 **4**	14	15 **1**	73	67 **6**	0	0	0	6-18	2-6	0	0
Kalispell-Granite (% Change)	31	33 **2**	28	26 **-2**	49	55 **-6**	0	0	12-36	4-12	0	0	0
Lakeshore (% Change)	82	82 **0**	54	56 **2**	19	20 **-1**	0	0	2-6	0	0	0	0
Salmo-Priest (% Change)	30	33 **3**	24	26 **2**	66	64 **2**	0	0	0	2-6	4-12	0	0
Sullivan-Hughes (% Change)	24	24 **0**	19	19 **0**	61	61 **0**	0	0	0	0	0	0	0
Myrtle (% Change)	29	33 **4**	20	24 **4**	60	56 **4**	0	0	0	0	8-24	0	0
Ball-Trout (% Change)	17	20 **3**	11	13 **2**	72	69 **3**	0	0	0	2-6	4-12	0	0
Selkirk Subtotal							**0**	**0**	**24-72**	**14-42**	**18-54**	**0**	**0**
Cabinet-Yaak and Selkirk Combined Total							**18-54**	**16-48**	**74-222**	**86-258**	**24-72**	**12-36**	**28**

Each BMU is assessed for its unique situation. Based on the 2009 status for OMRD, TMRD, and core area, there are 16 BMUs that do not meet one or more of the standards as proposed in this Alternative E Updated (see Table 6 on page 31). Management actions would be taken in these BMUs to change the current wheeled motorized vehicle access status in order to meet the proposed standards. The methodology described in Alternative D Modified has been used for Alternative E Updated, for determining the degree of wheeled motorized vehicle access status changes.

The columns “Roads open to gated”, “Roads open to barriered”, “Roads gated to barriered”, and “Trails motorized to nonmotorized” in Table 42 are mandatory actions that would occur with implementation of this alternative. Implementing this alternative then is expected to result in gating about 18 to 54 miles of currently open road, placing barriers on about 90 to 270 miles of open or gated road and converting about 28 miles of motorized trail to nonmotorized status in order to achieve the standards for OMRD, TMRD, and core area associated with this alternative. The columns “Roads gated to open”, “Roads barriered to open”, and “Roads barriered to gated” reflect opportunities and are not necessary actions for implementing this alternative. There may be other resource management considerations, which limit these opportunities.

In Alternative E Updated, once all BMUs administered by the Kootenai, Lolo and Idaho Panhandle National Forests in the respective ecosystems meet standard (full implementation), those BMUs with conditions that are better than the standard may be able to accommodate some reductions in core area by roads.

The potential management actions that would result in the attainment of the standards for OMRD, TMRD, and core area would then affect the total miles of roads and trails remaining in the eight IGBC categories. For instance, for those BMUs with conditions better than their respective standard in the Cabinet-Yaak Recovery Zone, if OMRD, TMRD, and core area standards are attained (see Table 42, “Roads Gated to Open” and “Roads Barriered to Open”), the total miles of IGBC 4 (open) road would change from the 2009 existing condition of 1,324 miles to a range between 1,368 and 1,456 miles. There would be a net increase of 44 miles (a 3 percent increase) to 132 miles (a 10 percent increase).

Table 43 displays the estimated net change in wheeled motorized vehicle access status (for routes under Forest Service jurisdiction) for the Selkirk Recovery Zone, the Cabinet-Yaak Recovery Zone, and both Recovery Zones combined, for all eight IGBC categories. The estimated net change displayed in the table reflects the maximum change possible when taking those BMUs that exceed (are better) than their assigned standard to their respective standard for OMRD and either TMRD or core area.

Cumulative Effects

When combined with past, present, and reasonably foreseeable future actions, Alternative E Modified is likely to result in more miles of road available for wheeled motorized vehicle access than Alternative D Modified (see Table 41 on page 172 and Table 43 on page 176).

Table 43. Alternative E - Projected conditions in wheeled motorized vehicle access status for the Selkirk Recovery Zone, Cabinet-Yaak Recovery Zone, and both zones combined, if OMRD, TMRD, and core area standards are attained

IGBC Code	2009 Existing Condition* (miles)	Conditions when Standards are Attained (miles)	Net Change (miles)
Cabinet-Yaak Recovery Zone			
IGBC 1 (impassable) road	1,625	1,625	0
IGBC 2 (gated) road	938	846 – 662	(92 – 276)
IGBC 3 (barriered) road	1,042	1,090 – 1,186	48 – 144
IGBC 4 (open) road	1,324	1,368 – 1,456	44 - 132
IGBC 5 (open motorized) trail	59	31	(28)
IGBC 6 (open non-motorized) trail	565	565	0
IGBC 7 (restricted non-motorized) trail	589	617	28
IGBC 8 (non-motorized high intensity) trail	7	7	0
Selkirk Recovery Zone			
IGBC 1 (impassable) road	700	700	0
IGBC 2 (gated) road	308	270 - 194	(38 - 110)
IGBC 3 (barriered) road	46	52 - 64	6 -18
IGBC 4 (open) road	448	480 - 544	32 - 96
IGBC 5 (open motorized) trail	0	0	0
IGBC 6 (open non-motorized) trail	218	218	0
IGBC 7 (restricted non-motorized) trail	124	124	0
IGBC 8 (non-motorized high intensity) trail	13	13	0
Selkirk and Cabinet-Yaak Recovery Zones Combined			
IGBC 1 (impassable) road	2,325	2,325	0
IGBC 2 (gated) road	1,246	1,116 - 856	(130 - 390)
IGBC 3 (barriered) road	1,088	1,142 - 1,250	54 - 162
IGBC 4 (open) road	1,772	1,848 – 2,000	76 - 228
IGBC 5 (open motorized) trail	59	31	(28)
IGBC 6 (open non-motorized) trail	783	783	0
IGBC 7 (restricted non-motorized) trail	713	741	28
IGBC 8 (non-motorized high intensity) trail	20	20	0

Note: numbers in parenthesis ( ) represent a net decrease in miles
* = Routes under Forest Service jurisdiction

Forest Plan Consistency

Implementation of Alternative D Modified or Alternative E Updated would not conflict with, nor prevent achieving, the standards for transportation system management and operation, and results in the conclusion that they are consistent with the KNF, LNF, and IPNFs Forest Plans (as amended).

Aquatics - Watershed and Fisheries

Introduction

The Forest Plans for the KNF, LNF, and IPNFs provide direction regarding the management of NFS lands to enhance and protect aquatic resources. In addition to direction established by the Forest Plans, all activities or proposals for activities would comply with rules and regulations governing the states in which the proposed activity would occur. Proposed activities are located in the States of Montana, Idaho, and Washington.

Changes between the DSEIS and FSEIS

The USFWS published final rules designating critical habitat for bull trout (USDI Fish and Wildlife Service 2005). At that time, no critical habitat for bull trout was designated on NFS lands. On January 13, 2010, the USFWS proposed to revise its 2005 designation of critical habitat for the bull trout. Under the USFWS revised proposal, critical habitat is proposed for designation on NFS lands within the Kootenai and Clark Fork River Basins. The final Critical Habitat designation rule was published in the Federal Register in October 2010 (USDI Fish and Wildlife Service 2010a). The affected environment section for fisheries has been revised to reflect this proposal.

Regulatory Framework

Watershed

The beneficial uses for the Kootenai River, Clark Fork River, Pend Oreille Lake, and Priest River basins cover many uses. Specifically, the rivers supply local public water and recharge major aquifers; provide habitat for several species of native fish, as well as contribute to an important sport fishery in Koocanusa and Pend Oreille Lakes; support riparian and other wetland habitats that are used by aquatic and terrestrial species, and function to moderate flooding and ensure quality water; and provide water for irrigation, recreation and power production. Beneficial uses are protected by best management practices (BMPs) as identified in the Idaho Forest Practices Act (Title 38, Chapter 13, Idaho Code), Montana (ARM Section 17); and Washington Forest Practices Rules and Regulations (Title 222 WAC).

Additional regulatory framework governing management of watersheds includes the Clean Water Act (Revised), NFMA (1976), NEPA (1969), Forest Service Manual (FSM 2500), and direction from the Regional Watershed, Wildlife, Fisheries and Rare Plants program and the Washington Office.

Fisheries

Table 44 lists laws and regulations concerning fisheries resources on public lands.

Table 44. Laws and regulations for fisheries management

Law/Regulation	Explanation
National Forest Management Act (1976)	Requires that the Forest Service provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives.
Clean Water Act (Revised)	Regulates protection of water quality to protect beneficial uses of water bodies including aquatic life/fisheries uses.
National Environmental Policy Act (1969)	Requires analysis to insure the anticipated effects upon all resources within the area are considered prior to implementation (40 CFR 1502.16).
Section 7, Endangered Species Act (1973)	Includes direction that Federal agencies, in consultation with the United States Fish and Wildlife Service, will not authorize, fund, or conduct actions that are likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitat.
Executive Order 12962 (June 7, 1995)	States objectives "to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities by (h) evaluating the effects of Federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of this order."

The *Inland Native Fish Strategy* (INFS) amended the KNF, LNF, and IPNFs Forest Plans in 1995 (USDA Forest Service 1995b). The INFS establishes stream, wetland, and landslide-prone area protection zones called Riparian Habitat Conservation Areas (RHCAs) and standards and guidelines for management activities that potentially affect conditions within the RHCAs. The INFS also established Riparian Management Objectives (RMOs) that provide objectives for key habitat variables.

Sensitive species are managed under the authority of NFMA and are administratively designated by the Regional Forester (FSM 2670). The Forest Service is directed to avoid actions that may cause a species to become threatened or endangered. Sensitive fish species identified to exist on the KNF include westslope cutthroat trout (*Oncorhynchus clarki lewisi*) and interior redband trout (*Oncorhynchus mykiss gairdneri*). Sensitive species on the IPNFs include westslope cutthroat trout, interior redband trout and burbot (*Lota lota*). Only the westslope cutthroat trout is present on the LNF.

Analysis Area

The analysis area considered for this FSEIS consists of the Kootenai Subbasin within Montana and Idaho, the Lower Clark Fork River Subbasin in Montana and Idaho, the Pend Oreille Lake Subbasin within Idaho, and the Priest River Subbasin within Idaho and Washington, as overlapped by the Selkirk and Cabinet-Yaak Recovery Zones (see Figure 1 on page 3).

Affected Environment for Watersheds

Kootenai River Subbasin Watershed Characteristics

The Kootenai River drainage is an international watershed, with approximately two-thirds of its acreage within the province of British Columbia, Canada (Knudsen 1994). It is the second largest tributary to the Columbia River and has an average annual flow measured near the Montana-

Idaho border of 14,150 cubic feet per second (cfs) (USGS 1994). The total drainage area is 14,000 square miles, 27 percent of which is in Montana (Knudsen 1994).

This river originates in Kootenay National Park, near Banff, British Columbia and flows south, entering Lake Koocanusa 42 miles north of the British Columbia-Montana border. Libby Dam, which forms Lake Koocanusa, is located 17 miles upstream of Libby, Montana (about 40 miles south of the international border). Downstream of the dam, the Kootenai River turns northwest, flows over Kootenai Falls and crosses the Montana-Idaho border near Troy, Montana. About 90 percent of the Kootenai watershed is coniferous forest. A small amount is agricultural land used mainly for pasture and forage production (Marotz et al. 1988).

Impoundment of the Kootenai River in 1972 by Libby Dam altered the aquatic environment in the river downstream from the dam. Libby Dam drastically alters downriver discharge patterns on a seasonal and sometimes daily basis. Peak discharge rates of 64,000 cfs that formerly occurred during spring runoff have been replaced with regulated releases ranging from 4,000 to 10,000 cfs during the summer to 15,000 to 28,000 cfs during the winter. During many months, it is not uncommon for discharge rates to fluctuate widely between approximately 5,000 to 20,000 cfs (Knudsen 1994).

The United States' portion of the watershed is primarily NFS lands. Management activities include forest practices associated with timber management, grazing, recreation, and special uses. Private land is used for similar purposes as well as commercial and domestic development. The major population centers in this watershed include Eureka, Libby, and Troy, Montana and Bonners Ferry, Idaho. There are several other small areas of suburban development distributed throughout the watershed.

The KNF, IPNFs, and a portion of the LNF included in the amendment area are characterized as moist forests (USDA Forest Service 1996). These areas are transitional between drier, lower elevation forests and higher sub-alpine forests. Moist forest types are characterized by high soil moisture in spring and early summer and drought stress through the latter part of summer and the fall. Nutrients often limit productivity, particularly where past harvest has resulted in loss of both soil and site nutrients.

In Idaho, the drainage area for the Kootenai subbasin is 1,960 square miles or 11 percent of the entire basin. The majority of the river flows through private land, including the town of Bonners Ferry. Its main tributary is the Moyie River, which is also a subbasin and originates in British Columbia, Canada. About 53 percent of the Kootenai subbasin is NFS lands, of which 45 percent are within grizzly bear Selkirk and Cabinet-Yaak Recovery Zones.

The IPNFs has completed individual subbasin assessments for the middle portion of the Kootenai River, the Moyie River, Lake Pend Oreille, and Priest River Subbasins. The assessments assigned a watershed "Functioning" Condition rating for watersheds based on three categories: 1) overall inherent sensitivity, 2) watershed disturbance, and 3) riparian disturbance. Overall sensitivity of the drainage evaluates the percentage of sensitive landtypes and rain-on-snow acres to the total acres of the drainage. Watershed disturbance is derived from evaluating the combination of upland road densities, hydrologic openings, and percentage disturbance on sensitive landtypes. Riparian disturbance is based on miles of encroaching roads, riparian road density, and steam crossing frequency.

For the middle Kootenai Subbasin, the overall condition rating was determined to be "functioning at risk" due to a high overall inherent sensitivity, low riparian disturbance, and moderate watershed disturbance. "Functioning at risk" implies the subbasin is functioning but may exhibit trends or has known risks that may compromise its ability to fully support beneficial uses in the future. Watershed disturbance activities have occurred throughout the basin, especially within the Boulder Creek Watershed and certain Selkirk drainages. Disturbance activities include past road construction, timber harvest, and mining activities.

Lower Clark Fork Subbasin Watershed Characteristics

The Clark Fork River is Montana's largest river, with an average annual stream flow of 21,960 cfs at the Montana-Idaho border. The total drainage area is 22,073 square miles (USGS 2005). Land ownership within the drainage is mixed. Timber production is the primary land use activity. The Clark Fork River flows into Lake Pend Oreille near Clark Fork, Idaho. In Montana, its major tributaries include the Blackfoot River, Upper Clark Fork River, Bitterroot River, Flathead River, and Bull River.

The Lower Clark Fork River flows through sedimentary formations (belt rock) from the Precambrian time. Although the Clark Fork valley did not contain ice-age glaciers, it did carry all of the flood flow from glacial Lake Missoula. The passage of this torrent left its mark on the local landscape.

There are three hydroelectric dams within the Lower Clark Fork River drainage. Thompson Falls Dam, completed in 1916, is owned and operated by Pennsylvania Power and Light in Montana. This facility controls flows into the Noxon Reservoir reach of the Lower Clark Fork River. Cabinet Gorge Dam, completed in 1952, is just downstream of the Montana-Idaho border. It currently operates as a re-regulating facility for Noxon Rapids Dam. Noxon Rapids Dam, completed in 1958, inundates that portion of the Clark Fork River between the backwaters of Cabinet Gorge Reservoir and the tailwaters of Thompson Falls Dam. Avista Corporation owns and operates the Cabinet Gorge and Noxon Rapids hydroelectric dams.

Almost all streams entering the Clark Fork River or reservoirs from the Bitterroot Mountains on the south side of the drainage have naturally intermittent reaches. Some streams on the north side of the Clark Fork River are also intermittent. The number of intermittent streams has increased due to natural and man-caused events. Historical natural events include major forest fires in 1889 and 1910, subsequent high flows in 1916, and intermittent drought. Human disturbance is primarily the result of events that are related to mining, logging, and agricultural practices.

In Idaho, the Lower Clark Fork Subbasin drains only two percent in Idaho, where the majority is within the Lightning Creek Watershed. About 67 percent of the lands within the basin are NFS lands, of which 50 percent is within the Selkirk and Cabinet-Yaak Recovery Zones. This portion of the Lower Clark Fork Subbasin is considered "functioning at risk" due to its moderate overall inherent sensitivity, low riparian disturbance, and moderate watershed disturbance. The majority of past watershed disturbance activities within this subbasin have been road construction and timber harvest activities within the Lightning Creek drainage.

Pend Oreille Lake Subbasin Watershed Characteristics

The 1,174 square mile Pend Oreille Lake Subbasin is entirely within the state of Idaho. The subbasin is composed of all the streams that drain into Lake Pend Oreille and the Pend Oreille River, excluding the Clark Fork. The subbasin boundary is where Albeni Falls Dam impounds the Pend Oreille River. The major tributaries include the Pack River, Grouse Creek, Trestle Creek, Granite Creek, and Gold Creek. Pend Oreille Lake is the largest and deepest natural lake in Idaho and is recognized throughout the Inland Northwest as an extremely valuable water resource.

About 26 percent of the lands within this basin are NFS lands, 40 percent of which is within the Selkirk and Cabinet-Yaak Recovery Zones. The Pend Oreille Lake Subbasin is also considered to be “functioning at risk” due to its moderate overall inherent sensitivity, and its moderate riparian and watershed disturbance. Riparian and watershed disturbances are the greatest in the Grouse Creek, Gold Creek, and Granite Creek watersheds. As with other areas, road construction, timber harvest, and mining have been the dominant disturbance factors.

Priest River Subbasin Watershed Characteristics

The Priest River originates in British Columbia, Canada near the international boundary and flows north to south through the Selkirk Mountain Range until the river empties into the Pend Oreille River below Lake Pend Oreille. The Priest River Subbasin is approximately 980 square miles and contains the Priest Lake system, a unique and highly valued water resource in the region. The main tributaries are Granite Creek, Hughes Creek, Lamb Creek, Upper and Lower West Branch, and Kalispell Creek.

Land ownership is unique within this basin. The western portion is primarily composed of NFS lands and the eastern portion is primarily lands administered by the Idaho Department of Lands. About 51 percent of the lands within this basin are NFS lands, of which 28 percent is within the Selkirk and Cabinet-Yaak Recovery Zones. The analysis area for this amendment will primarily be the watershed boundaries along NFS lands from the Upper Priest River watershed to where it drains into Pend Oreille River.

The Priest River Subbasin is considered “functioning at risk” due to its moderate overall inherent sensitivity, low riparian disturbance, and moderate watershed disturbance. Watershed disturbance activities are greatest in the watersheds located in the lower portions of the subbasin and include the Lower West Branch, Upper West Branch, and Quartz Creek.

Affected Environment for Fisheries

Threatened and Endangered Fish Species

Kootenai River White Sturgeon

The endangered Kootenai River white sturgeon is restricted to 168 miles of the Kootenai River from Cora Linn Dam, British Columbia, upstream to Kootenai Falls, Montana. Designated critical habitat for Kootenai River white sturgeon is limited to 18.3 river miles (RM) of the mainstem Kootenai River from below the confluence with the Moyie River (RM 159.7) to downstream of Shorty’s Island (RM 141.4). The segment does not pass through NFS lands. The Yaak River below Yaak Falls is considered potential habitat for white sturgeon. White sturgeon migrate freely throughout the Kootenai River but are uncommon upstream of Bonners Ferry, Idaho (Graham 1981; Apperson and Anders 1991). There are no published reports of sturgeon using lateral tributaries in Idaho or Montana (Partridge 1983); however, accounts by local residents suggest that sturgeon may occur, if not actually rear, in several lateral tributaries of the Kootenai River. Approximately 45 percent of the known potential habitat on the KNF is under joint State/Federal management. The remainder is managed by private and corporate landowners. The main threats to Kootenai River white sturgeon are limited to effects from modifications to the river hydrograph caused by flow regulation at Libby Dam (USDI Fish and Wildlife Service 1994a).

Bull Trout

The threatened bull trout is native to the upper Columbia River basin in northwest Montana. Bull trout require clean, cold, complex, and connected habitat. Bull trout have declined by perhaps more than 50 percent because of disruptive land management practices, expansion of introduced fish populations, non-sustainable recreational harvest, and loss of habitat connectivity (Lee et al. 1997; MBTSG 1998). Forest management, mining, and dam operations have adversely affected spawning and rearing habitat conditions for bull trout in the Kootenai and Clark Fork River meta-populations. Bull trout habitat is also inhabited by non-native brown trout and brook trout that threaten the persistence of bull trout by hybridization and interspecific competition. Bull trout are common on the KNF, LNF, and IPNFs.

On September 25, 2005, the USFWS published a final rule designating critical habitat for the Klamath River, Columbia River, Jarbidge River, Coastal-Puget Sound and Saint Mary-Belly River populations of bull trout (70 FR 56212). This rule did not designate critical habitat on National Forest System lands. On December 22, 2008 the USFWS notified the court of its intent to review a December 15, 2008 Interior Department Inspector General Report disclosing irregularities in development of its 2005 bull trout final critical habitat designation. On March 23, 2009, the USFWS requested a voluntary remand of the 2005 final critical habitat rule to address irregularities in the rule-making process and outcome as identified by the 2008 Inspector General report. On July 1, 2009, the court granted the Service's request for a remand, and directed the Service to submit a proposed revision to the Federal Register by December 31, 2009, and a final designation by September 30, 2010. On January 13, 2010, the USFWS published the proposed critical habitat revision, a justification document that includes "Rationale for Why Habitat is Essential," "Documentation of Occupancy", and "Draft Economic Analysis". The final Critical Habitat designation rule was published in the Federal Register in October 2010.

The Grizzly Bear Access amendment project area lies within two bull trout recovery units, the Clark Fork and the Kootenai. The Clark Fork Recovery Unit is comprised of four recovery subunits: Upper Clark Fork, Lower Clark Fork, Flathead and Priest. Only the Lower Clark Fork Sub-recovery unit and the Priest Sub-recovery unit are included in this project area. The Lower Clark Fork Sub Recovery unit includes five bull trout core areas, of which four are within the project area. These four core areas include 17 local populations. The Priest Sub-recovery unit includes one bull trout core area separated into nine local populations (see Biological Assessment pp. 85-88).

The Kootenai Recovery Unit has four bull trout core areas, but only two; the Kootenai River and Bull Lake are within the project area. There are six specified local populations in the Kootenai River core area and one local population in the Bull Lake (see Biological Assessment pp. 85-88).

Sensitive Aquatic Species

Westslope Cutthroat Trout

The distribution and abundance of westslope cutthroat trout has declined from historic levels across its range, which included western Montana, central and northern Idaho, a small portion of Wyoming, and portions of three Canadian provinces (Liknes and Graham 1988). The U.S. Fish and Wildlife Service (USFWS) was petitioned to listed the westslope cutthroat trout as a threatened species but in 2003 the USFWS determined that the status of the species did not warrant listing (Federal Register August 7, 2003). Westslope cutthroat trout persist in 38 percent of their historic range in Montana and 51 percent in Idaho (May 2009). Due to hybridization, genetically pure populations are present in only nine percent of that range (Shepard et al. 2003). Introduced species have hybridized or displaced westslope cutthroat trout populations across their range. Hybridization causes loss of genetic purity of the population through introgression. Some of these remaining genetically pure populations of westslope cutthroat trout are found above fish passage barriers that protect them from hybridization, but isolate them from other populations. Westslope cutthroat trout are common on the KNF, LNF, and IPNFs.

Brook trout are believed to have displaced many westslope cutthroat trout populations (Behnke 1992). Where the two species co-exist, westslope cutthroat trout predominate in higher gradient reaches and brook trout prevail in lower gradient reaches (Griffith 1988). This isolates westslope cutthroat trout populations, further increasing the risk of local extinction from genetic and stochastic factors (McIntyre and Rieman 1995).

Interior Redband Trout

Behnke (1992) differentiates the redband-rainbow-golden-steelhead trout complex into six "subspecies," one of which is the Columbia/Frazier redband, including the Kootenai River redband. The American Fisheries Society recognizes redbands by listing nine subspecies of concern, one of which is the interior redband (Williams et al. 1989).

The range of the interior redband trout in Montana includes the Kootenai River and its tributaries downstream of Kootenai Falls. There are also isolated populations in the Fisher River drainage, which is upstream of Kootenai Falls. The Kootenai River redband trout in Montana represent the furthest inland penetration of redband trout in the Columbia River Basin. On the IPNFs, interior redband trout are limited to the Kootenai River system.

Historically, interior redband trout occupied much of the Kootenai River system below Kootenai Falls, including the Yaak River. Now, only a few remnant populations exist primarily due to planting of non-native stocks of coastal rainbow trout. Genetic introgression with these non-native stocks is thought to be the principle cause of reductions in distribution and abundance of interior redband trout throughout its historic range (Behnke 1992). Much of the controversy surrounding the redband is over the genetic integrity of remaining populations and the imminent danger of hybridization with non-native fish.

Burbot

The burbot, locally referred to as "ling" or "ling cod," is the only freshwater member of the cod family (Gadidae). Burbot have a circumpolar distribution and are typically associated with larger streams or rivers and deep, cold lakes, or reservoirs. Historically, they inhabited the mainstem of the Kootenai River and a few of its tributaries. Although spawning has been confirmed below Libby Dam, it is not known if burbot spawn below Kootenai Falls in Montana. Reduced populations of burbot inhabit the Kootenai River below Kootenai Falls in Idaho and British Columbia, Canada. Burbot do not occur in the Clark Fork River, although they have been transplanted to Triangle Pond (located on the KNF, Cabinet Ranger District) by MDFWP in the 1980s. Distribution of burbot is limited to the Kootenai River on the KNF and IPNFs.

Western Pearlshell Mussel

This mussel was recently added to the Northern Region sensitive species list (USDA Forest Service 2011c). The western pearlshell mussel is listed by Nature Serve as having a National status of N4 (Apparently Secure; Jepsen et al. 2011). The mussel is listed as an S2S4 (imperiled/apparently secure) for the state of Montana and an SNR (unranked) for the state of Idaho. This is the most common mussel species in the Pacific Northwest, but it has been extirpated from northern Nevada and from most areas in northern Utah, and there is documentation of the species declining in particular stream and rivers throughout its range (Jepsen et al. 2011).

In Idaho, the historical range of western pearlshell mussel includes sites in the Snake, Coeur d'Alene, Lost, and Salmon River drainages (Frest 1999). In central Idaho, populations with good viability occur in the Clearwater, Selway, Lochsa, Pahsimeroi, Lost, Salmon and Little Salmon rivers and in Hells Canyon. In south Idaho, populations are thought to be extant in the upper tributaries of the Snake River, including the Blackfoot River (Frest 1999). Populations are known to occur in north Idaho in the Coeur d'Alene, St. Joe, and St. Maries Rivers (Frest 1999).

Montana's populations of western pearlshell mussel, in contrast to Idaho's, may be significantly contracting and becoming less viable with decreased stream flows, warming and degradation. Previously reported mussel beds in the larger rivers (Blackfoot, Big Hole, Bitterroot, Clark Fork, etc.) are extirpated from the drainage or are at such low densities, long-term viability is unlikely (Stagliano 2007). Stagliano (2010) found eight western Montana streams with large viable pearlshell populations (up to 3,000 mussels/km), but also has evidence from hundreds of negative surveys documenting the extirpation of the western pearlshell from countless streams and hundreds of river miles throughout the state. Stagliano (2010) also identified dozens of non-viable populations that will be extirpated from streams and whole watersheds (Smith River) within the next 25 years.

The preferred habitat for the western pearlshell mussel is cold, clear streams and rivers. Pearlshell mussels occur in waterways with low velocities, low shear stress and stable substrates and are frequently found in eddies or pools (Howard and Coffey 2003). The species is intolerant of heavy nutrient loads, siltation and water pollution (Frest 1999). Like other freshwater mussels in North America, threats to the pearlshell mussel include: impoundments and loss of host fish, channel modification from channelization, dredging and mining, restoration activities, contamination, sedimentation, nutrient enrichment, water withdrawal and diversion, thermal pollution, livestock grazing in riparian areas, and the introduction of non-native fish and invertebrate species.

Freshwater mussels, including the pearlshell mussel are filter feeders that consume plankton suspended in the water. Western pearlshell mussels are very long-lived – with some individuals estimated to be 100 years in age (Hastie and Toy 2008). Larval western pearlshell mussels are fish parasites that attach to the fins or gills of host fish (Frest 1999). Freshwater mussels are not able to move far on their own, but their association with fish allows them to colonize new areas, or repopulate areas from which mussels have been extirpated. Host fish include westslope cutthroat trout (Stagliano 2007) and potentially bull trout and brook trout (Jepsen et al. 2011).

Pearlshell mussel surveys have been conducted in some of the streams within the analysis area (Stagliano 2010). Table 45 documents the results of those surveys.

Table 45. Results of mussel surveys conducted in Montana streams within the analysis area

Basin	Stream	Date	Mussels found
Kootenai	Fisher	7/25/2007	None
	Fortine	8/7/2007	Western Pearlshell
	Keeler Creek	8/11/1992	None
	Keeler Creek	9/17/1992	None
	Lake	7/25/2007	None
	Pipe	7/25/2007	None
	Swamp	7/25/2007	None
	Tobacco	8/13/1992	Western Pearlshell
Fisher	East Fisher River	7/26/2007	Western Pearlshell
Thompson	Bull River	7/25/2007	None
Clark Fork	Graves Creek	8/25/2008	None
	Graves Creek tributary	7/27/2007	None
	Thompson River (3 sites)	7/25/2008	None
	Thompson River	8/26/2008	None
	Thompson River (7 sites)	8/27/2008	Western Pearlshell
	Thompson river (4 sites)	8/27/2008	None
	Vermillion River (2 sites)	7/27/2007	None
	Vermillion River	8/25/2008	None
	West Fork Thompson River (2 sites)	8/25/2008	None

Road Failures and Sediment Delivery

Forest roads can cause serious degradation of streams and subsequently salmonid habitats in those stream systems (Furniss et al. 1991; Lee et al. 1997). Roads directly affect natural sediment and hydrologic regimes by altering streamflow, sediment loading, sediment transport and deposition, channel morphology, channel stability, substrate composition, and water quality within a watershed (Lee et al. 1997). Increased sediment production is generally associated with roads, stream crossings, and failed road structures. Undersized stream crossings, poorly managed surface drainage, and road failures can all negatively impact streams by altering their form and function. Regular road maintenance helps to reduce the negative impacts of roads, but in the absence of maintenance, even well constructed roads can be at risk of failure. Undersized crossings or those that do not match the stream gradient or bankfull width contribute to aggradation behind road fills and measurable scour downstream. In the absence of maintenance and over time, this condition results in the structure's failure and contributes large volumes of sediment to the stream.

Sediment continues to be a primary concern to fish habitat because it decreases habitat diversity, degrades spawning and rearing habitat, and consequently fish reproduction and survival. It also reduces aquatic insect production. The density of salmonids in rearing habitat has been shown to be inversely proportional to the level of fine sediment (Bjornn and Reiser 1991). Fine sediment can greatly reduce the capability of winter and summer rearing habitats and when levels reach 30 percent or more, survival to emergence is significantly reduced (Shepard et al. 1984). Fine sediment may have the greatest impact on winter rearing habitat for juvenile salmonids. Fine sediments can cap or fill interstitial spaces of streambed cobbles. When interstitial rearing space is unavailable, juvenile salmonids migrate until suitable wintering habitat can be found (Hillman et al. 1987). Fine sediment has also been shown to cause alterations in macro invertebrate abundance and diversity.

Roads also tend to alter natural drainage processes by intercepting shallow groundwater. Roads that interrupt hill-slope drainage patterns often alter the timing and magnitude of peak flows, changing base stream discharge and sub-surface flows. Poor road location or concentration of surface and sub-surface water by cross slope roads can lead to road-related mass soil movements. Negative direct effects to fish habitat can occur if roads are located in RHCAs.

Many road failures have occurred over the last 50 years in the Selkirk and Cabinet-Yaak Recovery Zones (USDA Forest Service 1998b, 1999a, and 2000b). Most of the failures have occurred during mid-winter rain-on-snow events. These failures have contributed substantial amounts of sediment to the area streams. Generally, watersheds with higher road densities and road/stream crossing densities have higher failure rates and more direct sediment delivery to the streams.

Table 46 displays the miles of impassable, gated, barriered, and open roads by BMU that contain bull trout.

Table 46. 2009 existing road miles within BMUs that contain bull trout

BMU	Forest	Existing miles of road by category			
		Impassable IGBC 1	Gated IGBC 2	Barriered IGBC 3	Open IGBC 4
1-Cedar	KNF	7	12	19	23
2-Snowshoe	KNF	2	15	10	51
3-Spar	KNF	117	59	65	80
4-Bull	KNF	56	26	39	142
5-St. Paul	KNF	45	42	30	81
6-Wanless	KNF	30	87	24	92
7-Silver Butte-Fisher	KNF	14	31	3	72
8-Vermilion	KNF	106	61	9	81
9-Callahan	KNF	71	98	89	76
10-Pulpit	KNF	88	58	102	146
11-Roderick	KNF	84	68	51	84
12-Newton	KNF	50	16	80	94
17-Big Creek	KNF	39	44	78	77
19-Grouse	IPNFs	32	43	28	220
20-North Lightning	IPNFs	43	12	34	76
21-Scotchman	IPNFs	8	11	6	111
22-Mt. Headley	LNF	286	84	5	460
Blue Grass	IPNFs	77	73	14	42
Sullivan-Hughes	IPNFs/CNF	144	50	5	68
Kalispell Granite	IPNFs	272	88	7	88
Long-Smith	IPNFs	47	22	11	51
Myrtle	IPNFs	94	32	4	66
Total		**1,712**	**1,032**	**713**	**2,281**

Analysis Methods

Watershed

Alternative D Modified and Alternative E Updated would add management direction to the Forest Plans regarding wheeled motorized vehicle access management. To meet this direction, each alternative predicts a range of road restrictions and treatments that would be needed to meet the standards. Therefore, the amount and type of change in wheeled motorized vehicle access management required to meet OMRD, TMRD, and core area standards were used to determine the potential effects and risks to aquatic resources. A qualitative assessment of the anticipated change in sediment risk associated with stream crossings and road fill failures (i.e., net associated risk of sediment delivery) was used to compare alternatives.

Fisheries

Fish species distributions were overlaid with the Selkirk and Cabinet-Yaak Ecosystems and compared with the assessment of net associated risk of sediment delivery (see above) for each BMU. The trend for pearlshell mussel is based on the trend for westslope cutthroat trout, which is the host for the mussel glochidia and effects to sediment. Alternative D Modified and Alternative E Updated were analyzed qualitatively for both short-term and long-term effects from sedimentation based on the likelihood that additional site-specific actions would be required to move a BMU into consistency with the alternative selected for implementation. For example, BMUs that presently are consistent or exceed the conditions of either alternative would have a zero to low likelihood of further action regarding road densities and access. Conversely, BMUs that are not consistent with either alternative would have a higher likelihood of further action being required for that BMU to be consistent with the selected alternative.

The cumulative effects analysis for this project will include effects from certain activities because they have occurred in the past, are currently occurring, and will likely continue to occur in the future. Activities such as road construction, road maintenance, timber management, grazing, agricultural practices, and mining have been identified by research to have the potential for negative influences to the fisheries resource. All of these activities have occurred in the analysis area in the past and to some extent, continue to have an influence on the current condition of the streams (existing condition description). These activities currently occur within the analysis area and will likely occur into the future; however, their negative effects to the fisheries resource have been reduced as compared to the past because of improved methods of implementation. The following activities are considered during the analysis because they had beneficial influences on the fisheries resource in the past and continue to influence the fisheries resource: implementation of INFS, instream habitat restoration, culvert replacement/removal, and decommissioning of roads. Many other activities (see Chapter 3 introduction on page 39) have occurred in the past within the project area; however, they will not be considered in the cumulative effects analysis because they had minor influence, no influence, or short-term influence with no lasting effects to the fisheries resource.

Direct, Indirect, and Cumulative Effects

Effects Common to All Alternatives

It is well documented that elevated levels of sediment in stream gravels pose a threat to bull trout (Shepard et al. 1984, Fraley and Shepard 1989 and MBTSG 1998) and roads are recognized as a long-term sediment source even after erosion control measures have been implemented (Furniss et al. 1991, Belt et al. 1992). Sediment can affect bull trout and other salmonids in several ways.

One of the most likely ways is through effects on egg incubation and fry emergence. The level of impact is closely related to timing of activity and location of activity (adjacent or above) to spawning areas. Rearing habitat may also be affected by filling of interstitial spaces of stream rubble and filling of pool habitat (Goetz 1997, Jakober 1995). Long-term, chronic sediment delivery from roads can affect channel structure and stability. If intensity and duration of ground disturbance is great enough in a limited area, it can affect channel structure and stability (Furniss et al. 1991).

Direct and Indirect Effects

Bull trout, westslope cutthroat, and redband trout are most sensitive to changes that occur in headwater areas encompassing important spawning and rearing habitats for fluvial and adfluvial stocks, as well as resident populations (Quigley et al. 1997). With many forest roads in headwater areas, there is high potential for native fishes to be influenced by road related activities. Road failures would directly affect sediment delivery to streams and potentially affect westslope, redband, and bull trout and their respective habitat. Increased sediment production could decrease habitat diversity, degrade spawning and rearing habitat, and reduce aquatic insect productions.

Alternative D Modified and Alternative E Updated represent programmatic decisions that would guide future decisions about access as it relates to specific activities and projects, and therefore, will have no direct effects on the watershed and fisheries resources in the analysis area. Any direct effects would be caused by implementing future subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives. Alternative D Modified and Alternative E Updated would affect BMUs that overlap with occupied bull trout, westslope cutthroat, interior redband, burbot and western pearlshell habitat.

Alternative D Modified and Alternative E Updated would change access within BMUs in the Selkirk and Cabinet-Yaak Recovery Zones. For the BMUs requiring future management to comply with the proposed standards, road access would change as appropriate. To meet these standards, selected roads would be gated or barriered. Each action has both short-term negative and long-term beneficial effects. The level or intensity of effects to aquatic resources would vary depending on the location of selected roads, associated aquatic resources, and the level of treatment selected for the specific road.

Gating or constructing barriers across roads have the greatest long-term risk to aquatics when roads are closed but are not made hydrologically stable prior to closure. Once a road is closed to administrative access, maintenance is discontinued, which may increase the potential risk to aquatic resources as the lack of maintenance is the primary cause for road failures and subsequent sedimentation to stream channels (USDA Forest Service 1998b; 1999a; and 2000b). Road failures include culvert failures, fill slope failures, ditch failures, and surface erosion. These failures and their associated effects are typically reduced or avoided through road maintenance. Subsequent site-specific decisions at the project level will consider hydrologic needs when gates or barriers are proposed for road status changes. Design elements for Alternative D Modified and Alternative E Updated include allowances for entering core area to stabilize existing roads (see Design Elements starting on pages 19 and 26).

Road treatments could also increase sediment delivery to streams and affect fish and aquatic habitat; however, the effects tend to be isolated and of short duration. Monitoring of road treatment activities on the Libby Ranger District (KNF) and Priest Lake Ranger District (IPNFs) has documented that the increase in turbidity and sedimentation is isolated to the project site and of very short duration (USDA Forest Service 1998c; Foltz et al. 2008). Associated sediment transport is also very limited. The long-term benefits of reducing water routing, sediment input, the potential for road failures, and restoring fish passage would outweigh the short-term negative effects of the work required to make proposed roads (hydrologically) stable.

The treatments of barriered roads pose a short-term negative impact with a long-term beneficial effect to the watershed and associated fisheries habitat. Short-term effects are associated with sediment generated in close proximity to active channel stream crossings. The greatest short-term effects are associated with removing culverts in live stream crossings. After treatments, negative effects from sediment would be reduced as disturbed areas are revegetated. Activities associated with treatments such as unstable fill removal, ripping road prisms, and recontouring can be done in time for revegetation to occur prior to fall rains. When vegetation occurs prior to fall rains, associated sediment generation is usually negligible.

One key factor in reducing the risk of road failure is culvert removal. Removing culverts would prevent them from plugging and the associated fill slope failures from occurring, thereby preventing large increases in stream channel sediment. Channel widths, slope, and streambed forms are artificially altered upstream and downstream of culverts (Lee et al. 1997). By removing culverts and reconstructing the stream channels where the culverts were located, the stream channel and fish habitat would begin to be restored.

Bull trout, westslope cutthroat, and redband trout are most sensitive to changes that occur in headwater areas encompassing important spawning and rearing habitats for fluvial and adfluvial stocks as well as resident populations (Quigley et al. 1997). With many forest roads in headwater areas, there is high potential for native fishes to be influenced by road related activities. Road failures would directly affect sediment delivery to streams and potentially affect westslope, redband, and bull trout and their respective habitat. Increased sediment production could decrease habitat diversity, degrade spawning and rearing habitat, and reduce aquatic insect production.

Alternative D Modified and Alternative E Updated would affect Water Quality Limited Streams and Stream Segments of Concern. Beneficial effects would occur where roads are treated to meet wheeled motorized vehicle access management criteria. Restoration of the natural drainage pattern for surface and subsurface flow would benefit these watersheds.

Western pearlshell mussels occur in streams lower in the stream system, more often in Rosgen C channel types (Stangliano 2010). There is a potential for the mussels to be negatively affected if sediment from road failures reaches these stream segments. Culvert removals would have short-term negative impacts on the mussels, but in the long-term, the removal of the road failure threat would benefit the species.

The potential for long-term negative effects to Water Quality Limited Streams and Stream Segments of Concern would exist where roads were closed without first being made hydrologically stable. The potential for road failures and increased sediment would be elevated over the existing condition.

Both Alternative D Modified and Alternative E Updated include a provision for allowing an increase in route densities in BMUs that exceed (better than) the standard after all BMUs in the respective recovery zone meet their individual standards. This would allow for the opening of gated or barriered roads. As stated previously, gated and barriered roads that are not hydrologically stabilized prior to closure present some of the greatest long-term risk to aquatics. However, if the roads were stabilized prior to being barriered the potential for negative effects to aquatic species would be reduced. The effects of opening a gated or barriered road are therefore, dependent on what was initially done when the road was gated or barriered.

If a barriered road, that had been hydrologically stabilized prior to being barriered, is converted to a gated road, then any culverts that were removed would need to be reinstalled, which would cause a short-term sediment pulse. In addition, roads that are hydrologically stabilized are not included in road density calculations for fishery resources but gated roads are included in the calculation. As mentioned previously increases in road densities have been shown to have a negative effect on fish populations. If the barriered road had not been hydrologically stabilized then the conversion to a gated road would allow for routine road maintenance to occur thus removing a potential for culverts plugging and other forms of road failure, which would benefit aquatic species but there would be an increase in road densities. When the situation occurs, that road prescriptions can be changed due to achievement of grizzly bear standards, then additional site specific NEPA would be required and consideration of which roads to open would take into consideration effects to fish species.

Cumulative Effects

Alternative D Modified and Alternative E Updated would have an influence on aquatic resources throughout the Kootenai, Clark Fork, Pend Oreille, and Priest Lake subbasins. Increasing bear security within any BMU would be accomplished through changes in road access. As stated earlier, access restrictions would potentially increase risk to watersheds through road failures if roads were not made hydrologically stable. Treatment of roads would create short-term effects associated with implementation but would provide long-term benefits to the watershed and aquatic species.

Presently, there are 29 BMUs where national forest management occurs on between 81 to 99 percent of the BMU. There are two BMUs where national forest management occurs on 54 or 64 percent of the BMU. Activity on lands outside national forest can and does affect the fisheries resource but because of the low percentage of the area under management other than the Forest Service, it has limited influence. With that in mind, continued management activities that would affect wheeled motorized vehicle access management would include, but are not limited to: timber, silviculture, mineral related activities, grazing, watershed restoration, recreation, and fire suppression actions. Implementing these activities often requires modification of the existing transportation system. Changes would be developed through project-level NEPA decisions that address site-specific details. Generally, the changes would require adjusting road densities, building new roads, either temporary or permanent, and road treatments such as placing roads into intermittent stored service or decommissioning existing roads.

Road construction, either for temporary or system roads, would contribute sediment to stream systems as well as altering the existing drainage pattern by either routing surface flow or intercepted ground water. Negative impacts of temporary road construction would be short term and associated with construction and decommissioning. Construction of new system road would further alter the existing surface drainage pattern and would potentially intercept groundwater. Effects of new roads would be additive to the effects of roads put into intermittent stored service under future project level decisions. These effects would occur either on NFS lands, other Federal lands, state lands, or on private lands.

Continued implementation of Forest Plans as amended by INFS (USDA Forest Service 1995b) would require the improvement of existing transportation systems to address watershed concerns. Stream crossings would continue to be upgraded to accommodate 100-year flood events. Fish passage barriers would be removed to accommodate historic movements, except in Montana where isolated pure-strain westslope cutthroat populations are protected by migration barriers. This is consistent with the Memorandum of Agreement between the Forest Service and MDFWP for the Conservation of Westslope Cutthroat Trout (MDFWP 2007).

Effects to Recreational Fishing

The affected watersheds currently provide a varied degree of recreational fishing on NFS lands. Opportunities range from small streams and rivers, large rivers, ponds, reservoirs, and large natural lakes. Alternatives that change access would affect the accessibility of fishing opportunities. Alternative D Modified and Alternative E Updated would not negatively affect existing fishing opportunities by reducing numbers of fish; however, they would change some existing opportunities by limiting wheeled motorized vehicle access and reducing angler pressure. Alternative D Modified and Alternative E Updated would not modify INFS. Many areas in the analysis area do not provide a high degree of recreational opportunity for fishing due to small fish size. Both Alternative D Modified and Alternative E Updated would decrease access to some fishing areas within BMUs. There is the potential for reclaimed or barriered roads or their stream crossings to fail, resulting in site-specific impacts to the fisheries resources. This would potentially negatively impact habitat and reduce numbers of harvestable fish. There are no other known potential effects to recreational fishing.

Effects of Alternatives

Alternative D Modified

Direct and Indirect Effects

Direct and indirect effects would be consistent with those previously discussed in Effects Common to All Alternatives. Alternative D Modified requires the most change in wheeled motorized vehicle access and would provide the greatest increase in short-term negative effects with an overall long-term decrease in net associated risk of sediment delivery from roads. The estimated change would be from 598 to 768 miles of open roads changed to barriered; 282 to 403 miles of open roads changed to gated; and 665 to 999 miles of gated roads changed to barriered. Out of the total 1,545 to 2,170 miles of roads proposed for status change, 81 percent would be barriered with no access permitted. The associated risk to water quality and fisheries would only be reduced when roads are made hydrologically stable to reduce water routing, sediment input, potential for road failures, and restore fish passage.

Cumulative Effects

Currently in Alternative D Modified, of the 30 BMUs, three BMUs meet the proposed standards for OMRD, four BMUs meet the criteria for TMRD, and five BMUs meet the proposed criteria for core area. BMUs 1, Salmo Priest, and Ball Trout are the only three BMUs that would require no change under this alternative to be consistent with the proposed standards. Management action decisions within the remaining BMUs would need to increase the miles of gated and barriered roads to achieve the proposed standards. These gated and barriered roads would receive less road maintenance, which would increase the risk of road failure and associated sediment delivered to streams.

Selecting Alternative D Modified would require reducing OMRD and TMRD across the Selkirk and Cabinet-Yaak Recovery Zones, as management decisions are implemented to meet proposed standards. Activities implemented to meet these standards, along with other management activities discussed in this section and in the introduction to this chapter, would cause increased short-term sediment levels to streams. Provided that the treatments of barriered and gated roads are adequate to reduce the risk of failure to acceptable levels for the life of the closure, there would be a long-term benefit to water quality and fisheries resources as road densities are reduced, stream crossings removed, and the risk of road failure is reduced through the implementation of Alternative D Modified.

Alternative E Updated

Direct and Indirect Effects

Direct and indirect effects would be consistent with those discussed in Effects Common to All Alternatives. Alternative E Updated would not require as great a change in wheeled motorized vehicle access management but would provide a decrease in net associated risk of sediment delivery to streams associated with road densities. The estimated change would be from 16 to 48 miles of open roads changed to barriered; 18 to 54 miles of open roads changed to gated; and 74 to 222 miles of gated roads changed to barriered. Out of the 108 to 324 total miles of roads proposed for status change, 83 percent would be barriered. The net associated risk would only be reduced when roads are made hydrologically stable to reduce water routing, sediment input, the potential for road failures and restore fish passage.

Alternative E Updated would provide the opportunity to address watershed concerns through site-specific projects developed to meet OMRD, TMRD, and core area objectives. This would potentially benefit aquatic resources as needs were identified through project level NEPA analysis.

Cumulative Effects

Currently under Alternative E Updated, 21 BMUs meet the proposed standards for OMRD, 19 BMUs meet the standards for TMRD, and 17 BMUs meet the standards for core area. The remaining BMUs would require increased miles of gated and barriered roads to meet the proposed standards. These gated and barriered roads would receive less road maintenance, which translates into greater risk of road failure with subsequent sedimentation to streams.

Selecting the proposed action would require reducing TMRD and/or OMRD in BMUs Bull (4), Wanless (6), Silver Butte-Fisher (7), Vermillion (8), Roderick (11), Keno (13), East Fork Yaak (16), Boulder (18), Grouse (19), N. Lightning (20), Scotchman (21), Mt. Headley (22), and Kalispell-Granite as management decisions are implemented to meet proposed standards. Actions implemented in BMUs Bull (4), St. Paul (5), Wanless (6), Silver Butte-Fisher (7), Pulpit (10), Roderick (11), East Fork Yaak (16), Boulder (18), Grouse (19), Mt. Headley (22), Blue-Grass, Kalispell-Granite and Lakeshore would also be affected by the proposed core area standard.

Activities implemented to meet these standards, along with other management activities discussed in this section and in the introduction to this chapter, would cause increased short-term sediment levels to streams. Provided that the treatments of barriered and gated roads are adequate to reduce the risk of failure to acceptable levels for the life of the closure there would be a long-term benefit to water quality and fisheries resources as road densities are reduced, stream crossings removed and the risk of road failure is reduced in these same BMUs through the implementation of Alternative E Updated.

Statement of Findings

Threatened, Endangered, and Sensitive Aquatic Species

Forest activities are not listed among the threats to the Kootenai River white sturgeon or their habitat (USDI Fish and Wildlife Service 1994a, USDI Fish and Wildlife Service 2008b). Changes in access and potential road treatments under Alternative D Modified and Alternative E Updated will have no effect to Kootenai River white sturgeon or designated critical habitat in the mainstem Kootenai River.

Based on the analysis above, Alternative D Modified and Alternative E Updated **may affect, and are likely to adversely affect** bull trout. This determination for Alternatives D Modified and Alternative E Updated is based on the superimposition of affected BMUs on occupied bull trout habitat. Impacts associated with implementing Alternative D Modified and Alternative E Updated would result in the potential for short-term negative impacts to habitat and the possible harm or harassment to individuals. Implementation of Alternative D Modified and Alternative E Updated could indirectly affect designated critical habitat downstream of NFS lands, but is not likely to adversely affect designated critical habitat. A biological assessment will be prepared as a separate document and submitted to the USFWS.

Alternative D Modified and Alternative E Updated **may impact individuals but are not likely to cause a trend toward federal listing or result in a loss of viability** for interior redband, westslope cutthroat trout, burbot, and western pearlshell mussels. This determination for Alternative D Modified and Alternative E Updated is based on the superimposition of BMUs affected by the alternatives on known occupied burbot, interior redband trout, western pearlshell mussel and westslope cutthroat trout habitat and the potential that individuals may be affected by short-term negative impacts to habitat and individuals. This assessment constitutes the biological evaluation for interior redband trout, westslope cutthroat trout, western pearlshell mussels and burbot.

Forest Plan Consistency

Alternative D Modified and Alternative E Updated would be consistent with the respective Forest Plans as they were amended by INFS (USDA Forest Service 1995b) to protect riparian values and aquatic resources. The alternatives would not affect the current direction for protecting aquatic resources as provided in the three Forest Plans.

Vegetation and Timber Management

Introduction

This section describes the environmental effects of Alternative D Modified and Alternative E Updated on forestland vegetation and timber management.

Changes between the DSEIS and FSEIS

The transportation system’s existing condition of miles of road and trail was updated from 2006 to 2009 data. The new transportation baseline conditions were used for Alternative D Modified and Alternative E Updated analyses.

Regulatory Framework

The regulatory framework providing direction for the management of forest vegetation is provided through the NFMA and the Forest Plans for the KNF (USDA Forest Service 1987c), LNF (USDA Forest Service 1986), and IPNFs (USDA Forest Service 1987b). NFMA provides for balanced consideration of all resources. It requires the Forest Service to plan for diversity of plant and animal communities. The Forest Plan, in compliance with NFMA, establishes forestwide management direction, goals, objectives, standards, and guidelines for the management for forest vegetation and plant communities.

Affected Environment

A discussion of the affected environment for the vegetation and timber management resource is provided in the 2002 FEIS on pages 3-93 to 3-99. Except for the following updated information, that analysis is incorporated by reference into this document.

Historical Harvest of Timber

Forest Plans for the three Forests were approved in the late 1980s. Timber management goals, objectives, and standards were identified for each Forest along with a numerical upper limit for timber harvest, or allowable sale quantity (ASQ). Timber quantities were expressed either by board feet or by acres treated. The IPNFs determined that an ASQ of 280 million board feet (MMBF) from 18,688 acres was appropriate for the IPNFs. The KNF determined that an ASQ of 227 MMBF from 16,500 acres was appropriate for the KNF. The LNF arrived at an ASQ from 1986 through 1995 of 107 MMBF from 17,113 acres; and from 1996 through 2005 the ASQ is set at 131 MMBF from 20,677 acres. This number is considered a “ceiling” of the maximum timber to be harvested.

Since the Forest Plans were approved, the ASQ has never been reached. The number of acres annually treated with timber harvest has shown a lot of variability in recent years, but the trend has been slightly downward. The volume harvested has declined more rapidly over the same period because of changes in management direction and silvicultural regimes, from primarily regeneration harvest early in the period to primarily intermediate and salvage harvest in more recent years.

Figure 12 displays acres harvested from 1987 to 2007 for all suitable timber lands, and Figure 13 displays a similar trend of acres harvested within the Selkirk and Cabinet-Yaak Recovery Zones.

As a result of past regeneration harvest activities and reforestation, there are many areas of young even-aged stands that are meeting land management objectives. However, many of these young stands will require stand tending in the form of thinning or stocking control to maintain desired growth and species composition. Managers wanting to maintain the dominance of seral, shade intolerant species must evaluate these stands as they develop and consider the need for some stand tending. Table 47 displays acres of potential stand tending needs by BMU.

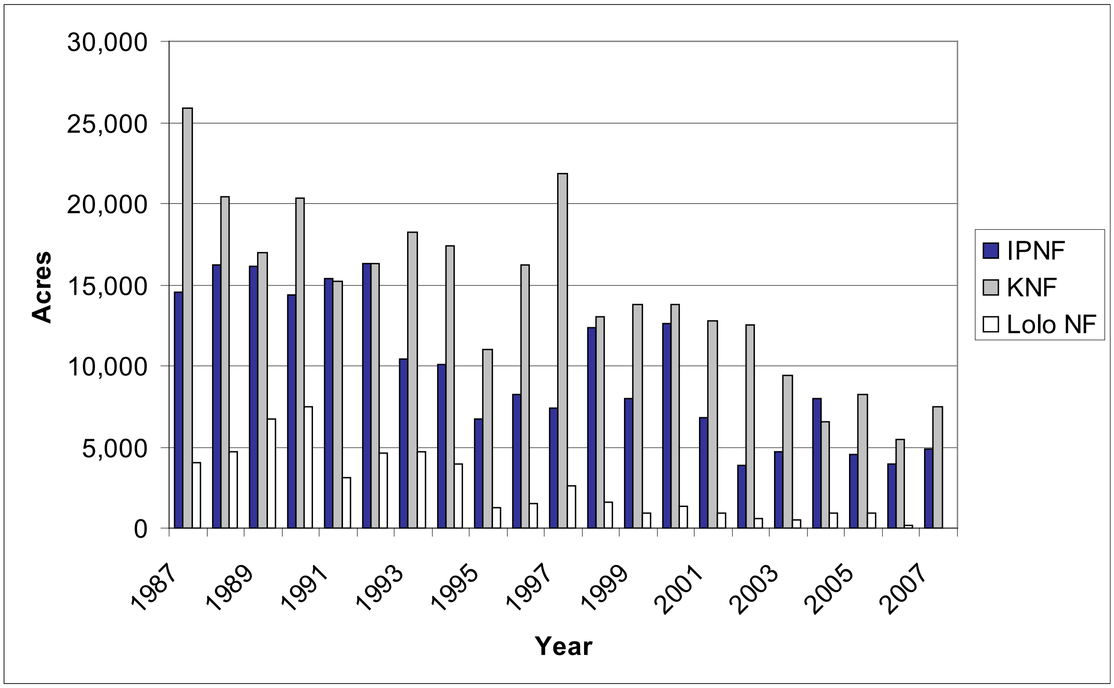

Figure 12. Timber harvest acres since 1987

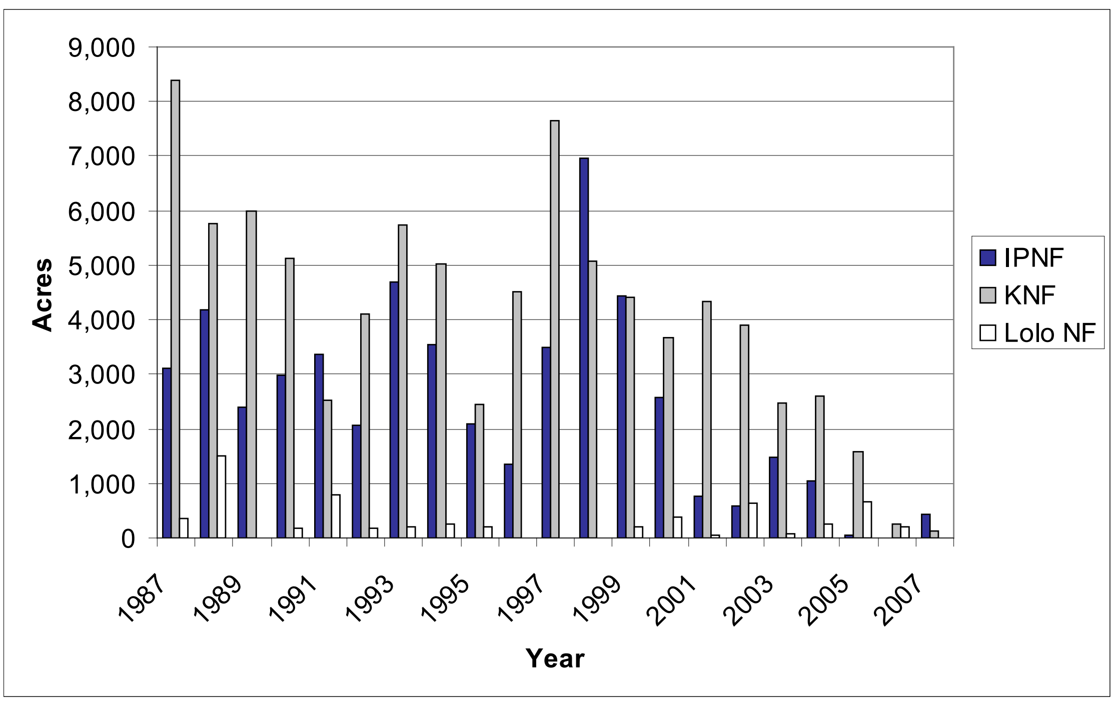

Figure 13. Acres of timber harvest in Selkirk and Cabinet-Yaak Recovery Zones since 1987

Table 47. Potential stand tending need (based on past regeneration harvest)

BMU	Forest	Acres
Cabinet/Yaak Recovery Zone		
1 - Cedar	KNF	1,537
2 - Snowshoe	KNF	3,706
3 - Spar	KNF	9,620
4 - Bull	KNF	2,273
5 – St. Paul	KNF	4,779
6 – Wanless	KNF	1,850
7 – Silver Butte	KNF	243
8 – Vermillion	KNF	3,204
9 – Callahan	KNF	10,163
10 – Pulpit	KNF	15,335
11 – Roderick	KNF	7,617
12 – Newton	KNF	9,321
13 – Keno	KNF/IPNFs	6,549
14 – NW Peak	KNF/IPNFs	12,761
15 – Garver	KNF	26,651
16 – E.F. Yaak	KNF	25,866
17 - Big Creek	KNF	16,752
18 – Boulder	IPNFs	4,480
19 – Grouse	IPNFs	11,817
20 – N. Lightning	IPNFs	11,471
21 – Scotchman	IPNFs	4,248
22 – Mt. Headley	LNF	1,033
Selkirk Recovery Zone		
Blue-Grass	IPNFs	9,258
Long-Smith	IPNFs	7,516
Kalispell-Lakeshore	IPNFs/CNF	11,706
Salmo-Priest	IPNFs/CNF	7
Sullivan-Hughes	IPNFs/CNF	3,704
Myrtle	IPNFs	5,481
Ball-Trout	IPNFs	3,280

Analysis Methods

Designation of suitable timberlands was determined in the Forest Plans. Timberland suitability is based in part on factors such as rainfall, temperature, or other growing conditions affecting the ability of trees to establish cover on a site. The potential for successful regeneration within five years or for irreversible damage from timber harvest to soil, slope, or other watershed conditions are also factored into the suitability determination. There may also be special areas designated by statute, Executive order, or regulation where timber harvest is prohibited. Timber suitability by BMU was determined using GIS or database queries based on suitability designations from the Forest Plans. The acreage estimates of timber land suitability utilized in the 2002 FEIS are still valid and appropriate for use in this supplemental analysis, as there were either no or minimal changes to timber suitability designation since 2002.

The acres of potential stand tending need were derived from past regeneration harvest within the analysis area. Stand tending needs within the individual BMUs were qualitatively ranked based on the amount of acres potentially needing treatment. BMUs having less than 5,000 acres of stand tending needs were identified as low priority. BMUs having greater than 5,000 but less than 10,000 acres were identified as medium priority. BMUs with 10,000 acres or more of stand tending needs were identified as high priority.

The vegetation and timber management analysis is based on changes to wheeled motorized vehicle access management status for each alternative (see Table 40 on page 169 and Table 42 on page 173). The assumptions used in the analysis include: 1) the percentage change in total road miles from open or gated to barriered would correspond to the same percentage change in suitable acres accessed; 2) roads are uniformly distributed over the land; 3) roads barriered would also occur uniformly; and 4) acres with past regeneration harvest would require some stand tending. Because the programmatic nature of this analysis does not allow us to know which roads would be proposed to be barriered at some future date, the acres represented by this analysis are only relative estimates, and not a true representation of the accessible acres for the purpose of timber management.

For this analysis, the range of road mileage changes presented for the various access categories (see Transportation section on page 156) are assumed to be independent of one another, and therefore, are additive in nature. This provides a conservative estimate of the miles of road category change needing to be implemented under Alternative D Modified and Alternative E Updated to achieve the proposed standard.

The analysis indicators include suitable acres accessed by BMU and access to acres with stand tending needs.

Direct, Indirect, and Cumulative Effects

This section discloses the environmental effects of implementing Alternative D Modified and Alternative E Updated described in Chapter 2 on forest vegetation and the timber resource. Chapter 3's discussion of the affected environment and description of anticipated effects forms the scientific and analytical basis for the comparison of alternatives. Impacts to the vegetation and timber resource are linked to the issues identified in Chapter 1.

Each alternative would have varying effects on land managers' ability to treat forest vegetation. As stated elsewhere in this document, this is a programmatic decision that does not identify site-specific actions (particular road and trail access decisions). Therefore, the comparison of alternatives described here is based on generalized effects associated with loss of access and additional road closures.

As described in the Social and Economic section on page 221 and the public involvement discussion in Chapter 4 of the 2002 FEIS and Appendix B of this FSEIS, the public expressed concerns about reductions in access affecting management of vegetation (timber) on public lands. Restrictions on wheeled motorized vehicle access could limit administrative access and could change the means in which land managers respond to fire, windthrow, and insect and disease outbreaks and infestations. Changes in access could affect motorized travel to and/or from private inholdings; but these situations are likely to be limited and occur in case-by-case circumstances.

See Social and Economic section on page 221 for a discussion of the potential impacts to the communities within the analysis area and zone of influence.

The Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin (ICBEMP; USDA Forest Service 1996) discussed the need for restoration and maintenance of long-term ecosystem health and ecological integrity. Future vegetation management could include efforts to meet the following objectives:

- Increasing ponderosa pine and western larch on its historic range on the dry forest type.
- Maintaining the viability of and increasing western white pine on the moist forest type.
- Increasing the dominance of the early-successional, shade-intolerant species on the moist forest type.
- Maintaining the viability of and increasing whitebark pine on the cold forest type.

Effects Common to All Alternatives

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on vegetation or timber resources in the analysis area. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives. Indirect effects on vegetation and the timber resource were measured as a loss of administrative access to suitable acres.

The scope of the proposal (management of access provided by roads and trail systems) limits potential effects to vegetative manipulation. The ability of the land and resource managers to respond to needs created by fire, windthrow, and insect and disease, and the ability to provide timber or other commodities, would be affected. Alternative D Modified and Alternative E Updated would have indirect effects on vegetation and the timber resource in the Selkirk and Cabinet-Yaak Recovery Zones. Access is necessary to respond to forest health needs, to manage vegetation to achieve restoration goals, and to provide commodity outputs.

Alternative D Modified and Alternative E Updated, as described in Chapter 2 on pages 19 and 25, respectively, would provide varying amounts of OMRD, TMRD, core area, and administrative use trips that would have effects on land managers' ability to access suitable timber lands. Table 40 on page 169 used OMRD and TMRD to indicate the degree of change in access available for vegetation and timber management.

The successes of recovery plan implementation have resulted in expansion of grizzly bear populations beyond the boundaries of the Selkirk and Cabinet-Yaak Recovery Zones. There are seven identified BORZ polygons, totaling about 725,000 acres of NFS land, outside the recovery zones, where grizzly bears are known or expected to occur regularly on an annual basis (see Table 25 on page 85 and Figure 3 on page 5). Wheeled motorized vehicle access related standards for these areas include: 1) no increases in permanent linear miles of open road on National Forest System lands (i.e., non-gated roads open to the public) and 2) no net permanent increases in linear miles of total roads on NFS lands, above baseline conditions in these BORZ).

To prevent permanent increases in miles of linear open road in the BORZ, the Forest Service would restrict (gate) any roads that may be opened or constructed as a result of proposed timber harvest activities. Gated roads would prevent general public wheeled motorized vehicle use but allow administrative use, such as for timber harvest and associated activities. Increases in permanent miles of total roads would be prevented by effectively closing any newly constructed roads with a barrier immediately upon completion of use. Barriered roads prevent both public and administrative use. Barriered roads would prevent both public and administrative use. However, project design features allow for an exception to immediate closure upon completion of use. Roads may be “opened” to the public immediately following completion of all mechanized harvest and post-harvest slash activities requiring use of the road, to allow motorized public use during the bear summer season prior to the fall bear hunt (i.e., June 16-August 31) for activities such as personal firewood collection. This public access would only be provided in cases where the mechanized harvest and/or post-harvest slash activities occurred during the same active bear year.

Cumulative Effects

Across the three Forests, the number of acres annually treated with timber harvest has shown much variability in the years since implementation of the 1987 Forest Plans, but overall the trend has been downward (see Figure 12 on page 195). The volume harvested has declined more rapidly over this same period because of changes in management direction and silvicultural regimes, from primarily regeneration harvest early in the period to primarily intermediate and salvage harvest in more recent years. Within the recovery zones, the trend of timber harvest has shown a similar trend (see Figure 13 on page 195). Since 2002, including the decline in timber harvest, across the recovery zones there has been a net reduction in number of miles of Total Motorized Routes. In 2009, there were about 250 fewer miles of Total Motorized Routes than in 2002 (see Table 39, p. 162). This reduction reduces the resource manager’s ability to access suitable timberlands for future treatment needs and it would combine cumulatively with the reductions in miles of open and gated roads proposed under Alternative D Modified and Alternative E Updated to further restrict access to suitable timberlands within the recovery zones.

Past, present and reasonably foreseeable project level activities within the recovery zones are expected to include actions that would improve grizzly bear security conditions, including road storage and decommissioning activities. Road decommissioning could reduce opportunities for future timber harvest and stand tending needs. For example, on the Priest Lake Ranger District of the IPNFs the Lakeview Reeder project has decommissioned approximately 25 miles of existing road within the Kalispell-Granite BMU (USDA Forest Service 2009a). On the Plains-Thompson Falls Ranger District of the LNF, the Fishtrap project will decrease TMRD and increase core area within BMU 22 through various road decommissioning activities (USDA Forest Service 2008f).

By law (Alaska National Interest Lands Conservation Act), the Forest Service must provide for adequate access to private land inholdings within the national forests. In 2004, Stimson Lumber Company was granted a road authorization for long-term road access across NFS lands within the Kalispell-Granite BMU for the purposes of accessing private inholdings. In the future, it is uncertain as to how much or when new roads may be constructed on private lands or across NFS lands to access inholdings, but if roads are constructed within a BMU, they are categorized as IGBC 4 (open) roads and would influence the calculations for OMRD and TMRD. If this were to prevent the affected BMU from meeting security standards, then core area designation and route density adjustments may be necessary elsewhere on NFS lands within the affected BMU to compensate for the difference. Such compensation could result in reduced road access on NFS lands within the affected BMU, thereby potentially reducing access options for future vegetation treatment needs.

The National Fire Plan (USDA and USDI 2000) and science data from the Interior Columbia Basin Ecosystem Management Project (USDA Forest Service 1996) have identified the need for more active management of the vegetation on public lands. Based on direction in the National Fire Plan, the Healthy Forests Initiative, and the Healthy Forests Restoration Act of 2003 (16 U.S.C. Chapter 84, § 6511 - 6518), the Forest Service has initiated proposals for maintaining or restoring healthy forests and lands by reducing heavy fuel loading and insect and disease risks. Management of vegetation and reduction of fuels loads is generally emphasized around structures. Some of the vegetation restoration work identified would be more difficult to perform with changed or increased wheeled motorized vehicle access management standards. See the Fire, Fuels, and Air Quality section on page 243 for more information on the alternatives' potential effects on implementing the National Fire Plan.

The Northern Rockies Lynx Management Direction, which amended 18 Forest Plans, including the KNF, LNF, and IPNFs Forest Plans, provides management direction for the conservation of lynx (USDA Forest Service 2007b). The management direction in the lynx amendment (with certain exceptions for activities occurring within the wildland-urban interface and for the purposes of maintaining/restoring aspen, whitebark pine, and planted rust-resistant western white pine) limits precommercial thinning activities in winter snowshoe hare habitat in young regenerating forests (USDA Forest Service 2007b). The limiting of precommercial thinning is unlikely to affect long-term sustained yield within the analysis area, as defined by the NFMA, because the cubic foot volume would not substantially change. However, the volume would be spread among more, smaller trees without thinning (USDA Forest Service 2007b).

The Northern Rockies Lynx Management Direction also precludes harvest of multi-story mature or late-successional forest in snowshoe habitat, except for certain exceptions within the wildland-urban interface (USDA Forest Service 2007b). While this limitation, by itself, would not be likely to result in an overall change in timber outputs, there would be changes in what material could be harvested and where it could be harvested.

The limitations contained within the Northern Rockies Lynx Management Direction would combine cumulatively with both the reduced access to suitable timber lands and stand tending disclosed as indirect effects of this amendment. The effects from this reduced access likely include many of the same areas affected by lynx limitations so the extent of cumulative effects may be similar to the indirect effects disclosed in this amendment. For Alternative D Modified and Alternative E Updated, the limitations of the Northern Rockies Lynx Management Direction could combine cumulatively with the reductions in access afforded with the alternatives to further limit the Forests' ability to address the need for restoration and maintenance of long-term ecosystem health and ecological integrity of suitable lands. Cumulative effects would be greatest with Alternative D Modified because it would convert greater amounts of open or gated roads to barriered status than would Alternative E Updated.

The Roadless Area Conservation Rule (USDA Forest Service 2001b), if in effect in Montana, permits timber harvest within IRAs provided at least one of the exceptions found at 36 CFR 294.13(b) is met. Road construction or reconstruction within these areas for the purposes of addressing forest health improvement objectives (for example, thinning to improve vigor or fuels reduction) is not permitted. Helicopter would be the principal yarding method utilized for timber harvest under the Roadless Rule, except in those areas that may be accessed by existing roads that do not require reconstruction. Because of the high cost of this logging system, cost per acre would increase substantially and proportionally with the distance of such harvest from the nearest road, thus effectively limiting its use. Therefore, the Roadless Area Conservation Rule would combine cumulatively with the alternatives considered to further restrict access to suitable acres for timber harvest and stand tending purposes. If the Roadless Rule is not in effect in Montana, then the 1987 Forest Plan management direction would apply and there would be no cumulative effects to access suitable timber acres for timber harvest.

In the Idaho Roadless FEIS and Rule [36 CFR 294 Subpart C (USDA Forest Service 2008c and 2008d)], the Primitive theme permits timber harvest: to improve threatened, endangered, proposed, or sensitive species habitat; to maintain or restore characteristics of ecosystem composition and structure; or to reduce the significant risk of wildland fire effects to an at-risk community or municipal water supply system. However, only existing roads or aerial systems would be able to be used. It is expected that timber cutting in the Primitive theme would be rare and therefore, roadless characteristics would be maintained.

In the Idaho Roadless FEIS and Rule, the Backcountry theme permits road construction and/or reconstruction when done to facilitate timber harvest within a community protection zone. While some roads could be constructed outside the community protection zone for activities designed to reduce the significant risk of wildland fire to communities and municipal water systems, the Idaho Roadless FEIS and Rule expects these instances to be limited because of additional conditions that would have to be met. The Idaho Roadless FEIS and Rule is expected to be more effective in addressing forest health concerns in the IRAs than the Roadless Area Conservation Rule, but less effective than existing forest plans. Therefore, the Idaho FEIS and Rule, in conjunction with the alternatives considered in this FSEIS, could further restrict access to suitable acres.

Overall, the above past, present, and reasonably foreseeable actions are expected to combine cumulatively with Alternative D Modified and Alternative E Updated to reduce opportunities for accessing suitable timber lands within the Selkirk and Cabinet-Yaak Recovery Zones. Of the alternatives considered, Alternative D Modified would have the greatest negative cumulative effect on the ability of the land and resource manager to access suitable timber land in order to respond to vegetation treatment needs created by fire, windthrow, and insect and disease, and the ability to provide timber or other commodities to society. Alternative D Modified could convert between 1,263 and 1,757 miles of either open or gated road to barriered status when fully implemented. In comparison, Alternative E Updated could convert between 90 and 270 miles of either open or gated road to barriered status, resulting in less of a cumulative impact on access to suitable timber land than Alternative D Modified.

Effects of Alternatives

Alternative D Modified

Direct and Indirect Effects

Alternative D Modified would set BMU standards for OMRD, TMRD, and core area at the high levels (OMRD of less than or equal to 17 percent, TMRD of less than or equal to 14 percent, and core area of greater than or equal to 72 percent in each BMU) utilized by one of the bears from the study by Wakkinen and Kasworm (1997), with BMUs that are unable to meet these standards set at the highest possible, considering all roads under the jurisdiction of the Forest Service. It would allow very little flexibility for management access, but would allow administrative use at 57 and 60 round trips, respectively, on roads outside core area in the Selkirk and Cabinet-Yaak

Recovery Zones. The effect of Alternative D Modified on OMRD and TMRD, and thus on management access, is substantially higher than Alternative E Updated.

Alternative D Modified would have the highest reduction in suitable acres accessed (see Table 48 and Table 49 on page 203), and would provide the lowest level of opportunities to access stands with stand tending needs (see Table 49 on page 203). For BMUs not meeting the core area standard, actions affecting core area must result in increased post-project core area. Other core area requirements would include consideration for seasonal needs, and fixing core area in place for a minimum of 10 years. This alternative would greatly restrict management activities within the analysis area by converting between 1,263 and 1,757 miles of either open or gated road to barriered status (see Table 40 on page 169). BMUs requiring large increases of core area in Alternative D Modified include Spar, Bull, St. Paul, Wanless, Silver Butte, Vermillion, Callahan, Pulpit, Roderick, Newton, Keno, Northwest Peak, Garver, East Fork Yaak, Big Creek, Boulder, Grouse, North Lightning, Scotchman, Mt. Headley, Blue Grass, Myrtle, Sullivan Hughes, Kalispell-Granite, and Lakeshore.

Opportunities for opening currently barriered roads would be available only in BMU 1 (see Table 40 on page 169). In BMU 1, there would be an opportunity to convert between 8 and 19 miles of road currently barriered to either open or gated, potentially providing for a small increase in the amount of suitable timberland accessible for administrative use.

Alternative E Updated

Direct and Indirect Effect

Alternative E Updated would set road densities and core areas individually for each BMU based on the presence of uncontrollable factors such as highways, county roads, settlements, etc. It provides for some flexibility for management access and would allow administrative use at 57 and 60 round trips, respectively, on roads outside core area in the Selkirk and Cabinet-Yaak Recovery Zones. The effect of Alternative E Updated on OMRD and TMRD, and thus on management access, is less restrictive than Alternative D Modified.

Alternative E Updated would result in a reduction in suitable acres accessed (see Table 48 and Table 49) and would reduce opportunities to access stands with stand tending needs (see Table 50 on page 204). Although core area requirements are more flexible in Alternative E Updated, in the short-term, existing core must stay in place for 10 years. Alternative E Updated would restrict management activities within the analysis area by converting between 90 to 270 miles of either open or gated road to barriered status (see Table 42 on page 173). BMUs requiring large increases in core area with this alternative are Vermillion, Boulder, Grouse, Mt. Headley, Blue Grass, and Kalispell-Granite.

Opportunities available for opening currently barriered roads and providing access to suitable timberlands would be available in eight BMUs, which are Cedar, Snowshoe, Newton, Big Creek, Salmo-Priest, Myrtle, Ball-Trout, and Long Smith (see Table 42 on page 173). This flexibility would result in an opportunity to convert between 36 and 108 miles of road currently barriered to either open or gated status, potentially providing for a small increase in administrative access to suitable timberland.

Alternative Comparison

Table 48 compares the reduction in total road access and effects on suitable lands between Alternatives D Modified and E Updated.

Table 48. Reduction in total road access and effects on selected suitable lands

Alternative	Administrative Trips*	Reduction in Total Road Access (miles)	BMUs with Reduced Road Access	Effect on Access to Suitable Lands with Regeneration Harvest
D Modified	57 (SRZ) 60 (CYRZ)	1,263 to 1,757	27	Very high impact on management access
E Updated	57 (SRZ) 60 (CYRZ)	90 to 270	14	High impact on management access

* Number of administrative round trips per road
CYRZ – Cabinet-Yaak Recovery Zone; SRZ – Selkirk Recovery Zone

Table 49 displays access to suitable acres in each BMU by alternative. Actual access to these stands will be affected by site-specific decisions made through project level analysis and decision-making. The acreages displayed represent only relative estimates to use in comparing effects of Alternative D Modified and Alternative E Updated.

Table 49. Suitable acres accessed by BMU by alternative*

BMU	National Forest	Suitable Acres Accessed (rounded to the nearest 1,000 acres)	
Cabinet-Yaak Recovery Zone		Alt D Modified	Alt E Updated
1	KNF	9,000	9,000
2	KNF	10,000	11,000
3	KNF	9,000	15,000
4	KNF	17,000	23,000
5	KNF	8,000	14,000
6	KNF	18,000	22,000
7	KNF	8,000	8,000
8	KNF	5,000	14,000
9	KNF	20,000	31,000
10	KNF	17,000	35,000
11	KNF	17,000	35,000
12	KNF	15,000	24,000
13	KNF/IPNFs	14,000	33,000
14	KNF/IPNFs	21,000	40,000
15	KNF	13,000	32,000
16	KNF	25,000	43,000
17	KNF	5,000	25,000
18	IPNFs	21,000	45,000
19	IPNFs	25,000	28,000
20	IPNFs	22,000	33,000

Table 49. Suitable acres accessed by BMU by alternative*

BMU	National Forest	Suitable Acres Accessed (rounded to the nearest 1,000 acres)	
Cabinet-Yaak Recovery Zone		**Alt D Modified**	**Alt E Updated**
21	IPNFs	9,000	12,000
22	LNF	70,000	77,000
Selkirk Recovery Zone		**Alt D Modified**	**Alt E Updated**
Blue-Grass	IPNFs	9,000	31,000
Long-Smith	IPNFs	22,000	22,000
Kalispell-Lakeshore	IPNFs	78,000	146,000
Salmo-Priest	IPNFs/CNF	0	0
Sullivan-Hughes	IPNFs/CNF	15,000	23,000
Myrtle	IPNFs	21,000	34,000
Ball-Trout	IPNFs	23,000	23,000
LeClerc	IPNFs/CNF	5,000	5,000
Total Cabinet-Yaak and Selkirk Recovery Zones		**550,000**	**890,000**

* Table does not reflect the opportunities potentially available for opening currently barriered roads under Alternative D Modified and Alternative E Updated.

Table 50 below displays access to suitable acres needing treatment in each BMU by alternative.

Table 50. Access to acres with stand tending needs

Alternative	Acres with Stand Tending Needs Accessed
Alternative D Modified	126,000
Alternative E Updated	224,000

Forest Plan Consistency

The NFMA requires that in developing, maintaining, and revising forest plans for units of the National Forest System, such forest plans provide for balanced consideration of all resources. The alternatives, as developed, provide for a balanced consideration of resources and would therefore be consistent with the NFMA. Furthermore, the alternatives would not alter goals, objectives, or management area allocations within the existing forest plans, nor do they affect applicability of any standards within the forest plans related to timber management.

Recreation

Introduction

The Forest Plans for the KNF, LNF, and IPNFs identify the following four primary recreation goals and objectives:

- To provide for developed recreation with expansion or development of new sites as demand and budget dictates;
- To provide for a variety of dispersed motorized and non-motorized recreation opportunities;
- To pursue opportunities to increase and improve the recreation trail system, including snow trails; and
- To continue to increase cooperative recreational programs with organizations, clubs, and other public agencies.

Determination of the existing conditions and demands for recreation activities, facilities, and opportunities are derived from facility inventories, facility maintenance work, observation by recreation specialists and technical personnel, and contact with recreation user groups and individuals. Guidance for management of recreation resources is provided in various FSM and FSH, as well as professional publications and documents.

Changes between the DSEIS and FSEIS

The primary changes between the DSEIS and this FSEIS include updates to the miles of open and restricted roads that would be available for Alternative D Modified and Alternative E Updated.

Regulatory Framework

Federal and state laws guide this analysis. In overview, the following regulations govern recreation on NFS lands.

- 1960 - The Multiple-Use Sustained-Yield Act states "… that the National Forests are established and shall be administered for outdoor recreation …" as one of the five purposes for management of the National Forests.
- 1964 - The Wilderness Act was passed to establish wilderness lands for the "… use and enjoyment of the American people …"
- 1964 - The National Forest Roads and Trails Act declared that an adequate system of roads and trails be constructed and maintained to meet the increasing demand for recreation and other uses.
- 1968 - The Wild and Scenic Rivers Act of 1968 establishes three classes of river systems: wild, scenic and recreation. The purpose of the act was to protect the river "… for the benefit and enjoyment of present and future generations".
- 1976 - The Federal Land Policy Act declares that "… the public lands be managed in a manner that … will provide for outdoor recreation and human occupancy and use."
- 1976 - The National Forest Management Act, in part, directed that in developing, maintaining and revising plans, such plans would provide for coordination of outdoor recreation and wilderness.

These laws, as well as forest plan goals and FSM guidance, provide substantial direction to consider the recreation resource in land use planning and to provide for outdoor recreational opportunities for the American public.

Analysis Area

The temporal limit (temporal bounds of analysis) for the recreation analysis in the 2001 FEIS was 20 years with 2000 as the base year. Data from use records, surveys, and studies were converted to the base year for analytical purposes. Projections of future recreational use were provided in two-decade intervals; 2010 and 2020. For this supplemental analysis, the base year is 2009 but the temporal limit remained 2000 to 2020.

Affected Environment

Recreational use within all BMUs that are within the Selkirk and Cabinet-Yaak Recovery Zones is well established and is an integral part of the management and use of the land. Opportunities provided a range from semi-primitive non-motorized cross-country travel to motorized summer and winter travel on a well-developed transportation system; remote backpack and horse camping to developed campgrounds with tables, toilets, and other amenities; and from a feeling of remoteness and solitude to one associated with the presence of other users.

Recreation is only one of the many uses of the national forests; however, demand for recreational opportunities by the public seems to be increasing faster than the demands for other uses. Since the early 1960s, Cordell has conducted surveys and reported his findings on outdoor recreation (Cordell 2004). In *Outdoor Recreation for 21st Century America*, he notes:

> “Outdoor recreation in forested settings is a fast growing land use across the United States, continuing a steady trend since before the 1950s. Currently, well over 90% of Americans participate in at least one outdoor recreation activity. Estimates of recreation days occurring in forest settings show walking for pleasure, viewing natural scenery, viewing birds, viewing flowers, viewing wildlife, day hiking, sightseeing, driving for pleasure, mountain biking, and visiting a wilderness or primitive area as the most actively engaged activities in 2000-2001. On National Forests alone, visitation estimates for the year 2000 show substantial use, most of which occurs in general, undeveloped forest areas (compared with use of developed sites). Use of National Forest totals over 137 million visits per year. … Rising demand and rising population, however, is leading to a decline in per capita acres of forest available for recreation – a trend likely to accelerate future conflicts over access and use by different interest groups."

Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends (Cordell 1999) was used in the analysis for the 2002 FEIS. This book documented the growth trend of outdoor recreation use between surveys in 1982-1983 and 1994-1995. It also provides a review of other studies and writings covering the trends of outdoor recreation. Nationally, of the 13 basic types of outdoor recreation surveyed, 11 increased. In the 12 years between surveys, some of these activities increased by more than 50 percent (Cordell 1999).

In his 2004 book, Cordell discussed trends by comparing recreational use between the 1994-1995 survey and the 2000-2001 survey for the nation as a whole. Table 51 below provides the changes for selected recreational activities associated with a national forest setting (Cordell 2004).

Table 51. Participation, percentages, and number of participants in the United States by activity, 1994-1995 and 2000-2001 (Source: Cordell 2004)

Activity	Percent Participating 1994-1995	Millions of Participants 1994-1995	Percent Participating 2000-2001	Millions of Participants 2000-2001	Percent Change 1994-1995 to 2000-2001
Developed Camping	20.7	40.5	26.4	56.2	38.7
Dispersed Camping	14.0	27.4	16.0	34.1	24.8
Picnicking	49.1	96.0	54.5	116.1	20.9
Hiking	23.8	46.7	33.3	70.9	51.8
Backpacking	7.6	14.8	10.7	22.8	53.8
Hunting	7.1	13.9	8.4	17.9	28.9
Fishing	10.4	20.3	13.6	28.9	42.8
Horse Riding	7.1	13.9	9.7	20.6	48.0
Snowmobiling	3.6	7.0	5.6	11.8	70.2
Cross-Country Skiing	3.3	6.4	3.8	8.1	27.6

Cordell did not make the same comparison for these activities for the 12-state Rocky Mountain region that includes Idaho and Montana. However, he did provide the number of days by persons over 16 years old that participated in those activities, which are displayed in Table 52 (Cordell 2004). Two additional activities included in the 2000-2001 survey that were not sampled in 1994-1995 are driving for pleasure and visiting a wilderness.

Table 52. Millions of recreation activity days by persons 16 years and older in forested settings

Activity	Millions of Days
Developed Camping	47
Dispersed Camping	29
Picnicking	48
Hiking	124
Backpacking	28
Hunting	22
Fishing	38
Horse Riding	44
Snowmobiling	15
Cross-Country Skiing	6
Driving for Pleasure	72
Visiting a Wilderness	56

Source: Cordell 2004

Cordell compared the trend in how many days a person participated in a specific activity between the two surveys. For example, recreational participation at sites designated for concentrated use, such as developed sites, experienced an overall increase in participation but the number of days by a single individual showed a slight decrease in use. This indicates that more people recreated at developed sites but did so for fewer days. Activities occurring over a larger landscape and often associated with roads and trails, such as driving, hiking, and horseback riding, showed little change between the two surveys, with one exception. The number of days participated in day hiking and backpacking increased during the six years between surveys. Not only did more people participate in these two activities, they did so for a longer period of time. Hunting days increased slightly while fishing days decreased. For snow-based activities, snowmobiling showed a slight increase in participation and skiing, downhill and cross-country, showed little change (Cordell 2004).

For the KNF, LNF, and IPNFs, overnight camping at five developed campgrounds was used to show a trend in use between 1990 and 2000. The five sites are Rexford Bench, Yaak River, Bull River, Dorr Skeels, and Sam Owen. These five sites were selected because they were within or near the Selkirk and Cabinet-Yaak Recovery Zones and reliable use records existed. Overnight use at the five developed sites increased 52 percent in the decade between 1990 and 2000. These same five sites showed a 23 percent increase in the six years between 2000 and 2006. Future increase at these five sites is expected to be less than what has been realized over the past two decades as three of the sites – Rexford Bench, Dorr Skeels, and Sam Owen – are reaching capacity between July 1 and Labor Day, especially during the weekends. However, all three Forests usually have capacity at other developed campgrounds to meet overnight use, provided all campgrounds continue to be operated and maintained.

The Forest Service implemented the standardized National Visitor Use Monitoring (NVUM) program in 2000. This program uses a stratified random sample to provide statistically sound estimates of visitor use for a national forest. Statistically sound estimates are available only for total recreational use on the national forest. The sample was not designed to provide statistically sound estimates for specific activities or for specific sites on a forest. The first round of surveys was completed on the LNF in 2000-2001, the KNF in 2001-2002, and the IPNFs in 2002-2003. The second round of surveys is currently underway but data is not yet available for the KNF or IPNFs.

Recreational use on the KNF from October 1, 2001 to September 30, 2002 was 1.11 million visits. A visit is the entry of one person on a national forest to participate in recreational activities for an unspecified period of time. During a visit, the person could have participated in more than one activity and could have visited more than one site. A person was considered the visitor and could visit the national forest more than once. The activity most utilized by visitors was viewing (wildlife, birds, scenery, flowers) followed by hiking, hunting, driving for pleasure, and other (relaxing, escaping noise or heat, etc.). At least 20 percent of the visitors indicated they participated in one or more of these activities. Almost half of the visitors interviewed who were asked what facilities were used listed forest roads followed by trails (30 percent). Of the total number of visits, approximately 60 percent occurred within or adjacent to the Selkirk or Cabinet-Yaak Recovery Zone.

For the IPNFs, recreational use was estimated at 855,000 visits from October 1, 2002 to September 30, 2003. Viewing was the activity most utilized followed by hiking, driving for pleasure, and other (relaxing). More than half of the respondents listed forest roads as a facility utilized followed by trails (40 percent). About half of the total visits occurred in the Forest's north zone, which includes the Selkirk and Cabinet-Yaak Recovery Zones.

Only a small portion of the LNF is located within the Cabinet-Yaak Recovery Zone. Since the NVUM survey data is for the entire Forest, the recreational visits estimated is not useful information for analyzing recreational impacts.

Established recreational use on the three Forests has been classified into five broad recreational opportunity classes based on the mode of access (motorized or non-motorized) and amount of development (developed or dispersed) to provide an analytical base to evaluate Alternative D Modified and Alternative E Updated. The five opportunity classes are:

- Motorized, Developed Recreation - includes recreating at campgrounds, picnic areas, beaches, cabin rentals, and other developed sites.
- Motorized, Dispersed, Summer Recreation - includes driving on roads, motorbike riding on trails, dispersed camping, boating, hunting, and fishing.
- Motorized, Dispersed, Winter Recreation - primarily snowmobile riding.
- Nonmotorized, Dispersed, Summer Recreation - includes hiking, horseback riding, hunting, fishing, and floating.
- Nonmotorized, Dispersed, Winter Recreation - includes cross-country skiing, downhill skiing, and snowshoeing.

Analysis Methods

Recreational trends and participation by the public in recreation opportunities and activities on the three Forests are derived from the following three sources:

- Actual counts of users such as nightly tallies used in many fee campgrounds and surveys, such as NVUM (National Visitor Use Monitoring);
- Field observations by recreation personnel and other Forest Service employees; and
- Statements made by the recreating public in conversations, phone calls, and during public meetings.

People respond differently to changes in outdoor recreational opportunities. Users are more likely to verbally respond or physically react if there is a perceived or actual change that they feel negatively affects them or affects an activity they enjoy. People’s actual behavior in response to a change or restriction in use may differ from how they state they will respond. However, past experience of people’s responses to similar change does give an indication of how recreationists are likely to respond to the alternatives being analyzed.

The recreation effect analysis is based on the known uses and participation levels; the potential changes in open roads, motorized trails, and areas allowing cross-country travel; and the expected reaction of the users.

Direct, Indirect, and Cumulative Effects

Effects Common to All Alternatives

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on recreation. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

Proposed changes in road status could affect public recreation opportunities and participation on the three Forests depending on which of the six changes in road status is utilized. Open roads that are gated or barriered would eliminate wheeled motorized vehicle travel. Nonmotorized travel, such as hiking, horse riding and biking could still occur. While administratively there is a difference in gated or barriered status (administrative use is allowed on gated roads but not barriered roads, except in emergency situations), the effects to public recreation are the same regardless if the road is gated or barriered. The exception is barriered roads become covered with vegetation in a few years while gated roads allow some opportunities to provide road maintenance. Change in road status from gated to barriered or barriered to gated would have little effect on recreational use. Roads that are changed from gated or barriered to open may provide some additional wheeled motorized opportunities. Motorized trails that are converted to non-motorized will have effects similar to open roads that are gated or barriered. The actual effect will depend on how many and which routes are changed.

Changes in the active bear year within the Cabinet-Yaak Recovery Zone from April 1-November 15 period to an April 1-November 30 period would reduce public motorized access on seasonally gated roads for an additional two weeks during the year and would likely preclude further motorized access until the following spring to these areas. This would reduce the public’s ability to gather firewood and potentially access these areas for hunting during the late fall period.

Cumulative Effects

The 2001 Off-Highway Vehicle FEIS and Record of Decision, and Forest Plan Amendments for Montana, North Dakota, and portions of South Dakota (USDA Forest Service 2001a) eliminated wheeled motorized cross-country travel on the KNF within the State of Montana with some specific exceptions listed in the Record of Decision. Although the LNF was within the analysis area for that project, no acres were affected by the decision and its forest plan was not amended. The IPNFs were not included in the analysis area.

The Roadless Area Conservation Rule (USDA Forest Service 2001b), if in effect in Montana, would limit road construction and reconstruction within IRAs (see Appendix A on page 303). It has the potential to prevent development of some recreation facilities within the IRAs. The Idaho Roadless FEIS and Rule (USDA Forest Service 2008c and 2008d) provides management direction within IRAs in Idaho and prohibits road construction and reconstruction for recreational purposes in all themes except General Forest, Rangeland and Grassland (GFRG). About 12,833 acres of GFRG overlap the Selkirk Recovery Zone and 1,330 acres overlap the Cabinet-Yaak Recovery Zone. Neither Rule affects current wheeled motorized vehicle access but would constrain future motorized road access in roadless areas by limiting new road construction in roadless areas. If the Roadless Rule is not in effect in Montana, there would be no potential to cumulatively constrain future wheeled motorized vehicle access.

The Northern Rockies Lynx Management Direction FEIS and Record of Decision (USDA Forest Service 2007b) amended the KNF, LNF, and IPNFs Forest Plans. Developed recreation sites, dispersed recreational opportunities, outfitter operations, road and trail usage, and winter snow activities could be affected within the Selkirk and Cabinet-Yaak Recovery Zones by the lynx management direction.

Travel management planning under the 2005 Travel Management Rule (USDA Forest Service 2005b) is currently being conducted on the KNF, LNF, and the IPNFs. This Rule may have cumulative effects on wheeled motorized travel on roads and trails on all three Forests and wheeled motorized cross-country travel in Idaho on the KNF and IPNFs.

The Selkirk Mountain Range Winter Travel Plan is currently being prepared in response to a court order. The order reduced snowmobile access to the Selkirk Mountain Range to protect caribou. The Winter Travel Plan is expected to consider a range of alternatives to the proposed action, including an alternative that would retain, in place, the court-ordered injunction on winter travel in portions of the Selkirk Mountain Range and an alternative that would emphasize levels of motorized winter recreation opportunities existing prior to implementation of the current court injunction. If an alternative similar to the existing court order is selected for implementation, the cumulative effect would be to potentially have a greater reduction in motorized winter recreation opportunities within the Selkirk Mountain Range than either Alternative D Modified or Alternative E Updated alone. If motorized winter recreation opportunities were emphasized, motorized winter recreation opportunities within the Selkirk Mountain Range would likely allow for more winter over-the-snow motorized access than in the current court order, but less than the level of use prior to implementation of the order because the effect of non-maintained roads (an indirect effect potentially resulting from Alternative D Modified or Alternative E Updated) could cumulatively reduce over-the-snow motorized use.

Past forest management decisions and management activities, primarily for vegetation management, mineral development, and watershed restoration have resulted in changes to the transportation system. While some new roads have been constructed, many more have been gated or barriered to wheeled motorized vehicle access. This has reduced opportunities for the public to recreate on public land. Any reduction in wheeled motorized vehicle access, that results from site-specific decisions and also implements the pending decision for this FSEIS, would have a cumulative effect to motorized recreational use when added to past decisions that have reduced or eliminated motorized access. The cumulative effect is reflected in the existing miles of roads and trails by level or motorized use found in the Transportation section starting on page 156.

The human population composition of the analysis area has changed over the past 20 to 30 years. This has changed the way people recreate, what they want for recreational opportunities and activities, and what they are willing to tolerate in the recreational use by others. Many people who have moved to Northwestern Montana and Northern Idaho have done so to get away from the city or surroundings in which they were living and to experience the remote and wild setting found in the analysis area. This includes the vast array of recreational opportunities on the national forests being used by those already living in the area. However, there is a perception by the existing residents that the newcomers are bringing the very values with them that they were trying to leave behind, not really caring about the people who were born, raised, or reside here (Social Assessment: KNF, 1995, p 129). Changes in human population diversity are having a cumulative effect on the type and quality of recreational use within the analysis area.

Effects of Alternatives

Alternative D Modified

Indirect Effects

Nine BMUs in the Cabinet-Yaak Recovery Zone and five BMUs in the Selkirk Recovery Zone cannot meet the bear standards of OMRD (less than or equal to 17 percent), TMRD (less than or equal to 14 percent) and core area (greater than or equal to 72 percent). For these BMUs, all open roads under Forest Service jurisdiction that are not encumbered with obligations to other entities would need to be gated or barriered (see the Transportation section on page 156). Those 14 BMUs are 4, 6, 7, 8, 9, 12, 18, 19, and 21 in the Cabinet-Yaak Recovery Zone and Blue-Grass, Lakeshore, Salmo-Priest, Sullivan-Hughes, and Myrtle in the Selkirk Recovery Zone (see Table 5 on page 24 for a list of BMUs).

BMU 1 in the Cabinet-Yaak Recovery Zone and Salmo-Priest and Ball-Trout BMUs in the Selkirk Recovery Zone already meet the bear standards and no change in road status is required. The remaining 14 BMUs have some flexibility in the number of miles of road and the specific roads that would be gated or barriered. The flexibility is governed in part by the road's location, distance to other roads (open, gated, or barriered), and other resource needs which provides for a range in the miles of open road that would be gated or barriered. The range in miles of road that would be gated or barriered varies by BMU. In eight of those remaining 14 BMUs (BMU 3, 10, 11, 13, 15, 17, 20, and Kalispell-Granite), there is the potential that all open roads under Forest Service jurisdiction that are not encumbered with obligations to other entities would need to be gated or barriered. However, the flexibility in these eight BMUs indicate that bear standards might be met while leaving some roads open. Specific roads to be gated or barriered would be determined in subsequent project level analysis. Potential effects to recreational opportunities and participation would be higher in these eight BMUs than in BMUs 2, 5, 14, 16, 22, and Long-Smith.

In BMUs 2, 5, 14, 16, 22, and Long-Smith from 34 to 92 percent of open roads under Forest Service jurisdiction that are not encumbered with obligations to other entities would be gated or barriered to meet bear standards. The more roads that are gated or barriered, the greater the potential effect on recreational opportunities and participation. In addition to changes in road status, 57 miles of motorized trails are likely to be converted to non-motorized travel and all of these miles are in the Cabinet-Yaak Recovery Zone.

Motorized, Developed: Alternative D Modified has the greatest potential to affect wheeled motorized vehicle access to developed recreation sites (i.e., campgrounds, boat ramps, day use areas, and cabin rentals). Access roads into most of these sites meet the criteria of roads under Forest Service jurisdiction that are not encumbered with obligations to other entities. On the KNF, Bull River, Big Eddy, Willow Creek, Yaak River (west loop), Yaak Falls, and Red Top are developed recreation sites that are in BMUs that cannot meet the bear standards. To achieve the highest possible bear standards, it is anticipated that all public and administrative wheeled motorized vehicle access could be restricted (gated or barriered.) This would likely close six campgrounds, three boat ramps, and three day use areas. Spar Lake, Ross Creek Cedars, Yaak Mountain Lookout rental, Baldy-Buckhorn Lookout rental, and Garver Mountain Lookout rental are located in BMUs requiring most roads under Forest Service jurisdiction to be gated or restricted. These sites have a high potential of having wheeled motorized vehicle access restricted. Other developed sites in these BMUs that have a lower potential to be gated or barriered include Yaak River (east loop), Bad Medicine, Whitetail, and Pete Creek.

For the IPNFs, one campground, one cabin rental, and several use areas could be affected. Public wheeled motorized vehicle access to the Boulder City Ghost Town, Boulder Cemetery, and Lunch Peak Lookout rental may need to be gated or barriered to meet bear standards. Access roads to Stagger Inn Campground have a high potential to be restricted to public wheeled motorized vehicle access. In the Selkirk Recovery Zone, wheeled motorized vehicle access to the Roman Nose day use and dispersed site could be restricted to meet bear standards.

On the LNF, the Fishtrap Creek and Fishtrap Lake Campgrounds, and the Cougar Mountain Lookout rental are accessed by roads that could be barriered to meet bear security standards.

Motorized, Dispersed, Summer: The 776 to 995 miles of open road in the Cabinet-Yaak Recovery Zone and 104 to 176 miles of open road in the Selkirk Recovery Zone that potentially could be gated or barriered is expected to have a major affect on dispersed motorized summer recreational opportunities. Recreational activities often associated with open roads, such as hunting, fishing, dispersed camping, forest product gathering, sightseeing, and driving for pleasure would be affected on any road that was gated or barriered. Approximately one-third of the people surveyed during NVUM stated they drove for pleasure on NFS roads. With Alternative D Modified, the miles of roads proposed for gates or barriers to meet the BMU standards, including several popular loop routes, would affect a large percentage of public users.

There are many dispersed camping and day use sites existing along motorized routes. Considering that 46 to 62 percent of all open roads under Forest Service jurisdiction within the BMUs would be restricted to public motorized travel, three-fourths or more of the dispersed sites could become accessible only by non-motorized travel (by foot, bicycle, or horseback). Those sites furthest from primary access roads, such as state or county roads and forest development roads located in valley bottoms, are the ones most likely to be affected. High alpine lakes and sites on major ridges have the highest potential for restriction of wheeled motorized vehicle access. Dispersed sites that are affected by this restriction are likely to be distributed throughout the Selkirk and Cabinet-Yaak Recovery Zones.

Some of the more popular sites and areas that have the potential to be restricted include Northwest Peak Scenic Area, Hensley Hill, and the eligible Big Creek Wild and Scenic River on the KNF. On the IPNFs, wheeled motorized vehicle access to Porcupine Lake, Solomon Lake, Pettit Lake, and Lower Roman Nose Lake could be eliminated. Fishtrap Lake on the LNF could also have wheeled motorized vehicle access restricted.

Wheeled motorized vehicle access to as many as 148 trailheads could be eliminated as these sites are located on routes that potentially could be closed to wheeled motorized travel. Breakdown of these trailheads by Forest and recovery zone include: 86 on the KNF; 24 in the Selkirk Recovery Zone and 26 in the Cabinet-Yaak Recovery Zone on the IPNFs; and 12 on the LNF. In addition, approximately 57 miles of motorized trail in the Cabinet-Yaak Recovery Zone could be converted to non-motorized. These trails may originate from trailheads that are no longer accessible by wheeled motorized means but some motorized trails would likely be converted even if the trailhead is still located on open roads. The majority of the trails that may be restricted are in BMUs 4, 8, 13, 20, and 22.

On the KNF, disabled hunters are allowed wheeled motorized vehicle access on certain specified restricted roads during the fall general hunting season. Fourteen of these disabled hunter access routes could be eliminated. The disabled hunter program would not be affected on the LNF or IPNFs.

Other effects of Alternative D Modified could include: the reduction of boating/floating opportunities on some rivers and lakes if the primary access is closed; scenic overlooks along open roads, particularly along loop routes, would no longer be enjoyed where wheeled motorized vehicle access is restricted; forest product gathering, such as for berries, firewood, mushrooms, Christmas trees and boughs, and decorative rocks, would be restricted to smaller areas; and some effects could be recognized by outfitters where access to permitted areas is restricted.

Motorized, Dispersed, Winter: Only wheeled motorized vehicle travel during the active bear year (April 1 to November 15 in the Selkirk Recovery Zone; April 1 to November 30 in the Cabinet-Yaak Recovery Zone) is being analyzed; motorized travel outside the active bear year and over-the-snow vehicles (snowmobiles) are not being analyzed in this FSEIS. However, this recreational opportunity could be affected. Most snow trails are on roads and potential road restrictions could affect summer maintenance. The lack of maintenance over a long time period would effectively render the snow trail as impassible by snowmobiles. Maintenance would not occur on any barriered road; it might on gated roads. Several of the roads that could potentially be restricted are groomed for snowmobile travel. Non-maintained roads would likely reduce winter snowmobile use.

Nonmotorized, Dispersed, Summer: Restricting wheeled motorized vehicle access to vast acres of national forest would have an effect on non-motorized dispersed summer users. Most of the participation in this recreation opportunity class is on trails or cross-country travel during the hunting season. An estimated 148 trailheads are located on routes that potentially could be closed to public wheeled motorized travel. Some gated or barriered roads would become trails, making trails longer with some more than doubling in length. This would make it more difficult for hikers or horseback riders to reach their destination. Use is likely to diminish and users are more likely to feel they are being locked out of their public lands even for non-motorized activities. Longer trails make maintenance more difficult and expensive. With limited trail maintenance funding, it is likely some of the trails would be abandoned. This affect would occur on all three Forests.

Under Alternative D Modified, between 6 and 18 miles of road currently gated or barriered could be opened for wheeled motorized travel. BMU 1 on the KNF is the only BMU with available miles. The decision to open a road would be determined during a future project-level analysis. Project-level analysis would consider all resources and other resource requirements may prevent these roads from being reopened to public wheeled motorized vehicle travel. No assumption should be made that this option can be utilized to any extent to absorb displaced recreation activities.

Nonmotorized, Dispersed, Winter: The South Flower Cross-Country Ski Area on the KNF could be affected by Alternative D Modified. If wheeled motorized vehicle access to this area is eliminated, summer maintenance, including pumping the vault toilet at the pavilion, likely would not occur. Alder and other brush would render the trail unusable in a few years. With any loss of motorized vehicle access into the high country, alpine cross-country skiers would experience difficulty accessing the high major ridges and this opportunity could be reduced.

Cumulative Effects

The 2001 Off-Highway Vehicle FEIS and Record of Decision and Forest Plan Amendment for Montana, North Dakota, and portions of South Dakota (USDA Forest Service 2001a) eliminated wheeled motorized cross-country travel on the KNF in the State of Montana with some specific exceptions. One of those exceptions was cross-country travel within 300 feet of an open road for dispersed camping. Campsite selection must be done by non-motorized means. This exception would be eliminated on any road gated or barriered for wheeled motorized vehicle travel.

Other exceptions to the prohibition included: cross-country travel for emergency travel, such as search and rescue; for law enforcement, such as border patrols; and when authorized under special use permits for maintenance purposes. Since barriered roads often become impassable within a few years, access or reasonable response time could be affected. In the case of search and rescue or wildfire suppression, this has the potential to jeopardize human life.

Over-the-snow travel may occur in November and after April 1 at higher elevations. How long this activity occurs during the active bear year (April 1 to November 15 in the Selkirk Recovery Zone; April 1 to November 30 in the Cabinet-Yaak Recovery Zone) is entirely dependent on available snow, motorized access to the snowfields, and the public's demand for the activity. Any road restrictions to public motorized access would be determined in subsequent project level analysis. There is a potential that project level analysis would restrict all motorized travel during the active bear year, including over-the-snow travel. This could have a cumulative effect on snowmobile riders during the spring.

Alternative D Modified could have cumulative effects to recreational opportunities outside the Selkirk and Cabinet-Yaak Recovery Zones. As recreational opportunities and participation decreases in the recovery zones, users will seek other local areas to recreate. Therefore, more people must use sites and areas already being utilized resulting in overcrowding and a reduction in the quality of the recreational experience. Using a standard of two hours, or about 100 miles from home as the local area, effects could occur on the entire KNF, the IPNFs' north and central zones, most of the LNF and extend to the Bitterroot, Flathead, and Colville National Forests.

Other cumulative effects are covered in Effects Common to All Alternatives.

Alternative E Updated

Indirect Effects

For Alternative E Updated, an estimated 34 to 102 miles of road would be changed from open to gated or barriered. This compares to the estimate of 51 to 70 miles in the 2001 analysis for Alternative E. All of the change would be in the Cabinet-Yaak Recovery Zone.

Motorized, Developed: Access to and use of developed recreation sites is expected to be maintained[39].

Motorized, Dispersed, Summer: About 60 percent of the open roads that are anticipated to be gated or barriered under Alternative E Updated are in BMUs 20 and 22. Dispersed wheeled motorized activity during the active bear year (April 1 to November 15 in the Selkirk Recovery Zone; April 1 to November 30 in the Cabinet-Yaak Recovery Zone) is more likely to be affected in these two BMUs than the other BMUs. Open roads that are gated or barriered would have an effect on the public's ability to use those roads for driving pleasure, sightseeing, hunting, fishing, and forest product gathering. There is a number of dispersed camping and day use sites scattered throughout these BMUs. It is likely wheeled motorized vehicle access to some of them would be eliminated. Current recreational use on roads gated or barriered would shift to roads left open either in that BMU or to adjacent areas.

Wheeled motorized vehicle access to trailheads along open roads proposed for gates or barriers would be eliminated. The actual trailheads that would be affected are unknown until specific roads have been identified in subsequent project level analysis. It is anticipated that if access to the trailhead of a motorized trail is restricted, then wheeled motorized travel on the trail would also be restricted. Twenty-eight miles of motorized trail in BMU 22 could be converted from motorized to non-motorized in Alternative E Updated.

[39] The draft Supplemental EIS identified the Lunch Peak Lookout rental as potentially being restricted under Alternative E updated. This was an error.

Under Alternative E Updated, between 110 and 330 miles of road currently gated or barriered could be opened for wheeled motorized travel. BMUs with the most available miles are BMU 3, 6, 9, 15, and 16 on the KNF and BMU Long Smith on the IPNFs. No BMU that has gated or barriered roads that could be opened also have open roads that need to be gated or barriered to meet bear standards. The decision to open a road would be determined during a future project level analysis. Project level analysis would consider all resources and other resource requirements may prevent these roads from being reopened to public wheeled motorized vehicle travel. No assumption should be made that this option can be utilized to any extent to absorb displaced recreation activities.

Motorized, Dispersed, Winter: This activity occurs outside the active bear year (April 1 to November 15 in the Selkirk Recovery Zone; April 1 to November 30 in the Cabinet-Yaak Recovery Zone) when the bears are denning so the effects are not as great as during the summer. One effect is barriered roads quickly become impassable to travel from vegetative growth on the road surface. Roads currently used for snowmobiling could become unusable in a few years.

Nonmotorized, Dispersed, Summer: Restriction of wheeled motorized vehicle access to trailheads would require hikers and horse riders to travel longer distances. Hunting access to some higher basins may also be affected if the access route to the area is restricted. Overall affects to users in this opportunity class would be minimal.

Nonmotorized, Dispersed, Winter: With any loss of motorized vehicle access into the high country, alpine cross-country skiers would experience difficulty accessing the major high ridges and this opportunity could be reduced. This will have less affect than Alternative D Modified.

Cumulative Effects

Cumulative effects are similar in nature to those considered for Alternative D Modified. The extent or quantity would be less for Alternative E Updated because fewer miles of roads and trails would be affected.

Forest Plan Consistency

Alternative D Modified and Alternative E Updated are consistent with, and will not change, current programmatic Forest Plan direction to manage the recreation resource, while reducing the potential conflicts between grizzly bears and humans, for the three Forests.

Heritage Resources

Introduction

Heritage Resource objectives are outlined in the Forest Plans for the KNF, LNF, and IPNFs. All of the Forests' heritage programs are committed to the identification and protection of cultural and historic resources. Objectives outlined in the Forest Plans have been designed to increase the understanding of cultural resources into forest management through consultation with State and Federal agencies and Tribal governments.

Changes between the DSEIS and FSEIS

The primary changes between the DSEIS and the FSEIS include updates to the miles of open and restricted roads that would be available for Alternative D Modified and Alternative E Updated.

Regulatory Framework

Cultural Resources

If Alternative D Modified or Alternative E Updated is selected for ground-disturbing activities related to road restrictions, site-specific cultural surveys or inventories to locate and identify cultural sites with heritage values may be required. Such surveys would be conducted during the NEPA analyses for site-specific projects. The Forest Service is required to protect and manage identified sites in the United States under several statutes, which are listed below.

- National Historic Preservation Act of 1966
- Archaeological Resources Protection Act of 1979
- Native American Graves Protection and Repatriation Act of 1990

Tribal Consultation

Federal agencies have trust responsibilities to tribes under treaty and under law. Guidance on tribal consultation directs the Forest Service to increase and improve the involvement of tribes in the decisionmaking process in the areas where our decisions affect tribes and their treaty rights and interests. There is a trust responsibility in regard to managing the resources that the treaties depend on. The Forests are required by law to consult with all federally recognized tribes that had or continue to have traditional uses within the Forests' boundaries. Consultation with the Confederated Salish and Kootenai Tribes, the Kootenai Tribe of Idaho, the Kalispel Tribe, and the Coeur d'Alene Tribe has been initiated and/or is ongoing. A complete record of consultation efforts is in the project record.

The following laws and treaties provide direction to all Federal agencies and have been considered. Further information on tribal consultation is found in the project record.

- Hellgate Treaty of 1855
- National Historic Preservation Act
- National Environmental Policy Act
- American Indian Religious Freedom Act
- National Forest Management Act
- Archaeological Resources Protection Act
- Interior Secretarial Order 3175
- Executive Orders 12866, 13007, 13084
- Religious Freedom Restoration Act

Affected Environment

The prehistoric past spans 8,000 years and encompasses the time before any written record. During this time, there were bands of mobile hunters and gatherers. People of the prehistoric times left behind cultural materials that reflect their hunter and gatherer subsistence patterns, including stone artifacts, pictographs (rock paintings), petroglyphs (rock carvings), peeled trees, and rock cairns. The prehistoric past is considered as integral to the continuing cultures of the Kootenai, Salish, and Upper Pend d'Oreille Indians.

The historic past is documented from the first arrival of people of European decent, which started with French and Scottish fur traders arriving around 1808. Mining, homesteading, railroading, and logging would have followed and continued throughout the 19th and 20th centuries. National forest management activities began in the early 20th century. Site types that represent these historic periods include cabins, railroad grades, lookouts, ranger stations, and mines.

Analysis Methods

Acres in which material evidence of prehistoric and historic land use is observed or recovered are referred to as "heritage sites." There are myriad standard data gathering and analytical techniques that may be employed in the discovery and understanding of a particular site; however, all methods begin by focusing the search for heritage properties in areas of high to medium probability for site occurrence. Prehistoric overviews for each Forest define such areas.

Over time, cultural sites have been identified through cultural resource inventories. That information is kept in GIS coverages as well as in a database. While information concerning the nature and location of any cultural resource is confidential and not subject to public disclosure as per Public Law 94-456, [16 U.S.C. 470 hh Section 9 (a and b)], this information is used by cultural resource specialists to assess the impacts.

Direct, Indirect, and Cumulative Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on heritage resources. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

Effects Common to All Alternatives

Direct and Indirect Effects

Natural weathering, management practices, looting and vandalism can impact heritage sites. Access plays a major role in the looting and vandalism of sites. Limited access provides a measure of site protection and unlimited access can exacerbate problems if they exist.

Any further restrictions to road access provide an additional measure of protection for heritage sites. However, restricted road access may complicate administrative access to sites for the purpose of site management, as well as decreased access for the Tribes to exercise their treaty rights. Additionally, road access restrictions impact tribal members who use roads for gathering, hunting and for visiting traditional sites.

Cumulative Effects

Past Actions and their Effect on Current Conditions: Before the National Historic Preservation Act (NHPA) of 1966 was implemented, project planning did not include consideration of impacts to historic properties. Ground-disturbing activities or projects such as timber harvest, road building, road closures, grazing, mining, wildfires, and wildfire suppression activities that occurred prior to this had the potential to adversely impact historic properties. Many of these projects occurred in areas considered high probability for cultural resources and therefore, it is probable that cultural sites were impacted. Conversely, the remains of some of these activities that took place longer than 50 years ago may now be considered cultural resources, and thus have been added to the historic record. While past actions may have affected cultural resources, no ongoing effects are known to be occurring currently from those past actions.

Contrasting Effects of Alternative D Modified and Alternative E Updated with Past Actions: Since the 1970s, cultural resource inventories have been conducted to locate cultural resources prior to project implementation. Known sites found during earlier inventories and the refinement of the inventory process to locate properties during current inventories, allows impacts from projects to be avoided or mitigated. While natural deterioration of the resource is ongoing, the current condition and trend of the historic record is that historic properties are being protected from project impacts. Knowledge of the location and condition of historic properties also allows the potential for management action to abate or mitigate natural processes, which adversely affect the historic record. Additionally, since Tribal consultation procedures were established, there has been a greater level of protection provided to cultural sites and tribal resources.

As described in the direct and indirect effects section, there is the potential for beneficial effects and some limited adverse effects to historic properties from Alternative D Modified and Alternative E Updated. On-going efforts to locate and document historic properties allow their protection from proposed undertakings. Additional road access restrictions create the potential for some cumulative impacts to Tribal members who use roads for gathering, hunting, and for visiting traditional sites.

Effects of Past, Present, and Reasonably Foreseeable Actions: The applicable past, present, and reasonably foreseeable actions (see Chapter 3 starting on page 39) and in the record were considered in this analysis. Actions that have potential effects to wheeled motorized vehicle use similar to those identified in the proposed alternatives include the Travel Management Rule (USDA Forest Service 2005b) and the Off-Highway Vehicle Record of Decision (USDA Forest Service 2001a). Activities on NFS lands would be mitigated by protection of cultural sites after identification under the NHPA.

The Travel Management Rule (USDA Forest Service 2005b) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning or converting unneeded roads to other uses. A reduction in roads is expected to reduce access to sites, thereby reducing the potential for vandalism of sites. Decommissioning could limit wheeled motorized vehicle access for Tribal use and site management (see direct and indirect effects above). Implementation of site-specific actions resulting from this FSEIS may indirectly result in road decommissioning; therefore, cumulative reductions in roads and corresponding impacts to site access are expected.

In recent years, off-road wheeled motorized vehicle use has been identified as an activity that has impacted cultural sites and tribal resources. The nature and extent of this activity changed with the Off-Highway Vehicle Record of Decision of January 2001 (USDA Forest Service 2001a), which confined vehicle use to existing routes on the KNF.

Any future road closures resulting from the proposed changes in wheeled motorized vehicle access that cause ground disturbance have the potential for adverse effects to cultural sites and tribal resources. However, prior to any ground disturbance, a cultural resource survey and tribal review would be required. This survey and review would identify any eligible cultural resource sites and significant tribal resources and if applicable, Forests would prescribe mitigation measures when specific project access proposals are examined during environmental analysis.

Combined Effects of Past, Present, and Reasonably Foreseeable Actions: Cumulatively, when considering past, present, proposed, and reasonably foreseeable actions, Alternative D Modified and Alternative E Updated would not exacerbate effects to historic properties. The post-project condition and trend would continue the current condition and trend, which protects historic properties through inventory and project design. Thus, no historic properties are impacted by project implementation.

Effects of Alternatives

Alternative D Modified

Direct and Indirect Effects

Alternative D Modified identifies roads changing from access to no access for between 1,263 to 1,767 miles (open or gated roads changed to barriered roads) for administrative use and between 880 and 1,171 miles (open roads changed to gated or barriered roads) closed to public use. This alternative provides protection to cultural resources, especially for the miles closed to the public, allows some additional miles for administrative use, but leaves between 383 and 596 miles closed to wheeled motorized vehicle access for the management of cultural resources and access for the exercise of treaty rights more difficult. Road closures make the exercise of treaty rights more difficult.

Cumulative Effects

Alternative D Modified has greater potential than Alternative E Updated for cumulative disturbance to cultural resource sites and tribal resources due to the greater number of road closures proposed. However, treatment measures designed to protect these resources would mitigate these effects. There is greater potential than Alternative E Updated for a cumulative reduction in wheeled motorized access by tribal members for exercise of treaty rights.

Alternative E Updated

Direct and Indirect Effects

Alternative E Updated identifies roads changing from access to no access for between 90 to 270 miles for administrative use and between 34 and 102 miles closed for public use. This alternative provides some protection to cultural resources, especially for the miles closed to the public, allows some additional miles for administrative use, and maintains some wheeled motorized vehicle access for the management of cultural resources and access for the exercise of treaty rights.

Cumulative Effects

Alternative E Updated has less potential than Alternative D Modified for cumulative disturbance to cultural resource sites and tribal resources since fewer roads will be closed. However, treatment measures designed to protect these resources would mitigate these effects. There is less potential than Alternative D Modified for a cumulative reduction in wheeled motorized access by tribal members for exercise of treaty rights.

Forest Plan Consistency

In accordance with Section 106 of the NHPA, forest plans require integration of cultural resource management into the overall multiple resource management effort. In addition, national forests must work closely with the appropriate scientific community and American Indian Tribes concerning cultural resources. Heritage inventories must be completed prior to ground-disturbing activities.

The guidelines in the KNF, LNF, and IPNFs' Forest Plans and of other jurisdictions were recognized in the development of the alternatives. In addition, the laws and policies that govern cultural resource protection on NFS lands are coordinated with the State Historic Preservation Officers (SHPO) of Montana and Idaho, who serve in an advisory capacity. The policies of the Forest Service and SHPO are consistent.

Social and Economic Environments

Introduction

Social and economic analyses are conducted by the Forest Service to determine what effect the agency's management decisions have on local communities, economies and the people using the natural resources. Rural areas surrounding forests are often dependent upon forest resources for much of their social and economic well-being. This dependency can affect local economies, life-styles, population, and quality of life of the area.

Public scoping for the 2002 FEIS identified two issues pertaining to the social and economic environment. No new issues were identified for this analysis. The two issues are:

1. Public Access for Recreation and Social Uses
2. Local Economic Conditions

Social Environment: This analysis of the social environment focuses on several "indicator" activities affected by public wheeled motorized vehicle access to NFS lands. These include hunting, fishing, huckleberry picking, and firewood cutting. These outdoor social activities are contributors to defining the culture and quality of life for many local residents and, therefore, are used to discuss relative changes in the social environment by alternative. Changes in these activities are assumed to coincide closely with changes in the amount of open roads. Impacts to other outdoor recreation activities are discussed in the Recreation section on page 205.

Economic Environment: Because no decisions are being made on which roads would be closed by alternative, a quantitative change to recreation use or timber harvest is not known. The economic analysis qualitatively describes potential effects of Alternative D Modified and Alternative E Updated on employment, income, and Federal payments to the counties. An analysis of cost efficiency was conducted to describe the tradeoff in the monetary costs of each alternative.

Changes between the DSEIS and FSEIS

The cost efficiency analysis has been updated to reflect the changes between the DSEIS and this FSEIS in the miles of open, gated, and barriered roads under Alternative D Modified and Alternative E Updated.

Regulatory Framework

The National Environmental Policy Act (NEPA) requires disclosure of effects on the human environment. The human environment includes the natural and physical environment and the relationship of people to that environment (40 CFR 1508.14).

Executive Order 12898 (Environmental Justice) requires identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of the agency's programs, policies, and activities on minority populations and low-income populations.

Analysis Area

The majority of the Selkirk and Cabinet-Yaak Recovery Zones bear management units (BMUs) encompass parts of four counties in two states and on three Forests: Boundary and Bonner counties in Idaho, and Lincoln and Sanders counties in Montana (see Figure 14, page 223). These four counties make up the analysis area for this FSEIS. Management of the BMUs would potentially affect the social and economic environment of these four counties. Table 53 displays the acres and percentage of BMUs within each county.

Table 53. Acres of bear management units by county

County	Total County Acres	BMU Acres	Percent of County in BMU
Lincoln, MT	2,353,600	910,500	39%
Sanders, MT	1,782,900	422,800	24%
Bonner, ID	1,226,800	288,500	24%
Boundary, ID	812,000	467,000	57%

Source: Acres were calculated from the GIS coverage

A small amount (approximately 70,000 acres) of BMU acreage administered by the IPNFs is found in Pend Oreille County, Washington. However, the size and extent is not significant and management decisions as a result of this FSEIS are not expected to impact Pend Oreille County.

Affected Environment – Social Environment

Population

The population of all four counties increased between 1970 and 2000 (see Table 54 and Figure 15). Lincoln County experienced a slight decline in population during 1970 to 1990 but increased from 1990 to 2000. The population in Sanders County declined during 1980 to 1990 but increased from 1990 to 2000. The growth rates in Bonner and Sanders counties exceed those of their respective states, while Boundary and Lincoln counties are growing at a slower rate.

Table 54. Change in population by county and state (Source: U.S. Bureau of the Census)

Region	1970	1980	% Change (1970-80)	1990	% Change (1980-90)	2000	% Change (1990-2000)
Montana	**694,409**	**786,690**	**13.3%**	**799,065**	**1.6%**	**902,195**	**12.9%**
Lincoln, MT	18,063	17,752	-1.7%	17,481	-1.5%	18,837	7.8%
Sanders, MT	7,093	8,675	22.3%	8,669	-0.1%	10,227	18.0%
Idaho	**713,015**	**947,983**	**33.0%**	**1,006,749**	**6.2%**	**1,293,953**	**28.5%**
Bonner, ID	15,560	24,163	55.3%	26,622	10.2%	36,835	38.4%
Boundary, ID	5,484	7,289	32.9%	8,332	14.3%	9,871	18.5%

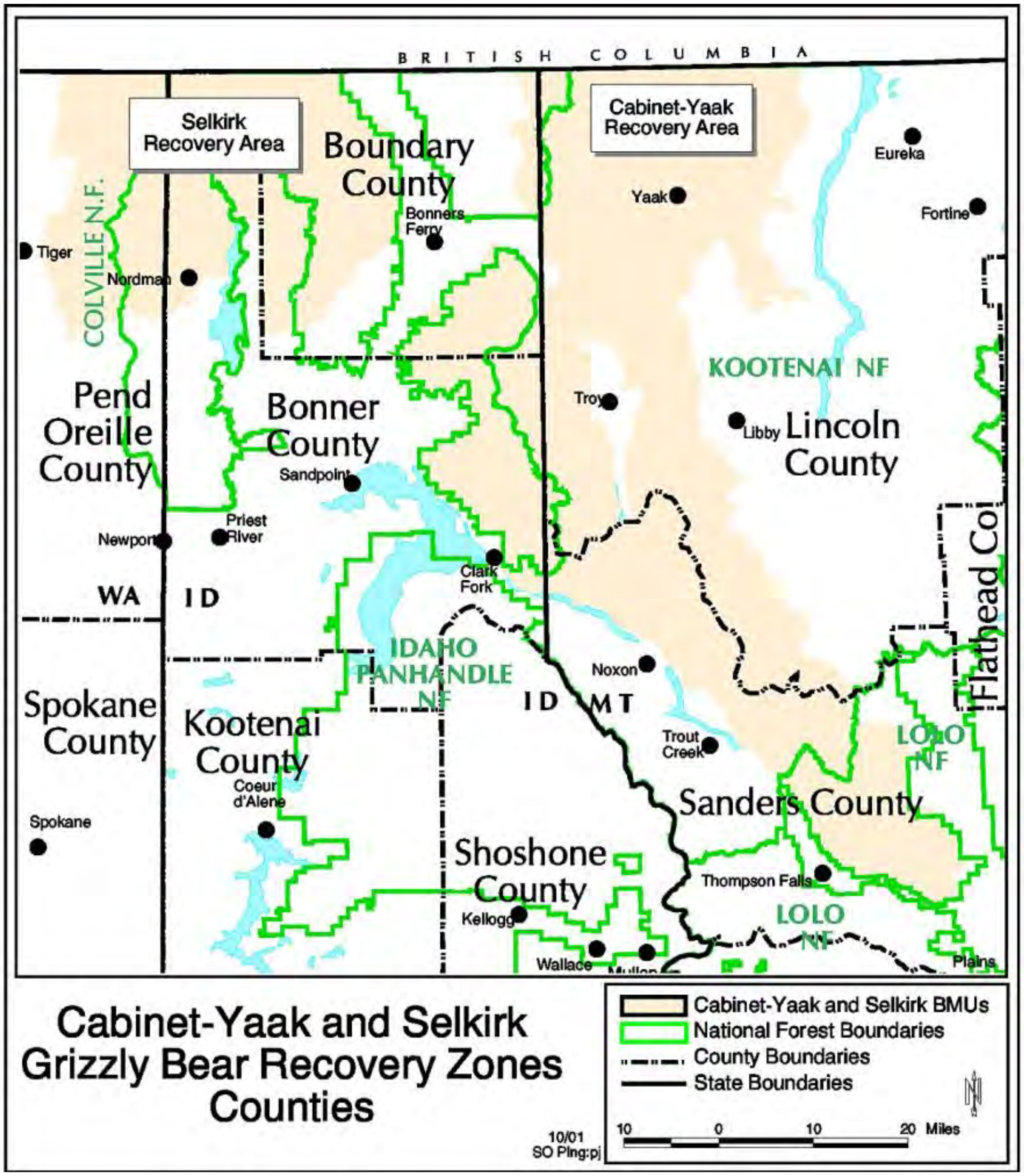

Figure 14. Counties and states within the analysis area

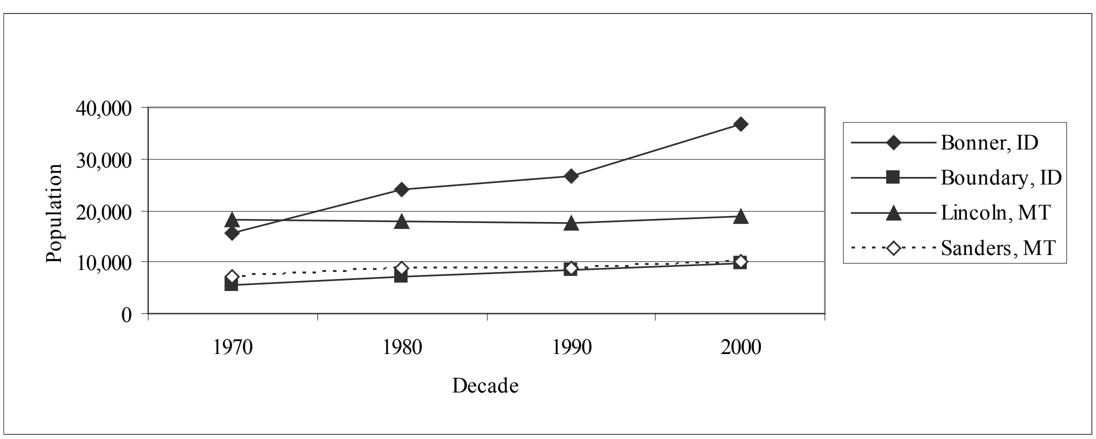

Figure 15. Population by county (source: U.S. Census Bureau)

The U.S. Bureau of the Census (2008) estimated the 2006 population for Idaho at 1,466,465 and 944,632 for Montana. In Idaho, this is a 13.3 percent increase (2.2 percent annual) and in Montana, a 4.7 percent increase (0.8 percent annual) from 2000. The population in Bonner County in 2006 was estimated at 41,275, a 12.1 percent increase from 2000 and an annual increase of 2 percent. The population in Boundary County in 2006 was estimated at 10,831, a 9.7 percent increase from 2000 and an annual increase of 1.6 percent. The population in Lincoln County in 2006 was estimated at 19,226, a 2.1 percent increase from 2000 and an annual increase of 0.3 percent. The population in Sanders County in 2006 was estimated at 11,138, an 8.9 percent increase from 2000 and an annual increase of 1.5 percent. This indicates growth rates in both States and the four counties have been slowing from that experienced in the prior decade, especially in Bonner and Lincoln counties.

Although slower than in the previous decade, the growth in population experienced by Bonner County is reflective of the increasing development and economic diversification in Sandpoint, Idaho and its close proximity to major trade centers of Coeur d'Alene, Idaho and Spokane, Washington. Growth in the other counties has been slower.

All counties have seen an increase in median age from 1990 to 2000. The median age for Bonner is 40.8, Boundary 38.3, Lincoln 42.1 and Sanders 44.2. This is consistent with the overall aging of the population in the United States, with a median age of 35.3. All counties have a higher median age than the national average.

The counties within the analysis area are fairly homogenous with few minority populations. Table 55 displays the composition of minorities within the population for each county.

The 2000 Census had a separate question that asked people to identify themselves if they were either Hispanic or Latino origin. Estimated percents for 2006 were 1.9 percent in Hispanic or Latino origin in Lincoln County, 2.1 percent in Sanders County, 2.2 percent in Bonner County, and 3.7 percent in Boundary County.

Table 55. Estimated Population race by county, 2006 (Source: U.S. Bureau of the Census)

County	Total Population	White	American Indian	Asian	Black	Other[1]
Lincoln, MT	19,226	96.2%	1.5%	0.3%	0.2%	1.8%
Sanders, MT	11,138	92.6%	4.5%	0.4%	0.2%	2.3%
Bonner, ID	41,275	96.9%	1.0%	0.4%	0.1%	1.6%
Boundary, ID	10,831	95.9%	2.3%	0.6%	0.2%	1.0%

1 Native Hawaiian or other Pacific Islander, other race, or person reporting two or more races

Land Ownership and Use

Many counties in the western United States contain a large amount of federal land and are influenced by management actions on these public lands. Within the analysis area, Lincoln County has the largest percentage of land under federal ownership at 73 percent. Boundary County has the next largest at 61 percent. Sanders County is 52 percent federally owned with an additional 14 percent under Tribal ownership. Bonner County has the least amount of federally owned NFS lands. Figure 16 displays land ownership for each county.

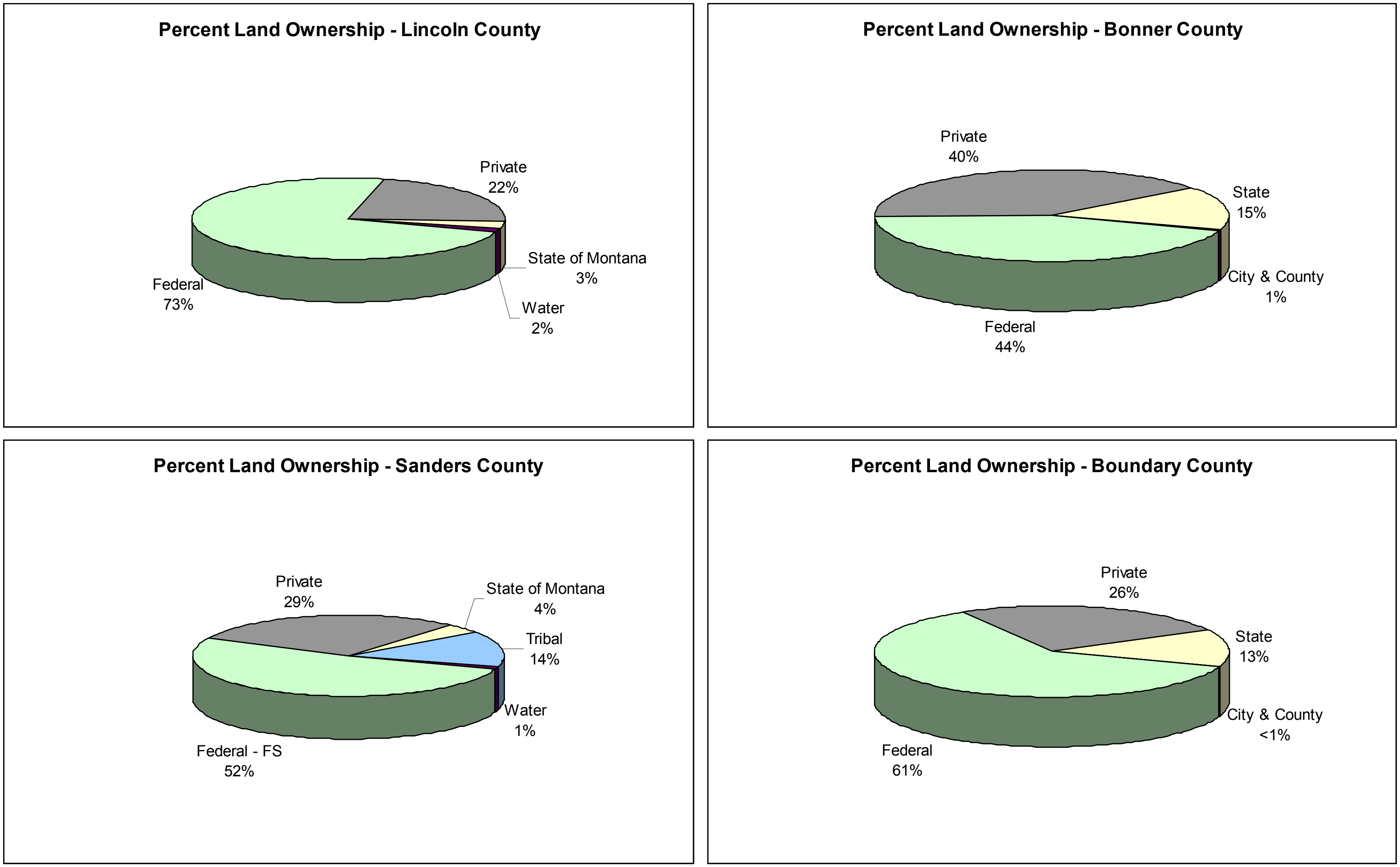

Figure 16. County land ownership (Sources of Data: Montana - GIS coverage mt_cntyo, confirmed by land ownership data from the Montana Natural Heritage Program; Idaho - Idaho Department of Commerce, Economic Development Division, 2001)

Traditionally, the four counties in the analysis area have relied on the use of natural resources in activities such as farming, ranching, mining and timber production. Recreation has also been an important use of forest resources among the residents of nearby communities as well as others from more distant urban areas such as Spokane, WA, Missoula, MT, and elsewhere. Recreation usage also appears to be increasing as urban populations increase and more diverse residents are moving to rural towns and cities. The institution of the Forest Service has also been a part of the social environment of communities in this region since development of the NFS.

The four counties in the analysis area are noted for their natural resources. The counties are heavily forested, ranging from 80 percent (Bonner County) to 95 percent (Lincoln County) as forestland. Timber harvest has been an important land use for all four counties.

The water resources of the area have had a significant influence, carving the river valleys that provide the major areas for settlement. The many rivers, lakes, reservoirs and streams also provide fishing and recreation opportunities to local residents and draw visitors to the area.

In addition, the area has a wide array of wildlife, including moose, elk, white-tailed deer, caribou, black bears, grizzly bears, wolves, lynx, coyotes, bird life, and a variety of fish species (see the Wildlife section on page 44 and Aquatics - Watershed and Fisheries section on page 177). Therefore, hunting has had a large influence on settlement of the area and remains a major activity for local residents and visitors to the area.

Lincoln and Sanders counties have mineral deposits that have been mined since the early days of settlement. The most important of these mining resources are silver and copper. Even though mining in the area has declined, there is some new interest in mining. The Revett silver mine, south of Troy, Montana, has recently reopened and there is consideration for opening two new mines in Lincoln and Sanders counties. The Revett Corporation is considering development of the Rock Creek mine for silver and copper extraction. This site is located in Sanders County near the Idaho and Montana border. Mines Management has also indicated interest in development of the Montanore Mine. The ore deposits are located in Sanders County under the Cabinet Mountains Wilderness area, but the mine site will be located in Lincoln County.

Historically, miners heading to the gold fields in The Kootenay Country of British Columbia influenced Boundary County. In the mid-1860s, a ferry was established across the Kootenai River in response to the rush of miners from Washington State into British Columbia's Wild Horse Creek. Mr. E.I. Bonner owned the ferry for a time, giving his name to the community that grew up around this important river crossing. The County operated the ferry from 1902 to 1905.

In the late 1800s discovery of rich lead-silver deposits in northernmost Boundary County led to development of the Idaho Continental Mining Company in 1902. The Continental Mine operated off and on, depending on the price of silver, from 1914 until 1980. It produced 344,000 tons of ore during its peak years (1915 to 1922) and the town at the mine grew to over 100 people. Although most of the mine's structures are now gone, social/historical effects of Continental Mine continue to be recognized in Boundary County.

Ranching and agriculture have traditionally been important uses of land. Recently, however, land has been taken out of agricultural and corporate forest use and put into subdivision and housing developments. As a result of this trend, the demand for land and land prices increase, assessed value and taxes increase, and agricultural and private forestry lands become more expensive to maintain and more tempting to sell for profit (Russell and Downs 1995).

For more information on historic and current trends in land uses in the four counties, see the document "Conditions and Trends: Social and Economic Systems for the Kootenai and Idaho Panhandle Plan Revision Zone" (Russell et al. 2006).

Lifestyle, Attitude, Values, and Beliefs

Social assessments were completed for the IPNFs (Parker et al. 2002) and the KNF (Russell and Downs 1995; Russell and Adams-Russell 2004). Studies included information on lifestyles, and values and issues regarding forest management. In comparing the studies, it is apparent there are many similarities across the analysis area. The following summarizes the findings from these studies (excerpted from Russell et al. 2006):

- Communities have a strong rural identity and value rural lifestyles and communities. The values about rural communities include:
    - Face-to-face interpersonal relationships and knowing neighbors.
    - Personal safety and living in what is perceived to be a low-crime region in which family and children are safe.
    - Volunteerism that supports community enrichment and ways of life.
    - Mutual support for neighbors and other community members in times of need.
    - Opportunity for self-reliance and the exercise of personal freedom.
    - Preference for limited government regulation and other influence on the lifestyles and property rights of individuals.
    - The importance of the "local place" as a reference for assessing what is meaningful and valued.
- Lifestyles vary, but there are some common characteristics:
    - Individuals choose to live in these communities because of the lifestyle and benefits offered.
    - This choice often entails an economic compromise because of limited job opportunities and other means to make a living.
    - This is compensated for by the aesthetic, scenic, and open space resources of rural areas close to public lands. This results in a strong sense of place attachment.
    - Occupations have traditionally focused on resource extraction such as logging, log truck driving, mill work, equipment repair, mining, farming, and ranching. These occupations have structured the activity patterns and interactions with natural resources for many community members.
    - Individual and community identities are based on the occupational lifestyles of resource extraction such as logging, mining, and mill work.
    - Hunting, fishing, berry gathering, wildlife viewing, trail riding, and other outdoor activities are important activities valued by residents as accessible away from work activities.
    - Hunting is an especially important characteristic of local lifestyles. It has some direct economic benefit in providing food resources, but it also expresses the fundamental values of self-reliance and engagement with and appreciation of the natural world.
    - Attending church and participation in school activities, especially athletic events, are common activities expressing support for community.

- NFS lands and resources are evaluated as important local resources that contribute to the quality of lifestyles in the region. The Forest Service and the public lands they manage are perceived as providing a range of benefits to local communities, including the following:
  - Social - the agency contributes leadership, organizational, facility, and other resources to communities. Agency personnel also participate as community members in clubs, organizations, volunteer efforts, and other elements of community life. There is also some economic contribution when purchases can be made locally.
  - Recreational opportunities are an important perceived benefit of forest lands. Individuals and groups with diverse recreational interest value the available opportunities to pursue outdoor activities close to their residence and place of work.
  - Open space is also a significant value for residents who see forest lands as integral to the qualities of community and place of this region. Open space contributes to the rural character of communities.
  - Economic value exists in the resources that can be extracted from public lands (e.g., minerals, timber, and other plant material) and in the scenic, amenity, and recreational resources that attract tourists. Among some interest groups there is strong sentiment the National Forest management is inhibiting community development by limiting timber harvests, which is believed to result in fewer jobs in local communities.
  - Fiscal benefits accrue to counties from Payments in Lieu of Taxes and funds from the Secure Rural Schools and Self-Determination Act of 2000 or the National Forest Revenue Act. These fiscal benefits often offset taxes that would otherwise be required to provide funding for schools, roads, and other state and local government programs.
  - Existence benefits are associated with special places (e.g., wilderness and roadless areas) and resources (e.g., grizzly bear) as well as with the forest as a whole. For example, providing habitat for diverse plants and wildlife and ecological conditions that contribute to water quality.
- The integration of community, place, work, recreation, and lifestyle characterizes the social environment of this region. Occupationally based identities for individuals and communities express the history and traditions of logging, mining, millwork, and agriculture. These identities also incorporate values about the use of and attachment to natural resources that enrich rural lifestyles and the opportunity to express personal freedom.

Perceptions on Grizzly Bear and Road Management

The social assessments completed for the IPNFs (Parker et al. 2002) and the KNF (Russell and Downs 1995; Russell and Adams-Russell 2004) identified public perceptions regarding grizzly bear and road management. Some people value the existence of grizzly bears on the Forests while others perceive management decisions that benefit grizzly bears as limiting active management of the forest and recreational use.

One of the perceived benefits of the Forests is the value of habitat for wildlife and vegetation. As stated in the KNF social assessment (Russell and Adams-Russell 2004), “The strongest sentiment for this perceived benefit is the value of forest lands as habitat for larger mammals such as elk, deer, lion and bear, especially grizzly bears.”

At the same time, there is strong sentiment that some management decisions "just don't make sense." The KNF social assessment identified that there is a desire that land managers listen to the common sense perspective of people who have grown-up and lived their lives in and around the Forest (Russell and Adams-Russell 2004). There is an important social context to these sentiments that is revealed in the details about what does not make sense. What is perceived as nonsense often concerns endangered species issues, management of old growth, and other common issues in the ongoing debate about resource management in the region. For example, one participant expressed the following:

> "They will tell you they need to close off that area because grizzly bears don't cross roads and so they are going to obliterate the roads. I don't know when the last time was they were in the woods, but I saw a bear walking down a road just last week. I guess he didn't read the report they wrote. It just seems they lack common sense in what they are doing and it makes me wonder if they care more about bears or people. I would like to see them take people into consideration a lot more in how they manage the forest."

These types of sentiments are most often expressed by those who feel their way of life is threatened by management decisions that favor wildlife or outside concerns over local ways of life.

The IPNFs social assessment (Parker et al. 2002) found that road closures are supported by a cross-section of residents, while opposition is focused among those with resource extraction lifestyles or identities. A logger in Bonners Ferry illustrated his support for road closures, addressing the sensitive ecological issues that need to be considered:

> "Road closures… there are some places where road closures are very necessary. We have harvested timber. We have built roads. There is nothing wrong with gates or road closures. There are areas that we work today that are very sensitive: they fall into the grizzly bear habitat, the caribou habitat, the lynx habitat that has been put on the Endangered Species list."

Other respondents had similar sentiments, seeing value in road closures for future generations and protection of resources.

Opposition to road closures was for two primary reasons: 1) recreational access, especially as it existed historically, and 2) use of roads for management access (Parker et al. 2002). An individual from Silver Valley discussed a common issue among those opposing road closures - the lack of access for fire suppression and other forest management efforts:

> "My concern with road closures and removal of the roads is the fact that we do live within our forest and so I think it would be very difficult to manage the forest to the very best of your ability if there is no access to that forest."

The IPNFs social assessment also found there was a perception that the ESA constrained forest management. This sentiment was most focused around Bonners Ferry where there are a number of road closures due to threatened and endangered species. Residents of Priest Lake also relayed concern over the potential decreasing access due to grizzly bear habitat protection.

Affected Environment – Local Economy

Employment and Income

Employment by industry describes the distribution of jobs by economic sector. The Bureau of Economic Analysis maintains and updates these data. The most current information (for the year 2005) uses the North American Industry Classification System (NAICS). This classification system has been used since 2001. Thus, comparisons are limited to 2001 to 2005. Table 56 on page 231 displays employment by industry for 2001 and 2005.

In all four counties, the two largest employers in 2001 and 2005 were government and retail trade. Construction is the third largest employer in all counties in 2005. All counties show a decline in manufacturing and government from 2001 to 2005.

The Bureau of Labor Statistics maintains information about annual unemployment rates for counties, states, and regions. These data are a consistent and comparable source of information about county unemployment rates, although they do not include information about some data, such as discouraged workers. Average annual unemployment data for a 9-year period (Figure 17) indicates that all counties show higher than average annual unemployment rates when compared to State rates. Lincoln and Boundary counties have the highest unemployment rates while Sanders and Bonner are lower.

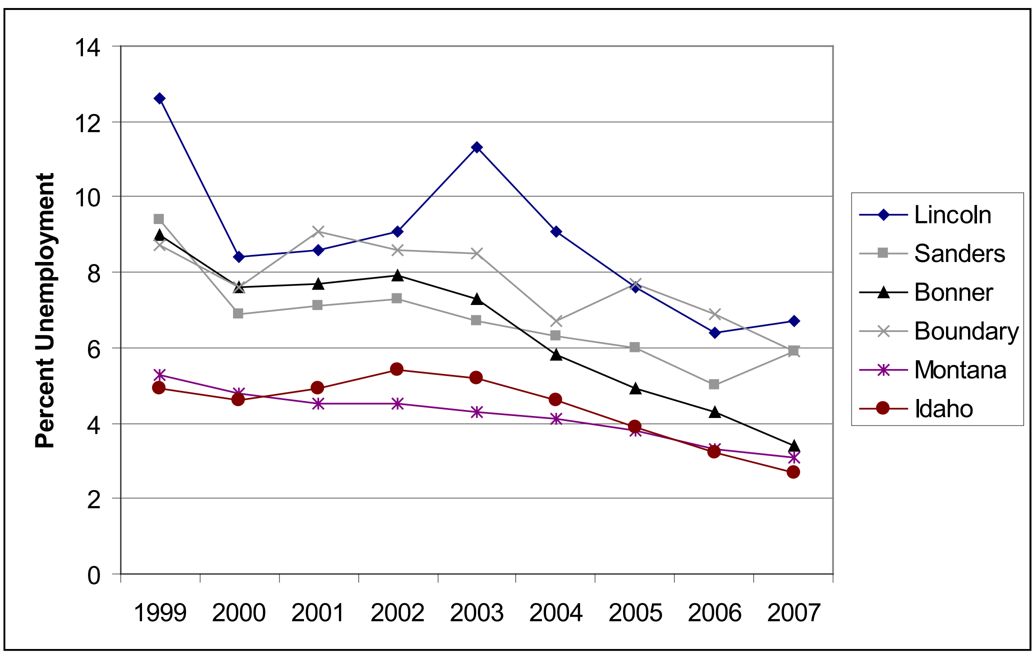

Figure 17. Unemployment rates by county and state for 1999 – 2007 (Source: U.S. Department of Labor Bureau of Labor Statistics website http://www.bls.gov/lau/home.htm)

Table 56. Employment by industry

	Lincoln		Sanders		Bonner		Boundary	
	2001	**2005**	**2001**	**2005**	**2001**	**2005**	**2001**	**2005**
Total Employment	8,742	9,499	5,162	5,659	20,258	23,382	5,021	5,258
By Type (percent of total employment)								
Wage and salary employment	64.8%	63.8%	60.2%	59.5%	64.7%	64.6%	70.7%	68.7%
Proprietors employment	35.2%	36.2%	39.8%	40.5%	35.3%	35.4%	29.3%	31.3%
By Industry (percent of total employment)								
Farm employment	3.6%	3.3%	10.2%	9.2%	3.1%	2.7%	8.1%	7.7%
Non-farm employment	96.4%	96.7%	89.8%	90.8%	96.9%	97.3%	91.9%	92.3%
Private employment	79.5%	81.0%	75.2%	77.4%	85.1%	86.6%	70.4%	71.0%
Forestry, fishing, related activities, and other	7.2%	(D)	5.2%	4.5%	3.9%	3.4%	6.7%	(D)
Mining	0.5%	(D)	1.2%	1.3%	0.6%	0.6%	0.2%	(D)
Utilities	(L)	(L)	1.1%	0.8%	(D)	0.5%	(D)	0.3%
Construction	7.6%	8.7%	6.8%	8.9%	10.4%	11.3%	6.9%	9.4%
Manufacturing	9.4%	4.8%	6.8%	5.7%	9.3%	10.6%	9.9%	8.9%
Wholesale trade	1.0%	1.1%	1.7%	1.5%	(D)	1.2%	1.3%	1.3%
Retail trade	12.0%	12.7%	9.5%	9.2%	16.0%	15.1%	10.9%	11.2%
Transportation and warehousing	2.7%	2.7%	3.4%	3.5%	2.3%	2.1%	3.5%	3.6%
Information	1.6%	1.3%	1.0%	1.0%	1.2%	1.2%	0.9%	0.8%
Finance and insurance	2.6%	2.2%	2.1%	2.2%	2.9%	2.7%	1.0%	1.6%
Real estate and rental and leasing	4.1%	4.4%	4.0%	5.0%	4.5%	5.4%	(D)	2.8%
Professional and technical services	3.1%	2.9%	(D)	2.9%	5.1%	5.5%	3.8%	3.9%
Management of companies and enterprises	(D)	0.1%	(D)	0.2%	0.3%	0.5%	0.0%	0.0%
Administrative and waste services	(D)	2.5%	(D)	1.5%	2.3%	2.7%	1.7%	2.7%
Educational services	0.4%	(D)	(D)	(D)	1.3%	1.3%	1.1%	1.6%
Health care and social assistance	9.7%	(D)	(D)	(D)	6.2%	6.5%	11.2%	7.0%
Arts, entertainment, and recreation	2.0%	2.5%	1.4%	1.7%	3.9%	3.6%	0.9%	1.0%
Accommodation and food services	6.9%	6.4%	6.6%	6.9%	6.5%	6.1%	3.3%	3.3%
Other services, except public administration	6.7%	7.5%	5.0%	6.0%	6.6%	6.4%	4.6%	5.1%
Government and Government Enterprises	17.0%	15.7%	14.6%	13.4%	11.7%	10.6%	21.4%	21.3%
Federal, Civilian	5.4%	5.0%	2.5%	2.3%	1.3%	1.0%	2.5%	2.7%
Military	1.1%	1.0%	1.1%	1.0%	0.7%	0.7%	0.8%	0.7%
State and local	10.5%	9.7%	11.0%	10.2%	9.7%	9.0%	18.1%	17.9%

Source: Bureau of Economic Analysis website http://www.bea.gov/bea/regional/reis/. (D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals; (L) less than 10 jobs.

Unemployment has a strong seasonal pattern among the counties as indicated in Figure 18. As the chart shows, around March unemployment begins to drop and continues to drop until about September. The highest months of unemployment are from November through April. These seasonal variations are probably related to jobs in construction, agriculture, and natural resource related employment.

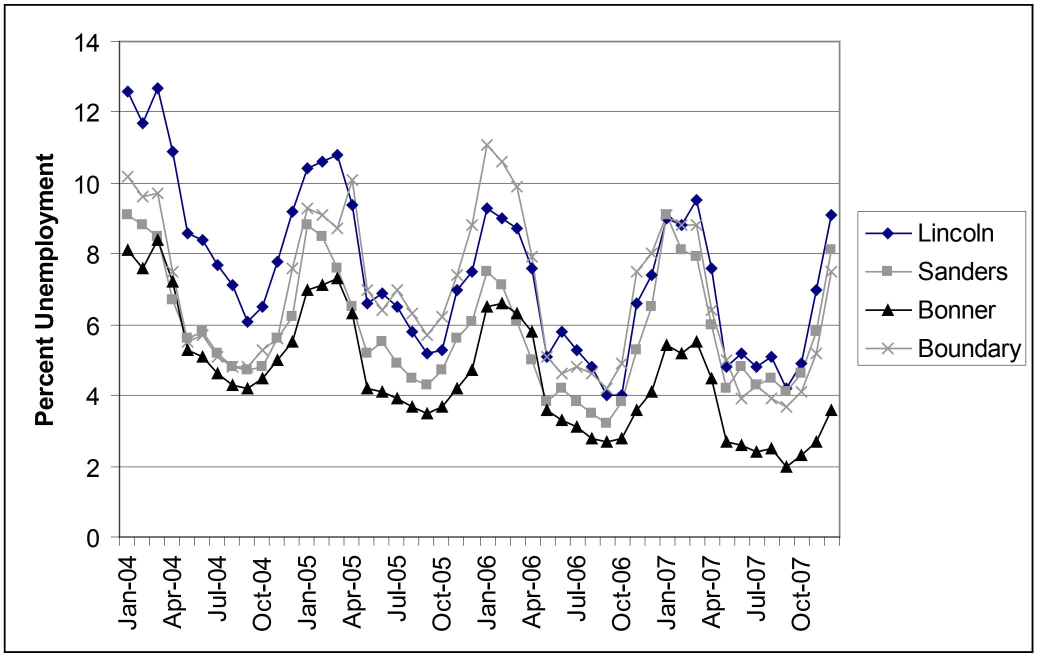

Figure 18. Monthly unemployment rate, January 2004 – December 2007

The per capita income by county and state is displayed in Table 57. Both counties are below the State per capita income. Bonner County is experiencing growth in per capita income that exceeds those of the State.

Table 57. Per capita personal income

County/State	1996 Per Capita Income	2006 Per Capita Income	1996 – 2006 Average Annual Growth Rate
Lincoln County	14,834	23,935	4.9%
Sanders County	13,718	22,116	4.9%
Montana	19,047	30,790	4.9%
Bonner County	16,900	27,767	5.1%
Boundary County	14,687	20,243	3.3%
Idaho	20,248	29,920	4.0%

Source: U.S. Department of Commerce, Bureau of Economic Analysis website
http://www.bea.gov/bea/regional/bearfacts

Income by industry describes the distribution of earning among the categories of employment used by the Bureau of Economic Analysis. Table 58 displays the percentage of income generated by major industries in 2001 and 2005.

Table 58. Earnings by industry

	Lincoln		Sanders		Bonner		Boundary	
	2001	2005	2001	2005	2001	2005	2001	2005
Total Earnings	160,282	196,537	78,004	101,016	370,991	530,205	101,403	117,754
By Industry (percent of total earnings)								
Farm earnings	0.2%	0.2%	3.1%	3.0%	0.3%	0.2%	2.7%	3.4%
Non-farm earnings	99.8%	99.8%	96.9%	97.0%	99.7%	99.8%	97.3%	96.6%
Private earnings	62.8%	62.2%	65.6%	67.2%	77.8%	80.4%	63.8%	60.8%
Forestry, fishing, related activities, and other	6.2%	(D)	2.7%	2.2%	2.8%	2.3%	6.4%	(D)
Mining	0.2%	(D)	1.6%	2.0%	1.0%	1.0%	0.0%	(D)
Utilities	0%	0%	4.1%	3.4%	(D)	1.6%	(D)	0.2%
Construction	4.6%	4.2%	3.6%	5.4%	7.2%	7.8%	3.9%	7.1%
Manufacturing	16.1%	7.4%	9.4%	7.9%	15.7%	17.5%	16.3%	13.9%
Wholesale trade	0.8%	0.7%	1.7%	1.2%	(D)	1.4%	1.5%	1.9%
Retail trade	7.4%	7.9%	5.8%	6.4%	17.9%	18.8%	8.4%	8.6%
Transportation and warehousing	3.4%	3.0%	3.5%	3.7%	2.7%	2.2%	4.0%	4.5%
Information	2.2%	2.0%	1.9%	1.7%	1.6%	1.2%	0.5%	0.3%
Finance and insurance	2.9%	2.2%	2.9%	3.1%	3.7%	3.6%	0.8%	2.2%
Real estate and rental and leasing	0.4%	0.7%	0.5%	0.7%	0.8%	1.2%	(D)	0.4%
Professional and technical services	1.7%	1.7%	(D)	1.4%	3.8%	4.7%	4.3%	3.6%
Management of companies and enterprises	(D)	(D)	(D)	0%	0.5%	1.1%	0.0%	0.0%
Administrative and waste services	(D)	(D)	(D)	0.2%	0.7%	1.2%	0.6%	1.2%
Educational services	0.2%	(D)	(D)	(D)	1.1%	1.1%	0.9%	1.6%
Health care and social assistance	9.7%	(D)	(D)	(D)	5.7%	5.8%	12.6%	5.5%
Arts, entertainment, and recreation	0.8%	1.3%	0.3%	0.7%	2.2%	1.9%	0.1%	0.2%
Accommodation and food services	3.2%	3.2%	3.4%	3.8%	3.4%	3.0%	1.3%	1.2%
Other services, except public administration	2.6%	2.8%	2.2%	2.9%	3.4%	2.9%	1.7%	2.3%
Government and Government Enterprises	37.0%	37.6%	31.3%	29.8%	22.0%	19.4%	33.5%	35.8%
Federal, Civilian	18.0%	19.1%	9.1%	8.3%	3.9%	3.1%	7.8%	9.2%
Military	1.0%	1.8%	1.2%	2.0%	0.7%	1.2%	0.6%	1.4%
State and local	18.0%	16.7%	21.0%	19.4%	17.4%	15.1%	25.0%	25.3%

Source: Bureau of Economic Analysis website http://www.bea.gov/bea/regional/reis/
(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.
All percent calculations are percent of total income.

Several of these industries connect local economies to national forests. For example, "farm earnings" may include income from individuals with grazing permits and "forestry, fishing and related activities" as well as "manufacturing" may include earnings from persons in the wood processing industry. Retail and wholesale trade, accommodations, and arts and entertainment include earnings from persons who provide services to tourists as well as to local residents. U.S. Forest Service earnings are captured in the "government and government enterprises" category.

Table 58 shows that "government" generates the largest portion of income in all counties. The "manufacturing" industry, which includes wood processing mills and facilities, is the second or third highest contributor of private earnings in all counties. Collectively, sectors associated with tourism (retail and whole sale trade, accommodations and food services, arts and entertainment) are also among the important contributors to private earnings.

Wildland Dependency

Economic dependency on wildland natural resources can be assessed by estimating the proportion of primary and secondary labor income generated in natural resource industries relative to the labor income for all industries. A reliable source of county-level labor income data by industry is found in the IMPLAN input-output modeling system. Primary (direct) labor income is defined as the sum of employee compensation and proprietor income. Secondary labor income is calculated by using an IMPLAN Type II labor income multiplier that includes "indirect" and "induced" effects derived from primary labor income. Total labor income effects are the sum of primary plus secondary labor income.

Natural resource (or wildland) dependency was measured for the following industries: 1) grazing, 2) timber, 3) mining, 4) wildland Federal Government management (e.g., Forest Service and BLM employment, etc.), and 5) recreation expenditures tied to recreation activity occurring on all private and public wildland (Gebert and Odell 2007).

Table 59 displays wildland economic dependency by county based on the relationship of labor income generated by the natural resource industries to total labor income. The table indicates the total wildland dependency is highest in Lincoln County (56.8 percent) and lowest in Sanders and Bonner counties. For all counties, timber is the largest contributor to wildland income, while grazing and mining are much less than 3 percent.

Table 59. Wildland dependency – total labor income by category (2000 data)

County	Percent Total Non-Wildland	Percent Grazing	Percent Timber	Percent Mining	Percent Wildland Government	Percent Recreation
Lincoln	43.2%	0.2%	42.1%	0.2%	7.4%	6.9%
Sanders	72.1%	2.5%	13.8%	0.7%	4.0%	6.9%
Bonner	71.6%	0.2%	24.0%	1.1%	1.2%	1.2%
Boundary	55.7%	0.3%	38.1%	0.1%	2.0%	3.8%

Source: Results from Gebert and Odell 2000 data set

Payments to Counties

Counties containing NFS lands receive payments from the Federal Government to compensate for critical services they provide to both county residents and visitors to these Federal lands. Congress enacted in 1908 and subsequently amended a law (the National Forest Revenue Act) that requires that 25 percent of the revenues derived from NFS lands be paid to States for use by the counties in which the lands are situated for the benefit of public schools and roads. Since 1908, the affected counties have received these payments. Under this act, payments to counties changed from year to year due to the fluctuation in volume and revenues generated by timber sales.

The Secure Rural Schools and Community Self-Determination Act was enacted in October 2000. The purpose of this act was to stabilize payments to counties. Under this law, for fiscal years 2001 through 2006, counties had the choice of receiving either (1) the 25 percent payment as under the act of 1908 or (2) an amount equal to their proportion of the average of the State's three highest 25 percent payments from fiscal year 1986 through fiscal year 1999. All counties in the planning area chose option 2. In May of 2007, the act was extended one year, allowing payments to be made under the Secure Rural Schools and Community Self-Determination Act in Fiscal Year 2007. In 2008, the act was amended and reauthorized in P.L. 110-343. This law ensures that for years 2008-2011, counties can continue to count on stable and transition payments that provide funding for schools and roads, make additional investments in projects that enhance forest ecosystems, and improve cooperative relationships. With notable exceptions, the act, as amended, is similar to the original Secure Rural Schools program. Payments to the counties for 1986 to 2007 are shown in Table 60. Of the four counties, Lincoln County receives the highest payments.

Table 60. Payments to counties – 1986 to 2007 (adjusted to 2007 dollars, in thousands of dollars)

Year	Lincoln	Sanders	Bonner	Boundary
1986	$4,574.9	$981.1	$844.0	$811.3
1987	$3,400.7	$1,192.0	$1,046.7	$1,050.4
1988	$4,033.5	$1,482.7	$1,361.7	$1,397.2
1989	$4,450.8	$1,295.5	$1,112.8	$1,100.4
1990	$7,223.3	$2,019.3	$1,425.7	$1,419.4
1991	$6,393.1	$1,491.4	$1,275.1	$1,264.9
1992	$7,486.9	$2,204.6	$1,811.1	$1,826.6
1993	$9,086.6	$1,963.1	$1,269.7	$1,213.5
1994	$8,111.8	$2,472.5	$1,372.3	$1,342.4
1995	$5,864.9	$1,673.4	$1,346.2	$1,370.5
1996	$5,105.0	$1,496.5	$1,204.0	$1,213.5
1997	$4,243.2	$1,184.4	$690.2	$670.8
1998	$4,521.8	$1,549.5	$1,012.7	$1,015.0
1999	$2,831.3	$1,172.3	$936.8	$988.4
2000	$3,412.7	$1,268.3	$1,056.8	$1,115.7
2001	$6,602.6	$1,899.4	$1,413.6	$1,451.6
2002	$6,489.1	$1,866.8	$1,543.0	$1,541.5
2003	$6,405.2	$1,842.6	$1,527.4	$1,525.8
2004	$6,300.8	$1,812.6	$1,503.2	$1,501.6
2005	$6,182.8	$1,778.7	$1,479.6	$1,478.1
2006	$6,131.3	$1,763.9	$1,484.2	$1,482.7
2007	$6,041.8	$1,738.1	$1,469.6	$1,468.1

Analysis Methods

Impact Analysis

Impacts to jobs and income are used to evaluate potential direct, indirect, and cumulative effects on the economy. These economic impacts are estimated using input-output analysis. Input-output analysis is a means of examining relationships within an economy, both between businesses and between businesses and final consumers. It captures all monetary market transactions for consumption in a given time period. The resulting mathematical representation allows one to examine the effect of a change in one or several economic activities on an entire economy, all else constant. This examination is called impact analysis.

Impact analysis on the zone of influence was conducted using the IMPLAN modeling system (Minnesota IMPLAN Group 2004). IMPLAN translates changes in final demand for goods and services into resulting changes in economic effects, such as labor income and employment of the affected area's economy. The IMPLAN modeling system allows the user to build regional economic models of one or more counties for a particular year.

An IMPLAN model was built for the zone of influence to estimate jobs and income associated with timber harvest and recreation. To develop a functional economy and capture the market interactions, the zone of influence included Bonner and Boundary counties in Idaho and Lincoln, Sanders, and Flathead counties in Montana. The model for this analysis used the 2002 IMPLAN data. Multipliers for direct, indirect, and induced jobs and income were developed for timber harvest and recreation use in the analysis area.

The economic impact effects of timber harvest were measured by estimating the multipliers for direct, indirect, and induced jobs and labor income generated by the harvest and processing of timber. The multipliers were based on the harvest of one million cubic feet (MMCF) of timber. The data used to estimate the direct effects from timber harvest is information provided by University of Montana's Bureau of Business and Economic Research. The indirect and induced effects were estimated using IMPLAN.

Travel and tourism have economic implications in the form of recreational expenditures. Individuals traveling to the analysis area for recreation stimulate the local economy through the purchase of goods and services during their trip. If the individual's residence is not local, their expenditures represent new money into the local economy. That new money can then serve to create jobs through increased demand for goods and services. Typically, the expenditures of visitors vary by individual, activity type, and demographic profile. Studies have been conducted to determine the spending profile for people recreating on national forest lands (Stynes et al. 2003 and Stynes and White 2006). These studies break out spending by various recreation activities by local and non-local visitors. Local visitors were defined as those living within 50 miles of the survey site. IMPLAN was used to develop multipliers for direct, indirect, and induced jobs and labor income generated by the expenditure of one million dollars for non-local recreation.

Potential limitations of these estimated multipliers are the time lag in IMPLAN data and the data intensive nature of the input-output model. Significant changes in economic sectors since the latest data for IMPLAN have been adjusted using information from the University of Montana's Bureau of Business and Economic Research.

Cost Efficiency Analysis

Cost efficiency was also conducted to determine the tradeoff in budget expenditures to implement each alternative. Cost efficiency considers anticipated costs that are part of Forest Service monetary transactions. Present value cost (PVC) is used as an indicator of cost efficiency and presents one tool to be used in conjunction with many other factors in the decision-making process. PVC calculates costs that occur at different times and discounts them into an amount that is equivalent to all economic activity in a single year. The most recent unit costs were used in the analysis.

Direct, Indirect, and Cumulative Effects

Effects Common to All Alternatives

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on the social and economic environment. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

No alternative would affect the demographic or major social trends within the analysis area. Population and land ownership are not expected to change under Alternative D Modified or Alternative E Updated. Population growth is influenced by many things that are not affected by this project. Since all alternatives would close or restrict existing open roads to some extent, some individuals may sense a loss of freedom to use portions of the national forests in ways they have become accustomed to in recent years.

The expected change in timber production for each alternative is not known. To estimate the impact of Alternative D Modified and Alternative E Updated on the zone of influence from changes to timber production, an analysis was conducted on the amount of jobs and income associated with the production of one million cubic feet (MMCF) of timber. The number of direct jobs associated with logging one MMCF of timber harvest is estimated at 23.0 with $644,000 labor income. From these direct jobs and income, an additional 19.7 indirect and induced jobs with $403,000 labor income would be generated, resulting in total jobs and labor income of 42.7 and $1,047,100. The number of direct jobs associated with processing (milling) one MMCF of sawtimber is estimated at 21.0 with $714,000 labor income. From these direct jobs and income, an additional 33.9 indirect and induced jobs with $820,100 labor income would be generated, resulting in total jobs and labor income of 54.9 and $1,531,100.

The current number of actual recreation visits to the analysis area and the expected change by alternative is not known (see the Recreation section on page 205 for a discussion on recreation use estimates for the Forest using NVUM). To estimate the impact of Alternative D Modified and Alternative E Updated on the zone of influence from changes to recreation, an analysis was conducted on the amount of jobs and income associated with $1,000,000 worth of expenditures from non-local day use. The IMPLAN model indicates that $1,000,000 of expenditures for non-local day use results in 15.6 direct jobs and $317,653 in labor income. From these direct jobs and income, an additional 5.2 indirect and induced jobs with $124,331 labor income would be generated, resulting in total jobs and income of 20.8 and $441,984.

If the Secure Rural Schools and Community Self-Determination Act is not extended after 2011, payments to counties would revert to 25 percent of Forest revenues under the National Forest Revenue Act. This change would result in a decline in Payments to States under all alternatives, based on a reduction in timber production.

Cumulative Effects

Many factors influence and affect the local social and economic environment. Population growth, economic growth, and wildland dependency of individual counties and communities all affect local economies. Management of NFS lands within the counties also affects local economies, lifestyles, and values.

Management decisions or actions have been made or are being developed that resulted in (or may result in) restricted forest access and timber management, including the following:

- **Lynx Forest Plan Amendment; FEIS and Record of Decision released 2007 (USDA Forest Service 2007b) -** amended the KNF, LNF, and IPNFs Forest Plans; has the potential to affect timber management, mostly the thinning program.
- **Montana OHV Forest Plan Amendment and Record of Decision released January 2001 (USDA Forest Service 2001a) -** eliminates wheeled, motorized cross-country travel on certain national forests, with some specific exceptions listed in the Record of Decision. The EIS and Record of Decision amended the Forest Plan for the KNF for lands administered in Montana. In relation to this wheeled motorized vehicle access management DSEIS, cumulative effects of restricted access occurs on the Kootenai NFS lands within the State of Montana.
- **Roadless Area Conservation Rule [36 CFR 294, Subpart B (USDA Forest Service 2001b)], if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)] -** both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. If the Roadless Rule is not in effect in Montana, then more road construction could be done under 1987 Forest Plans; however any road construction would be subject to the Access Amendment.
- **2005 Travel Management Rule (36 CFR 212 and USDA Forest Service 2005b) -** travel management planning currently being conducted on Three Rivers, Cabinet, and Libby Ranger Districts of the KNF. The travel planning may limit access and reduce recreation opportunities.
- **Selkirk Mountain Range Winter Travel Plan -** snowmobiling access to the Selkirk Mountain Range has been reduced through a court order protecting caribou. The Winter Travel Plan is expected to consider a range of alternatives to the proposed action, including an alternative that would retain in place the court-ordered injunction on winter travel in portions of the Selkirk Mountain Range and an alternative that would emphasize levels of motorized winter recreation opportunities existing prior to implementation of the current court injunction. If an alternative similar to the existing court order is selected for implementation, the cumulative effect would be to potentially have a greater reduction in motorized winter recreation opportunities within the Selkirk Mountain Range than either Alternative D Modified or Alternative E Updated alone. If motorized winter recreation opportunities were emphasized, motorized winter recreation opportunities within the Selkirk Mountain Range would likely allow for more winter over-the-snow motorized access than in the current court order, but less than the level of use prior to implementation of the order

because the effect of non-maintained roads (an indirect effect potentially resulting from Alternative D Modified or Alternative E Updated) could cumulatively reduce over-the-snow motorized use.

- **Forest management activities, including timber harvest, mineral exploration and development, and watershed restoration -** active management by the Forest results in changes to the travel management system. This often results in increased access in some areas while other areas have decreased access, causing a change in timber harvest and recreation opportunities.
- **Timber harvest program -** this program has declined over the last two decades (see Vegetation and Timber Management section on page 193). The decline in timber harvest has added to a reduction in jobs and income in the logging and manufacturing sectors of local counties.

The effects of these decisions or actions are cumulative to the restricted access found under Alternative D Modified and Alternative E Updated causing decreased timber harvest and recreation opportunities. The cumulative effects of these decisions and actions constrain the outdoor lifestyle of county residents. The cumulative effects also reduce employment and income opportunities in local communities.

The National Fire Plan (USDA and USDI 2000) increases the amount of fuels management of the three Forests, which affects local economies through reduced fire risk and, possibly, improved job opportunities from timber harvest and restoration activities. Management of State and corporate lands also provide access and timber harvest, benefiting local economies.

Effects of Alternative D Modified

Direct and Indirect Effects

Social Environment

To meet the requirements of this alternative, there is the potential that access may be closed or restricted for some developed recreation sites (campgrounds, boat ramps, day use areas, and cabin rentals). Because of the number of developed sites that would be inaccessible (see the Recreation section on page 205), there would be a reduction in developed use on the Forest in some sites. Recreation use may increase at other developed sites on the forests.

Under this alternative, between 880 and 1,171 miles of currently open roads could be gated or barriered and 57 miles of trail could change from motorized to nonmotorized use. Placing barriers and gates on roads would reduce public wheeled motorized vehicle access in most of the BMUs. This would affect the public's ability to hunt, fish, pick huckleberries, camp (in dispersed sites), or collect firewood in these areas and would likely cause a shifting of use to other areas on the forests. Concentrating use on other parts of these three Forests would increase competition for hunting, fishing, huckleberries, firewood, and other uses and products, diminishing the quality of the experience and the quantity of products. Long hiking distances on roadbeds could be required to reach trailhead accesses due to closed roads, and wheeled motorized trails would be reduced.

In addition, in some BMUs there may be the possibility of opening 6 to 18 miles of previously gated or barriered roads. This would allow wheeled motorized vehicle access for social uses such as recreation, forest product gathering, hunting, fishing and pleasure driving. However, whether or not roads would be opened is dependent on project level analysis that considers all resources.

This alternative has the greatest potential to affect the lifestyle of the residents and visitors to the analysis area. Those who participate in developed and dispersed recreation activities would have reduced opportunities and may find a diminished quality of the experience at other sites (see the Recreation section on page 205). This has the potential to concentrate these displaced users into a slightly smaller area, increasing competition for hunting, fishing, and gathering of huckleberries, firewood, and other uses and products. This increased competition may cause more difficulty for some people to obtain firewood or huckleberries or have a high quality, successful hunting experience. Either they will not be able to obtain the quantity or quality of products they have in the past or they may have to walk further from an open road to obtain these products. They may have a sense of being more crowded when engaging in these activities. These effects may generate a feeling that an aspect of their quality of life has been diminished. Other aspects of lifestyle, such as the value of landscape and open, rural settings, is not expected to change under this alternative. Of the alternatives, Alternative D Modified has the potential for the largest negative impact on the social environment. See the tables in Transportation section on page 156for more detailed information on the estimated amount and location of changes in wheeled motorized vehicle access.

Area Economy

Alternative D Modified has the highest reduction in suitable acres accessed (see Table 49 on page 203), and thus, the highest potential for reducing future timber harvest than Alternative E Updated.

Because of the limited access for developed and dispersed recreation on the national forests, recreation levels are expected to decline. Because of the reduction in access to the suitable timberland base, timber harvest levels would be reduced. Recreation and timber-related jobs and income would be reduced. However, there would be a temporary increase in jobs and income associated with the potential increase in watershed work on roads over the next several years.

If the Secure Rural Schools and Community Self-Determination Act is not extended, payments to counties would revert to 25 percent of Forest revenues under the National Forest Revenue Act. This change would result in a decline in Payments to States under all alternatives. The potential for a reduction in Payments to States is higher in Alternative D Modified than Alternative E Updated.

Of the alternatives, Alternative D Modified has the potential for the largest negative impact on the area economy.

Cumulative Effects

The Cumulative Effects of All Alternatives described the past, present, and reasonably foreseeable actions that combine with the effects of the alternative, resulting in cumulative effects. These actions and their effects are cumulative to the restricted access found under Alternative D Modified, causing a further reduction in timber harvest and recreation opportunities. The cumulative effects of these decisions and Alternative D Modified constrain the outdoor lifestyle of county residents and reduce employment and income opportunities in local communities.

Of the alternatives, the cumulative effects under Alternative D Modified result in the largest reduction in recreation and timber harvest opportunities, causing the largest reduction in employment and income in local communities.

The amount of possible increased management under the National Fire Plan (USDA and USDI 2000) is the lowest under Alternative D Modified because of reduced access.

Effects of Alternative E Updated

Direct and Indirect Effects

Social Environment

Under this alternative, between 34 and 102 miles of currently open roads would be gated or barriered. An additional 28 miles of trail would be changed to non-motorized use. Alternative E Updated would have a net effect of leaving more roads open for wheeled motorized vehicle access with less effects to the social environment than Alternative D Modified. In addition, in some BMUs there may be the possibility of opening 110 to 330 miles of previously gated or barriered roads, providing more opportunities for wheeled motorized vehicle access and related uses such as recreation, forest product gathering, hunting, fishing, and pleasure driving. However, whether or not roads would be opened is dependent on project level analysis that considers all resources.

This alternative has the potential to affect the lifestyle of the residents and visitors to the analysis area. Those who participate in developed and dispersed recreation activities would have somewhat reduced opportunities and may find a diminished quality of the experience at other sites (see the Recreation section on page 205). This displacement would likely cause social effects similar to those described for Alternative D Modified, although to a lesser extent. Other aspects of lifestyle, such as the value of landscape and open, rural settings, is not expected to change under this alternative. Of the alternatives, Alternative E Updated has the least potential for a negative impact on the social environment. See the tables in Transportation section on page 156for more detailed information on the estimated amount and location of changes in wheeled motorized vehicle access

Area Economy

Alternative E Updated has a lower reduction in suitable acres accessed (see Table 49 on page 203), thus, a lower potential for reducing future timber harvest than Alternative D Modified.

Because of the availability of alternative areas on and near these three national forests, recreation levels would remain at current levels. Because of the reduction in access to the suitable timberland base, there is potential that timber harvest levels would be reduced. Recreation-related jobs and income would remain close to current levels, while timber-related jobs and income would be reduced. However, there may be a temporary increase in jobs and income associated with the potential increase in watershed work on roads over the next several years.

If the Secure Rural Schools and Community Self-Determination Act is not extended, payments to counties would revert to 25 percent of Forest revenues under the National Forest Revenue Act. This change would result in a decline in Payments to States under all alternatives. The potential for a reduction in Payments to States is lower under Alternative E Updated than Alternative D Modified.

Of the alternatives, Alternative E Updated has a lower negative impact on the area economy than Alternative D Modified.

Cumulative Effects

The Cumulative Effects of All Alternatives described the past, present, and reasonably foreseeable actions that combine with the effects of the alternative, resulting in cumulative effects. These actions and their effects are cumulative to the restricted access found under Alternative E Updated, causing a further reduction in timber harvest and recreation opportunities. The cumulative effects of these decisions and Alternative E Updated constrain the outdoor lifestyle of county residents and reduce employment and income opportunities in local communities.

The cumulative effects under Alternative E Updated result in a smaller reduction in recreation and timber harvest opportunities than found under Alternative D Modified, resulting in a lower reduction in jobs and income in local communities.

The amount of possible increased management under the National Fire Plan (USDA and USDI 2000) is higher under Alternative E Updated than Alternative D Modified.

Cost Efficiency

The cost of implementing Alternative D Modified and Alternative E Updated was analyzed by alternative. Costs were developed for the following road status changes:

- **Currently Open Roads changed to Gated -** to meet INFS and other standards, roads would need to be brought up to BMPs before gates are installed. Average costs are approximately $5,834 per mile (in 2007 dollars).
- **Currently Open Roads changed to Barriered -** the average cost is $7,001 per mile. This includes costs for placing some roads into intermittent stored service.
- **Currently Gated Roads changed to Barriered -** the average cost is $8,459 per mile (in 2007 dollars). This includes costs for placing some roads into intermittent stored service. These costs are the highest, since many of these roads have begun to vegetate in and are beginning to deteriorate from lack of maintenance.

Costs for gating or putting a barrier on a road vary. If BMP work is needed prior to gating, costs are much higher. The economic analysis considered the higher costs of watershed work with using barriers.

To calculate the cost of implementing the change in road status, the highest number of miles in the range estimated for each alternative was used (see Table 40 on page 169 and Table 42 on page 173). The activities required by the changes in road status were assumed to occur over the next several years. Possible change in status from gated or barriered to open or gated were not included in this analysis, as these changes may not be possible.

In addition, road maintenance costs were reduced ($58 per mile in 2007 dollars) for open roads with a change in status. Road maintenance cost savings were included for the next 20 years.

Table 61 displays the miles of change in road status, miles of roads no longer requiring maintenance, and the present value (discounted) cost for each alternative. A four percent discount rate was used over a 20-year period. The table also indicates that Alternative D Modified has the highest cost of implementing and Alternative E Updated has the lowest cost.

Table 61. Cost by alternative

Activity	Alternative D Modified	Alt E
Miles Open to Gated	403 miles	54 miles
Miles Open to Barriered	768 miles	48 miles
Miles Gated to Barriered	999 miles	222 miles
Miles no longer needing Maintenance	1,767 miles	270 miles
Present Value Cost (M$)	**$13,262,300**	**$2,078,200**

Forest Plan Consistency

See Consistency with Regulatory Framework and other required disclosure sections starting on page 266.

Fire, Fuels, and Air Quality

Introduction

Fire and Fuels

The KNF, LNF, and IPNFs Forest Plans all have objectives for forest fire management programs to minimize the number of acres lost to wildfires. The Plans consider minimizing cost plus net value change while providing for the safety of the public and the personnel engaged in fire management activities.

Air Quality

Under the 1977 Clean Air Act amendments (42 U.S.C. 7401 et seq.), areas of the country were designated as belonging in Class I, II, or III Airsheds for Prevention of Significant Deterioration purposes. Class I areas are all international parks, national parks greater than 6,000 acres, and national wilderness lands greater than 5,000 acres which existed on August 7, 1977. This class provides the most protection to pristine lands by severely limiting the amount of additional, human-induced air pollution that can be added to these areas. Class II areas are currently all other areas of the country that are not Class I. To date, there are no Class III airsheds.

Although there is no known historical air quality data for the natural ecosystems in the KNF, LNF, and IPNFs, it is known that fire historically played a major part in the vegetative conditions of the area. Journals from early-day explorers and newspaper articles from the late 1800s often mention the smoky conditions from fires burning in western Montana and northern Idaho (Losensky 1992). The annual amount of smoke generated from forest and range fires has generally decreased since the early 1900s, even with today's use of prescribed fire. Settlement and subsequent fire protection reduced the amount of area burned and reduced the duration of smoke emissions from wildland fires.

Changes between the DSEIS and FSEIS

The primary changes between the DSEIS and the FSEIS include updates to the miles of open and restricted roads that would be available for Alternative D Modified and Alternative E Updated.

Regulatory Framework

The following four guiding documents establish direction and provide the framework for fire management. These documents provide specific goals, standards, and objectives for implementing a fire management program. Fire handbooks, guides, research, and technical papers provide further direction.

- KNF, LNF, and IPNFs Forest Plans
- Federal Wildland Fire Policy
- National Fire Plan (USDA and USDI 2000)
- Forest Service Manual (FSM)

The Kootenai and Lolo National Forest's fire management plans, which tier to each Forest Plan, define a program to manage wildland and prescribed fires and documents the fire management program in the approved Forest Plan. It is a detailed program of action to carry out the fire management and fire protection objectives identified in the Forest Plan. The IPNFs does not currently have a fire management plan, but similarly to the Kootenai and Lolo NFs, fire management actions on the IPNFs carry out the fire management and fire protection objectives identified in the IPNFs Forest Plan.

FSM 5150 defines fuel as combustible wildland vegetative materials, living or dead. The objective of fuel management as stated by FSM 5150.2 is to identify, develop and maintain fuel profiles that contribute to the most cost-efficient fire protection and use program in support of land and resource management direction in the Forest Plan. Methods used for controlling the flammability and intensity of a fire may include mechanical, chemical, biological, or manual means, including the use of prescribed fire and wildland fire for resource benefit (FSM 5150).

The Federal Wildland Fire Management Policy and Program Review was chartered by the Secretaries of the Interior and Agriculture in 1995 to examine the need for modification of and addition to federal fire policy. Fire suppression policy from the early 1900s until the late 1970s had been one of total suppression. Only recently has fire policy been modified to recognize the importance of fire in balancing vegetation cycles within temperate forests. This program review recommended a set of consistent policies for all Federal wildland fire management agencies.

The National Fire Plan (USDA and USDI 2000) originated after the record-breaking wildfire season of 2000; President Bush requested a national strategy for preventing the loss of life, natural resources, private property, and livelihoods in the wildland-urban interface. Working with Congress, the Secretaries of Agriculture and Interior jointly developed the National Fire Plan to respond to severe wildland fires, reduce their impacts on communities, and assure sufficient firefighting capabilities for the future. The National Fire Plan includes five key points:

- firefighting/ preparedness
- rehabilitation and restoration of burned areas
- reduction of hazardous fuels
- community assistance
- accountability

The National Fire Plan is a long-term commitment based on cooperation and communication among Federal agencies, states, local governments, tribes, and interested publics. The Federal wildland fire management agencies worked closely with these partners to prepare a 10-Year

Comprehensive Strategy (USDA Forest Service and USDI Bureau of Land Management 2002). The four goals of the 10-Year Comprehensive Strategy are to:

1. improve fire prevention and suppression
2. reduce hazardous fuels
3. restore fire-adapted ecosystems
4. promote community assistance

In adopting the Federal Wildland Fire Management Policy, the Federal agencies recognized the role of wildland fire as an essential ecological process and natural change agent that will be incorporated into the planning process. The severe wildfire seasons in recent years throughout the country have made it clear that fire cannot be excluded from fire-dependent ecosystems. On the other hand, because of developed areas, and commercial forests, fire cannot be fully restored to its historic character without severe consequences to humans, except perhaps in a few of the largest wilderness areas (Brown et al. 1994, in Hardy and Arno 1996)

The Clean Air Act would be met as wildfire smoke emissions are exempt from regulation. Even though there could be an impact to air quality, the Clean Air Act does not regulate wildfire smoke. The use of prescribed fire would also meet the Clean Air Act as the states of Montana and Idaho use the Montana/Idaho State Airshed Group's Smoke Monitoring Unit to manage and limit the amount of emissions from prescribed fire.

Affected Environment

Fire Risk

Before this century, most vegetation types had evolved with fires of natural or human-caused origin. Fire history shows that these types of vegetation were periodically disturbed by fire. The pattern of disturbance is referred to as fire frequency and the effect of the disturbance is referred to as fire regime or intensity. The frequency and intensity of fires varied greatly because of variation in fuel, topography and weather. This resulted in a mosaic of vegetation.

Fire suppression in this century has created unexpected effects. Successful fire suppression, insect and disease mortality, and windstorms causing blowdown have resulted in a buildup of fuels. This has led to increasing rates of fire spread and intensity, and ultimately has increased the probability of larger high-intensity fires. Such fires potentially could occur on a repeated basis due to an increase in the frequency of large fires.

Management activities that change species composition, age distribution and structure of the vegetation across the landscape affect fire regimes. The structural factors, which determine crown fire potential, include canopy closure, fuel ladders and canopy height. The species that are selected for a site, through active management or through the indirect effects of fire suppression, can affect fire intensity.

Management action that changes roaded access may affect human-caused fire ignitions, initial attack fire suppression success and have significant effects on large-fire suppression capability. Delayed response time for initial attack and reinforcements for emerging fires is the critical limiting factor for most fire starts. Extended response times due to reduced surface access increases the possibility of an escaped fire. The cost of suppression increases due to needs for aviation support and firefighter support in remote areas. Conversely, reduced access may decrease the number of human-caused fires.

Management ignited prescribed fires can be an effective tool to reduce fuel accumulations and thus reduce the severity of wildfires. However, reduced road access can limit the opportunities for such prescribed fires, thereby lessening fuel management capabilities.

The analysis area averaged 102 fires per year for the period between 1985 and 2006, with an average of 4,239 acres burned per year. Lightning accounted for 64 percent of the fires and 71 percent of the acres. Human-caused fires accounted for 29 percent of the number of fires and 36 percent of the acres.

Analysis Methods

This analysis uses the miles of accessible roads (such as open or gated) available to firefighting resources as the indicator of potential effects to fire, fuels, and air quality. Essentially, the more access that is afforded to firefighters should result in faster response times and thus fewer acres burned and less impacts to air quality. Areas with less road access would require more aerially delivered firefighters and would result in longer response times, which would most likely result in more acreage burned and potentially more impacts to air quality.

Effects Common to All Alternatives

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on the fire, fuels, and air quality resources in the analysis area. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

Road restrictions could have a number of potential impacts on fire, fuels, and air quality. In general, reduced administrative access could result in delays in initial attack and fire suppression efforts of undesirable fires. For fires that escape initial attack, this may lead to large, landscape-sized fires with the associated changes in forest resources. For example, air quality may decline in the vicinity of the fire(s), security cover for grizzly bears may be reduced, and the larger, faster moving fires would increase the risk of mortality to plant and animal species.

Reduced administrative access indirectly reduces opportunities for vegetation management to treat insect and disease mortality, blowdown and undesirable tree species compositions (see the Vegetation and Timber Management section on page 193); therefore, fuel levels are expected to increase over time. Fire history suggests that unmanaged vegetation has the most potential for large fires in vegetative types with low fire frequency. When a wildfire begins under the right weather and fuel conditions in these types, forest resources such as wildlife cover, water quality, soil integrity and air quality could be adversely impacted (Graham et al. 2004).

Decreased wheeled motorized vehicle access to the general public may decrease the number of human-caused fires. However, if the total amount of wheeled motorized recreation does not decrease and is simply relocated in different areas, the results may only be that human-caused ignitions are more concentrated into those areas with access, with fewer ignitions in the areas with wheeled motorized vehicle access restrictions.

The potential change in the bear year in the Cabinet-Yaak Recovery Zone from the existing April 1 through November 15, to April 1 through November 30 would have minimal effect to fire, fuels, and air quality. The incidence of wildfire occurrence after November 15 is low due to the onset of cooler and damper weather. Therefore, the impacts of adding two weeks to the bear year in November would have minimal effects. However, prescribed fire management activities could be affected if areas need to be accessed by roads in late November due to prescribed burn prescription windows. However, this would have to be analyzed in specific project analysis.

The effects of Alternative D Modified and Alternative E Updated would be proportional to the change in administrative and wheeled motorized vehicle access and the subsequent changes in vegetation and fuels management. The alternatives' actual impacts cannot be completely assessed until the implementation of site-specific decisions. Additionally, the potential for road access changes (i.e., gated road to be opened) is dependent on resource considerations that may limit these opportunities.

Cumulative Effects

The cumulative effects of the National Fire Plan include the use of prescribed fire and increased fire suppression within the Selkirk and Cabinet-Yaak Recovery Zones. The National Fire Plan has the following as an emphasis of land management:

> "Prescribed fire use to reduce natural fuels to a historic level focusing on the warm, dry sites with short fire return intervals of less than 35 years. Several areas within the Selkirk and Cabinet-Yaak Recovery Zones fall into this category and should be treated over the next decade to bring the natural fuels back to historic levels."

Decreased access through roads being permanently restricted may allow fires to become larger due to increased response time. This will allow an increased impact on air quality due to an increased addition of particulates into the air.

Reduction of vegetative management (see Vegetation and Timber Management section on page 193) reduces the management of natural fuels and increases the risk of larger fires. This would result in an increased impact on air quality due to an increased addition of particulates into the air.

Increased prescribed fire, as outlined in the National Fire Plan, emphasizes use of fire in the warmer, dryer sites, which are present in varying amounts in the recovery zones. A limit on prescribed fire use as a result of access restrictions would reduce the amount (acres) of natural fuel treatment accomplished, continuing the fuel build up and possibility of larger wildfires. This may result in an increased impact on air quality when wildfires occur, due to increased fire intensities and increased additions of particulates into the air.

Past vegetative management has resulted in areas with reduced fuel loads. Many of these areas are still serving as treated areas that can alter fire behavior by slowing fire spread. Over time, these areas will continue to accumulate fuel and their effectiveness for slowing fire spread will be diminished. If future vegetative treatments are decreased, over time the net result will be fewer areas on the landscape that can function as slowing fire spread.

The cumulative impacts of decreasing road access and the reduction of vegetative management opportunities would increase the possibility of larger wildland fires because of a slower response time and an increase in hazardous fuels. If road access is restricted by barriers, access could be possible by use of equipment to remove barriers or fill in ditches but would result in a slower response time. Increase in the size of wildland fires allows for more particulates to be released into the air, thus degrading air quality. Use of prescribed fire to bring the natural fuels back to historic levels would increase particulates in the air; however, the controlled burning of the natural fuels releases significantly fewer particulates than a wildfire.

The Roadless Area Conservation Rule, if in effect in Montana, and the Idaho Roadless FEIS and Rule [36 CFR 294, Subpart C (2008c and 2008d)], both constrain future road construction, reconstruction, and timber cutting, sale, and removal more than the KNF and IPNFs 1987 Forest Plans. Neither Rule would affect existing wheeled motorized vehicle access. The Idaho Roadless FEIS and Rule permits treating hazardous fuels around communities. If the Roadless Rule is not in effect in Montana, then more road construction could be done under 1987 Forest Plans; however, any road construction would be subject to the Access Amendment.

Effects of Alternative D Modified

Direct and Indirect Effects

Alternative D Modified would result in approximately 1,545 to 2,170 total miles of road status changes to meet grizzly bear BMU standards. Of those, 1,263 to 1,767 miles would result in loss of administrative use (open or gated roads changed to barriered roads). This alternative would eventually result in the greatest loss of access for fire suppression equipment and personnel. Additional reliance on air supported fire suppression would be needed to compensate for reduced ground-based response time. The result would likely be more escaped fires and larger high intensity acreage burned due to limited access and longer response times, resulting in higher suppression costs. Under Alternative D Modified, fires that started in the Selkirk and Cabinet-Yaak Recovery Zones in areas of no wheeled motorized vehicle access would also have an increased risk of escaping from core areas on a large fire front, which results in an increased risk to resources and values located downwind of large stand-replacement fire.

Over time, roads that are gated and not maintained by the Forest Service would see reduced access due to encroaching vegetation and/or down trees. As these roads became difficult to access, these areas would see an increased risk in fires escaping due to longer response times. Under Alternative D Modified, there are potentially 282 to 403 miles of open roads that would be changed to gated.

Cumulative Effects

Refer to effects Common to All Alternatives above. No additional cumulative effects to fire, fuels, or air quality specific to Alternative D Modified were identified.

Effects of Alternative E Updated

Direct and Indirect Effects

Alternative E Updated could result in the conversion of 86 to 258 miles of currently gated road being changed to open roads. Overall, this would increase access for firefighting. It is important to note that some allowed changes (i.e., increases in road densities or decreases in core area in BMUs that are currently better than standards), though allowed to occur by the standards, are unlikely to occur (see Wildlife section on page 44). As some areas are changed from open to either gated or barriered (34 to 102 miles), those areas would have reduced access for suppression equipment and personnel. Additional reliance on air supported fire suppression would be needed to compensate for reduced ground-based response time. However, Alternative E Updated would have a net effect of leaving more roads open for wheeled motorized vehicle access than

Alternative D Modified. More open roads would result in improved fire suppression access overall, with generally faster response times than Alternative D Modified. Other effects are similar to those discussed for Alternative D Modified, but to a lesser extent.

There are potentially 18 to 54 miles of open roads that would be changed to gated status in Alternative E Updated. Over time, roads that are gated and not maintained by the Forest Service would see reduced access due to encroaching vegetation and/or down trees. As these roads become difficult to access, these areas would see an increased risk in fires escaping due to longer response times.

Cumulative Effects

Refer to effects Common to All Alternatives above. No additional cumulative effects to fire, fuels, or air quality specific to Alternative E Updated were identified.

Forest Plan Consistency

Forest Plan consistency for fire, fuels, and air quality would be met for all three Forest Plans, as the direction outlined by each Plan for fire management would be met. Implementing these alternatives would not result in changes to the Forest's fire management standards, goals, and objectives. However, implementation of these alternatives would potentially change the response time and how a fire could be accessed by suppression resources.

Soils

Introduction

Soil is critical for maintaining the productivity potential of a site. A productive soil can sustain biological productivity, maintain environmental quality, and promote plant and animal health. Management does not affect factors such as climate and soil parent material; however, management activities can affect soil nutrients and structure. Maintenance of soil productivity is dependent on organic material inputs and the protection of surface layers from erosion, displacement, and compaction.

Changes between the DSEIS and FEIS

The primary changes between the DSEIS and this FSEIS include updates to the miles of open and restricted roads that would be available for Alternative D Modified and Alternative E Updated.

Regulatory Framework

Within the Forest Plans for the KNF, LNF, and IPNFs, there are specific goals developed to enhance and protect resources, specifically, soil and aquatic resource goals are in place to ensure that activities on NFS lands do not impair soil and water quality and that each activity adheres to state and federal Best Management Practices (BMPs) (see Aquatics - Watershed and Fisheries section on page 177).

The regulatory framework providing direction for minimizing erosion and sedimentation comes from the following principal sources:

- Forest Plans for the KNF, LNF, and IPNFs
- Clean Water Act (CWA)
- Inland Native Fish Strategy (INFS; USDA Forest Service 1995b)
- Multiple Use Sustained Yield Act (MUSY)
- National Forest Management Act (NFMA)

Direction in the three Forest Plans is to manage the soil resource to maintain long-term productivity. The Clean Water Act stipulates the need to restore and maintain the chemical, physical and biological integrity of streams. The INFS provides direction to protect habitat and populations of resident native fish outside of anadromous fish habitat in the Northwest.

Section 6 of the NFMA charges the Secretary of Agriculture with ensuring research and continuous monitoring of each management system to safeguard the land's productivity. MUSY directs the Forest Service to achieve and maintain outputs of various renewable resources without permanent impairment of the land's productivity (see Aquatics - Watershed and Fisheries section on page 177for additional information related to the regulatory framework).

Affected Environment

The majority of the land in the analysis area was influenced by glaciers. Glacial activity produced considerable scouring and filling, creating a more subdued landscape than would have existed prior to glaciation. When forest conditions are undisturbed, surface erosion is generally low to non-existent on most upland landtypes. In most cases, landtypes have variable materials available with the most productive part occurring near the surface at the contact between the organic forest litter and the mineral soil. Landtype information is on file at the KNF, LNF, and IPNFs Supervisor's Offices.

Underneath this organic layer is volcanic ash that occurs as the surface horizon of the mineral soil. The volcanic material accumulated from several Cascade volcano eruptions with most of the ash originating from Mt. Mazama (Crater Lake) in Oregon about 6,800 years ago. The top part of the ash is usually enriched with organic matter that is incorporated into this part of the soil. The ash has a high water- and nutrient-holding capacity, both of which are important for soil productivity and infiltration rates that generally negate erosion-causing overland flow. A restrictive layer of dense glacial till often occurs close to the soil surface and can inhibit infiltration or water movement. When associated with roads, these compacted layers perch water that flow out of cut banks and down ditches, culverts, and the road surface for extended periods of time.

Geological creep is the dominant mass erosional process in most of the undeveloped portions of the analysis area. Creep is the minor shifting and downslope gravitational movement of the surface mantle material. The rate of geologic creep is higher on steep, dissected landtypes and least near ridge tops. Surface erosion tends to become a dominant player when activities remove protective ground cover and the surface volcanic ash material. Roads and skid trails account for most of the surface erosion with a reduced quantity associated with fires and timber harvest. The amount of surface erosion that occurs varies depending on road design features and site characteristics.

The inherent erodibility of subsoils and substratum materials ranges from low to high, with the surface volcanic ash being low due to its high water retention capacity. The primarily young glacial soils are very weakly weathered and generally have a high component of rock fragments although this can be quite variable, particularly in alluvial bottoms. Soils with high amounts of rock component in the soil profile are better armored against erosion, but generally have reduced soil productivity. Lacustrine, glacio-fluvial and weathered residual areas that have low rock fragment contents and finer textured soils have higher, inherent erodibility ratings. Roads greatly extend the stream network and the speed and efficiency of water delivery to stream channels. Road systems also substantially increase the potential for mass failures and cutslope slumps, particularly in steep, dissected landtypes where the road prism can expose dense, compacted tills or other restrictive layers that can perch ground water.

Bare or disturbed soils may increase the presence of noxious weeds that can alter vegetative cover and soil stability and effectively reduce native plant species without providing comparable effective soil cover. This can lead to an increase in potential soil erosion, decrease in organic matter input into the soil, and reduction in potential soil productivity (D'Antonio et al. 2004; DiTomaso 2000).

Soils within the Analysis Area

Soils are a mixture of glacial till, glacial-fluvial, fluvial and residual materials. Glacial activity had a considerable influence on the location and character of the soil materials within the analysis area. North Idaho and Montana were visited by at least two ice advances over the past 50,000 years that covered all but the tops of the highest mountains – reshaping the landscape by scouring ridges, creating areas of shallow soil or exposed bedrock. The side slopes and valley bottoms are often defined by abrupt stream breaklands or consist of wide valleys that are remnants of past glacial advances. Surrounding slopes contain extensive deposits of gravel, glacial till, glacial lake silts, or residual colluvium. These deposits include materials of various sizes as follows:

- Silts, fine sands, and gravels in the glacial tills;
- Silts and clays in the lacustrine (lake) deposits;
- Sands and gravels in the stream and melt-water deposits;
- Sands, silts and gravels in the residual soils.

Those areas not affected by glaciation contain soils that are weathering "in place" - these are often referred to as residual soils. Typically, there is a good gradation of particle sizes. The amount of rock present is much higher than those associated with a glacial till soil and contain rocks that are strongly angular. Gravel and rock fragment content varies and increases in amount and size depending on shallowness or depth to bedrock.

Volcanic eruptions in the Cascade Mountains have left ash-influenced loess on most of the landscape across the analysis area. The silt-loam textured ash layer forms the uppermost soil horizon and is generally present on all aspects, overlying outwash, alluvium and till, and can be quite variable. Topsoil derived from ash is highly productive and supports an array of mixed coniferous forest. Soils in valley bottoms are usually subject to flooding and are poorly developed with little or no volcanic ash influence. These soils support a complex association of vegetation generally dominated by riparian and moist habitat types.

Geology and Landscape of the Analysis Area

The analysis area is underlain by metamorphosed sedimentary rocks known as the Precambrian Belt Supergroup. These rocks were formed approximately a billion years ago from fine sediments that accumulated at the bottom of ancient seas and changed into hard dense rock formations under great pressure and heat. They form a relatively stable foundation compared to watersheds in areas dominated by granitic rock and soils that are prone to landslides and soil movement (Kuennen and Nielsen-Gerhardt 1995).

Granitic parent material is located in the Selkirk Mountains and isolated areas of the Cabinet Mountains. Extensive surficial glacial and alluvial deposits cover valley bottoms, flood plains, terraces, outwash basins, benches, and also mantle mountain side slopes.

The landscape within the analysis area is part of the Rocky Mountain Uplift. As such, the terrain includes numerous mountain ranges and intervening narrow valleys. It is an erosional landscape, part of which has been strongly modified by continental ice sheets and alpine glaciation. The portion that has been continentally glaciated has a subdued appearance -- the ridges have been scraped, rounded and scoured off while the U-shaped valleys have been filled with alluvium. Alpine glaciation has created more rugged and dramatic features at generally higher elevations above the timberline.

Climatic Conditions of the Analysis Area

Climatic conditions are dominated by Pacific maritime weather. Winters are generally cloudy, warm, and wet. Summer days are typically dry and warm with much cooler nighttime temperatures. Annual precipitation ranges from 13 inches in the Eureka Valley along the Canadian Border to over 100 inches in the highest elevations of the Cabinet Mountains in Idaho and Montana and in the Selkirk Mountains in Idaho.

Analysis Methods

Soils and geology were analyzed using ArcMap GIS and the soil survey or land systems inventory of each of the three Forests (Niehoff 2002; Kuennen and Nielsen-Gerhardt 1995; Sasich and Lamotte-Hagen 1989).

The temporal scales for the soil analysis area can be defined as long and short-term. For this evaluation, short-term effects are those that occur approximately within the first 10 years following proposed management activities. Long-term effects are those that last longer than10 years following proposed management activities.

Generally, detrimental effects on soils on forested land are not permanent and depend primarily on soil texture, parent material, aspect, climate and level of disturbance. Recovery time is on the average 30 to 70 years as second growth timber becomes established within disturbed areas (Dykstra and Curran 2002; and Froehlich et al. 1983 and 1985). However, soil displacement that mixes or moves the volcanic ash surface layer and reduces soil moisture holding capacity and productivity is essentially irreversible.

Direct, Indirect, and Cumulative Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on the soil resource in the analysis area. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives. Most of the effects identified in this analysis would be indirect effects in that they would occur later in time as a result of this programmatic decision.

Effects Common to All Alternatives

Direct and Indirect Effects

Road Access

Implementation of Alternative D Modified and Alternative E Updated would result in both beneficial and negative short- and long-term soil impacts associated with changes in road access and treatments. Various forms of roadwork are projected and include but are not limited to:

- **Full Recontour:** pulling the excavated road back as near as possible to its original condition.
- **Partial Recontour:** not matched at the top of the cutbank like fully recontoured roads.
- **Outsloping**: pulling some of the fill-slope material back onto the roadbed to create an outslope, to eliminate the inside ditch and provide drainage toward the outside of the road.
- **Culvert Removal:** removing most or all of the ditch relief and instream culverts.

Road treatments would result in short-term sediment increases but are expected to have positive long-term effects as a result of restoring hydrological function along roads, improving lateral soil-water movement, and reducing road-related mass wasting and erosion potential (Burroughs and King 1989; Switalski et al. 2004). Much of the risk reduction is attributed to the proposed road treatments and restrictions. The level of effects to the soil resource would depend on the road location, parent material, and intensity of treatment selected.

Removal of culverts and all associated fill material would increase amounts of sediment input over a span of minutes to hours and is not expected to have long lasting negative effects. Long-term benefits include elimination of wash-outs from undersized or failing culverts and a reduction of risk from erosion and sediment transport into streams.

The greatest long-term risk to the soil resource would arise when roads are closed and put into intermittent stored service without having critical areas, such as failing culverts, stream crossings, cut- and fill slopes, slumps, surface water routing, and modified drainage patterns stabilized prior to the road status change. Discontinued maintenance and inaccessibility to effectively and efficiently monitor and treat potential road degradation over time would increase the risk of surface erosion and adverse effects to soils and water quality.

Fire and Fuels

Vegetation management to treat insect and disease mortality, overstocked stands, increased fuel loads, or undesirable tree species composition are restricted to varying degrees under each alternative. The chance of a wildfire could be enhanced if ignition starts in an untreated area during extreme dry weather conditions (Heyerdahl et al. 2007). Increased fire risk and burn severity in alternatives with the least vegetation management and the greatest decrease in wheeled motorized vehicle access could have adverse effects on soils and soil productivity.

Conversely, areas that receive the greatest amount of road treatment (i.e., decompaction, recontouring, culvert removal, etc.) may have reduced erosion and mass failure concerns post-fire. Roads are attributed as being one of the greatest contributors to sediment movement (Cacek 1989; Elliot et al. 1999; Luce and Wemple 2001; Reid et al. 1994). Roads with restored or proper drainage and infiltration capacity therefore have less potential for sediment movement post-fire compared to roads that are only gated and not treated.

Proposed vegetation and fuels treatments in the analysis area would not necessarily prevent wildfires but would increase the ability to suppress such fires should ignition occur in treated areas (Maurer 2007). Roads are also important tactically, creating barriers to fire expansion and providing lines from which back-fires can be set. However, additional road restrictions may also have the potential to decrease access and impact fire suppression efforts, resulting in larger and more intensive fires that could affect soils.

The occurrence of a high intensity wildfire would have an increased potential for impacts to soils and soil productivity in severely burned areas, especially since the risk of soil erosion increases proportionally with fire intensity (Megahan 1990). Burns that create very high soil surface temperatures can result in a reduction of water infiltration and an almost complete loss of soil microbial populations, nutrients, woody debris, and the protective duff and litter layer over mineral soil (Hungerford et al. 1991; Neary et al. 2005; Wells et al. 1978).

Recreation

Disturbance from general motorized use and recreational access would continue throughout the analysis area but would vary in extent by alternative. Increased road access would have a higher potential for short- and long-term soil impacts as opportunities for illegal motorized trespass and localized recreational site disturbance (i.e., dispersed camping) are available from travel routes.

Cumulative Effects

Across the three Forests, the number of overall acres annually treated with timber harvest has decreased (see Figure 12 on page 195) because of changes in management direction and silvicultural regimes (see Vegetation and Timber Management section on page 193). Within the Selkirk and Cabinet-Yaak Recovery Zones, impacts to soils are therefore reduced with a decline in timber harvest.

Past and present fire suppression has prevented many stands from being consumed in wildfires but has lead to an alteration of fuel loads, especially when combined with a reduction in vegetative management. Detrimental effects on soils depend on the intensity and severity of the fire but can negatively alter soil productivity and watershed sensitivity.

Given the absence of fire due to suppression across the three Forests, the chance of a wildfire occurring could be increased if an ignition starts in untreated areas during extreme weather conditions (see Fire, Fuels, and Air Quality section on page 243). The resulting impacts on soil productivity would therefore be much higher in unmanaged stands with increased fuel loads compared to those that have successfully completed vegetative treatment.

The 2005 Travel Management Rule (USDA Forest Service 2005b) requires that the Forest Service examine the road network and give priority to reconstructing and maintaining needed roads, to decommission or store unneeded roads, and/or to reduce maintenance costs. Therefore, as additional emphasis is given to road management, it is expected that road-related mass failures and sediment movement would be further reduced, road design would be improved, and restoration of the hydrological function along roads would be enhanced or restored.

Since 2002, along with the decline in timber harvest, there has been a net reduction in number of miles of Total Motorized Routes across the recovery zones. In 2009, there were about 250 fewer miles of Total Motorized Routes than in 2002 (Table 39, p. 162). This reduction in roads results in a decrease of impacts to soil.

Additionally, the 2001 Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a), which restricts wheeled motorized cross-country travel in Montana on the KNF, is expected to reduce the spread of noxious weeds and impacts from recreation, therefore improving the productivity of native plants and shrubs, which results in healthy soil conditions. Stable and healthy soil conditions are expected to result in a positive trend where erosion, mass movement, or road-cut failure is reduced.

Implementation of Alternative D Modified and Alternative E Updated would result in both cumulative beneficial and negative short- and long-term soil impacts. This is a result from the proposed changes in road access and the potential stabilization treatments when considered along with other past, ongoing, and reasonably foreseeable activities that have applied road treatments similar to those discussed above under Direct and Indirect Effects. Additional road treatments would result in short-term sediment increases but are expected to have a cumulative reduction in soil impacts as a result of restoring hydrological function along roads, improving lateral soil-water movement, and reducing road-related mass wasting and erosion potential.

Alternative D Modified would potentially have more cumulative reduction in soil impacts when compared to Alternative E Updated. This conclusion is tied to the potential level of stabilization treatment applied to roads prior to closure.

Effects of Alternatives

Alternative D Modified

Administrative Use

Alternative D Modified would result in changing the access status of 1,263 to 1,767 miles of open or gated roads to barriered roads. These roads closed to create core area would have hydrologic function restored, including the road treatments discussed above, prior to the road status change. Short-term negative effects would be expected, but long-term benefits would result. About 57 miles of motorized trail would change to non-motorized use. The effects to soils from reduced wheeled motorized vehicle access are discussed above. At the same time, 6 to 19 miles of barriered roads could be opened for administrative access, allowing for uses such as road maintenance, surveys, and fire access.

Public Use

Wheeled motorized vehicle access for recreational uses could decrease on 880 to 1,171 miles of road and 57 miles of trail, with associated effects to soils as described above. About 6 to 18 miles could be opened to public use.

Alternative E Updated

Administrative Use

Alternative E Updated would have similar effects as Alternative D Modified, but road status changes from open or gated to barriered roads would occur on 90 to 270 miles of road. Similar hydrologic treatments could occur prior to the road status change for those roads closed to create core area. Short-term negative effects would be expected, but long-term benefits would result. About 28 miles of trail could change to non-motorized use only, and about 12 to 36 miles of barriered roads could be opened to administrative use.

Public Use

Wheeled motorized vehicle access for recreational uses could decrease on 34 to 102 miles of road and 28 miles of trail, with associated effects to soils as described above. About 84 to 252 miles could be opened to public use.

Alternative Comparison

Table 62 compares the potential effects of Alternative D Modified and Alternative E Updated on soil productivity and other soil-related attributes. As shown, Alternative D Modified has lower overall effects than Alternative E Updated due to the greater number of miles of road that would either be barriered or removed from the landscape, although short-term impacts would occur as discussed above.

Table 62. Potential effects to soil productivity by alternative

Potential Effects	Alternative D Modified	Alternative E Updated
Improvement of soil productivity, hydrologic function, and sediment reduction	Very high	Moderate
Opportunity for road maintenance	Very Low	High
Chance of vegetative treatments, fuels reduction, and fire suppression	Very low	Low
Likelihood of human-caused fires and recreation impacts	Very low	High

Forest Plan Consistency

Alternative D Modified and Alternative E Updated would meet Forest Plan soil and water quality standards on the KNF, LNF, and IPNFs. The overall effect of any action alternative selected is expected to be beneficial in the long-term because restoration of the hydrological function along roads would be improved or restored and the potential for road-related mass failures would be reduced.

Threatened, Endangered, and Sensitive Plants

Introduction

This section addresses the potential effects of proposed activities on threatened, endangered, and sensitive (TES) plant species that are known or suspected to occur on the KNF, LNF, and IPNFs. Threatened and endangered plant species are those that are in danger of extinction throughout all or a significant portion of their range. A Sensitive plant species is one for which the Regional Forester has determined a concern for population viability, due to current or predicted downward habitat or population trends.

Changes between the DSEIS and FSEIS

The primary changes between the DSEIS and this FSEIS include updates to the miles of open and restricted roads that would be available for Alternative D Modified and Alternative E Updated.

Water howellia (*Howellia aquatilis*) and Spalding's campion (*Silene spaldingii*) are still listed as federally threatened plant species that are suspected to occur on the KNF, LNF, and IPNFs because suitable habitat is present. Neither species has been found on any of the three Forests since the 2002 FEIS.

Regulatory Framework

Threatened and Endangered species are managed under the authority of the Federal ESA of 1973 (PL 93-205 as amended), which requires Federal agencies to carry out programs for the conservation of listed species [Sec. 7(a) (1)], and to ensure that agency actions are not likely to jeopardize the continued existence of listed species. All three Forests have a number of policies and existing Forest Plan direction to meet these two requirements.

Sensitive Species are managed under the authority of the NFMA (PL 94-588) and are administratively designated by the Regional Forester (FSM 2670; USDA Forest Service 2011a). All three existing Forest Plans include Forestwide direction to provide for the environmental needs of sensitive species to maintain viable populations, and to avoid listing as Threatened or Endangered.

Affected Environment

NFS lands on all three Forests contain a wide variety of habitats that provide suitable conditions for the 107 species of TES plants that are known or suspected to occur within the analysis area. Suitable habitat specific to individual species depends on many factors, including vegetation types, soil types, light regimes, elevation, moisture, exposure, micro climates, and even surrounding vegetation. Descriptions of suitable habitat for each of these species can be obtained from the three Forest Supervisor's Offices or found online at http://www.natureserve.org/explorer.

Analysis Methods

This analysis considers how changes in wheeled motorized vehicle access management proposed in Alternative D Modified and Alternative E Updated would affect the ability to find, and in some cases, protect individuals or populations of TES species. The number of miles of road changing from open or gated status (accessible by public or administrative use) to barriered status (not accessible by public or for administrative use) will be used to compare alternatives.

Effects Common to All Alternatives

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on TES plant species. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

None of the alternatives would alter existing forest plan direction for TES plant species. Since populations of these plants are infrequent and generally have a localized distribution, and existing forest plan standards require site-specific analyses prior to implementing site-specific projects, none of the alternatives would affect known locations.

Both positive and negative indirect effects to known or potential TES plant species could result from decisions to reduce wheeled motorized vehicle access to NFS lands. For wheeled motorized vehicle access, road status changes from open to gated or barriered status would reduce the potential for existing populations to be affected by physical trampling or from plant gathering (e.g., orchids, sundews), although non-motorized access would still be possible. For administrative access, the potential for locating new sites may be less likely due to decreased access, and known locations may be less likely to be monitored. At the same time, sensitive plant species that occur in disturbed habitats or roadside grasses may be less likely to be affected by road maintenance and vehicle travel.

Cumulative Effects

Past, ongoing, and reasonably foreseeable programmatic decisions (see list in Chapter 3 on page 40) generally have not or will not have effects to TES plant species because they do not directly cause ground-disturbing actions that might affect TES plants or their habitat. Cumulative effects are identified when the site-specific actions they authorize are evaluated in environmental documents.

Past management actions on NFS lands have affected potential habitat for some TES plant species, and may have affected individuals, although this effect is difficult to assess for actions taken prior to when surveys were conducted. General forest habitats have been altered by vegetation management, roads, and prescribed fires; streams and wetlands have been crossed by roads; and unique seral stages such as old-growth have been changed. Current and reasonably foreseeable actions also have the potential to alter suitable habitat for some species, however, TES plant individuals or populations are consistently identified through site-specific surveys and protected through avoidance, site-specific design criteria, and/or mitigation from impact by ground-disturbing activities. As a result, adverse effects are avoided. Other past, current, or reasonably foreseeable actions such as wheeled motorized vehicle use, mineral-related activities, grazing, recreation uses, road maintenance, noxious weed spraying, prescribed fire, wildfires, and forest product removal all have or will have the potential to affect both habitats and individuals and/or populations.

When added to the above actions, the effects of Alternative D Modified and Alternative E Updated would not contribute to adverse cumulative effects to TES plant species because no ground-disturbing actions would be authorized. The cumulative effects of future project-level decisions on TES plants would be evaluated at the time of analysis. Potential ground-disturbing activities such as installing or removing gates or barriers would occur on site-specific locations that have already been altered by past road construction and that have a very low probability of supporting TES individuals or populations.

Effects of Alternative D Modified

Direct and Indirect Effects

Alternative D Modified would restrict the greatest number of road miles (greater than Alternative E Updated). Public wheeled motorized vehicle access would be reduced by 880 to 1,171 miles of road and 57 miles of trail. Although non-motorized methods would still allow access to sites, the reduced potential for use would also reduce the potential for adverse effects to those sites. At the same time, up to 6 to 18 miles of road could potentially be opened and allow wheeled motorized vehicle access to sites. However, whether or not roads would be opened is dependent on project level analysis that considers all resources. Ultimately, the proximity of these roads to known sites would determine the risk of adverse effects.

Potentially, 1,263 to 1,767 miles of road and 57 miles of motorized trails would no longer be accessible for motorized administrative use. Administrative access would decrease for plant surveys and/or monitoring, resulting in increased work, time, and costs. Conversely, 8 to 19 miles of road that could be opened would allow access for surveys and monitoring. Roads that have been undisturbed for a long period of time have the potential for some species to become established in roadside habitat (e.g., Botrychiums). Road maintenance and/or vehicle use on opened roads could affect individuals.

Cumulative Effects

No additional cumulative effects from Alternative D Modified were identified.

Effects of Alternative E Updated

Direct and Indirect Effects

Alternative E Updated would restrict less road miles than Alternative D Modified. Effects are similar to Alternative D Modified but to a lesser degree. Public wheeled motorized vehicle access would only be reduced on 34 to 102 miles of road and 28 miles of trail. However, about 110 to 330 miles of road could potentially be opened for public use, which is more than Alternative D Modified. However, whether or not roads would be opened is dependent on project level analysis that considers all resources. The potential for wheeled motorized vehicle access to known plant sites and subsequent potential for adverse effects would increase. Administrative access could be reduced on 90 to 270 miles of road and 28 miles of trail. About 36 to 108 miles of road could be opened (barriered roads changed to open or gated). Effects are similar to Alternative D Modified, but to a lesser extent.

Cumulative Effects

No additional cumulative effects from Alternative E Updated were identified.

Statement of Findings

Threatened, Endangered and Proposed Species

Implementation of Alternative D Modified or Alternative E Updated would have **no effect** on water howellia or Spalding’s campion. This determination is based on the fact that no locations are known from any of the three Forests within the analysis area and because proposed road status changes would not affect suitable habitat for either species.

Sensitive Species

Implementation of Alternative D Modified or Alternative E Updated **may impact individuals but is not likely to cause a trend towards federal listing or result in a loss of viability** for current sensitive plant species. This determination is based on the fact that roads opened for wheeled motorized vehicle access could allow access to collectable species and that road maintenance could affect individuals established in roadside habitat.

Forest Plan Consistency

The selected alternative will not change any of the current programmatic direction to manage for viable populations of TES plants, and is therefore consistent with the respective forest plans.

Invasive Plant Species

Introduction

Invasive plants, commonly referred to as noxious weeds, are designated by the Secretary of Agriculture or responsible State official. By definition, they possess undesirable characteristics such as "aggressive and/or difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being not native or new to or not common to the United States or parts thereof…" (FSM 2080.5).

Noxious weeds are not desirable in the forest setting. They often out-compete or displace desirable native plant species, including those beneficial to fish, wildlife, and range livestock. Some species such as spotted knapweed are already widespread, while others such as rush skeletonweed are just becoming established. Locating and treating infestations when they first occur is the most effective method of controlling these species.

Changes between the DSEIS and FSEIS

The primary changes between the DSEIS and this FSEIS include updates to the miles of open and restricted roads that would be available for Alternative D Modified and Alternative E Updated.

Regulatory Framework

NFMA has a goal of providing for a diversity of plant and animal communities and establishing the disclosure requirements for proposed noxious weed control activities on NFS lands. FSM 2080 provides direction to prioritize weed treatments and control with an integrated pest management approach. Forestwide goals, standards, and objectives in the three forest plans tier to this direction.

The Federal Noxious Weed Act of 1974, as amended, requires cooperation with State, local, and other Federal agencies in managing and controlling noxious weeds. Montana, Idaho, and Washington all have state requirements for landowners to control weeds on their property (under the Noxious Weed Act, Title 22, Chapter 24 Idaho Code).

In 2007, the KNF released their FEIS and Record of Decision for Invasive Plant Management (USDA Forest Service 2007a). The documents provide an adaptive strategy to manage invasive plant and noxious weed species on Federal lands on the KNF. The LNF Integrated Weed Strategy (USDA Forest Service 2008a) provides direction for management of invasive and noxious species on the LNF. On the IPNFs, three EISs currently provide direction to address noxious weeds: the Priest Lake Noxious Weeds Control EIS and Record of Decision (USDA Forest Service 1997), Sandpoint Noxious Weeds Control EIS and Record of Decision (USDA Forest Service 1998a), and the Bonners Ferry Noxious Weeds Control EIS and Record of Decision (USDA Forest Service 1995a). The IPNFs is in the beginning stages of considering a new Forestwide analysis (EIS) for addressing noxious weeds through the next decade.

Direction regarding the development and coordination of programs for the control of noxious weeds and evaluation of noxious weeds in the planning process is found in Federal legislation, regulations, and policy (Forest Plans and Forest Service Manual, Chapter 2080, as amended).

Affected Environment

NFS lands within the analysis area have the potential to have noxious weeds, even where infestations have been treated. Approximately 55 species of invasive plants or noxious weeds, including several small groups of species, have been identified as occurring within the counties associated with the analysis area (see Forest lists in the project record). Of those, at least 15 species are known to occur within the boundaries of the Selkirk and Cabinet-Yaak Recovery Zones. All three Forests have active, ongoing noxious weed programs to control existing populations or prevent and/or quickly treat newly established species or populations. Biological control agents and herbicide application are both used. There are also ongoing informational programs designed to promote public awareness of noxious weeds and encourage participation in reducing spread.

Analysis Methods

This analysis considers how wheeled motorized vehicle access management proposed in Alternative D Modified and Alternative E Updated would affect the ability to find, access, and treat infestations; and how the spread of invasive/noxious weeds would be affected. The number of miles of road moving from open or gated status (accessible by public or administrative use) to barriered (not accessible by public or administrative use) will be used to compare alternatives.

Effects Common to All Alternatives

Direct and Indirect Effects

Alternative D Modified and Alternative E Updated represent programmatic decisions that guide future decisions about specific activities and projects, and therefore, will have no direct effects on noxious weed species. Any direct effects would be caused by subsequent site-specific decisions about wheeled motorized access status on roads and trails. The effects identified in this analysis are based on assumptions about implementing future projects and levels of future uses that might occur under various projects. While these future actions and their effects are highly uncertain, this analysis is useful for a relative comparison of the alternatives.

Current direction within the respective forest plans and the weed control documents identified earlier for the site-specific application of weed management guidelines would not change under either alternative.

In general, both alternatives would authorize future road and/or trail restrictions in order to improve grizzly bear habitat. A number of those restrictions would prohibit any kind of wheeled motorized vehicle access, including administrative access needed to locate and treat invasive or noxious species. On these roads and trails, areas presently known to be infested would become more difficult to access and treat. New infestations may escape detection and spread beyond our ability to eradicate when first established. In addition, the cost of monitoring and treating existing weed infestations along roads and trails would increase if the areas were no longer accessible by wheeled motorized vehicles. Crews would take longer to walk into treatment areas that were formerly accessible by vehicles, and efficiency would be reduced. Poorly accessible areas may require aerial spraying methods in order to treat infestations. Either the overall cost of treating the infestation would be higher, or fewer acres would be treated, depending upon availability of funding.

Wheeled motorized vehicles are the number one cause of human-related spread of noxious weeds. Road and motorized trail restrictions would slow the spread of established invasive and noxious species by slowing the advance of vehicle-spread seed, particularly in areas that are currently free of such species. The lack of wheeled motorized vehicle use over time would eventually result in re-vegetated road surfaces that would inhibit establishment of noxious weeds. However, each road would need to be monitored and/or treated for weeds until vegetation becomes established.

Cumulative Effects

Cumulative effects to noxious weeds are almost entirely associated with access management, specifically the ability to access noxious weed locations and potential for seed to be spread to new locations by wheeled motorized vehicles. Past, ongoing, or reasonably foreseeable access-related decisions (see list in Chapter 3 on page 40 and Appendix A starting on page 303) address or prescribe the amount of wheeled motorized vehicle access allowed for the areas addressed. When added to these decisions, Alternative D Modified and Alternative E Updated would cumulatively reduce wheeled motorized vehicle access and result in the potential reduction to the associated establishment and spread of invasive and noxious species.

Past management actions on NFS lands have created the road system currently in place, including roads that are now removed from the landscape. Exposed soil (resulting from road construction, reconstruction, removal, maintenance, etc.) provides a seedbed for noxious weeds, and along with expanded wheeled motorized vehicle access, has contributed to the expansion of noxious weeds across the landscape. Other past, current, or reasonably foreseeable actions that may have or could create exposed soil include mineral-related activities, grazing, recreation uses, road maintenance, prescribed fire, wildfires, and forest product removal. Recent actions and ongoing and/or reasonably foreseeable actions generally include noxious weed treatment as part of the projects, and noxious weed treatments are ongoing across the three Forests. When added to these actions, Alternative D Modified and Alternative E Updated in most cases would result in overall reduced administrative access and a decreased ability to treat known infestations.

Effects of Alternative D Modified

Direct and Indirect Effects

There are no direct effects identified. Indirectly, when project level analysis and site-specific decisions are made about road and trail use restrictions, public wheeled motorized vehicle access could be reduced by 880 to 1,171 miles of road and 57 miles of trail. At the same time, up to 6 to 18 miles of road could potentially be opened for wheeled motorized vehicle access. The reduction in miles of public road access would reduce the risk of noxious weed spread by vehicle in the Selkirk and Cabinet-Yaak Recovery Zones.

Potentially, 1,263 to 1,767 miles of road and 57 miles of motorized trails would no longer be accessible for motorized administrative use. The potential for spreading noxious weeds by vehicle or by road maintenance (blading) would decrease, but accessibility for finding and treating infestations as discussed above would also decrease. Conversely, 8 to 19 miles of road that could be opened would allow access for surveys, treatments and monitoring.

Cumulative Effects

No additional cumulative effects from Alternative D Modified were identified.

Effects of Alternative E Updated

Direct and Indirect Effects

The effects of Alternative E Updated are similar to Alternative D Modified, but to a lesser degree. There are no direct effects identified. Indirectly, when project level analysis and site-specific decisions are made about road and trail use restrictions, there could be a potential reduction of 34 to 102 miles of wheeled motorized vehicle access, and an additional 28 miles of wheeled motorized vehicle access on forest trails. Reduced wheeled motorized vehicle access would decrease the potential for noxious weed seeds to be spread. About 110 to 330 miles of currently gated or barriered roads could be open, which would have the opposite effect of increased potential for seed spread.

The reduction in miles of road for administrative use translates to a reduced ability to locate, treat and monitor weed infestations, similar to the discussion above. Wheeled motorized administrative access could be reduced by 90 to 270 miles of road and 28 miles of motorized trail. Vehicle-spread seed would no longer be a concern on those miles of road that would not be accessible for public or administrative use. About 36 to 108 miles of road could be opened for administrative use, which would increase opportunities for surveying, treating and monitoring noxious weed populations.

Cumulative Effects

No additional cumulative effects from Alternative E Updated were identified.

Forest Plan Consistency

The selected alternative will not change any of the current programmatic direction to identify, treat, and monitor noxious weed populations, and is therefore, consistent with existing forest plan direction for the KNF, LNF, and IPNFs.

Consistency with Regulatory Framework

Consistency with regulatory framework is discussed below for each resource that is described in Chapter 3:

Wildlife – Alternative D Modified and Alternative E Updated are consistent with all regulatory framework (Forest Plans, Grizzly Bear Recovery Plan, IGBC direction for access management, ESA, and best available science). Alternative D Modified and Alternative E Updated are also in compliance with the Northern Rockies Lynx Management Direction Record of Decision and Biological Opinion.

The Alternative D Modified and Alternative E Updated requirement to monitor and report the status of wheeled motorized vehicle access management meets the Montana Grizzly Bear Management Plan objective related to agency coordination and reduction of human bear conflicts.

Transportation - Alternative D Modified and Alternative E Updated are consistent with the 2005 Travel Management Rule that provides a process for resolving access management issues through interdisciplinary analysis and review (36 CFR 212).

Aquatics – Watersheds and Fisheries - Alternative D Modified and Alternative E Updated would be consistent with the respective forest plans as they were amended by the Inland Native Fish Strategy (USDA Forest Service 1995b) to protect riparian values and aquatic resources. They would not affect the current direction for protecting aquatic resources as provided in the forest plans.

Vegetation Management - The NFMA requires that in developing, maintaining, and revising forest plans that such plans provide for balanced consideration of all resources. Alternative D Modified and Alternative E Updated provide for a balanced consideration of resources and would therefore be consistent with NFMA. Furthermore, Alternative D Modified and Alternative E Updated would not alter goals, objectives, and/or management area allocations within the existing forest plans, nor do they affect applicability of any standards within the Plans related to timber/vegetation management.

Threatened, Endangered and Sensitive Plants - Alternative D Modified and Alternative E Updated do not propose any changes in the current programmatic direction to manage for viable populations of TES plants, and therefore, are consistent with regulatory direction.

Invasive Plants - Alternative D Modified and Alternative E Updated do not propose any changes in the current programmatic direction to identify, treat, and monitor noxious weed populations, and are therefore consistent with direction in the forest plans as well as Invasive Plant/Noxious Weed management plans.

Recreation - Alternative D Modified and Alternative E Updated are consistent with the existing authorities for local line officers to manage wheeled motorized and non-motorized dispersed recreation as well as other types of recreation on NFS lands. (36 CFR 212)

Heritage Resources - Applicable laws and regulations were considered during this programmatic analysis (see Heritage Resources section on page 216). During any site-specific project analyses and implementation, the Forest Service would be required to comply with these regulations.

Social, Economic and Civil Rights - Alternative D Modified and Alternative E Updated are consistent with Environmental Justice. No civil rights effects associated with age, race, creed, color, national origin or sex have been identified. During the course of this analysis, no alternative considered resulted in any identifiable effects or issues specific to any minority or low-income population or community. The Forest Service considered all input from persons or groups regardless of age, race, income status, or other social and economic characteristics.

Fire, Fuels and Air Quality - Future site-specific management activities authorized by Alternative D Modified or Alternative E Updated, such as prescribed burning, would be required to comply with applicable Air Quality standards. Under this alternative, the four guiding documents (Forest Plan, FSM, Federal Wildland Fire Policy, and National Fire Plan) would all be met; although Alternative D Modified would be met to a lesser degree than Alternative E Updated. Reduced administrative access resulting in reduced opportunity to complete vegetation management would not meet FSM direction. Principles and policies outlined in the Federal Wildland Fire Policy and National Fire Plan would still be met; however, there would be more areas, over time, with increased fuel loads and increased potential for escaped fires. Air quality guidelines would still be met as occurrences of wildfire smoke are not regulated, however the impacts of the smoke would still be evident due to more acreage likely to be burned.

Soils - Alternative D Modified and Alternative E Updated would meet Forest Plan soil and water quality standards on the KNF, LNF, and IPNFs. The overall effect of any of these two alternatives is expected to be beneficial in the long-term because restoration of the hydrological function along roads would be improved or restored and the potential for road-related mass failures would be reduced.

Irreversible and Irretrievable Commitments of Resources

Irreversible effects are defined as the loss of future options. They result from a decision to use or modify resources that are not renewable, or are renewable only over a long period of time. Such commitments apply primarily to the effects of using nonrenewable resources, such as minerals or cultural resources, or to factors that are renewable only over long periods, such as soil productivity. Irretrievable effects apply to the loss of production, harvest, or use of natural resources. The production loss is irretrievable, but the action is not irreversible. They also occur when use of a renewable resource is lost due to land allocation decisions or in scheduling management activities. If the allocation or schedule changes, or if use changes, it would be possible to resume production (FSH 1909.15-92-1, Definitions section 05). No irreversible or irretrievable commitments are expected as a result of this programmatic FSEIS.

Adverse Environmental Effects which Cannot be Avoided

Implementation of Alternative D Modified or Alternative E Updated does not directly result in adverse effects; however future decisions about specific activities and projects may inevitably result in some adverse environmental effects. Many adverse effects can be reduced, mitigated or avoided by limiting the extent or duration of effects. The application of Forest Plan standards and guidelines, Best Management Practices, project-specific mitigation measures, and monitoring are all intended to further limit the extent, severity, and duration of potential effects. Regardless, some adverse effects will occur. This section focuses on unavoidable adverse effects. For resources that are not listed, no unavoidable adverse environmental effects are expected.

Water and Fisheries –Watershed activities, as well as decisions to restrict wheeled motorized vehicle access to roads, could result in sediment that would reach some stream systems during the short-term, but Best Management Practices and use of stream buffers would reduce the effects to a minimal level. However, these site-specific decisions will be evaluated and reached at the project-specific level; they would be an indirect effect of this programmatic FSEIS.

Recreation – Alternatives D Modified and Alternative E Updated could result in reduced mileage of roads or trails available for wheeled motorized activities. However, these decisions will be evaluated and reached at the project-specific level; they would be an indirect effect of this programmatic FSEIS.

Relationship between Short-term Uses and Long-term Productivity

Short-term uses are generally those that determine the present quality of life for the public. Current activities must not impair long-term productivity. Long-term productivity of the land refers to its capability to provide resources such as forage, timber and high quality water. A discussion for applicable resources follows:

Vegetation and Timber Management, Fire, Fuels, and Air Quality - The capability of the land to produce forage, timber, and high quality water would not be impaired by Alternative D Modified and Alternative E Updated. Any direct effects would occur later at the project level when site-specific decisions are made about wheeled motorized vehicle use of roads and trails. Such effects could include increased costs of activities in areas without road access, such as treatment of fuels, wildfire suppression, reforestation, response to insect and disease outbreaks, and other silvicultural needs. Changes in wheeled motorized vehicle access for wildfire suppression could result in increased impacts on air quality.

Watershed and Fisheries - The level or intensity of effects to aquatic resources will vary depending on the location of selected roads or trails, associated aquatic resources and the level of treatment selected for the specific road and/or trail to meet access standards. Continued implementation of forest plans as amended but INFS (USDA Forest Service 1995b) would require the improvement of existing transportation systems to address watershed and fisheries concerns.

Possible Conflicts with Federal, State, Local Policies, Plans, or Regulations

There would be no conflicts with any Federal, State or local policies, plans, or regulations. Compliance with such laws and regulations are addressed in Chapter 2 and where appropriate, in applicable resource effects discussions in this chapter.

Other Required Disclosures

Administration of the Forest Development Transportation System – A roads analysis has been prepared for the analysis area in accordance with the Roads Policy (USDA Forest Service 2001c as published in the Federal Register on January 12, 2001).

Effects of Alternatives on Social Groups – In accordance with Executive Order 12898, there would be no overall differences between Alternative D Modified and Alternative E Updated in terms of effects to minorities, American Indians, women, or the civil liberties of any American citizen.

Effects on Floodplains and Wetlands – Floodplain areas constitute all of the wetlands in the analysis area and are protected by RHCAs. Wetlands may occur in the form of seeps, springs, and small bogs and ponds within the analysis area. Management activities designed to protect these resources conform to the Federal regulations for floodplains (Executive Order 11900) and wetlands (Executive Order 11990). The INFS standards and guidelines, as amended to the Forest Plans for the KNF, LNF, and IPNFs, would protect floodplains and wetlands.

Effects of Alternatives on Threatened and Endangered Species –A biological assessment will be prepared and submitted to the USFWS for concurrence according to the Endangered Species Act, to insure protection of species.

Energy Requirements and Conservation Potential of Alternatives - The energy required to implement Alternative D Modified and Alternative E Updated, in terms of petroleum products, would be insignificant when viewed in the light of the production costs and effects of the national and worldwide petroleum reserves.

Effects of Alternatives on Prime Rangeland, Forest Land, and Farm Land - Alternative D Modified and Alternative E Updated as presented comply with Federal regulations for "prime land." The definition of prime forest land does not apply to lands within the NFS. The analysis area contains no prime farm lands or rangelands. In all alternatives, Federal lands would be managed with the appropriate consideration to the effects on adjacent lands.

Migratory Bird Treaty Act – There are no specific goals or standards for migratory land birds in the three Forest Plans. However, the KNF Forest Plan does contain the goal to: "Maintain diverse age classes of vegetation for viable populations of all existing native, vertebrate, wildlife species" (KNF Forest Plan, Vol. 1, II-1, goal #7). The IPNFs Forest Plan includes an objective in the management direction that states: "Habitat for vertebrate populations, other than threatened, endangered and sensitive species, will be managed to maintain viable populations" (IPNFs Forest Plan, page II-5). The LNF Forest Plan assessed the animal communities using a variety of ecosystem types and assigned representative and management indicator species (LNF Forest Plan, page IV-17). The management indicators were to monitor to detect changes in the quality and availability of habitat for all of the species using that ecosystem. All alternatives are consistent with the KNF, LNF, and IPNFs Forest Plans as a wide range of successional habitats would be available (see Vegetation section starting on page 193and the Management Indicator Species section starting on page 142). The alternatives comply with the "Executive Order titled "Responsibilities of Federal Agencies to Protect Migratory Birds." In addition, as habitat for management indicator species species is being maintained across the three Forests, their habitat contributes to the maintenance of habitat and populations of neotropical migratory bird species.

Interior Columbia Basin Project (ICBEMP) – In the fall of 1996, scientists associated with the ICBEMP released a summary of their integrated assessment of the ecological integrity and the socioeconomic resiliency of the Upper Columbia River Basin (USDA Forest Service 1996). Information from that assessment was considered in this document.

List of Preparers

Members of the Interdisciplinary Team:

Name	Position	Unit	Years Experience
Lydia Allen	Wildlife Biologist (2009-present)	Idaho Panhandle NFs	22
Matt Butler	Fire, Fuels, Air Quality	Idaho Panhandle NFs	22
Karl Dekome	Vegetation and Timber Mgmt, NEPA support, Team Leader	Idaho Panhandle NFs	20
Annie Dueker	Range, Noxious Weeds, Sensitive Plants	Kootenai NF	29
Ellen Frament	Social and Economics	Kootenai NF	26
Nancy Kmonk	GIS	Kootenai NF	11
MaryEllen Pearce	GIS (2009-2010)	Idaho Panhandle NFs	30
Greg Harris	GIS (2010-present)	Idaho Panhandle NFs	18
Jodi Kramer	Content Analysis	TEAMS Enterprise Unit	29
Judy York	Editing	TEAMS Enterprise Unit	17
Lisa Hawdon	Aquatics (Watershed and Fisheries)	Idaho Panhandle NFs	22
Gina Rone	Soils	Idaho Panhandle NFs	8
Becky Timmons	Heritage Resources	Kootenai NF	29
Jason Kirchner	Public Affairs	Idaho Panhandle NFs	8
Jack Zearfoss	Transportation	Kootenai NF	28

Additional support was provided by:

Barb Beckes	Staff Officer	Lolo NF
Shanda Dekome	Staff Officer	Idaho Panhandle NFs
Randy Hojem	District Ranger	Lolo NF
Brett Lyndaker	Wildlife Biologist	Idaho Panhandle NF
Dave Wrobleski	Wildlife Biologist	Lolo NF

Interagency and tribal government support to the Interdisciplinary Team was provided by the following Wildlife Working Group members and Tribal Government Representatives:

Becky Timmons	Kootenai Heritage Manager	Confederated Salish & Kootenai Tribes
Steve Matz	Idaho Panhandle Heritage Manager	Kootenai Tribe of Idaho, Kalispell Tribe, Coeur d'Alene Tribe, Nez Perce Tribe, Colville and Spokane Tribes.
Ben Conard	Consultation Biologist	U.S. Fish and Wildlife Service, Creston, MT.
Bryan Holt	Consultation Biologist	U.S. Fish and Wildlife Service, Spokane, WA.
Ann Vandehey	Consultation Biologist	U.S. Fish and Wildlife Service, Helena, MT.
Brian Johnson	Grizzly Bear Conservation Officer	Idaho Fish & Game Bonners Ferry, ID.
Wayne Kasworm	Grizzly Bear Biologist	U.S. Fish & Wildlife Service, Libby, MT.
Wayne Wakkinen	Grizzly Bear Biologist	Idaho Fish & Game, Sandpoint, ID.

Distribution List of the FSEIS

The following Government agencies, interest groups, and businesses received the FSEIS:

Advisory Council on Historic Preservation – Director, Planning and Review
Alliance for the Wild Rockies - Michael Garrity
Alliance for the Wild Rockies - Liz Sedler
Blue Ribbon Coalition – Ric Foster
Boundary County Library
Bureau of Land Management - Gary Cooper
Cabinet Resource Group – Cesar Hernandez
Capital Trail Vehicle Assn (CTVA) – Ken Salo
Clark Fork Library
Coeur d'Alene Public Library
Coeur d'Alene Tribe – Alfred Nomee
Coeur d'Alene Tribe – J Allan
Colville National Forest – Mike Borysewicz
Colville Tribe – Jeanne Jerred
Confederated Salish and Kootenai Tribe-E.T. Bud Moran
Confederated Salish and Kootenai Tribe-Francis Auld
County Commissioner Bonner - Cornel Rasor
County Commissioner Bonner - Joe Young
County Commissioner Bonner - Lewis Rich
County Commissioner Boundary – Dan Dinning
County Commissioner Boundary – Ron Smith
County Commissioner Boundary – Walt Kirby
County Commissioner Flathead - James Dupont
County Commissioner Flathead – Dale Lauman
County Commissioner Flathead – Pamela Holmquist
County Commissioner Lincoln – Tony Berget
County Commissioner Lincoln – Ron Downey
County Commissioner Lincoln – Marianne Roose
County Commissioners Missoula
County Commissioner Sanders - Carol Brooker
County Commissioner Sanders - Glen Magera
County Commissioner Sanders – Anthony B. Cox
Defenders of Wildlife, Rocky Mountain Region – Jonathan Proctor
East Bonner County Library
Federal Aviation Administration - NW Mountain
Federal Highway Administration - Montana Division
Federal Highway Administration – Washington Division
Federal Highway Administration – Idaho Division
FH Stoltze Land and Lumber Co – Brian Hobday
Forest Capital Partners – Ed Moe
Great Bear Foundation – Brian Peck
ID Conservation League – Brad Smith
ID Dept of Environmental Quality – Geoff Harvey
ID Dept of Environmental Quality – Glen Rothrock
ID Dept of Fish and Game – Chip Corsi
ID Dept of Fish and Game – Chuck Harris
ID Dept of Fish and Game – Craig Walker
ID Dept of Fish and Game – Greg Johnson
ID Dept of Fish and Game – Brian Johnson
ID Dept of Fish and Game – Wayne Wakkinen
ID Dept of Lands – Pat Seymour
ID Dept of Lands – David A Groeschl
ID Dept of Lands – Ed Robinson
ID Dept of Lands – Mick Schanilec
ID Dept of Parks and Recreation – Bob Meinen
ID Dept of Parks and Recreation – Jeff Cook
Idaho for Wildlife – Kevin Kimp
ID Governor Butch Otter – Bonnie Butler
ID Office of Species Conservation – Nate Fisher
ID Representative Michael Simpson – Laural Sayer
ID Representative Raul Labrador – Aaron Calkins
ID Senator James E Risch – Syd Smith
ID Senator Michael Crapo – Karen Roetter
ID Snowmobile Association – Sandra Mitchell
ID St Representative – Eric Anderson
ID St Representative – George Eskridge
ID St Senator – Joyce Broadsword
ID St Senator – Shawn Keough
Kalispel Tribe – Deane Osterman
Kalispel Tribe – Glenn Nenema
Kinnikinnick Chapter of the ID Native Plant
Kootenai Environmental Alliance – Mike Mihelich
Kootenai Tribe of ID – Jennifer Porter
Kootenai Tribe of ID – Patty Perry
Kootenai Valley Resource Initiative – David Anderson and Patty Perry
KPND – Mike Brown
Lands Council – Jeff Juel
Laurie Hill Library
Lincoln County Library - Eureka Branch
Lincoln County Library - Troy Branch
Lincoln County Library- Libby Branch
Montanans for Multiple Use – Fred Hodgeboom
MT Dept of Environmental Quality – Tom Ellerhoff
MT Dept of Natural Resources – Robert A Harrington
MT Fish Wildlife and Parks – Alan Wood
MT Fish Wildlife and Parks – Bruce Sterling
MT Fish Wildlife and Parks – James Jonkel
MT Fish Wildlife and Parks – Jim Williams
MT Fish Wildlife and Parks – Tim Thier
MT Governor Brian Schweitzer - MikeVolesky

MT Representative Dennis Rehberg – Erin Gabrian
MT Senator Jon Tester – Tracy Stone-Manning
MT Senator Max Baucus – Lauren Caldwell
MT State Representative - Mike Cuffe
MT State Representative - Pat Ingraham
MT State Representative - Gordon Hendrick
MT State Representative - Jerry Bennett
MT State Senator - Chas Vincent
MT State Senate – Greg Hinkle
N ID College Library
National Bison Range – Lynn Verlanic
National Marine Fisheries Service - Habitat Conservationist Division
Natural Resources Defense Council – Louisa Willcox
Nez Perce Tribe – Brooklyn Baptiste
Northwest Power Planning Council
Rural Utilities Service
Saint Maries Gazette Record - Dan Hammes
Selkirk Conservation Alliance – Mark Sprengel
Spokane Tribe - Greg Abrahamson
Spokesman Review – Becky Kramer
Stimson Lumber Company – Dwight Opp
Sullivan Lake Ranger District – John Buehler
Swan View Coalition – Keith Hammer
The Lands Council – Jeff Juel
Thompson Falls Public Library
Tribal Liaison/KNF – Loretta Stevens
Troy Snomobile Club – Jerry Wandler
U.S. Army Engineer - Northwestern Division
U.S. Coast Guard - Environmental Management
U.S. Dept of Energy – Director, Office of NEPA Policy and Compliance
U.S. Dept of Homeland Security – Border Patrol
U.S. Dept of Interior – Office of Environmental Policy and Compliance - Robert F. Stewart
U.S. Environmental Protection Agency Region 8
U.S. Environmental Protection Agency Region 10
U.S. Fish and Wildlife Service – Anne Vandehey
U.S. Fish and Wildlife Service – Chris Servheen
U.S. Fish and Wildlife Service- Ben Conard
U.S. Fish and Wildlife Service- Bryon Holt
U.S. Fish and Wildlife Service – Wayne Kasworm
USDA Aphis PPD/EAD - Deputy Director
USDA National Agricultural Library
USDA Natural Resources Conservation Service - National Environmental Coordinator
USFS Ecosystem Management Coordinator
USFS Region One – Kristi Swisher
USFS Capital City Coordinator – John Hagengruber
USFS Capital City Coordinator – Andy Brunelle
WA Dept Fish and Wildlife – Kevin Robinette
WA State Dept of Ecology – Grant Pfeifer
WA State Dept of Natural Resources – Loren Torgerson
West Bonner County Library
Wildlands CPR – Adam Rissien

The following individuals received a copy of the FSEIS:

Richard Artley
Rein Attemann
Mike Banks
Bill Baum
Nat Biondo
Joseph Brady
Rod Braun
Stephen Braun
Ron Brown
Donna Capurso
David Carrick
Robert Causton
Robert Cheshire
Jimmy Cornelius
Bruce Cunningham
Nicholas Dark
Jayne Davis
Stanley Davis
Matt Dilley
John Erhard
Edwin Fields
James Fifield
Jim Finch
John and Christa Finney
Jim Fish
Lydia Garvey
Arthur Gidell
Joyce and Ray Halvorsen
Eric Hart
Michael Haynes
David Head
Robert Helmer
Rose Marie Helmer
Larry Hilderman
David Hunt
Brian and Mary Jokela
John Latta
Doris Lee
Colleen Lewis
Camilo and Terry Lopez
Mary Kay Lutes
David Mann
Rachel Montgomery
Barbara Nagel
Kyle Olmstead
Steve Paulson
Ken Peddersen
Ina Pluid
Ed and Mary Porter
Chuck Roady
Amy Robertson
Evan Robertson
George Ronan
Neil Rose
David Schaible
Jerry Schroeder
Jana Shields
Dawna Stenros
Peter Stenros
Roberta Ulrich
Jim Valentine
David Wenk
Tim West
Donald and Elaine Wheeler
Dave Wood
Diane Zwinger

Glossary

Active Bear Year: See *Season of Grizzly Bear Use.*

Administrative Use (or Access): Usually refers to roads that are restricted to public use by a gate or other restrictive device, but that can be accessed by agency or other authorized personnel specifically for performance of administrative duties. These roads are outside of grizzly bear core areas, and receive low levels of use. Administrative use also includes contractors and permittees.

Affected Environment: The natural environment that exists at the present time in the area being analyzed.

Alaska National Interest lands Conservation Act (ANILCA): Provides statutory authority for access to non-Federal lands located within the boundaries of Federal land administered by the Bureau of Land Management and the Forest Service.

All Terrain Vehicles/Utility Terrain Vehicles: Wheeled motorized vehicles designed for cross-country travel over most types of terrain.

Alluvium: Material (e.g., clay, silt, sand, and gravel) deposited by running water, including the sediments laid down in riverbeds, flood plains, lakes, and estuaries.

At-risk Community: As defined under section 101 of the Healthy Forests Restoration Act, the term “at-risk community” means an area:

(a) that is comprised of:

(i) an interface community as defined in the notice entitled “Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire” issued by the Secretary of Agriculture and the Secretary of the Interior in accordance with Title IV of the Department of the Interior and Related Agencies Appropriations Act, 2001 (114 Stat. 1009) (66 Fed. Ref. 753, January 4, 2001); or

(ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land;

(b) in which conditions are conducive to a large-scale wildland fire disturbance event; and

(c) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event. (Roadless Area Conservation: NFS Lands in Idaho FEIS and Rule)

Barriered Road: Roads that have been restricted with a physical barrier such as a rock barrier or dirt berm/ditch in order to prohibit all motorized use, ATV, UTV and motorcycle use. Some roads classified as barriered roads are obliterated, where all or a portion of the road prism has been ripped up and returned to original slope and/or ground surface conditions.

A barriered road does not allow administrative access, and contributes to optimal secure core area for grizzly bears.

Bear Analysis Area: Subdivision of a BMU used for linear open road density calculations. Also termed bear management analysis area on the LNF.

Bear Management Unit: Areas established for use in grizzly bear analysis. BMUs generally (a) approximate female home range size; (b) include representations of all available local elevations, habitat components; and (c) are generally bounded on 3rd to 4th order watersheds. BMU calculations do not avoid areas of non-public ownerships (all ownerships are included within BMUs). Each BMU represents all available habitats and elevations. (IGBC 1998a)

Bear Year: See *Season of Grizzly Bear Use*.

Best Management Practices: BMPs are the primary mechanism for achieving water quality standards and complying with the Clean Water Act of 1987. They are soil and water conservation practices that are incorporated into all land management plans as a principal mechanism for controlling non-point pollution sources that may result from management actions. They include, but are not limited to, structural and non-structural controls, operations or maintenance procedures that reduce or eliminate the introduction of pollutants into watershed systems.

Biological Opinion: Document that states the opinion of the USFWS as to whether or not the Federal action will result in take, is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat.

Colluvium: A heterogeneous mixture of material that, as a result of gravitational action, has moved down a slope and settled at its base.

Community Protection Zone: An area extending ½ mile from the boundary of an at-risk community (see definition above); or an area within 1 ½ miles of the boundary of an at-risk community, where any land:

(a) has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community;

(b) has a geographic feature that aids in creating an effective fire break, such as a road or a ridge top; or

(c) is in condition class 3 as defined by Healthy Forest Restoration Act. (Roadless Area Conservation: NFS Lands in Idaho FEIS and Rule)

Core Area: An area of high quality habitat within a BMU that contains no motorized travel routes or high use trails. Core areas do not include any gated or restricted roads but may contain roads that are impassible due to vegetation or barriers. Core areas will be delineated by identifying and aggregating the full range of seasonal habitats that are available in the BMU. (IGBC 1998a)

Cumulative Effects: Effects on the environment that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable actions.

Decommissioned: A route that was no longer needed and has been removed from service. (Travel Routes Data Dictionary)

Direct Effects: Effects caused by the action and occur at the same time and place.

Effects: Impacts resulting from actions that may have beneficial or detrimental consequences. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historical, cultural, economic, social or health, whether direct, indirect, or cumulative.

Endangered: A species that is in danger of extinction throughout all or a significant portion of its range. Endangered species are identified by the Secretary of the Interior in accordance with the ESA of 1973.

Environmental Analysis: An analysis of alternative actions and their predictable long and short-term environmental effects. Environmental analyses include physical, biological, social, and economic factors.

Environmental Impact Statement: A statement of environmental effects of a proposed action and alternatives. The Draft EIS is released to other agencies and the public for comment and review. A Final EIS is issued after consideration of Public and agency comments. A Record of Decision is based on the information and analysis in the Final EIS.

Gated Roads: Roads that prohibit open public use but allows for administrative use, such as silvicultural exams, surveys, fire suppression, etc. The road requires effective physical obstruction (generally gated). Motorized administrative use by authorized personnel is acceptable at low intensity levels as defined in existing cumulative effects analysis models. This includes contractors and permittees in addition to agency employees. These roads reduce OMRD, but do not contribute to grizzly bear secure core area.

Geographic Information Systems: GIS is both a computer database designed to handle geographic data and a set of computer operations that can be used to analyze the data.

Habitat Effectiveness: A measure of habitat security in a BMU calculated by establishing buffers around open roads and other activities. The width of the buffer depends on the type of activity, but is ¼ mile for most activities. See *Habitat Security*.

Habitat Security: Grizzly bear habitat that contains no open public roads and limited human activity. Restricted or gated roads, with motorized administrative use by agency personnel and others with agency permission, are allowed if the use levels are within the levels shown under "Restricted Roads". The actual secure area may change from year to year by opening and closing roads. Additional deductions in the amount of habitat security are taken for other activities besides road use, using the guidelines in the Cumulative Effects model. These activities include, but are not limited to, mining, livestock grazing, helicopter use, private land development and heavy equipment use. The goal is to maintain at least 70 percent of each BMU as effective habitat during the active bear year on the KNF, LNF, and 70 square miles of effective habitat on the IPNFs. (IGBC 1998a)

Hydrological Stability: Condition where the potential for road failure and sedimentation is expected to be reduced.

Impassable Roads: Roads that prohibit use by motorized vehicles, including ATV/UTVs and motorcycles, due to physical conditions such as washouts, slides, ingrown vegetation, mechanical obliteration or other road condition that prohibits use. Impassable roads may allow for non-motorized use.

Incidental Take: As defined by the ESA, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Taking is prohibited, unless permitted under provisions of Section 10.

Indirect Effects: Effects caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

Infrastructure Database: A servicewide centralized database that contains information on all the Forest Service facilities, including road and trail attributes. Information from this database was used in models such as the Moving Windows analysis for open and total route densities, core area, and other road/trail-related analyses.

Interagency Grizzly Bear Committee: A committee established in 1983 to lead the recovery of the grizzly bear in the lower 48 states. Members include individuals from the USFWS, Forest Service, Montana BLM, National Park Service, Wyoming Game and Fish Department, Washington Department of Fish and Wildlife, MDFWP, IDFG, British Columbia Wildlife Branch, and USGS Biological Resources Division. Subcommittees are established for each of the grizzly bear ecosystems, plus one for information and education.

Interdisciplinary Team: A team of individuals with skills from different disciplines that focuses on the same task or project, referred to as an ID Team.

Interim Access Management Rule Set (Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones): In 1998, the Selkirk/Cabinet-Yaak Subcommittee recommended new access management direction to aid in the recovery of the threatened grizzly bear within the Selkirk and Cabinet-Yaak Recovery Zones. This direction was titled the “Interim Access Management Strategy.” Additional information was provided in an “Interim Access Management Rule Set.” The Interim Access Management Strategy and Interim Access Management Rule Set comprise a set of access related guidelines developed over the past few years by the Selkirk/Cabinet-Yaak Subcommittee of the IGBC. The guidelines address the following access management parameters: 1) habitat security, 2) core area, 3) trial use of access related to habitat quality/season, 4) motorized access route density, 5) monitoring, and 6) coordination with state wildlife agencies. The Rule Set also discloses definitions of terminology related to each specific parameter. (IGBC 1998a)

Intermittent Stored Service: Intermittent service road, closed to traffic. The road is in a condition that there is little resource risk if maintenance is not performed (self-maintaining). (FSH 5409.17-94-2)

Invasive Plants/ Noxious Weeds: Plant species that are designated by Federal or state law, possessing undesirable characteristics such as aggressive and difficult to manage; poisonous or toxic; parasitic; a carrier or host of serious insects or disease; or not native, new or not common to the United States.

Jurisdiction: The legal right to control and regulate the use of a transportation facility. Roads on NFS lands are under the control of the Forest Service, except for public roads established under the Act of July 26, 1866, private roads, roads for which the Forest Service has granted right-of-way to private landowners or public road agencies, and roads whose use and rights pre-date the national forest. Other factors may affect jurisdiction on acquired lands or easements. There are roads on the transportation systems where the Forest Service has limited rights of use and no jurisdiction over the traffic, such as private road systems and State, county, or township roads. (FSH 7709.59 Chapter 20)

Landtype: A map unit that reflects specific soil characteristics in conjunction with parent material, aspect, topographic feature, elevation, and vegetative attributes.

Linear Open Road Density: Linear miles of open roads divided by the area of a bear analysis area or BMU in square miles, exclusive of roads and land area in Mgmt. Situation 3.

Loess: Material transported and deposited by wind and consisting of a homogeneous, non-stratified, unindurated deposit made up predominantly of silt, with smaller amounts of very fine sand and/or clay.

Management Action: Any activity undertaken as part of the administration of the National Forest.

Management Indicator Species: A species selected by a land management agency to indicate the health of the ecosystem in which it lives and, consequently, the effects of forest management activities on that ecosystem.

Management Situation: Habitat designation that indicates the relative importance of an area to bears and its management strategy. Management situations include:

Management Situation 1 – areas managed for grizzly bear habitat maintenance, improvement, and minimization of grizzly bear-human conflict. Management decisions will favor the needs of the grizzly bear when grizzly habitat and other lands use values compete.

Management Situation 2 – areas where the grizzly bear is an important, but not necessarily the primary, use of the area. In some cases, habitat maintenance and improvement may be important management considerations. Minimization of grizzly bear-human conflict potential is a high management priority.

Management Situation 3 – areas where grizzly bear conflict minimization is a high priority management consideration. Grizzly bear presence and factors contributing to their presence will be actively discouraged.

Motorized Over-Snow Vehicle: Motor vehicles designated for over-snow that run on a track or tracks and/or skis(s), while in use over snow. The same vehicle would be a standard/terra OHV (1.2) when not in use over snow. 36 CFR 212.1. See *Snowmobile*.

Moving Windows: A technique for measuring road densities on a landscape using a computerized Geographic Information System (GIS). The results are displayed as a percent of the analysis area in relevant route density classes.

National Environmental Policy Act: An Act of Congress passed in 1969 declaring a national policy to encourage productive and enjoyable harmony between people and their environment. Section 102 of the NEPA requires a statement of possible environmental effects be released to the public and other agencies for review and comment.

National Forest Management Act: A law passed in 1976 requiring the preparation of Regional Guides and Forest Plans and regulations to guide that development.

National Visitor Use Monitoring: A monitoring program designed to use a stratified random sample to provide statistically sound estimates of visitor use on a national forest. Approximately 20 percent of all national forests are sampled each year so that over a 5-year period, every national forest has been monitored.

No Action Alternative: A required alternative that provides a baseline comparison with action alternatives and discloses the most likely condition expected to exist in the future if no management actions occur and existing conditions continue unchanged.

Noxious Weeds: Noxious Weeds – See *Invasive Plants.*

Open Motorized Route Density: Calculation made with the moving windows technique that includes open roads, other roads not meeting gated or impassible criteria, and open motorized trails. Density is displayed as a percentage of the analysis area in a defined density category (IGBC 1998a).

Open Road: See *Road*.

Open Road Density: Linear miles of open roads divided by the area of a bear analysis area or BMU in square miles, exclusive of roads and land area in Management Situation 3.

Outsloping: Pulling some of the fill-slope material back onto the roadbed to create an out-slope.

Point Source Disturbance: A disturbance originating from a single point rather than a linear feature such as a road. Examples include a drill rig, a campground, garbage collection site, etc.

Priority BMUs: A biological rating for each BMU derived by the Access Task Group of the Selkirk/Cabinet-Yaak Subcommittee. Each BMU was rated 1-high priority, 2-moderate priority, or 3-low priority based on sightings of family groups, credible grizzly sightings, human caused mortality, adjacency to BMU's having females with young, and within a linkage area or not.

Programmatic Decision: A decision that develops or amends program management direction for resource programs, uses or protection measures. It does not make site-specific decisions, and as such generally has indirect or cumulative effects rather than direct effects to forest resources.

Public Involvement: The use of appropriate procedures to inform the public, obtain early and continuing public participation, and consider the views of interested parties in planning and decision-making.

Public Access: Usually referring to public wheeled motorized vehicle access; roads or trails that are open to the public for wheeled motorized vehicle access, without gates or other barriers to restrict motorized use.

Reclaimed/ Obliterated Roads: A route which is managed with the long-term intent for no motorized use, and has been treated in such a manner so as to no longer function as a road. An effective means to accomplish this is through one or a combination of several means, including recontouring to original slope, placement of logging or forest debris, planting of shrubs or trees, obliterating/putting a barrier at the entrance, etc. No administrative use may occur on these roads. (IGBC 1998b)

Recontouring: Pulling the excavated road back as near as possible to its original condition.

Record of Decision: A document identifying the decisionmaker's selection of a course of action (or no action) to take, following review of the project record for an EIS. The project record includes consideration of a proposed action and its alternatives, public and agency comments, and an analysis of the environmental effects of the alternatives in the EIS.

Recreation Opportunity Spectrum: Five categories of recreational activities that are available to the public separated by the mode of travel (motorized or non-motorized) and the amount of development (developed or dispersed.)

Regeneration: The process of establishing a new tree crop on previously harvested land. The term also refers to the young crop itself.

Regeneration Harvest: A silvicultural treatment intended to regenerate a stand of trees. Clearcut, shelterwood, and seed tree harvests are examples of regeneration treatments.

Restricted Road: See *Road*.

Revised Statute (R.S.) 2477 - In order to promote settlement of the American West in the 1800s and provide access to mining deposits located under federal lands, Congress granted rights-of-way across public lands for the construction of highways by a provision of the Mining Law of 1866, now known as R.S. 2477. Congress repealed R.S. 2477 in 1976 as part of its enactment of FLPMA[40], along with the repeal of other federal statutory rights-of-way, but it expressly preserved R.S. 2477 rights-of-way that already had been established.

Road: All created or evolved routes that are greater than 500 feet long (minimum inventory standard for the Forest Service Route Management System), which are reasonably and prudently drivable with a conventional passenger car or pickup.

Open Road – a road without restriction on motorized vehicle use.

Restricted Road – a road on which motorized vehicle use is restricted seasonally or yearlong. The road requires effective physical obstruction (generally gated). Motorized administrative use by personnel of resource management agencies is acceptable at low intensity levels as defined in existing cumulative effects analysis models. This includes contractors and permittees in addition to agency personnel.

[40] Federal Land Policy and Management Act

Reclaimed/Obliterated Road – a route which is managed with the long-term intent for no motorized use, and has been treated in such a manner so as to no longer function as a road. An effective means to accomplish this is through one or a combination of several means, including recontouring to original slope, placement of logging or forest debris, and planting of shrubs or trees, etc. (IGBC 1998b)

Barriered Road - (no administrative use, not reclaimed or obliterated): Roads that have been restricted with a physical barrier such as a rock barrier or dirt berm/ditch in order to prohibit all motorized use, ATV, UTV and motorcycle use. Some roads classified as barriered roads are obliterated, where all or a portion of the road prism has been ripped up and returned to original slope and/or ground surface conditions. A barriered road does not allow administrative access, and contributes to optimal secure core area for grizzly bears.

Road Decommissioning: Activities that result in the stabilization and restoration of unneeded roads to a more natural state. (36 CFR 212.1)

Scoping: Activities in the early stages of preparation of an environmental analysis to determine public opinion, receive comments and suggestions, and determine issues during the environmental analysis process.

Season of Grizzly Bear Use: The following seasons have been defined through grizzly bear research. Although there may be considerable variation between individuals, seasons are defined as:

Denning: October 15 - April 15

Spring: April 1 - June 15

Summer: June 16 - September 15

Fall: September 16 - November 15 in the Selkirk Recovery Zone, November 30 in the Cabinet-Yaak Recovery Zone.

Non-Denning Season: same as active bear year

Active Bear Year: April 1 - November 15 in the Selkirk Recovery Zone, November 30 in the Cabinet-Yaak Recovery Zone.

Sensitive Species: A sensitive species is one that has been designated by the Regional Forester because of concern for population viability. Indications for concern include significant current or predicted downward trends in population numbers or density or in habitat capability that would reduce an existing species distribution.

Snowmobile: Motorized over-snow vehicles that operate on a track, use one or more skis for steering, and handle-bar steering, and a seat designated to be straddled by the operator. 36 CFR 212.1.

See *Motorized Over-Snow Vehicles*.

Standards and Guidelines: Requirements found in a Forest Plan that impose limits on natural resource management activities, generally for environmental protection.

Threatened, Endangered, Sensitive: Species that are federally listed as threatened or endangered, or that are identified by the Regional Forester as sensitive (see individual definitions for more information).

Threatened Species: Those plant or animal species likely to become endangered throughout all or a specific portion of their range within the foreseeable future as designated by the USFWS under the Endangered Species Act of 1973.

Timber Sale Management Report System (TSMRS): The TSMRS is a database containing timber stand information, including information on stand location and components (e.g., diameter at breast height, trees per acres, basal area per acre).

Total Motorized Route Density: Calculation made with the moving windows technique that includes open roads, restricted roads, roads not meeting all impassible criteria, and open motorized trails. Density is displayed as a percentage of the analysis area in a defined density category. Example: 20 percent greater than 2.0 miles of road per square mile of habitat. (IGBC 1998a)

Trail: All created or evolved access routes that do not qualify as a "road." They are not reasonably and prudently drivable with a conventional passenger car or pickup.

Open Motorized Trail – a trail that receives motorized use. Trails used by 4-wheelers, 4-wheel drive vehicles and motorized trail bikes are examples of this type of access route.

Open Nonmotorized Trail – a trail that is not reasonably or prudently passable by motorcycles or ATVs and is not legally restricted.

Restricted Trail – a trail on which motorized use is restricted during the active bear year. Motorized use is effectively/physically restricted. Motorized administrative use by personnel of resource management agencies is acceptable at low intensity levels as defined in existing cumulative effects analysis models. This includes contractors and permittees in addition to agency personnel.

Nonmotorized High Density Trails – a trail that receives an average of 20 or more parties per week of non-motorized use. This number is from the Unified Cumulative Effects Model document (April 1990). (IGBC 1998b)

Viable Population: The number of individuals of a species sufficient to ensure the long-term existence of the species in natural, self-sustaining populations that is adequately distributed throughout their range.

Watershed: The entire region drained by a waterway (or into a lake or reservoir). More specifically, a watershed is an area of land above a given point on a stream that contributes water to the stream flow at that point.

Wildland-Urban Interface: Per Title I of the Healthy Forest Restoration Act, this term means an area within or adjacent to an at-risk community identified in recommendations to the Secretary in a Community Wildfire Protection Plan.

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Appendix A. Cumulative Effects – Programmatic Actions

The following describes what past, present, and reasonably foreseeable programmatic actions were considered for the cumulative effects analysis. Chapter 3 starting on page 39 provides additional discussion of cumulative effects within the various resource areas.

Existing Forest Plans, As Amended

Existing plans and their associated plan amendments form the baseline of effects. The effects of these plans have previously been determined and disclosed in appropriate National Environmental Policy Act (NEPA) documents. Two specific amendments may have cumulative effects when combined with the access amendment to specific resources in the area.

The Inland Native Fish Strategy (INFS; USDA Forest Service 1995b) amended plans by establishing management requirements within riparian habitat conservation areas that apply to all three Forests. INFS generally requires retention of vegetation near streams and wetlands. INFS provides measures to mitigate the impacts of road building and road decommissioning and/or tree cutting near riparian areas to acceptable levels.

A Record of Decision was issued in March 2007 that provides direction contributing to conservation and recovery of Canada lynx in the Northern Rockies ecosystem (USDA Forest Service 2007b). The direction applies to mapped lynx habitat on NFS land presently occupied by Canada lynx as defined by the Amended Lynx Conservation Agreement between the Forest Service and the USFWS. The amendment provides additional protections to lynx and indirectly to other fish and wildlife species.

Past Policy Decisions

The following policy decision would have no cumulative effects associated with the access amendment because it does not dictate a particular outcome. This decision establishes administrative procedures; consequently, there are no direct or indirect effects to be added to any past, present, or reasonably foreseeable future actions. This policy decision includes the new NEPA procedures (73 FR 43084 [July 24, 2008]).

National Fire Plan and Other Initiatives

The National Fire Plan, the Healthy Forests Initiative, and the Healthy Forests Restoration Act of 2003, all emphasize developing proposals to maintain or restore healthy forests and lands by reducing heavy fuel loading and insect and disease risks. Management of vegetation and reduction of fuel loadings is generally emphasized around structures, called the wildland-urban interface. These policies do not prescribe where or to what extent future actions will occur and all future actions would occur under the requirements of the access amendment.

Road Management

The Off-Highway Vehicle FEIS and Record of Decision (USDA Forest Service 2001a) in Montana limits off-road wheeled motorized vehicle use on NFS lands. While the potential for such use is limited in grizzly bear habitat in the analysis area, any limitations could potentially affect access.

The Roads Management Policy (USDA Forest Service 2001c) directs the Forest Service to examine the road network and give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads. It also directs the Forest Service in a similar manner as the Travel Management Rule (USDA Forest Service 2005b).

The 2005 Travel Management Rule directs the Forest Service to designate roads, trails, and areas open to motor vehicle use by vehicle class and, if appropriate, by time of year. This rule may contribute to a change in miles available for wheeled motorized vehicle use. Once motor vehicle use maps are published, the foundation for enforcement of prohibition will change from the current condition where motorized use is allowed unless otherwise prohibited (prohibitions under current 36 CFR 261.54(a)(b)). Instead, enforcement will be based on the motor vehicle use maps and wheeled motorized vehicle use is prohibited unless designated as open (under (36 CFR 261.13).

The KNF, LNF, and IPNFs are all in the process of updating their travel plans. In addition, the IPNFs staff is preparing a travel management plan for motorized winter recreation use within the Selkirk Mountain Range on the Bonners Ferry, Priest Lake, and Sandpoint Ranger Districts.

Energy Development

As directed by Congress in section 368 of the Energy Policy Act of 2005, the Forest Service has participated in preparing a programmatic EIS to designate energy corridors on land it administers for oil, gas, hydrogen pipelines, and electricity transmission and distribution facilities in 11 contiguous western States and to incorporate these designations into affected agency land use plans (USDA Forest Service et al. 2008g). On January 14, 2009, USDA Undersecretary Mark Rey signed a Record of Decision amending 38 National Forest Land Management Plans to identify locations of corridors suitable for future energy transmission infrastructure across NFS land (USDA 2009b). The corridors protect or minimize resource impacts to lands and surface resources by identifying preferred locations for corridors that also cross Federal lands managed by other agencies. Energy corridors not addressed in the programmatic analysis would be subject to a separate environmental analysis. None of the corridors being addressed in the programmatic EIS would affect grizzly bear habitat; therefore, there would be no effects on resources in the analysis area.

In 2008, a decision was made to rebuild BPA’s Libby to Bonners Ferry 115-kilavolt transmission line (USDA Forest Service 2008e). A portion of the powerline is located within the analysis area and was designed to reduce existing adverse effects to grizzly bear and minimize effects to grizzly bears during construction.

Roadless Area Management

2001 Roadless Area Conservation Rule

The Roadless Area Conservation Rule (USDA Forest Service 2001b) addresses timber cutting, road construction, and road reconstruction in Inventoried Roadless Areas (IRAs). It allows these activities only when certain activities are met. The Roadless Rule does not authorize any ground disturbing activities.

The Roadless Rule is the subject of ongoing litigation. On August 12, 2008, the Federal District Court for the District of Wyoming, declared that the Roadless Rule was promulgated in violation of the NEPA and the Wilderness Act. The court held "the roadless rule must be set aside" and that "[t]herefore, the Court ORDERS that the Roadless Rule, 36 CFR §§ 294.10 to 294.14, be permanently enjoined, for the second time." Previously, another Federal district court in California had issued an order that reinstated the Roadless Rule, including the Tongass-specific amendment, and specified that "federal defendants are enjoined from taking any further action contrary to the [2001] Roadless Rule. . ." On December 6, 2008 Judge Laporte clarified her decision to apply to areas covered by the 9th circuit court and New Mexico. Both these orders have been appealed and the Forest Service has sought relief in both Federal district courts.

The Roadless Rule itself does not affect the decisions associated with the grizzly bear Access Amendment, including levels of motorized access in BMUs. The Roadless Rule, if in place in Montana, may have potential cumulative effects to some resource areas by limiting opportunities for activities to occur. Regardless of the Roadless Rule direction, any roads constructed in grizzly bear habitat would be designed to meet the requirements of the Access Amendment.

Idaho Roadless Rule

The *Roadless Area Conservation: National Forest System lands in Idaho, Final Environmental Impact Statement* (USDA Forest Service 2008c) and the Final Rule and Record of Decision (36 CFR 294, Subpart C; USDA Forest Service 2008d), hereinafter referred to as the "Idaho Roadless Rule", was promulgated in October 2008. The Idaho Roadless Rule replaces the Roadless Area Conservation Rule in Idaho.

The Idaho Roadless Rule designates a system of lands called Idaho Roadless Areas, of which about 281,000 acres of the 9.3 million acres of roadless areas in Idaho overlap the Cabinet-Yaak and Selkirk Recovery Zones. The rule established five management themes that provide prohibitions with exceptions or conditioned permissions governing road construction, timber cutting, and discretionary mineral activities. The Wild Land Recreation (WLR) theme prohibits all timber cutting and road construction in Idaho Roadless Areas. About 24 percent of the Cabinet-Yaak and Selkirk Recovery Zones overlap this theme. The Backcountry Restoration (BCR) theme provides conditioned permissions for road construction and timber cutting. Very few roads are anticipated to be constructed outside the Backcountry Restoration community protection zone (CPZ) because of the limitations provided in the Idaho Roadless Rule. Within the Backcountry Restoration community protection zone, temporary roads could be constructed to facilitate timber cutting to reduce wildland fire effects to communities. About 5 percent of the Cabinet-Yaak and Selkirk Recovery Zones overlap this theme. Any road construction would be designed to meet the requirements of the Access Amendment. The General Forest, Rangeland and Grassland (GFRG) theme permits road construction or reconstruction, and timber cutting, sale or removal consistent with the Forest Plan requirements. Since most of these lands are likely located in core area, these actions would be designed to meet the requirements of this Access Amendment. About 21,990 acres are located in Forest Plan Special Areas (FPSA). These are generally wild and scenic river corridors where little to no activity is anticipated.

The Idaho Roadless Rule itself does not affect the decisions associated with the Access Amendment, including levels of motorized access in BMUs. The Idaho Roadless Rule may have potential cumulative effects to some resource areas by limiting opportunities for activities to occur. Regardless of the Idaho Roadless Rule direction, any roads constructed in grizzly bear habitat would be designed to meet the requirements of the Access Amendment.

Table 63. Grizzly bear recovery ecosystems that overlap Idaho roadless areas under the Idaho Roadless Rule (Modified)

Recovery Unit	WLR Acres	BCR Acres	BCR/CPZ Acres	GFRG Acres	FPSA Acres	Total
Selkirk	55,872	69,504	1,243	12,833	19,078	158,530
Cabinet-Yaak	10,875	93,869	13,887	1,330	2,914	122,875
Total Acres	66,747	163,373	15,130	14,163	21,993	281,405

Acronyms are Idaho Roadless Rule themes: WLR = Wild Land Recreation, BCR = Backcountry Restoration, BCR/CPZ = Backcountry Restoration/Community Protection Zone, GFRG = General Forest, Rangeland and Grassland , FPSA = Forest Plan Special Areas

Appendix B. Alternative Development Process

This appendix describes the development process used for alternatives D Modified and E Updated.

Development Process Alternative D Modified

Introduction

Alternative D, as discussed in the 2002 FEIS, was developed in response to public comments requesting additional grizzly bear habitat security beyond what was provided by the Interim Access Management Rule Set (IGBC 1998a) (see 2004 project record: V20 D10 P10). In Alternative D in the 2002 FEIS, standards for Open Motorized Route Density (OMRD) (less than or equal to 17 percent), Total Motorized Route Density (TMRD) (less than or equal to 14 percent), and core area (greater than or equal to 72 percent) were established based on the highest security levels documented in Grizzly Bear and Road Density Relationships in the Selkirk Recovery Zone and Cabinet-Yakk Recovery Zone (Wakkinen and Kasworm 1997) (see 2004 project record: V26 D9 P29). The interdisciplinary team (IDT) began a detailed study of Alternative D in the 2002 FEIS; however, the standards could not be met in all BMUs (15 BMUs were unable to meet all three standards) since an insufficient number of roads existed under Forest Service jurisdiction (in some BMUs) to adequately reduce access to meet these standards. As a result, Alternative D in the 2002 FEIS was determined to be infeasible and was excluded from further detailed study (see 2002 FEIS, page 2-18).

Alternative D Modified Description Summary

Alternative D Modified is designed to provide OMRD, TMRD, and core area standards by individual BMU that achieve the highest security parameters for bears (where possible), as identified in Wakkinen and Kasworm (1997). The conditions for OMRD (less than or equal to 17 percent), TMRD (less than or equal to 14 percent), and core area (greater than or equal to 72 percent) were set for each BMU when possible to achieve within Forest Service jurisdiction. In BMUs within Forest Service jurisdiction where it was not possible to achieve recommended levels (e.g., high county road miles outside Forest Service jurisdiction), habitat parameters were set at the highest level achievable, based on individual BMU moving windows (OMRD and TMRD) and buffering analyses (core area).

Development Process

In 2008, the responsible officials directed the IDT to conduct additional environmental analysis that included the development of an alternative (in addition to the alternatives in the 2002 FEIS) that best met Wakkinen and Kasworm's highest levels of secure habitat (OMRD of less than or equal to 17 percent, TMRD of less than or equal to 14 percent, and core area of greater than or equal to 72 percent in each BMU).

Alternative D was revisited and the Forests evaluated the habitat parameters (OMRD of less than or equal to 17 percent, TMRD of less than or equal to 14 percent, and core area of greater than or equal to 72 percent in each BMU) in order to obtain the Wakkinen and Kasworm "highest secure habitat level for bears within Forest Service jurisdiction." The OMRD, TMRD, and core area were then determined by completing the following:

- The status (open, gated, closed) of every road and motorized trail within Forest Service jurisdiction (see following section) was adjusted to maximize improvement of the grizzly bear habitat parameter values (OMRD, TMRD and core area).
- A moving windows model analysis (see project record for analysis description) was then completed for every BMU to determine the highest value possible (within Forest Service jurisdiction) for OMRD and TMRD.
- A buffer model (0.31 miles) was then run for every BMU to determine the highest value possible (within Forest Service jurisdiction) for core area.
- In BMUs where the standards (17, 14, and 72 in each BMU) could not be achieved, habitat parameters were set at the highest level achievable within Forest Service jurisdiction.
- The standards (17, 14, and 72 in each BMU) were utilized in those BMUs where the parameters could be met.

Grizzly Bear Access Amendment Draft SEIS: Alt. D Modified Development and Forest Service Jurisdiction[41]

Maximum Protection Possible for Bears: Alternative D Modified is designed to provide OMRD, TMRD, and core area standards, by individual BMU, that achieve the highest security requirements for bears as documented in Wakkinen and Kasworm (1997) (Core >72%; OMRD <17%; TMRD < 14%) when possible within Forest Service jurisdiction. BMUs that can not achieve that level will have the habitat parameters set at the best level possible, within Forest Service jurisdiction, with rationale documented on individual roads that can not be closed in the individual BMU Excel spreadsheets (see project record). Rationale is provided in the definition below.

All roads and motorized trails that are fully within Forest Service jurisdiction will be evaluated for potential to improve grizzly habitat conditions. Since the evaluation process is to determine IF a BMU can reach the Wakkinen and Kasworm high values, all roads that can be closed will be evaluated as if they are barriered to create core area. This approach is the most efficient way to examine all three parameters.

Roads that meet the definition below will not be considered for gating or barrier placement.

Definition: Roads not available to close for grizzly bear habitat improvements (these roads will be considered open or gated based on existing status) are:

Roads that are NOT fully within Forest Service control. This includes:

- State highways
- County roads on private land
- County roads with easements across national forest land

[41] JURISDICTION: Jurisdiction is the legal right to control and regulate the use of a transportation facility (23CFR 660.103 and FSM 7705). FSH 7709.59 CH. 20 Traffic Management (02/05/09): Roads on National Forest lands are under the control of the Forest Service, except for public roads established under the Act of July 26, 1866, private roads, roads for which the Forest service or the U. S. Department of Transportation has granted rights-of-way to private land owners or public road agencies, and roads whose use and rights pre-date the National Forest.

- Roads with an easement providing access or right of use (private landowner, timber company, utility, state, county, etc.)
- Roads with a special use permit providing for right to use the road (access to private land or other purpose).
- Roads that provide access to private lands, even though special use permit or easement is not in place.
- Roads under a cost share agreement (e.g., Plum Creek, State of Montana) have legal ability to close road but legal advice is to show roads as: if they are gated now…leave as gated. If open, leave as open.
- Roads listed under R.S. 2477 (road created with public funds prior to the creation of the National Forest). County would need to make an assertion that the road belongs to them. This statute complies with the 1866 mining act to provide access across Federal land to mining claims. (Unpatented claims we do not have to provide open road access.)

The following roads would be evaluated on a case-by-case basis. Some may only be gated but not barriered while others might be closed in manner that could create core area.

- Roads under permit to other Federal Agencies (e.g., BPA roads to access a powerline).

Development Process Alternative E

Introduction

The following describes the process used to develop Alternative E and display the supporting rationale for the standards set by that alternative. The paper was prepared based on information from the Access Amendment 2004 project records (V1 D41, D51, D94, D95; V2 D59; V16 D4; and V35 D26).

Alternative E from the 2002 FEIS was developed to provide increased grizzly bear habitat security while allowing limited management flexibility in response to issues related to public and administrative access of National Forest system lands, economics, and access to private in holdings.

The intent of Alternative E was to do as much for the grizzly bear as possible while considering activities the Forest Service has no jurisdiction, while providing limited flexibility for administrative access.

Alternative E Description Summary

In Alternative E, standards were set individually for each bear management unit (BMU) based on achievable goals of open and total motorized route densities and core area. The standards reflect the presence of uncontrollable factors (e.g., highways, county roads, access to private lands), administrative access needs and public access. This Alternative would allow some minimal management flexibility.

Development Process

The standards for OMRD, TMRD, and core area were developed through a series of meetings and conference calls involving Forest Service (Kootenai, Lolo and Idaho Panhandle National Forests), U.S. Fish and Wildlife Service (Helena and Spokane offices), and Idaho Fish and Game (Bonners Ferry Office) wildlife biologists, Forest Supervisors and Selkirk/Cabinet-Yaak Recovery Zones

(SCYRZ) interdisciplinary team members. The group included the two grizzly bear research biologists (Kasworm and Wakkinen) working in the SCYRZ.

Information considered during development of proposed standards for individual BMUs included: existing conditions (end of bear year 2000) for OMRD, TMRD and core area; potential conditions for those parameters in each BMU and adjacent BMUs; range of parameter values used by bears as determined by research done in the SCYRZ; land ownership pattern; proportion of National Forest System lands to non-system lands; known high interest areas for public access; social assessment findings related to grizzly bears (see 2004 project record) and motorized vehicle access; and administrative access needs.

The biologist task group went through the following process in their review of every bear management unit.

1) Establish the existing conditions (Bear year 2000 status) for OMRD, TMRD, and core.
2) Determine the feasibility of achieving at least the average habitat parameter values (33% OMRD, 26% TMRD, and 55% core) established by research done in the SCYRZ by answering a series of questions (see attached blank worksheet and project record V1 D95 P102), on the site specific situation.
3) Identify uncontrollable factors (such as county or state road presence) by answering additional questions (see attached blank worksheet and project record V1 D95 P102).
4) Identify grizzly bear mortality risk factors (such as proximity to communities) by answering additional questions (see attached blank worksheet and 2004 project record V1 D95 P102).
5) Consider establishing management flexibility. The percent of core area standard was selected as the tool to establish flexibility. The group agreed that where conditions warranted (e.g., existing condition was equal to or greater than 55% core) a 2-3 percent drop in core from the estimated maximum would be the range for creating a core standard that provided limited flexibility. Once a core area standard was set, estimates of achievable OMRD and TMRD standards were established by an interdisciplinary group. These estimates were based on the assumption that a 1% change in OMRD or TMRD would require changing the status of 2-6 miles of road. A validation test was conduction on a sample set of BMUs that confirmed the assumption. The miles available to change status by BMU was determined and used to estimate the achievable OMRD and TMRD standards.

Development Process Alternative E Updated

Introduction

Alternative E from the 2002 FEIS was developed to provide increased grizzly bear habitat security while allowing management flexibility in response to issues related to public and administrative access, economics, and access to private in holdings. Alternative E integrated the biological, social, valuational, and institutional forces of grizzly bear recovery. Standards were determined through consultation with USFWS and grizzly bear research scientists, and reflect the unique features of biological and social factors (e.g., highways, high quality habitat, residential developments, linkage zones, etc.) found within specific Bear Management Units (BMUs).

On-the-ground conditions have changed since 2002 and new information regarding grizzly bear activity in relation to the active bear year has become available. Therefore, Alternative E was updated as shown below.

Alternative E Updated Description Summary

Alternative E has been updated in the final SEIS to 2009 conditions that reflect changes occurring since the 2002 FEIS. Non-discretionary terms and conditions from the USFWS Biological Opinion (2011) have been incorporated as part of this Alternative E Updated. Administrative use levels have been adjusted from the 2002 FEIS based on a change in the active bear year dates (now 4/1 to 11/30 in the Cabinet-Yaak Recovery Zone).

Development Process

For the draft SEIS, Alternative E was updated using the following information which constitutes changes from the 2002 FEIS:

- Adjustments were made to the proposed standard levels in five BMUs (BMU 3: core area increased to 59 percent, BMU 5: core area increased to 60 percent, BMU 10: core area increased to 52 percent, and BMU 13: core area increased to 60 percent). This was done through consultation with the USFWS (see 2004 project record: V2 D59 P8). The changes were possible based on the ground conditions, which reflected a higher current core area value than the 2002 FEIS.
- Road standards for occupied bear habitat outside the recovery zones (BORZ polygons) were added. This came directly from the USFWS 2004 Biological Opinion terms and conditions (2004 record: V2 D68 P168: pages 138-139).
- The proposed standard for TMRD in BMU 8 was changed from 20 to 21, based on analysis done to determine standards for Alternative D Modified because the original Alternative E proposed standard could not be met. This was due to the presence of several miles of road outside Forest Service jurisdiction.
- A modified timeline (due to new decision date for this final SEIS) to achieve proposed standards was incorporated. The modified timeline used the same number of years allowed to achieve standards under the original Alternative E, but extended the final dates based on the anticipated signature year of the Record of Decision for the FEIS.
- A change in the Bear Year (based on research by Kasworm and Wakkinen documented in their annual progress reports and summarized by Johnson et al. 2008) was incorporated. Based on additional grizzly bear den entrance and exit dates from Kasworm's and Wakkinen's research the active grizzly bear year dates were changed from April 1 thru November 15 to April 1 thru November 30 in the Cabinet-Yaak Recovery Zone. The Selkirk Recovery Zone dates were not changed because the new den entrance and exist dates in the Selkirk Recovery Zone fell within the original active bear year dates (Johnson et al. 2008).
- A change was made in the corresponding administrative use in the Cabinet-Yaak Recovery Zone using the updated active grizzly bear year dates. Kasworm and Wakkinen updated the allowable administrative use days in the Cabinet-Yaak Recovery Zone only (personal communication: e-mail from Kasworm to Wayne Johnson on 6/12/2008). The new use days would be: spring 18 trips, summer 23 trips, fall 19 trips, for a total of 60 trips. This is an increase of 3 days.

Table 64. Rationale for Alternative E Updated BMU standards

BMU	Proposed OMRD Standard	Proposed TMRD Standard	Core Area Standard	Rationale for Proposed Standard(s)
1-Cedar	15	15	80	Standards are better (higher) than average research levels because the BMU is 99% Federal ownership with a fairly high percentage of designated wilderness and designated roadless habitat. This BMU is the northern most BMU in the Cabinet Mountains, which links to BMU 10 in the Yaak portion of the Cabinet-Yaak Ecosystem.
2- Snowshoe	20	18	75	Standards are better (higher) than average research levels because the BMU is 94% Federal ownership with a fairly high percentage of designated wilderness and designated roadless habitat. There were sixteen grizzly bear sightings during the period 1990-2000 in this BMU.
3- Spar	33	26	59	Core area can be maintained at a higher level than the research recommended level. OMRD and TMRD do not vary from research values. The southern portion of the BMU is a linkage zone between Idaho and the East Cabinets. There were two bear sightings between 1990-2000 in this BMU (No female with young). There are five developed recreation sites within this BMU – Bad Medicine and Spar Lake Campgrounds, Ross Creek Picnic Area, Bad Medicine Day Use Site, and Bad Medicine Boating Site. The proposed standards would maintain public access to these recreation sites.
4- Bull	36	26	63	The standard for OMRD is within the range of values shown in the research. OMRD is affected by state highways located on two sides of the BMU. Core is better than the average research level because much of the BMU is currently proposed wilderness, inventoried roadless, or wilderness. Eleven grizzly bear sightings occurred from 1990-2000 in this BMU, including three sightings of females with young. There are four developed recreation sites located within this BMU – Bull River Boat Ramp, Bull River Day Use Area, Bull River Campground, and Big Eddy Picnic Area. The proposed standards would maintain public access to these recreation sites.
5- St. Paul	30	23	60	This BMU has a high percentage of designated wilderness and designated roadless habitat and was thought to be reasonably capable of achieving levels above and beyond the research average core level, and below the average OMRD and TMRD levels. This strategy provides some management flexibility while still providing a high level of habitat security. There were eighteen grizzly bear sightings from 1990-2000. One of these included a female with young. The Howard Lake Campground and Bull River Guard Station are located within this BMU. The proposed standards would provide for continued public access to these sites.
6- Wanless	34	32	55	Much of the private land in the eastern half of the BMU is owned by Plum Creek Timber Company (PCTC). In addition, several roads in the eastern half of the BMU are currently under County jurisdiction. The proposed standards are within the range of values shown in the research. There were twenty-five sightings of grizzly bear from 1990-2000 in this BMU, including five sightings of females with young. There is one developed recreation site located in this BMU – Lake Creek Campground. Access to this campground would be maintained under the proposed standards for this BMU.

Table 64. Rationale for Alternative E Updated BMU standards

BMU	Proposed OMRD Standard	Proposed TMRD Standard	Core Area Standard	Rationale for Proposed Standard(s)
7- Silver Butte-Fisher	26	23	63	Standards are better (higher) than average research levels because this BMU is 92% Federal ownership and currently has a large designated roadless area adjacent to the Cabinet Mountains Wilderness. There were four grizzly bear sightings from 1990-2000, including one female with young. The Sylvan Lake Campground is located in this BMU. The proposed standards for this BMU would maintain public access to this campground.
8- Vermillion	32	21	55	The proposed standards for OMRD and TMRD are better than the research recommendation. Regenerating harvest units that produce huckleberries are well distributed throughout the BMU. There were four grizzly bear sightings from 1990-2000, including one sighting of a female with young. Sightings and telemetry indicate bear use has occurred in all seasons and most portions of the BMU. Willow Creek Campground is located in this BMU. The proposed standards would maintain public access to this campground.
9- Callahan	33	26	55	The proposed security levels do not deviate from the 33-26-55 parameters. The northern portion of the BMU is a linkage zone between the Yaak River drainage, across the Kootenai and into BMU 9. There were three grizzly bear sightings from 1990-2000 in this BMU. Sightings and telemetry are limited, but indicate bear use has occurred in all seasons and most portions of the BMU.
10- Pulpit	44	34	52	The proposed standards are within the range of values shown in the research. Core area, OMRD & TMRD are at the levels that can be maintained without closing access to private land and recreational facilities. The southern portion of the BMU is a linkage zone from the BMU's to the north of the Kootenai River to the BMU's in the Cabinet Mountains, south of the river. There were twelve of sightings of grizzly bear from 1990-2000 in this BMU. Sightings and telemetry are limited, but indicate bear use has occurred in all seasons and most areas of the BMU except the southerly most portions. The BMU is extensively used by the community of Troy and the surrounding area for a variety of recreational and socia1 traditions There are seven developed recreation sites located within this BMU – Big Horn Boat Ramp, Surprise Gulch Shooting Range, Yaak Mountain Lookout, Yaak River Group Picnic Area, Yaak River Campground, Kilbrennan Lake Campground, and Kilbrennan Lake Boat Site. The proposed standards would maintain public access to these recreation sites.
11- Roderick	28	26	55	The proposed standard for OMRD is better than the research recommendation. TMRD and core do not vary from research recommendations. There were ninety-four sightings of grizzly bear in this BMU from 1990-2000, including fourteen sightings of females with young. Sightings and telemetry indicate bear use has occurred in all seasons and most portions of the BMU.

Table 64. Rationale for Alternative E Updated BMU standards

BMU	Proposed OMRD Standard	Proposed TMRD Standard	Core Area Standard	Rationale for Proposed Standard(s)
12- Newton	45	31	55	There were major Forest Service arterial access roads that would need to be closed during the non-denning period to meet the research recommendations for OMRD and TMRD. The proposed standards are within the range of values shown in the research. The southern portion of the BMU, at the junction of Highway 2 and Highway 508, is a linkage zone to the south across the Kootenai River into BMU 9. There were eight sightings of grizzly bear from 1990-2000 in this BMU. Sightings and telemetry are limited, but indicate bear use has occurred in all seasons and most areas of the BMU except the southerly most portions. Two developed recreation sites are located in this BMU. Public access to the Yaak Falls and Red Top campgrounds would be maintained with the proposed standards.
13- Keno	33	26	59	OMRD and TMRD do not vary from research values. On-the-ground conditions show that core can be maintained at a higher level than the research recommended. The BMU is a linkage zone between Idaho and BMUs 11 & 14. There were seven sightings of grizzly bear from 1990-2000 in this BMU. One of these sightings was of a female with young. Sightings and telemetry indicate bear use has occurred in all seasons and most portions of the BMU. There are two developed recreation sites within this BMU – Mt. Baldy Buckhorn Ridge Lookout and the Keno Creek Trailhead. The proposed standards would allow for continued public access to these recreation sites.
14- NW Peaks	31	26	55	TMRD and core do not deviate from research recommended levels. OMRD can be maintained at a higher (better) level than the research recommended level. The BMU is a linkage zone between Idaho and BMUs 11 and 15. There were twenty-seven sightings of grizzly bear from 1990-2000 in this BMU, including five of females with young. There are two developed recreation sites located in this BMU – Whitetail Campground and Garver Mountain Lookout. The proposed access standards would provide for continued public access to these recreation sites.
15- Garver	33	26	55	Selected security levels do not deviate from the research recommended levels. There were twenty-three sightings of grizzly bear from 1990-2000, including eleven of females with young during this period. Sightings and telemetry indicate bear use has occurred in all seasons and most portions of the BMU. This BMU has two developed recreation sites - Pete Creek Campground and Upper Ford Guard Lookout. The proposed standards would allow for continued public access to these recreation sites.
16- East Fork Yaak	33	26	55	Selected security levels do not deviate from the research recommended levels. There were thirty-seven sightings of grizzly bear from 1990-2000 in this BMU, including three sightings of females with young. Sightings and telemetry indicate bear use has occurred in all seasons and most portions of the BMU. There is one developed recreation site located within this BMU – Caribou Campground. The proposed standards would allow for continued public access to this recreation site.

Table 64. Rationale for Alternative E Updated BMU standards

BMU	Proposed OMRD Standard	Proposed TMRD Standard	Core Area Standard	Rationale for Proposed Standard(s)
17- Big Creek	33	26	55	Selected security levels do not deviate from research recommended levels. BMU 17 is not directly part of a linkage zone, but it is the closest BMU in the Cabinet-Yaak Ecosystem to the linkage zone to the NCDE through the Stryker area. There were thirty-nine sightings of grizzly bear which occurred in this BMU from 1990-2000. One of these sightings included a female with young. Sightings and telemetry indicate bear use has occurred in all seasons and most portions of the BMU. The Big Creek Baldy Lookout is located in this BMU. The proposed standards for this BMU would maintain public access to this recreation site.
22- Mt.Headley	33	35	55	A higher TMRD is proposed because the amount and pattern of private ownership. There is high quality habitat occurring in a large undisturbed area in the center of the BMU (Cube Iron/Silcox proposed wilderness and roadless areas north to Benson and Lone Tree peaks). This BMU is a major portion of the Cabinet-Yaak to Bitterroot Linkage Zone (identified by Servheen 2001). This bear unit is the closest point to the Bitterroot ecosystem and there are some large roadless land areas immediately south of the bear unit. This bear unit is likely occupied, but this was not confirmed and no female observations had been confirmed by 2000. Public access to the Fishtrap Creek and Fishtrap Lake Campgrounds, and the Cougar Mountain Lookout rental recreation sites would be maintained under the proposed standards for this BMU.
18-Boulder	33	29	55	Numerous roads accessing private lands in NW corner of this BMU affect the proposed std for TMRD. There are a few private residences in NW portion of BMU, and numerous residential and agricultural developments just outside northern and northwestern boundary of this BMU. In the Final Interim Road Management Strategy (1998) this BMU was listed as a priority (3) BMU. The BMU is part of a linkage zone and borders Highway 200 on the Idaho side, although it is across the Kootenai River from the highway. The Black Mtn. Lookout Cabin is a recreation site located within this BMU. The proposed standards for this BMU maintain public access to this recreation site.
19-Grouse	59	55	37	This BMU is unique in that almost half of it resides in other ownerships. Because of numerous private in holdings and the associated ownership pattern the 33-36-55 standard is unattainable. This BMU is only about 54% Federal ownership. There are numerous private inholdings, many with residences or other structures within or immediately adjacent to BMU boundaries in the Twentymile, Trail, Grouse, Gold, and Rapid Lightning Creek drainages. There are also 2 small communities (Naples and Elmira) within 1 mile of the BMU western boundary. There is a relatively small amount of high quality seasonal foraging habitat in this BMU. In the Final Interim Road Management Strategy (1998) was listed as a priority (3) BMU. This BMU is part of a linkage zone and is adjacent to the McArthur Lake Wildlife Corridor, which represents a point where the Selkirk Mountains and Cabinet Mountains are in closest proximity to one another. Developed recreation sites located in this BMU include the Lunch Peak Lookout site and Grouse Falls Trailhead. The proposed standards would maintain public access to these recreation sites.

Table 64. Rationale for Alternative E Updated BMU standards

BMU	Proposed OMRD Standard	Proposed TMRD Standard	Core Area Standard	Rationale for Proposed Standard(s)
20-N. Lightning	35	20	61	OMRD is not as good as research average value due to configuration of arterial roads; however, the standard is within the range of values shown in the research. The value for OMRD is primarily due to two major public routes (North Lightning and Trestle Creek Roads) and the configuration and topography of the BMU, which requires a winding road course across the BMU. TMRD is better than the research value. Higher core value results from Bee Top roadless area and other areas between major drainages. This BMU has large blocks of core habitat that grizzly bears would most likely utilize during home range movements while minimizing potential encounters with humans. The lower TMRD value results from the Lightning Creek Restoration Project. Spring habitat is restricted to private lands and the bottoms of Trestle and Trout Creek drainages. The higher elevation habitat contributes high quality forage (huckleberries, as well as other preferred species) resulting from older harvest areas and fires. The Final Interim Road Management Strategy (1998) listed this as a priority (1) BMU. There are numerous private inholdings, many with residences or other structures within or immediately adjacent to this BMU's westerly boundary. There is also the community of Hope, which lies on the southwest boundary of the BMU. There are three developed recreation sites within this BMU, including Huckleberry Campground, the Moose Lake Trailhead, and the Lunch Peak Trailhead. The proposed standards for this BMU would maintain public access to these recreation sites.
21-Scotchman	34	26	62	OMRD is not as good as research average level due to high densities on private ownership; however, the standard is within the range of values shown in the research. Most of the roads in this BMU are located in the southern quarter of the BMU and are associated with non-Federal lands. Higher core value results from roadless area and TMRD does not deviate from research value. This BMU has large blocks of core area that are connected to core area in adjacent BMUs to the east. In the Final Interim Road Management Strategy (1998) this BMU was listed as a priority (2) BMU based on sightings of family groups, credible sightings, human-caused mortalities, and adjacent BMUs having females with young. Porcupine Lake Campground is located within this BMU. The proposed standards for this BMU would maintain public access to this recreation site.
Blue-Grass	33	26	55	Selected security levels do not deviate from the 33-26-55 parameters. This BMU contains a variety of seasonal foraging habitats, as well as important denning habitat. In the Final Interim Road Management Strategy (1998) this BMU was listed as a priority (1) BMU. There is a private inholding near the middle of the BMU. Access to this inholding must be granted through the United States.

Table 64. Rationale for Alternative E Updated BMU standards

BMU	Proposed OMRD Standard	Proposed TMRD Standard	Core Area Standard	Rationale for Proposed Standard(s)
Long-Smith	25	15	67	This BMU is better than research average values for core area and road densities due to high quality habitat, low road densities, and an elevated level of habitat effectiveness. The western side of this BMU contains high elevation habitat that was affected by the Trapper Peak fire and now provides high quality forage in the form of berry fields. In the Final Interim Road Management Strategy (1998) this BMU was listed as a priority (1) BMU based on sightings of family groups, credible sightings, human-caused mortalities, and adjacent BMUs having females with young. Two developed recreation sites are located in this BMU - West Fork Cabin and Shorty Peak Lookout. The proposed standards would maintain public access to these recreation sites.
Kalispell-Granite	33	26	55	Selected security levels do not deviate from the 33-26-55 parameters. High quality spring habitats are more common within this bear management unit than are generally found within most other BMUs. Quality denning habitat also exists in this BMU. This BMU is considered as occupied and also occupied by female bears. The majority of the grizzly bear occurrences occur within the spring season with the late, summer/fall season being the next highest period of use. Grizzly bear use is normally documented each year within this BMU. There are no private residential lands, thus no private residential development in this BMU. Four developed recreation sites are located in this BMU, including Stagger Inn Campground, Granite Falls Trailhead, Boulder Meadows Horse Camp, and the Road 302 Snowmobile Trailhead. The proposed standards for this BMU would maintain public access to these recreation sites.
Lakeshore	82	56	20	Achieving the research average values was not considered feasible due to the small size of the BMU and its close proximity to developed residential areas. This BMU is management situation 2 and 3. The proposed standards maintain existing conditions. High quality spring habitats are more common within this BMU than are generally found within most other BMU's. This was the rationale for adding this BMU along with the Kalispell-Granite BMU to the recovery area in 1994. Spring habitat is generally well distributed. The majority of the grizzly bear occurrences occur within the spring season. This BMU has a high potential for human-hear interactions. Private residential properties that exist and also which may be added in the future will likely continue to encroach on spring range. Distillery Bay, Bottle Bay, and Beaver Creek Campgrounds are located in this BMU. The Navigation Trailhead is also located within the Lakeshore BMU. The proposed standards would maintain public access to these recreation sites.
Salmo-Priest	33	26	64	Level of core habitat is better than the average research values because of the proportion of designated wilderness within the BMU. OMRD and TMRD do not deviate from research values. High quality spring habitat is less common within this BMU largely as a result of topography and elevation. Quality summer habitat is abundant throughout the BMU. Denning habitat is also abundant. This BMU is considered occupied, including with female bears.

Table 64. Rationale for Alternative E Updated BMU standards

BMU	Proposed OMRD Standard	Proposed TMRD Standard	Core Area Standard	Rationale for Proposed Standard(s)
Sullivan-Hughes	24	19	61	The levels of core habitat would exceed the 55 percent level based on the proportion of designated wilderness, which is located within the BMU and also because of the low percentage of core habitat, which would be managed for within the Lakeshore BMU. Summer berry fields are generally associated with past timber management areas, open canopied timber stands and numerous smaller scale older burns. Quality denning habitat is located in this BMU. This BMU is considered occupied, including by female bears. There are three developed recreation sites located in this BMU. Plowboy, Geisinger, and Navigation Campgrounds are located in this BMU. The proposed standards would maintain public access to these recreation sites.
Myrtle	33	24	56	Proposed standards reflect ownership patterns and lower total motorized road densities. The large Sundance Burn occupies about a third of the Myrtle BMU. It provides huckleberries as well as other preferred species such as mountain ash. The burn has high quality forage, and is increasing in available cover as vegetation grows. Approximately 1/3 of the BMU is part of the Myrtle Creek Game Preserve, where no hunting is allowed. In the Final Interim Road Management Strategy (1998) this BMU was listed as a priority (2) BMU. In the past, there have been numerous unconfirmed sightings of family groups. While not immediately adjacent, this BMU is part of a linkage zone and represents the easternmost portion of the Selkirk Recovery Zone, and as such is closest to the McArthur Lake Wildlife Corridor. Roman Nose Trailhead and Campground and Harrison Lake Trailhead are located in this BMU. The proposed standards would maintain public access to these recreation sites.
Ball-Trout	20	13	69	This BMU is better than the average research values for core and road densities due to high quality habitat, low road densities, and an elevated level of habitat effectiveness. The Ball Trout BMU has a large proportion of unroaded habitat, with several popular trails. Management designs have limited the number of users in this backcountry area to a level deemed to be compatible with bear recovery. In the Final Interim Road Management Strategy (1998) this BMU was listed as a priority (2) BMU. Upper Trout Creek Trailhead is located within this BMU. The proposed standards for this BMU would maintain public access to this site.

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Appendix C. A Review of the Wakkinen and Kasworm (1997) Report as Best Available Science for the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones

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Introduction

The purpose of this paper is to provide a comprehensive review of the Wakkinen and Kasworm (1997) report and compare their effort with the South Fork Flathead River research conducted by Richard Mace and others in the late 1980s and early 1990s. This updates and supersedes the Johnson (2007) review.

The 1997 Wakkinen and Kasworm report provides the only available science specific to the Selkirk and Cabinet-Yaak Ecosystems (SE and CYE) for setting motorized access standards. This research was completed in response to the 1994 Interagency Grizzly Bear Committee (IGBC) direction (IGBC 1994) to develop site-specific habitat security parameters using local female bears in regards to motorized access in all grizzly bear recovery zones. In 1998 and 1999, the Selkirk/Cabinet-Yaak Ecosystem (SCYE) IGBC subcommittee reviewed the Wakkinen and Kasworm (1997) effort which was, in turn, used by the U.S. Fish and Wildlife Service (USFWS) as the “best available indication of habitat conditions used by grizzly bears in the Selkirk and Cabinet-Yaak Ecosystems” in completing their 2001 amended Biological Opinion regarding the continued implementation of the Idaho Panhandle National Forest Plan (USDI Fish and Wildlife Service 2001). To date, there are no other analyses quantifying these parameters using local grizzly bear data for these two ecosystems.

However, since the issuance of this report 14 years ago, there has been an on-going debate as to its merits and limitations. As a result, some have questioned the validity of using the report’s conclusions as a basis for developing motorized access standards in these two recovery zones. Critics of the 1997 report specifically point to the following in their disparagement of the results: (1) limited sample size of female grizzly bears; (2) inclusion of a subadult female for portions of the analysis; (3) lack of reproductive success and/or mortality of radio-collared bears after the study was over; (4) the lack of a second-order analysis which would help explain if these bears had the opportunity to select greater levels of unroaded habitat elsewhere in the recovery zone; (5) use of individual multi-annual home ranges versus composite home ranges in the resource selection analysis; and (6) the lack of a minimum core block size in establishing core areas. Many of these comments revolve around comparisons to research completed in the South Fork Flathead River area of the Northern Continental Divide Ecosystem (NCDE) in Montana. The latter provided the basis for development of the motorized access parameters by the IGBC in 1994 (Mace et al. 1993, IGBC 1994, Mace 2004).

The following review explores these six aspects of the research and offers a comparison of the Wakkinen and Kasworm (1997) effort with the various iterations of the Montana Fish, Wildlife, and Parks grizzly bear research completed in the South Fork Flathead River area of the NCDE (Mace and Manley 1993, Mace et al. 1996, Manley and Waller 1997 and 1998) and its application in the Flathead National Forest amendment to their Forest Plan in 1995 (USDA Forest Service 1994a, 1994b, and 1995). Key differences and similarities in the data analysis using a Geographical Information System (GIS) are also reviewed and illustrate why direct comparison between the two research efforts is problematic. Attachment A and B provide summary information on the study bears, biological data, and data analysis used in the Selkirk/Cabinet-Yaak and South Fork Flathead River studies.

Summary of Research and Findings

Mace and Manley (1993): This Montana Fish, Wildlife, and Parks progress report covered the first five years (1987-1992) of a 10-year research project aimed at quantifying grizzly bear population and habitat use on multiple-use lands (i.e., the Flathead National Forest) within the Northern Continental Divide Ecosystem. Their research on bears from the South Fork Flathead River[42] introduced the concept of using a "moving window" analysis in a GIS to quantify Open Motorized Road Density (OMRD) and Total Motorized Road Density (TMRD), as well as defining areas free of motorized access (i.e., "Core" Areas per IGBC 1994). All three of these parameters were subsequently adopted by the Interagency Grizzly Bear Committee as the three primary elements in the management of human access in grizzly bear recovery zones (IGBC 1994 and 1998). They reported a TMRD greater than 2.0 miles per square mile of 18 percent with 46 percent of the home range unroaded for nine adult female grizzlies. A 0.5-*mile* buffer around motorized routes was used to define unroaded habitat. No analysis or recommendation concerning core block size was included in this report.

Flathead National Forest Amendment 19 to the Forest Plan (USDA Forest Service 1995): The Biological Assessment for this Forest Plan Amendment (USDA Forest Service 1994a and 1994b) included a new characterization of a subset of the Mace and Manley (1993) grizzly bear radio telemetry data based on new direction from the IGBC committee and the need to complete consultation on their Forest Plan. This assessment was completed by R. Mace who used seven of the nine grizzly bears and incorporated a 0.5 *kilometer* (or 0.31 mile) buffer around motorized routes in his analysis of core (USDA Forest Service 1994a, 1994b). He used a composite of multi-annual home ranges[43] derived from these seven female grizzlies to determine a OMRD: TMRD: core area standard of 19:19:68 percent (ibid)[44]. The Forest proposed a 55 percent core as the minimum short term standard for implementation based on the smallest percent core observed in one individual female's home range (ibid) and research from the Yellowstone region (Mattson 1993). A minimum core block size of 2,500 acres was suggested in the Biological Assessment. The subsequent Biological Opinion for the Amendment (USDI Fish and Wildlife Service 1995) reported that 83 percent of some proportion of adult female grizzly bear use was in unroaded blocks greater than 2,260 acres in size from the Mace and Manley study, but no sample sizes were disclosed nor was any statistical analysis completed in the Mace and Manley (1993) or Mace and Waller (1997) report to substantiate this, or the 2,500 acre recommendation.

[42] Also referred to as the "Swan Valley" research project by some reviewers

[43]The composite home range for the seven bears was located exclusively on National Forest System (NFS) lands. Furthermore, it did not include any large lakes, private property, MS 3 designated lands, or federal, state, and/or county highways (Allen and Ake pers. comm. 2011b).

[44] A second-order resource selection analysis was not completed on this subset of the original data.

Mace et al. (1996): In this peer-reviewed publication[45], the authors reported their final results concerning the relationship between grizzly bears, habitats, and roads on multiple-use lands in the South Fork Flathead River area. The authors did not provide an update on their 1993 efforts to quantify female grizzly bear use in relation to varying levels of core area, OMRD, and TMRD, but did report habitat use in relationship to overall and roadless area[46] habitat for 13 female grizzlies from 1990-1994. In addition, they investigated grizzly bear response to roads of differing traffic volume. They used a composite multi-annual home range for 13 adult and subadult female grizzly bears[47] to determine that 56 percent of their annual use was in unroaded areas (0 km/km^2) versus the rest of the study area where 30 percent were unroaded. In addition, they used individual seasonal home ranges for as many as 15 male and females grizzly bears to demonstrate that an average of 53, 59, and 62 percent of spring, summer, and fall home ranges, respectively, were unroaded. They emphasized the multivariate nature of grizzly bear habitat selection (i.e., analysis of selection above and beyond just motorized routes[48]) and the need for inclusion of seasonal habitat requirements into road density standards. No analysis concerning core block size was included in this publication.

Mace and Waller (1997): This was the final report for the 10-year South Fork Flathead grizzly bear study. Their report included details on various aspects of grizzly bear biology within the study area as well as the Mace et al. (1996) publication as one of its ten chapters. Our review relies on this document for additional details on the reproductive success and mortality of the South Fork Flathead River study bears. No analysis or recommendation concerning core block size was included in this publication.

Mace and Waller (1998): This peer-reviewed publication[49] included information on the demography, movements, and population trend of grizzly bears in wilderness and non-wilderness portions of the South Fork Flathead River/Swan Mountains. Our review relies on this document for additional details on the mortality trends of the South Fork Flathead River study bears.

Wakkinen and Kasworm (1997): This report was developed at the behest of the SCYE IGBC subcommittee after the release of the 1994 IGBC guidelines[50]. Wakkinen and Kasworm (1997) used data collected from 1989-1991 (Selkirk Recovery Zone) and 1990-1994 (Cabinet-Yaak Recovery Zone) to document an average OMRD greater than 1.0 miles per square mile of 33 percent, a TMRD greater than 2.0 miles per square mile of 26 percent, and an average 55 percent core area for six[51] female grizzly bears using a 0.31 *mile* buffer around motorized routes [52] to

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45 Journal of Applied Ecology
46 They reported "roadless areas" (road densities of 0 km/km^2) rather than core habitat. A cursory analysis of three Selkirk ecosystem BMUs using ARCInfo and a square window revealed that the amount of BMU within the 0 km/km^2 category underestimates core by approximately five percent on average.
47 Seven bears were included in the 1990-1994 study effort that were independent subadults when first collared, and five of these were offspring from the original 10 adult female grizzlies used in the Mace and Manley (1993) report (Appendix A).
48 This includes variables such as the quality and quantity of habitats in terms of vegetation, elevations, slope, and aspect.
49 Conservation Biology (journal).
50 The SCYE IGBC subcommittee appointed a nine-member taskforce to review the research effort and provide critique and input for inclusion into the final product. This included: 1) USDI Fish and Wildlife Service representatives from the Spokane office (S. Audet & M. Aimes), the Helena office (K. Shelley), the Grizzly Bear Recovery Plan Coordinator (Dr. C. Servheen); 2) USDA Forest Service representatives from the Colville National Forest (J. McGowan), Idaho Panhandle National Forest (E. Zieroth), Kootenai National Forest (M. Balboni), and Lolo National Forest (D. Smith); and 3) the two co-authors W. Kasworm and W. Wakkinen (IGBC SCYE 1997).
51 Five of these bears were 5+ years or older during the study; one bear (bear 206) was 3-4 years old (subadult) for two years of the three years she was tracked.

describe core area habitat. Four of the six bears sampled had core amounts at or below the 55 percent level (53.3, 53.4, 53.7, and 55.3) with the two remaining bears creating the range (40.0 and 71.5). The authors attempted to determine a minimum core block size but were unsuccessful due to limited sample sizes[53]. This report was peer-reviewed by nine biologists from the U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, U.S. Forest Service, and Washington State University.

Sample Size and Age of Female Grizzly Bears

Research on grizzly bears is limited by the number of study animals that are captured and radio-collared for long-term movement and habitat use analysis. Both Weilgus and Bunnell (1995) and Mace et al. (1996) acknowledged the difficulties in obtaining large sample sizes when studying a low density and highly mobile species like the grizzly bear. Numerous annual reports from the Selkirk and Cabinet-Yaak research efforts attest to the hundreds of hours it takes to trap a single grizzly bear during any given field season (Knick 1988, Wakkinen and Zager 1990, Volson 1994, Kasworm and Manley 1988, Kasworm et al. 2007). Similar efforts were employed in the South Fork Flathead River grizzly bear study (Mace and Waller 1997).

Grizzly bear and black bear researchers captured and radio-collared 50 individual grizzly bears in extensive trapping efforts in the SCYE from 1983 to 1994[54] (Kasworm and Manley 1988, Kasworm et al. 2007, Thier 1990, Wakkinen 1993, Wakkinen and Johnson 2000). Wakkinen and Kasworm's subsequent 1997 report included data from 13 females and two males, but only six females were used to draw the conclusions and set recommendations regarding female habitat selection in relationship to all three road parameters on NFS lands in the U.S. (i.e., OMRD, TMRD and core area)[55]. The six females were captured in non-wilderness portions of multiple use areas and represented approximately 15 percent of the then estimated minimum population of 40 grizzly bears for both ecosystems (Selkirks=25; Cabinet-Yaak=15 per USDI Fish and Wildlife Service 1993). The average age[56] of the study bears was 11.5 years old during the 1989-1994 study period (Attachments A and B).

52The multi-annual composite home range for the six bears was not located exclusively on National Forest System (NFS) lands. Rather it included MS 3 designated lands, Idaho state lands, private property, British Columbia provincial lands, and severalfederal, state, and/or county highways. This is different from the situation in the South Fork study where the composite home range was located exclusively on NFS lands and included no federal, state, and/or county highways.

53 This analyses introduces more sample size limitations than determining statistical preference for core habitat and road density categories because: 1) the available pool of grizzly bear locations is smaller when only core habitat locations are used (about 2/3 of the total number of locations); and 2) a greater number of categories was used to attempt to establish core size preference (six versus four road density categories and two in core/non-core habitat use). Both of these aspects of the analyses reduce statistical power.

54 Idaho Fish and Game and British Columbian personnel trapped 16 females and 18 males (total=34) between 1983 and 1994 in the Selkirk Recovery Zone (17 in US: 17 in BC) while U.S. Fish and Wildlife Service and Montana Fish Wildlife and Parks personnel trapped 7 females and 9 males (total=16) in the Cabinet Mountain and Yaak River portions of Cabinet-Yaak Recovery Zone (13 in Yaak; 3 in Cabinets) for the same time period (Kasworm et al. 2007, Wakkinen and Johnson 2000). The 13 female bears used in the Wakkinen and Kasworm (1997) study represented 94 percent of all available adult female radio-collared bears (total=16) between 1989 and 1994. The remaining 3 bears were not used in the study due to a limited number of radio-locations or lack of evidence of reproduction.

55 All six bears spent the majority of their time in the United States portion of the two ecosystems where better road information for open and barriered roads was available. The authors did analyze TMRD for 9 bears that resided in British Columbia (Wakkinen and Kasworm 1997).

56 Average age was determined by computing the annual average age of study bears for each year of the study and then calculating an overall average based on these numbers for the entire study period.

All four of the Selkirk ecosystem females were adults during the data collection period (1989-1991), but one of the two Yaak female grizzlies was an independent subadult (bear 206)[57] for the first two years of the data collection period used for that ecosystem (1991-1994). This female was noted for her tolerance of higher open and total road densities (51.5 and 38.2 percent, respectively) and lower than average use of core area (40 percent) which was due, in part, to her use of more heavily roaded areas north of the Cabinet-Yaak recovery zone in British Columbia. Concerns have been raised regarding the incorporation of home range data from this subadult female during the time period prior to reaching reproductive age (i.e., 1991-1992); specifically, that her home range would change once she reached maturity[58]. However, additional monitoring of her movements once she reached maturity, bred, and successfully produced cubs (1993-1994) demonstrated her continued use of the same general home range quantified as a subadult (Kasworm et al. 2009).

The Mace and Manley (1993) research captured and collared 38 individual grizzly bears from 1987-1992, but only nine adult female grizzly bears were used in this preliminary analysis of habitat selection in relationship to roads[59]. These nine females represented approximately three percent of the estimated 306 bears in the ecosystem (USDI Fish and Wildlife Service 1993, Mace and Manley 1993). Grizzly bears were captured within non-wilderness multiple use lands with radio relocations completed once a week from 1987-1989 versus twice a week from 1990-1991 on this set of female grizzlies. The average age of the study bears was 13.1 years old during the 1987-1992 study period (Attachments A and B).

The subsequent re-analysis of the Mace and Manley data for development of motorized access standards for the Flathead National Forest (i.e., Amendment 19) incorporated the OMRD, TMRD, and core area parameters per IGBC (1994) direction. However, only seven of the original nine females were selected for this new analysis (USDI Fish and Wildlife Service 1995). These seven females represented approximately two percent of the minimum estimated population of 306 bears in the ecosystem (USDI Fish and Wildlife Service 1993) (Mace and Manley 1993). The use of only seven of the original nine study animals likely explains some of the differences observed between the Mace and Manley (1993) results and the Amendment 19 numbers summarized above. The average age of the study bears was 12.5 years old during the 1987-1992 study period (Attachments A and B).

The South Fork Flathead research project resulted in the capture of 50 grizzly bears[60] over the 10-year study period (1987-1996) (Mace and Waller 1997). The Mace et al. (1996) journal publication re-examined aspects of grizzly bear habitat selection in the study area using a more robust sample of 13 female grizzlies and their weekly movements from a slightly different time period (1990-1994), with all radio collared bear locations consistently collected twice a week. Six of these study animals were adults for the duration of the study, while another two were 4.5 years

[57] Three years (1991-1993) of radio telemetry data was collected from bear 206 who was two years old when first captured in 1990. Her 1991-1992 radio locations reflected her habitat use as an independent subadult bear (i.e., ≤ 5 years old). However, she was observed consorting with a nine year old male in 1992 although she did not emerge from the den in 1993 with any cubs. She was considered an adult in 1993 and lost her collar in the den before emerging in 1994. A cub of bear 206 was captured in 1994 and was monitored with her mother and sibling until late May of 1995. Bear 206 was observed in 1997 with 2 cubs and was identified by the presence of ear tags.

[58] Female cubs generally establish their home range within or overlapping with their mother's home range (Aune and Kasworm (1989) and McLellan (1989).

[59] Mace and Manley (1993) successfully trapped 23 females and 16 males (total=39) but only collared 38. Their report also included habitat use in relation to roads for adult and subadult males as well as subadult females, but it not clear from the document how many individuals were included in those samplings.

[60] Montana Fish, Wildlife and Parks personnel successfully trapped 29 females and 21 males during the 10-year study. The 38 grizzly bears mentioned in footnote 19 were a subset of these 50 bears.

old in 1990, and the remaining five were subadults for some portion of the 1990-1994 study period[61]. The average age of the study bears was 10.9 years old during the 1990-1994 study period.

One review of the Flathead Amendment 19 information suggested that conclusions drawn from the small study sample was not likely representative of all bears in the population (McLellan et al. 2000). Specifically, "*although adult females are the most critical segment of the population for population growth, they can't meet conservation requirements alone. Subadult females are needed to replace adults and adult males are also needed…"*(McLellan et al. 2000). This argument supports the inclusion of subadult females in the study sample in the Wakkinen and Kasworm (1997) report and Mace et al. (1996) journal publication.

To summarize, both the South Fork Flathead River (and its application to the Flathead Amendment 19) and SCYE studies used a relatively small number of study animals to draw their conclusions regarding female grizzly habitat selection in relationship to roads within multiple-use lands. More study bears would increase the reliability of the data for the Selkirk and Cabinet-Yaak Recovery Zones. However, grizzly bears are a species that occur at low densities, so it is difficult to obtain large numbers of study animals for a given study area and time period. Both the South Fork Flathead and Selkirk-Cabinet-Yaak researchers engaged in significant efforts to sample their respective study areas in order to have as large and representative sample as possible. The sample of female bears (n=6) used in the Selkirk and Cabinet-Yaak study represents a larger proportion of the number of resident female bears available in the two ecosystems at the time of the study based on the population estimates and is comparable with the number of bears used in the South Fork Flathead River study (n=9 and 13), and Flathead Amendment 19 analysis (n=7).

In addition, the inclusion of two years of data from a subadult female in the Wakkinen and Kasworm (1997) study does not change the conclusions from their report. Additional monitoring of her movements once she reached maturity, bred, and successfully produced cubs demonstrated her continued use of the same general home range quantified as a subadult.

Reproduction and Mortality of Study Bears

Successful rearing of offspring that in turn successfully produce their own offspring is one indication that the habitat is capable of producing survivors that contribute to a population increase. All of the adult bears in the two studies were chosen because they had survived long enough to provide sufficient data for analysis and had reproduced within the study area[62]. The six females used in the Wakkinen and Kasworm (1997) study produced from 2-13 cubs/each from 1985 to 1997 (ibid, Kasworm et al. 2009) (Attachment A). Likewise, ten of the South Fork female study bears produced 1-5 cubs/each from 1986 to 1996 (Mace and Manley 1993, Mace and Waller 1997)(Attachment A).

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61 Seven bears were included in the 1990-1994 study effort that were subadults when first collared. In no single year did subadults outnumber the adults in the study sample. This resulted in a ratio of adults:subadults of 7:3 in 1990, 8:2 in 1991, 10:1 in 1992, 9:1 in 1993, and 8:1 in 1994.

62 All female study bears produced young either during or prior to the study's monitoring period. In their Biological Opinion for the Flathead NF Amendment #19, the USFWS believed the motorized access conditions within the composite home range represented a valid approach to habitat management due, in part, because telemetry data from adult females that had demonstrated survival to adulthood were used in its construction (USDI Fish and Wildlife Service 1995).

Both the Mace and Manley (1993) and Wakkinen and Kasworm (1997) research efforts indicate that at least one female offspring from the respective study areas subsequently produced offspring that reached dispersal age (2 or 3 years of age)[63]. In the Wakkinen and Kasworm study, all four Selkirk females produced cubs and three of these females are known to have produced eight cubs that survived to dispersal age (≥2.5 years of age)[64] (Attachment A). In addition, multiple offspring have been identified as progeny from the Yaak study area adult female 106 (i.e., female offspring 206, 303, 353, and 354) (Kasworm et al. 2009)[65]. One of these, female 206, was also part of the 1997 study. All four of these female offspring reached maturity and are known to have produced cubs between 1994 and 2007 (ibid).

In the Mace and Manley (1993) report, study females 1, 48, and 96 produced female offspring that reached maturity, with five of these offspring subsequently incorporated into the 1990-1994 Mace et al. (1996) research effort (Mace and Manley 1993, Mace et al. 1996, Mace and Waller 1997)(Attachment A). One of these offspring, bear 147[66], in turn produced a female cub that survived to dispersal. However, this cub and her male sibling become habituated to humans and were killed as a management action after separating from their mother in 1992. Her mother (147) was subsequently killed in a management action in 1993 after also becoming habituated to humans. In addition, a female cub produced by study female 96 (i.e., #18) reached maturity and produced a cub (of unknown sex) that was still with its mother at the end of the study in 1994. All seven females used for the Flathead amendment produced cubs with at least two of these being female offspring that reached maturity (ibid) (Attachment A).

Given the relatively high rates of grizzly bear mortality, it is not surprising that a few of the female study animals might die during the research period. However, concerns have been expressed that inclusion of study animals that die due to human causes may introduce a bias into the study results. More specifically, the assumption is that habitat conditions used by these particular study bears somehow proved “lethal” to them and consequently their selection data should not be used to develop motorized access standards in the SCYE. The 1993 Mace and Manley progress report (time period 1987-1992) included data from three female grizzly bears that died during the study period (out of the nine total females used in the road analysis). These deaths were attributed to human[67] and natural[68] causes (Mace and Manley 1993). The subsequent

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[63] There is a paucity of data on radio-collared cubs for a number of reasons (Wakkinen and Allen pers. comm. 2011a): Collaring methods are geared towards avoiding capture of cubs to reduce potential safety issues for the trapping crew and the cubs, and there are issues associated with placing radio collars on cubs even if they were captured. Survival rates of cubs are based on observing radio-collared females and monitoring the presence/absence of their offspring. This is a conservative method to calculate survival rates as the cub *must* be observed with the female or they are presumed dead. Given this and the survival rates that have been calculated for all age classes in the Selkirk and Cabinet-Yaak, it is reasonable to expect adult female bears to successfully provide female offspring that are recruited into the adult segment of the population. The sex ratio of cubs of known sex does not differ from an expected 50:50 in grizzly bears (ibid). Therefore, the number of female cubs likely produced from the six females would be estimated at 16 of the 33 cubs produced during this time period.

64 At least fifteen cubs were produced by the four Selkirk females, 1985-1991. Of these, two were known to be females and three were males. One of the female cubs was killed at age one and the other cub was killed at age three. The males reached dispersal age and dropped their collars so their long term fate is unknown. The fate of the remaining 10 cubs is also unknown (Wakkinen and Allen pers. comm. 2011b). Based on the information provided in footnote 24, at least 5 of these cubs were likely females.

65 The ability to track the reproductive success of the four Selkirk female grizzly bears using DNA profiling was eliminated when all frozen blood samples were lost due to a power outage at the Boise-based storage facility (Allen and Wakkinen pers. comm. 2011).

66 Offspring of South Fork Flathead River study bear 1 (Appendix A).

67 Female bear 1 was killed in May of 1988 in a mistaken identification shooting. She left behind a pair of two year old cubs that were incorporated into the study in 1990 (Mace et al. 1996; Mace and Waller 1997).

South Fork Flathead River research paper included a larger sample size of female grizzly bears (13) and a different time period (1990-1994), but noted that one of the female grizzlies was killed within the study area in a management removal in 1993 and another was killed in 1994 (Mace et al. 1996, Mace and Waller 1997) (Attachments A and B).

Conversely, none of the six grizzlies used in the Wakkinen and Kasworm study died during the period of data collection (Selkirks 1989-1991; Yaak 1991-1994) although two of these females were killed by humans in the Selkirk Mountains after the data collection period. These included the following:

- In 1992, a 12-year old female (1015) was shot and killed by a hunter in secure (i.e., non-roaded) habitat in British Columbia within the original study area. Her death was deemed a "self-defense" killing by the authorities.
- In 1993, a second female (867)[69] was killed by a hunter, but this mortality was classified as a malicious killing. In this case, the hunter walked more than two miles behind a closed gate before encountering this 15-year old female and her two young-of-the-year cubs (Wakkinen and Kasworm 1997; Allen and Carr pers. comm. 2009). The site of her death was within 500 meters of an approximately 20-square mile block of roadless area situated in the Kalispell-Granite[70], LeClerc, and Salmo-Priest BMUs, but more than five miles outside of the 1997 study area boundary.

In both instances, the fact that the areas were open to legal big game hunting (as dictated by state and provincial fish and game agencies) led to the events surrounding the death of these grizzly bears after a hunter chose to walk into secure core habitat or an area that was restricted to motorized travel where they subsequently encountered and killed the study bear. Both mortalities would likely have been prevented if these areas had been closed to big game hunting[71]. These post study mortalities do not change the levels of habitat conditions selected by grizzly bears in either ecosystem. It is not appropriate to conclude from these mortalities that selecting more secure habitat would have prevented these mortalities (as shown by the fact that some grizzly bear mortality occurs in core areas are greater than 500 meters from a road in both study areas) or that the habitat conditions proved "lethal" to bears. As suggested by McClellan et al. (2000), a more appropriate analysis to answer this question would be to complete an assessment of home range and habitat use for "successful" and "unsuccessful" bears to see if use patterns were similar or not[72].

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68 Female bear 97 was found dead about three months after her initial collaring in 1988. She may have been killed by a male grizzly bear that was also part of the study. Female bear 143 was found dead with her cubs in an avalanche chute in 1991.

69 This female was the first grizzly to be radio collared in the Selkirks (1983) and produced eight cubs prior to her death in 1993.

70 Officially added in 1993 along with the Lakeshore BMU based on the use of the area by this same bear (867) in during the spring time in the 1980s and early 1990s (USDI Fish and Wildlife Service (1993).

71 There have been eight additional documented cases in the SCYE where grizzly bears were shot and killed in "secure" (>0.31 miles from an open road) habitat on NFS lands from 1982-2010 (U.S. only). In all cases, bears died because individuals were traversing public lands with a firearm during the hunting season and did one of three things: (1) shot the grizzly after mistakenly identifying it as a black bear which was legal to shoot; (2) shot the bear intentionally (i.e., poaching); or (3) shot in self-defense when threatened by the grizzly bear.

72 McClellan et al. 2000 provided a peer review of the South Fork Flathead River research and made the following observation: "If the 'successful' females had home range and areas of use different from 'unsuccessful' females, then the characteristics of the successful females' ranges may be considered sufficient as the basis for conservation planning. However, if the home ranges and habitat use patterns were similar, but some were just luckier or more skilled at avoiding people within their range, then the 'lucky to be successful' females may not be suitable as the basis for conservation planning. If the successful females lived in more secure areas than unsuccessful females, then it would be

Mace and Waller (1998) found annual mortality rates for grizzly bears using rural areas and the wilderness zone were 21 and 15 times higher, respectively, than for bears using only multiple-use lands[73], which demonstrates that bear mortality is a function of numerous variables besides the amount and juxtaposition of motorized access alone. Some of these variables include the type and seasonality of hunting seasons, the availability of lethal attractants (i.e., human provided--e.g., garbage, agricultural products such as orchards/grain/livestock, or big game carcasses), and the amount and juxtaposition of private property and associated development. In the Greater Yellowstone Ecosystem, Schwartz et al. (2010) found that survival of grizzly bears was best explained by the amount of human development and ungulate hunting that occurred within the home ranges of bears. Mortality data for the SCYE from 1982-2010 demonstrates the complexity of this relationship between observed human-caused bear mortality and roads, sanitation, hunting, and land ownership (IGBC SCYE 2010, Kasworm et al. 2009, Wakkinen et al. 2010). Grizzly bear mortalities occurring on NFS lands have typically been associated with the spring black bear or fall big game/black bear hunting seasons.

In conclusion, both the South Fork Flathead River and SCYE grizzly bear studies used females that successfully raised young to dispersal age and maturity and documented the death of some of the study animals either during or after the study period was over. In both research efforts, there is evidence that some female study bears produced female cubs that subsequently raised cubs to dispersal age. The incorporation of female grizzlies that successfully produce young is an indication that their use patterns would result in the production of future generations of grizzlies to support an overall population increase. Likewise, some of the study bears were killed during (South Fork of the Flathead) or just after (SCYE) the study period was over. This post study mortality information does not change the levels of habitat conditions selected by grizzly bears in either ecosystem, as the selection of more secure habitat would not have prevented these mortalities due to the presence—and popularity—of legal hunting of black bears and other big game throughout the recovery zones and surrounding areas.

Resource Selection Analysis

Analysis of grizzly bear use of the available habitat in relationship to road densities was analyzed in both studies using the use/availability technique developed by Neu et al. (1974). Statistical tests of comparison were conducted at two resource selection levels in the South Fork study but only one level of resource selection for the Selkirk and Cabinet-Yaak study. Johnson (1980) defined levels of resource selection as follows:

- Resource selection occurs in a hierarchical fashion from the geographic range of a species (first order), to individual home range[74] within a geographical range (second order), to use of general features (habitats) within the home range (third order), to the selection of particular elements (food items) within the general features (or feeding sites).

Many factors influence resource selection, including population density, intraspecific and interspecific competition, predation, and habitat availability (size, juxtaposition) among others (Peek 1986).

assumed they needed that level of security to be successful: perhaps they could have done fine with less security. Without comparing the range locations and habitat use of bears with varying levels of ‘success‘ then the question of whether bears from the Swan Valley study can form the basis of a conservation strategy “ remains unanswered.

[73] Composite female home range was 56 percent roadless (0 km/km^2) in these multiple use lands (Mace et al. 1996).

[74] Home range is defined as the area where an animal lives and travels in (Burt 1943). It is generally supposed that animals establish home ranges because it is more efficient to utilize familiar rather than unfamiliar areas (McLellan 1985).

One of the limitations of the Wakkinen and Kasworm (1997) effort was that they did not complete a second-order resource selection analysis in regards to motorized routes within observed home ranges. Such an analysis would help explain if these bears had the opportunity to select greater levels of unroaded habitat elsewhere in the recovery zone or if their results were merely a reflection of what was available to the study bears at that time (USDI Fish and Wildlife Service 2001). The authors did not complete this analysis because an access route map for the entire ecosystem was not available for the study period for analysis in a GIS. However, an overall GIS road layer is now available for development of a map reflecting a conservative approximation of the amount of core habitat the study bears experienced before and during the tenure of the research effort. Therefore, we reviewed the home ranges of the six SCYE grizzly bears in relationship to the maximum possible amount of core habitat available in the two ecosystems[75] .

Figures 1 and 2 illustrate that the SCYE study bears did indeed have several large areas of core habitat available to them within the recovery zone boundaries in the U.S. during the tenure of the research effort (1989-1994)[76]. These maps reflect the maximum roaded conditions that the study bears experienced as they dispersed from their mothers, matured, and/or reproduced from 1985 to 1994. In the SE, this included a large block (> 40 square miles) in the Salmo-Priest and Sullivan-Hughes BMUs (#1 on the map), a large block in the Long-Smith and Trout-Ball BMUs that was used on a limited basis by study bear 1084 (#2), the Selkirk-Crest in Myrtle and State Land BMUs which includes portions of the 1967 Sundance Burn (and associated huckleberry fields) (#3), and a smaller block of lower elevation unroaded habitat in the Sullivan-Hughes BMU (#4). All four bears in the SE had access to this array of habitats within close (1-5 miles) proximity of their existing home ranges and conceivably could have altered their selection of home range to incorporate more core habitat.

Likewise, the Cabinet-Yaak Ecosystem had numerous BMUs with large blocks of unroaded habitat available within the Cabinet Mountain portion of recovery zone (e.g., Cedar, Snowshoe, Boulder, Callahan, Scotchman and Spar, Bull, Saint Paul, Wanless and Silver Butte-Fisher)[77]. Within the immediate vicinity of the Cabinet-Yaak Ecosystem study bears in the Yaak, there was additional areas of contiguous and adjacent unroaded habitat whose use would have resulted in higher levels of unroaded use than those observed from 1990-1994. This observation was originally made by one of the researchers in responding to an unpublished report that criticized the results of the Wakkinen and Kasworm (1997) study effort (Kasworm et al. pers. comm. 2003).

[75] Road layer used for this analysis reflects a very conservative portrayal of conditions that existed around the time the respective Forest Plans that incorporated the two grizzly bear ecosystems were completed (i.e.1986-1987) (see Appendix C for details on rationale). Our approach was conservative in order to show the minimum amount of habitat that could potentially function as core habitat during this time period in order to answer the question as to whether grizzly bears had other habitat available to them that had no motorized routes. In addition, these numbers do not reflect the roaded and core habitat available with the SE and CYE home ranges that occurred in British Columbia. As a result of this, our portrayal of core habitat is not directly comparable to the amount of core documented in the grizzly bear home ranges from Wakkinen and Kasworm (1997) as our approach **underestimates** the amount of core that was available to the research bears during the actual tenure of the study.

[76]**Note:** Grizzly bear home ranges were provided for these figures as a courtesy by Idaho Department of Fish and Game and USDI Fish and Wildlife Service and are not on file with the USDA Forest Service.

[77] The question of viable travel corridors has been mentioned in regards to the ability of bears to cross large rivers (i.e., Kootenai) or highways (i.e., Highway 2) in order to travel between the Yaak and Cabinet portions of this ecosystem. While these features undoubtedly have an impact on bear movement, grizzly bears have been documented swimming large rivers and crossing major highways in this and the Selkirk ecosystem (Waller and Servheen 2005, Allen 2011, IGBC SCYE Subcommittee 2011, Kasworm et al. 2009, Wakkinen et al. 2010).

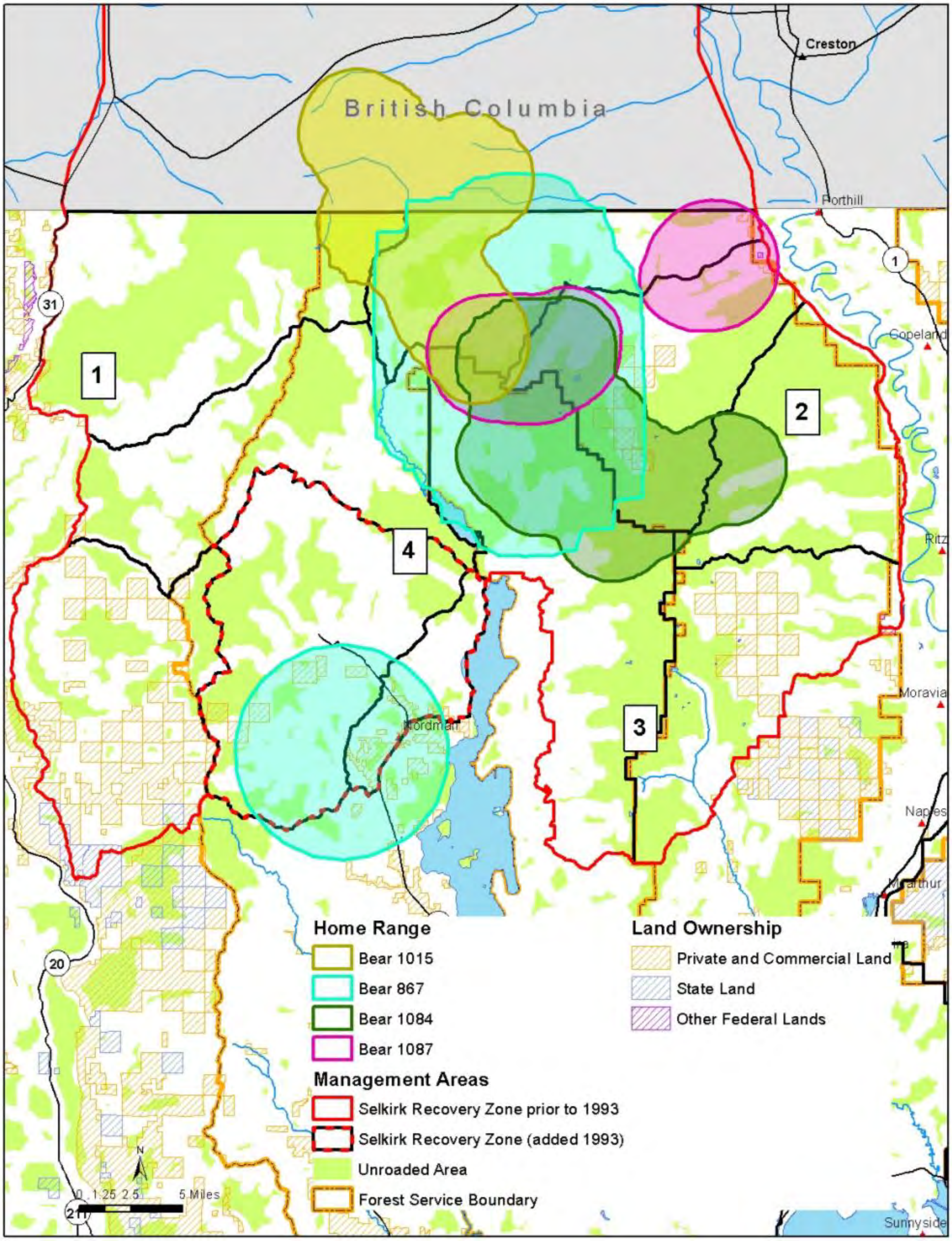

Figure 1. Grizzly bear home ranges for four (4) females (1989-1991) in relation to unroaded areas (~1987) within the U.S. portion of the Selkirk Recovery Zone. Home range data from Wakkinen and Kasworm (1997).

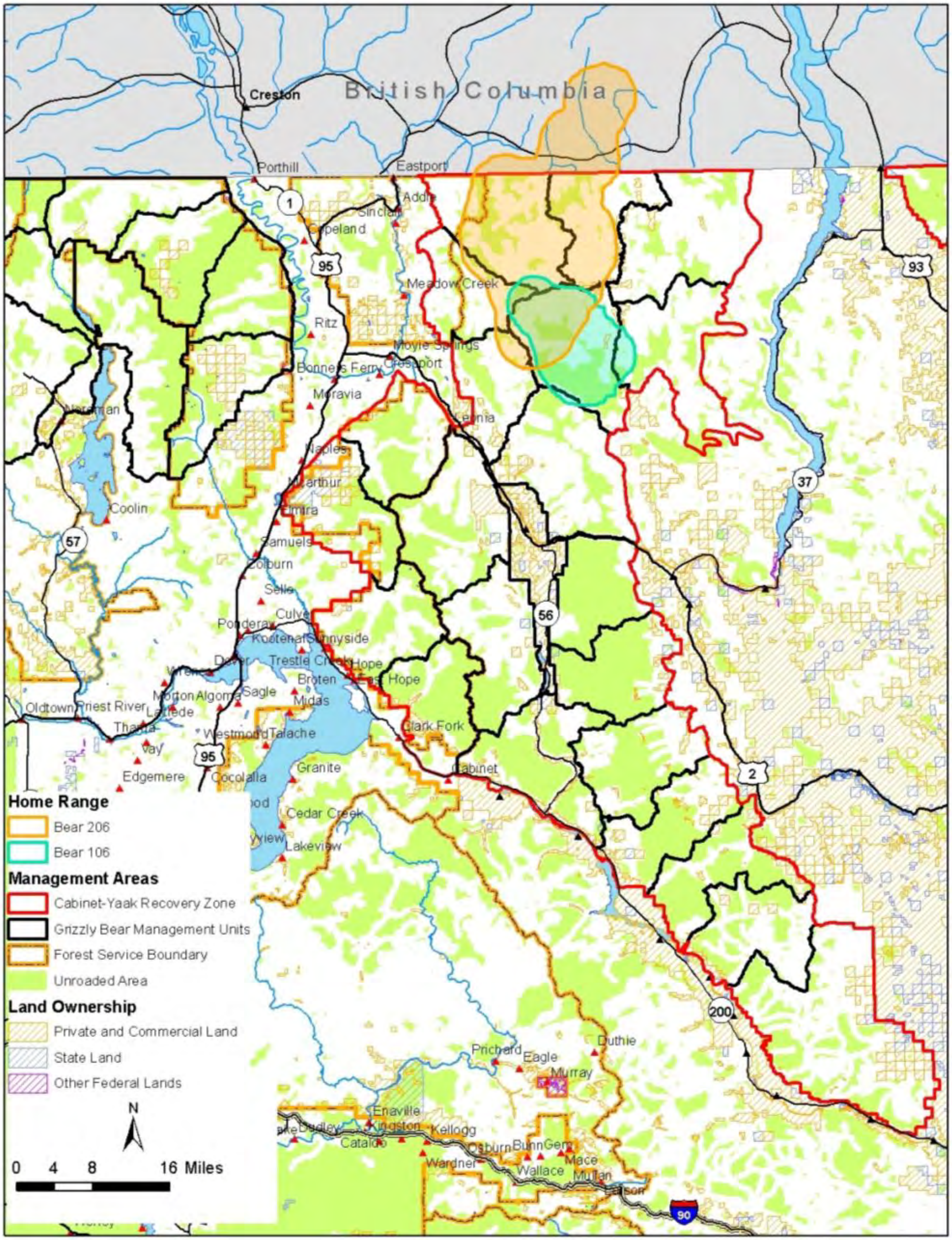

Figure 2. Grizzly bear home ranges for two (2) females (1989-1991) in relation to unroaded areas (~1987) within the U.S. portion of the Cabinet-Yaak Recovery Zone. Home range data from Wakkinen and Kasworm (1997)

More specifically, the composite home ranges of the Selkirk and Cabinet-Yaak study bears in the U.S. reflected 41.8 and 28.8 percent core habitat, respectively, versus 45.1 and 39.6 percent core habitat available throughout the remaining portions of the respective recovery zones (in the U.S.)[78] (Table 1). These results indicate that bears were selecting habitats with the same—if not more—roads than found within the entire ecosystem.

Table 1. Summary of available core area versus roaded habitat within the Wakkinen and Kasworm (1997) study home ranges versus the grizzly bear ecosystem. Data reflects a conservative picture of core conditions prior to full implementation of grizzly bear habitat security measures found in the 1986 and 1987 Forest Plans. See footnote 36 and Attachment C of this document for details on the development and use of these data.

Area	Grizzly Bear Recovery Zone							
	Selkirk				Cabinet-Yaak			
	Total Area (U.S./B.C.)	U.S. only	U.S. Roaded	U.S. Core	Total Area (U.S./B.C.)	U.S. only	U.S. Roaded	U.S. Core
	square miles				square miles			
Bear Home Range	421.1	358.4[1]	216.4[2]	141.9[3]	407.9	312.8	222.9	89.8
Recovery Zone	2,043.5	1,076.2	610.2	465.9	*U.S. only→*	2,645.7	1,663.6	982.1

[1]Includes 27.1 square miles of home range area located outside of the 1993 Recovery Zone boundary (see Figure 1).
[2]Includes 20.9 square miles of roaded area outside the 1993 Recovery Zone boundary (see Figure 1).
[3]Includes 6.2 square miles of core area outside the 1993 Recovery Zone boundary (see Figure 1).

Our re-examination of roads in grizzly bear home ranges and the recovery zones (in the U.S.) demonstrates that the core area results from the Wakkinen and Kasworm (1997) research effort are a reflection of bears actively choosing these areas and not an indication that they had a lack of opportunity to select home ranges with fewer roads. This evaluation supports our use of the Wakkinen and Kasworm (1997) study results in developing access parameters for grizzly bears in these two ecosystems.

Conversely, in the South Fork study, one of the authors' objectives was to examine the relationship between grizzly bear habitat selections in regards to road densities on multiple-use lands. To this end, they completed what they considered to be a second-order resource selection analysis comparing road densities within female grizzly bear home ranges to a larger study area dominated by multiple-use management[79] (Mace and Manley 1993 and Mace et al. 1996). The composite home range of their 13 female grizzly bears was characterized by a lower road density of 1.02 mi/mi^2 (0.6 km/km^2) with 56 percent of the area unroaded versus the rest of the study area where road densities were 1.86 mi/mi^2 (1.1 km/km^2) and 30 percent was unroaded (ibid). However, their analysis was not a 'true' second-order resource selection analysis because their

[78] Only the Selkirk recovery zone extends into British Columbia (B.C.). This assessment does not include areas within B.C.

[79] These areas were located on the Flathead National Forest and primarily included roaded areas where activities such as resource extraction and public recreation occur. Larger wilderness areas (e.g. Bob Marshall) and National Park lands (e.g. Glacier) were excluded from consideration. Inclusion of large tracks of unroaded habitat would have undoubtedly altered the statistical conclusions of the South Fork study data. However, given that the results were used to develop recommendations for road densities and secure habitat for application within these same multiple-use lands, their analysis was useful in answering this question—but does not represent a second-order analysis as defined by Johnson (1980).

study area only represented six percent of the entire Northern Continental Divide Recovery Zone (i.e., home range within an entire geographical range=second order selection analysis) (Johnson 1980). However, since their objective was to examine use in relation to roads on multiple use lands this analysis was useful in determining the cutoff in open and total motorized road densities tolerated by grizzly bears using these kinds of areas within the recovery area. In addition, the South Fork researchers completed a third-order resource selection analysis when they examined grizzly bear use within a female multi-annual (1987-1992) composite home range in relation to total road density (Mace and Manley 1993). A subsequent characterization of grizzly bear habitat using seven of the female grizzly bears from this study was used to set OMRD: TRMD: core standards for the Flathead NF (i.e., Flathead Amendment 19). The researchers did not re-assess their Mace and Manley (1993) analysis for core area, ORMD, and TMRD in their 1996 publication with a larger sample size of female grizzly bears (Mace et al. 1996).

To summarize, both the NCDE South Fork and SCYE studies were completed in multiple-use areas that were typified by varying levels of road densities and significant levels of resource management including timber harvest and recreation. The SCYE researchers did not complete a second-order selection analysis examining home range selection versus the respective recovery zone boundaries. However, our review of the home ranges in relationship to available core areas in both ecosystems indicates that bears had opportunities to select large blocks of unroaded habitat that included an array of vegetation types, elevations, slopes, and aspects throughout the respective recovery zones. Our review indicates that the road density and core area results from the Wakkinen and Kasworm (1997) research are a reflection of bears actively choosing these areas and not an indication that they had a lack of opportunity to select their home ranges with fewer roads. This is true both in terms of visual inspection and percentage of core area acres available outside home ranges but within the recovery zone boundaries. The South Fork researchers conducted a partial second-order resource selection analysis in that it was truncated to only include consideration of multiple-use dominated lands rather than the entire recovery zone. Both research efforts completed a third-order resource analysis to determine grizzly bear tolerances to open and total road densities.

Home Range Analysis

Another difference between the two studies involves the use of female home ranges in examining habitat use in relationship to the three access parameters. In both studies, researchers used the computer program CALHOME (Kie et al. 1996) and an adaptive kernel home range estimator (Worton 1987) with a 95 percent isopleth in calculating bears home ranges. However, the South Fork Flathead River researchers used a *composite* multi-annual (i.e., combination of multiple females) home range to examine this question in their 1993 progress report and 1996 publication (Mace and Manley 1993, Mace et al. 1996) while the Selkirk and Cabinet-Yaak effort was completed using an average of *individual* multi-annual home ranges (Wakkinen and Kasworm 1997).

In the case of the South Fork research, the study area and overlapping nature of the bear home ranges lent itself to characterizing overall female habitat use in relation to roads using one unified home range (Mace and Manley 1993; Mace et al. 1996). However, in their subsequent third-order seasonal habitat selection investigation for the South Fork study Mace et al. 1996 did not use composite home ranges from multiple bears because the authors recognized that "*pooling of individuals is not appropriate because resource availability and selection is unique to the individual bears*". Conversely, authors of the Selkirk/Cabinet-Yaak report were working with bears from two different disjunct recovery zones and it was not possible to combine habitat use into one unified home range. That being said, their use-availability analysis did provide OMRD: TRMD: core area data for the cumulative (or composite) home range within both recovery zones, and these levels are equal to or are worse (i.e., would protect less habitat) than the averages that characterize individual bear home ranges[80] (Table 2).

Table 2. Summary of composite, individual bear, and associated averages for motorized access parameters by recovery zone, 1989-1994 (from Tables in Wakkinen and Kasworm 1997).

Recovery Zone	Study Area	Home Range Category	Motorized Access Parameters		
			Percent OMRD > 1 mi/mi²	Percent TMRD > 2 mi/mi²	Percent Core Area
Selkirk	South (US)	Composite[1]	34.5	26.4	54.6
		Bear 867	28.1	25.1	55.3
		Bear 1015	34.9	27.3	53.4
		Bear 1984	16.7	14.3	71.5
		Bear 1087	35.4	23.8	53.7
		Average for Bears	28.8	22.6	58.5
Cabinet-Yaak	Yaak	Composite[1]	47.3	35.1	44.1
		Bear 106	34.5	27.7	53.3
		Bear 206	51.5	38.2	40.0
		Average for Bears	43.0	33.0	46.7
Average for all Bears in Both Recovery Zones			33.5	26.0	54.5

[1]Based on "available" habitat derived from individual home ranges that were layered on top of one another resulting in a cumulative area that was considered available to the bears in the recovery zone (Wakkinen and Kasworm 1997). This is equivalent to the approach used in developing a composite home range for the South Fork Flathead River study (Mace and Waller 1997).

IGBC direction was to develop these access parameters "utilizing the largest *individual* annual home ranges of adult females" (IGBC 1994). Wakkinen and Kasworm (1997) followed this guidance when analyzing their bear data. In addition, an independent peer-review of the Amendment 19 analysis on the use of a composite multi-annual home range notes "*that it may be misleading to describe a core area by defining a composite home range using all telemetry locations for all female bears. If some female bears have more locations than others then the composite home range will be biased towards those females and could, in turn, affect the results of core size and the amount of roads an "average" bear will tolerate. A median core size and median amount of roads tolerant to bears may be a better metric*" (McClellan et al. 2000). In the case of the SCYE, a median OMRD: TMRD: core area value for the six bears would be 35:26:54 percent.

Two significant differences that likely influenced the resulting home range and observed OMRD, TRMD, and core area include the following:

[80] Based on "available" habitat derived from individual home ranges that were layered on top of one another resulting in a cumulative area that was considered to be available to the bears in the recovery zone (Wakkinen and Kasworm 1997, pg 11). This is equivalent to the approach used in developing a composite home range for the South Fork Flathead River study (Mace and Waller 1997, pg 47 and 66). Available habitat for OMRD:TMRD:Core areas within the composite home range was derived from Tables 10, 8, and 12 of Wakkinen and Kasworm (1997). Within home range availability for individual grizzly bears is from Tables 11, 9 and 13 of Wakkinen and Kasworm (1997).

- From a biological perspective it is worth noting that adult female home ranges from the South Fork Flathead River study were, on average, **2.5 times smaller** than the home ranges defined by the six adult females in the Selkirk/Cabinet-Yaak study (Mace and Waller 1997, Wakkinen and Kasworm 1997)[81]. This suggests a significant difference in the availability and juxtaposition of preferred seasonal habitats between the two ecosystems (Blanchard and Knight 1991; McLoughlin et al. 1999). Additionally, bear populations between the two studies are very different, with notably higher densities of bears residing in the North Continental Divide Ecosystem and South Fork Flathead study area (Mace and Manley 1993; Mace and Waller 1997) than in either the Selkirk or Cabinet-Yaak Ecosystems (USDI Fish and Wildlife Service 1993). Social factors such as kinship, density, and population structure may significantly affect the resulting size of individual bear home ranges (Nagy and Haroldson 1990).
- Another important point regarding the development of the standards relates to the juxtaposition and availability of habitat by land ownership and the presence of Federal, state, or county highways within the composite home ranges of the study bears. The Wakkinen and Kasworm study bears were selecting habitats managed by multiple entities besides the Forest Service including the state of Idaho, private industrial forest companies, private land owners, and British Columbia provincial forestry lands where there were virtually no restrictions on motorized route development or associated vegetation management. Conversely, the study bears in the South Fork Flathead River study selected habitats located exclusively on NFS lands[82].

These differences help illustrate why application of standards developed in one area should not be applied to other populations without consideration of local conditions and variation in population parameters, habitat availability, and habitat selection. The IGBC took this into consideration when it advised recovery zone subcommittees to develop access standards based on local grizzly bear data (IGBC 1994).

To summarize, both research efforts used the same home range software and estimator when generating their female grizzly bear home ranges. However, the South Fork researchers chose to use a composite home range while Wakkinen and Kasworm (1997) opted to use the average of individual female home ranges, which is in line with IBGC direction. This approach provides a range of habitat selection data for review and development of management standards based on what an “average” bear will tolerate in regards to road density and available core area (range of

[81] **South Fork Flathead River:** 10 females; average = 48 square miles with a range in size of 18 – 105 square miles.
Selkirk/Cabinet-Yaak: 6 females; average = 120 square miles with a range in size of 83 – 335 square miles.
The Flathead NF BMUs (subunits) are correspondingly much smaller than those developed for the SCYE (USDA ForestService 2007).

[82] Application of the standards within individual BMUs differs among the three recovery zones. When applying the Amendment 19 standards, the Flathead NF does not include small private lands or large (>320 acres) lakes in core habitat calculations; and does not include small private lands, MS3 habitat, or large lakes in road density calculations: these acres are excluded from the acreage/percentage calculation after the buffering or moving window process was completed (Ake and Allen pers. comm. 2011, USDA Forest Service 1994a and 199b, USDI Fish and Wildlife Service 1995). This effectively eliminates motorized routes that occur off NFS lands. Conversely, forests in the SCYE include all roads on NFS and other lands as well as all lands regardless of ownership. While this difference in the application of standards would likely be inconsequential for BMUs where the majority of land ownership is managed by the National Forest (e.g., CYE—Cedar BMU; SE—Sullivan-Hughes BMU), it would create a more substantial disparity in BMUs with considerable small private parcels or highways/developments within or adjacent to their boundaries (e.g. CYE—Boulder BMU; SE—Lakeshore BMU). This may affect considerable variation in the on-the-ground results between the NCDE and the SCYE. For example, using the 2009 road condition as source data, analysis of Boulder BMU under the Flathead Amendment 19 protocol in ARC/Info would result in a 5 percent TMRD **decrease** (35 to 30 percent) compared to the methods currently employed in the SCYE. For this reason alone, it would be inappropriate to average the Flathead National Forest road density standards and standards derived from Wakkinen and Kasworm (1997).

variation). In the case of the SCYE study, both average and median values for individual access parameters (i.e., OMRD:TRMD:core area) from the Wakkinen and Kasworm (1997) study are within one to two percentage points of one another.

Core Block Size

Core block size has been identified as a possible concern for habitat conditions in the Selkirk and Cabinet-Yaak Ecosystems. Neither Wakkinen and Kasworm (1997) nor the various research conducted in the South Fork Flathead River area of the North Continental Divide Ecosystem (Mace and Manley 1993, Mace et al. 1996, Mace and Waller 1997 and 1998) established a minimum effective core block size. The Flathead NF Amendment 19 uses a minimum core area size of 2,500 acres (3.9 square miles). The Biological Opinion for the Flathead Amendment 19 (USDI Fish and Wildlife Service 1995) noted that 83 percent of some adult female grizzly bear use was in unroaded blocks greater than 2,260 acres in size in the preliminary Mace and Manley study, but no sample sizes were disclosed nor was any statistical analysis completed in the 1993 report or subsequent report or journal article to substantiate this (or the 2,500 acre) number (Mace and Manley 1993, Manley et al. 1996, Manley and Waller 1997). McLellan et al. (2000) observed that the 2,500-acre figure was based on a personal communication from researcher Tim Manley[83]. Wakkinen and Kasworm (1997) demonstrate that smaller-sized core blocks tended to be underutilized by their study animals – particularly those of less than two square miles (1,280 acres). However, while more than 97 percent of the use by successfully reproducing females in the SCYE occurred in blocks greater than two square miles, actual use occurred in blocks as small as 0.22 square miles (141 acres). Although both study areas produced similar trends, use statistically exceeded availability of habitat in that category in only one instance (block sizes of 8-10 square miles by Cabinet-Yaak Ecosystem females), and this pattern of significance was not repeated by this same group in the greater than 10 square mile size class. The researchers were unable to determine a minimum core size with the data set available, but suggested that **if** it occurred, it was likely between two square miles and eight square miles[84].

Within the Cabinet-Yaak Ecosystem, more than 95 percent of core habitat is in blocks greater than four square miles in size based on 2009 reporting data (Table 3). The amount of core in smaller blocks ranges from less than 5 percent of the KNF and IPNF portions of the Cabinet-Yaak Ecosystem, to about 7 percent of the LNF portion[85]. See Figure 3 for spatial distribution of core

83 Conversely, a U.S. Fish and Wildlife Service biologist serving on the IGBC SCYE Access Taskforce team suggested that this figure was based on a 24 to 48 hour grizzly bear foraging area (USDI Fish and Wildlife Service 1996).

84 An IGBC SCYE document states that SCYE "bears prefer large core polygons," with 90 percent of core use in blocks greater than ten square miles, and 95 percent of use in blocks greater than four square miles (IGBC SCYE 1997). This statement is seemingly at odds with an earlier statement from the same document that says "about 90 percent of bears used 4+ mi sq. for core." Moreover, the "ten square mile" statement misinterprets the results of the Wakkinen and Kasworm report it is supposed to have been based upon. Table 15 of the report shows that 88 percent of SE female locations, and 74 percent of CYE female core locations (half as many animals, but twice as many locations as the SE females) were in the greater than ten square mile category. The greater than 4 square mile category contained 94 percent and 89 percent of the SE and CYE female core locations, respectively. It is not clear how these numbers could be averaged out to 90 percent and 95 percent for the two categories. While the argument has been made that core blocks less than four square miles in size received "little use" in the Wakkinen and Kasworm (1997) study, blocks of this size accounted for about six percent and eleven percent of female core use in the SE and CYE, respectively.

85 Eleven of the 22 CYE BMUs (1, 2, 3, 4, 5, 7, 9, 13, 17, 20 and 21) contained more than 55 percent core in blocks larger than four square miles in 2009. Four other BMUs (8, 12, 14 and 15) had 54 percent of the BMU in core blocks larger than four square miles. Of the remainder, BMU 10 (Pulpit) currently has 45 percent in core blocks larger than four square miles, but contains 50 percent of the BMU in core blocks larger than two square miles (the Alternative E-Updated standard is 52 percent core in this BMU). Similarly, BMU 11 (Roderick) has 49 percent in core blocks larger than four square miles, but has 51 percent in core blocks larger than two square miles and will require further improvements to reach the 55 percent standard (which may consolidate or enlarge existing smaller core blocks). BMU habitats by block size category in the Cabinet-Yaak Ecosystem. Every BMU in the Cabinet-Yaak Ecosystem contains a portion of a large, interconnected core area block that is contiguous between adjacent BMUs. Six of 22 BMUs have core blocks of 4-8 square miles (Pulpit, Newton, East Fork Yaak, Spar, North Lightning and Mt. Headley), all of which are between four and six square miles except North Lightning (seven square miles).

Table 3. Number of core blocks by size category in the Cabinet-Yaak Ecosystem, 2009

Predominant Administrative Unit	Bear Management Units (BMUs)	Core Block Size (square miles)		
		< 2	2-4	> 4
Kootenai National Forest	BMUs 1-17	87 blocks 16,511 acres 2.3%	7 blocks 14,017 acres 1.9%	21 blocks 695,596 acres 95.8%
Lolo National Forest	BMU 22	16 blocks 2,694 acres 3.2%	2 blocks 3,474 acres 4.2%	4[2] blocks 77,206 acres 92.6%
Idaho Panhandle National Forest	BMUs 18, 19, 20, and 21	26[1] blocks 4,739 acres 3.6%	1 blocks 1,302 acres 1.0%	5[1] blocks 126,789 acres 95.4%
	Total	128 blocks 23,944 acres 2.5%	10 blocks 18,793 acres 2.0%	27 blocks 899,591 acres 95.4%

1. Indicates one core area block shared with KNF
2. Indicates two core areas shared with the KNF

Analysis of the SE core habitat is limited to BMUs encompassed by or largely within the IPNF, and therefore does not include the LeClerc BMU (which is administered by the Colville NF) or the State Lands BMU (administered by Idaho Department of Lands). Table 4 shows the number of core habitat blocks within this portion of the SE by size category at the end of 2009. See Figure 4 for spatial distribution of core habitat by block size category in the Selkirk ecosystem.

Table 4. Number of core habitat blocks by size category in the Selkirk Ecosystem, 2009

Administrative Unit	Core Block Size (square miles)		
	< 2	2-4	>4
Idaho Panhandle National Forest **Total**	46 blocks 9,471 acres 3.1%	2 blocks 3,298 acres 1.1%	8 blocks 294,467 acres 95.8%

16 (E ast Fork Yaak) has roughly 53 percent in core blocks larger than four square miles, and this percent may also increase as the BMU is brought up to the 55 percent standard. BMU 6 (Wanless) also contains 52 percent core in blocks larger than two square miles (46 percent larger than four square miles), with core increases needed to meet the proposed standard. BMU 18 (Boulder) and 22 (Mt. Headley) contain 47 percent core in blocks larger than four square miles, but this will likely increase since the addition of at least 4 percent core is needed in these BMUs. BMU 19 (Grouse) is less than 75 percent federal ownership, and is unlikely to ever contain 55 percent core habitat. Nonetheless, more than 20,000 of the current 21,285 core acres are in blocks larger than four square miles.

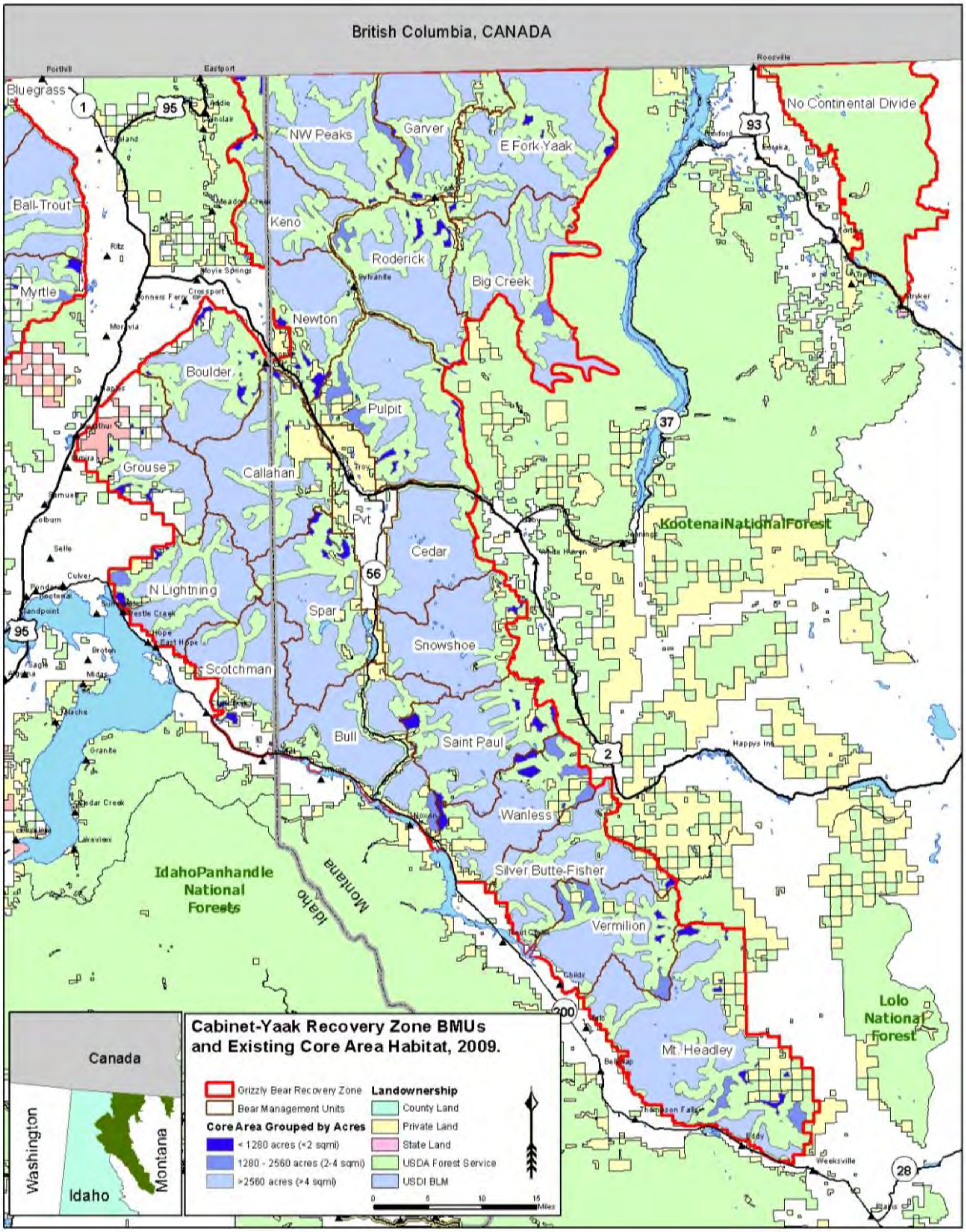

Figure 3. Cabinet-Yaak Recovery Zone core area habitat by core block size in 2009.

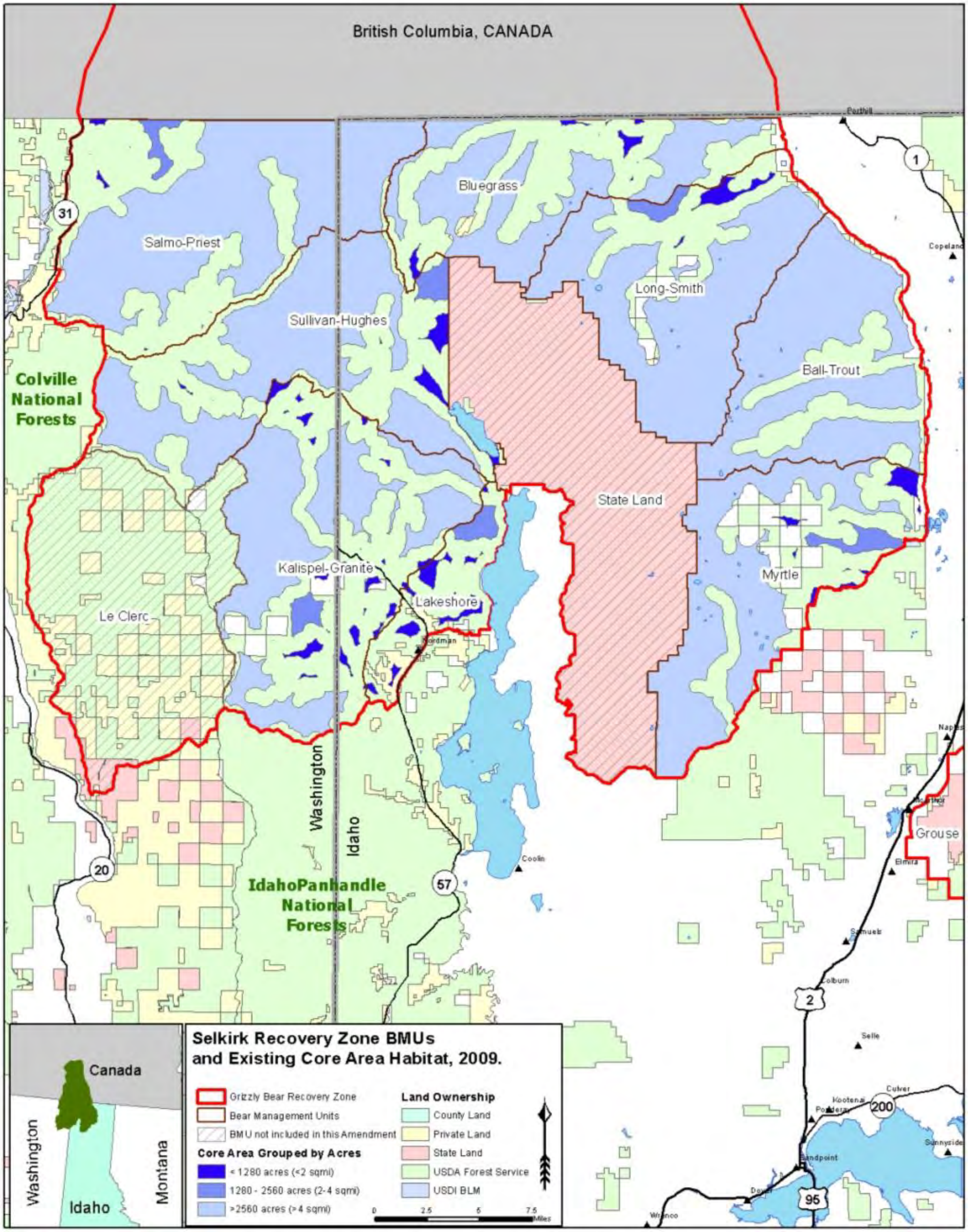

Figure 4. Selkirk Recovery Zone core area habitat by core block size in 2009.

Similar to the CYE, about 96 percent of core in the SE is in habitat blocks greater than four square miles in size. Five of the eight BMUs affected by the Forest Plan Amendments for Motorized Access[86] decision contain more than 55 percent core in blocks greater than four square miles in size. Kalispell-Granite BMU currently contains 45 percent core in larger blocks, but this number will increase to 53 percent once the Lakeview-Reeder Roads Decision is fully implemented (under contract to be completed in 2011). It has long been acknowledged that Lakeshore BMU is unlikely to meet research standards due to its small size (about 30 square miles), mixed land ownership, and high proportion of Management Situation (MS) 3 lands (USDI Fish and Wildlife Service 1993). Blue-Grass BMU currently contains about one percent core in small (less than two square miles) blocks, and will likely continue to even once the 55 percent threshold is achieved. Similar to the CYE, all SE BMUs contain large blocks of interconnected core habitat that is contiguous between adjacent BMUs. Furthermore, the issue of core blocks greater than four square miles versus core blocks greater than eight square miles is moot in the SE. Only one core block greater than four square miles (split between the Lakeshore and Kalispell-Granite BMUs) is less than eight square miles in size, and only so by less than ten acres.

Both ecosystems, taken as a whole, currently meet or exceed the percentage of core habitat in blocks greater than two square miles in size that was preferred by reproducing female grizzly bears in the Wakkinen and Kasworm (1997) study (i.e., 97 percent). This situation has improved considerably in both ecosystems since the 1989-1994 time periods[87] when their bear data were being collected (see Figures 1 through 4)[88]. Furthermore, maintaining scattered, small blocks of core habitat provides the starting point for the possibility of building larger blocks of core around those areas in the future and to connect existing core areas. In order to meet core habitat standards set forth in the Motorized Access Amendment, several BMUs in each ecosystem will have additional core created during implementation of the proposed action. It is likely that the percentage of core habitat consisting of larger blocks (greater than four square miles) could increase further.

In summary, while Wakkinen and Kasworm (1997) showed grizzly bear use increased with larger core habitat block size, they were ultimately unable to identify a block size below which grizzly bear use was less than expected (i.e., avoided). However, the percentage of core habitat in small blocks is currently low in both recovery zones and is likely to be further reduced as additional larger blocks of core habitat are created. Of the 22 Cabinet–Yaak Ecosystem BMUs, 15 contain at least 54 percent core habitat in patches larger than four square miles, and five others contain about 50 percent core in patches larger than two square miles (the lower end of the range the study authors suggested may represent a minimum area of core utility). Similarly, six of the eight Selkirk Ecosystem BMUs affected by the Forest Plan Amendments for Motorized Access contain (or will upon completion of existing projects) more than 53 percent core in blocks larger than four square miles, with core improvements in the Blue-Grass BMU likely to occur in this size category. Finally, lacking clear research evidence that core areas of smaller size are actively

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86 Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones.

87 For example, see Summerfield et al. (2004) Figure 9, which spatially displays growth and consolidation of core areas in the Garver BMU between 1987 and 2001.

88 Secure grizzly bear habitat on NFS lands (i.e., core area) has increased in the Selkirk and Cabinet-Yaak recovery zones by approximately 390,015 acres (Selkirks=74,150; Cabinet-Yaak=315,865 acres) from the days of maximum road construction and use (Figures 1 and 2) to conditions in 2009 (Figures 3 and 4). **This equates to more than an 11 and 18 percent increase in overall core area in the Selkirk (U.S. only) and Cabinet-Yaak recovery zones, respectively, since implementation of habitat security measures began in the late 1980s.**

avoided by bears as non-core areas are, there is currently no biological basis to discount or ignore smaller blocks of core.

GIS and Moving Windows Data Analysis Comparisons between the SCYE and NCDE Studies

Direct comparison of OMRD: TMRD: Core findings among the Mace and Manley (1993) report, the Flathead National Forest Amendment 19 (USDA Forest Service 1994a) analysis of some of the bears from the Mace and Manley {1993} report), the Mace et al. (1996) publication, and the Wakkinen and Kasworm (1997) report, is problematic due to many differences in the way the data were analyzed and presented. These differences included: 1) GIS software used for the moving window analysis[89] to determine open and total road densities (EPPL7 versus ERDAS versus ARC/Info); 2) Size and shape of moving window (1 km^2 versus 1 mi^2 and square versus round); (3) road buffering distance (0.5 mile versus 500 meters/0.31 miles); and 4) exclusion or inclusion of private property, some motorized routes, and MS3 designated lands (Attachment B). To summarize:

- Mace and Manley (1993) ran their moving windows analyses using the EPPL7 program – an early, raster (grid)-based GIS software developed by the State of Minnesota. In the analysis for the development of Amendment 19 (USDA Forest Service 1994a and 1994b), the standards were developed using EPPL7, although the Flathead NF used ERDAS to describe their environmental baseline (ERDAS, Inc.; Atlanta, GA) – also a raster-based program, but somewhat more robust than EPPL7 – and later ARC/Info ((Ake and Allen pers. comm. 2011). Wakkinen and Kasworm (1997) used ARC/Info software (Esri, Inc.; Redlands, CA) to calculate road density values. ARC/Info is a vector (line)-based GIS, and therefore offers advantages with respect to mapping accuracy of linear features (roads) (Attachment B). All three software packages involve rasterization: a conversion of a vector feature (such as roads) to a raster feature to conduct the moving window analysis. In ARC/Info, the moving window output is then converted back to a vector feature for final percentage calculations. While EPPL7 and ERDAS use similar algorithms for rasterization, ARC/Info uses a very different algorithm. The result is that approximately 18% more cells take on the identity of the linear feature in the rasterized file when using ARC/Info compared to EPPL7 and ERDAS (Ake and Allen pers. comm. 2011). This difference in estimation of total road miles during the rasterization process is then carried over to the final density layer. Wakkinen and Kasworm (1997) calculated this "correction factor" to be 0.805[90], and incorporated it into the table used to define density classes[91].

- Additionally, the three different analyses used slightly different "windows" to determine road densities. Mace and Manley employed a 1 mile^2 square window (1993) and a 1 km^2 square window (Mace et al. 1996), the Flathead Amendment re-analysis used a 1 mile^2 square window (USDA Forest Service 1994a), and Wakkinen and Kasworm (1997) used a 1 mile^2 circular window (Attachment B).

[89] As defined originally by Turner and Gardner (1990). To determine a moving window density, motorized routes were buffered to create density contour maps based on a set pixel (cell) size. Effective road density around each pixel was determined by calculating the amount of road within a set window distance (e.g. 1 mi^2) around each pixel (Wakkinen and Kasworm 1997).

[90] Rasterization would result in one mile of road for every 0.805 actual miles.

[91] The "remap" table in the "SLICE" step.

While developing Amendment 19, the Flathead National Forest ran several moving window comparisons using different combinations of GIS software and input parameters (circular and square windows of varying sizes; Ake and Allen pers. comm. 2011). Regarding shape (circular versus square) of the moving window, their analysis found that the percentages were generally within one percent of each other, but could differ by between one and 3.5 percent about 33 percent of the time[92].

Comparison of different software packages disclosed percentage differences that were somewhat larger still between the different software than between differing window shapes. Besides the raster- and vector-based programs using different algorithms to rasterize vector features (discussed above), EPPL7 also had a tendency to place more cells in lower density classes than ERDAS when running identical datasets. This would result in lower density estimates for OMRD and TMRD when using EPPL than when running the same data using ERDAS. The author of the Flathead Amendment 19 analysis protocol cautioned that "*the same software package must be used for all analyses so that results are comparable*" (Ake and Warren 1995).

We did not have access to direct comparisons between a 1 mi^2 versus 1 km^2 window size. This would be impossible to do after the fact, since the results would have to be converted to like units prior to being placed in the various density classes. It is unclear how this would affect the higher density classes used for OMRD and TMRD calculations, but it is obvious from our cursory analysis, and from the analysis done for Flathead Amendment 19, that relatively more cells fall into the "0.0" category with smaller window sizes (1 km^2 compared to 1 mi^2.

The IGBC recognized the differences in research, data collection, and analysis among the various grizzly bear research efforts, and noted that, "as such, the data sets lend themselves to dissimilar analysis with which to develop access management strategies" (IGBC 1998). Despite this assessment, many comparisons have been made between the Wakkinen and Kasworm (1997) results and the standards established for the Flathead National Forest Amendment 19. In the 2006 litigation, plaintiffs drew attention to the comments made by biologists from the Spokane U.S. Fish and Wildlife Service office. In one instance, a biologist made the suggestion to "average" the results from the two studies in 1998 after the Access Taskforce team presented the results of the Wakkinen and Kasworm study to the SCYE IGBC subcommittee (USFWS 1998). No rationale was provided by this biologist to support pooling information from the two studies. Subsequent discussion and review by the SCYE Subcommittee members (of which the Spokane USFWS Field Supervisor was a member) in 1999 resulted in unanimous support of the Interim guidelines and rule set based on the Wakkinen and Kasworm study results alone. The Spokane USFWS office later used Wakkinen and Kasworm (1997) as the "best available indication of habitat conditions used by grizzly bears in the Selkirk and Cabinet-Yaak Ecosystems" in completing their 2001 amended Biological Opinion regarding the continued operation of the Idaho Panhandle National Forest Plan (USFWS 2001).

In conclusion, each of the OMRD:TRMD:core area analyses were conducted using different GIS software and parameters, and the three methods should not be expected to reliably produce similar results from identical data. Notable differences in the amount of core area (i.e., 68 percent—Flathead Amendment 19) versus roadless areas (i.e., 46 and 56 percent—Mace and

[92] Results were compared across 14 BMUs. Using a 1 mi^2 window, 6 of 14 BMUs had >1% error in the ">2" column (representative of what is reported for TMRD), but only 2 of 14 had >1% error in the added ">2" and "1.1-2.0" columns (representative of OMRD) – resulting in >1% error 29% (8 of 28) of the time. Using a 1 km^2 window size, 8 of 14 BMUs had more than 1% error in the ">2" column, and 2 of 14 in the added ">2" and "1.1-2.0" columns – giving a >1% error rate of 36% (10 of 28).

Manley 1993; Mace et al. 1996) to describe the composite home range of South Fork Flathead River female grizzlies bears from 1987-1992 and 1990-1994, respectively, demonstrates how differences in data analysis parameters, software, and the pool of female bears used in the evaluation can contribute to very different results. Attempting to "pool" road density data with research from the Selkirk and Cabinet-Yaak Ecosystems that incorporated not only completely different software, but differing criteria for inclusion/exclusion of roads and habitat areas—let alone significant differences in habitat selection as reflected in dramatically different home range sizes—is biologically unsound and statistically problematic.

Conclusions

We conclude that the Wakkinen and Kasworm (1997) report provides the best data available for determining recommendations for the management of grizzly bear habitat in relationship to motorized routes for the Selkirk and Cabinet-Yaak Ecosystems. The subject bears included six female grizzly bears that successfully produced at least two or more offspring before or during the research period (1989-1994) and represented 15 percent of the estimated population of grizzly bears occupying the two ecosystems at that time. Sample sizes were small, but were in line with the South Fork Flathead River research efforts examining the same relationship between grizzly bears and roads. This was a reflection of the difficulty in researching a wide-ranging and low density animal and was not a result of a lack of effort to obtain a larger sample size of successfully reproducing female grizzly bears within the SCYE. In addition, inclusion of some habitat selection data from the one study bear that was an independent subadult for one year of the study did not alter the results of the analysis, because she continued to use the same general home range area even after maturing.

The Wakkinen and Kasworm (1997) study bears represented a "successful" portion of the population based on documented reproduction by all six bears. Indeed, bear 106 is known to have produced 13 cubs from the time of her capture in 1986 until her death in 1999. Moreover, at least five of the six bears are known to have produced cubs that survived to dispersal with at least four female cubs successfully producing cubs during—and well after—the study was completed. Likewise, the death of two Selkirk study bears at the hands of hunters after the study was completed does not render their habitat selection data invalid or biased, as the selection of more secure habitat would not have necessarily prevented these mortalities. It is clear from research in the North Continental Divide, Selkirk, Cabinet-Yaak, and Yellowstone Ecosystems that human-caused grizzly bear mortality is not a simple function of the availability of motorized access. Rather, grizzly bear mortality risk is also heavily influenced by the existence of state and provincial authorized big game hunting seasons, the availability of human-produced attractants that draw in and potentially habituate grizzly bears, and the amount and juxtaposition of private property and its associated development.

Furthermore, while the researchers did not evaluate home range selection in relationship to motorized routes within the entire recovery zone (i.e., second order selection) our examination of the six home ranges in relationship to a conservative picture of core areas available during the late 1980s demonstrates that the study bears did indeed have other large areas devoid of motorized routes that they could have utilized throughout ecosystem in the early 1990s. Many of these unroaded habitats were as large—or larger—than the observed multi-annual home range sizes of the six bears and included a range of habitats by elevation, slope, aspect, and cover type. This information supports our conclusion that the road density and core area results from the Wakkinen and Kasworm (1997) research are a reflection of bears choosing these areas—and their associated road densities—and not an indication of a lack of opportunity to select home ranges characterized by lower road densities.

Wakkinen and Kasworm (1997) were unable to determine if a minimum effective core block size existed from their data. Likewise, a minimum core block size similarly was never established for the South Fork Flathead River research, although the Flathead National Forest's selection of 2,500 acres appears to have some connection with the preliminary radio-telemetry findings as of 1993. Regardless, only a small proportion of BMUs in the Selkirk and Cabinet-Yaak Ecosystems contain core in patches smaller than 2,500 acres, and the current overall distribution of core size in both of these ecosystems closely reflects that used by reproducing female bears in the Wakkinen and Kasworm (1997) study. While it is possible that core blocks of larger size may be preferred by grizzly bears, there presently is insufficient justification for dismissing smaller core blocks in the Selkirk and Cabinet-Yaak Ecosystems.

Finally, results of research conducted in the Selkirk and Cabinet-Yaak Ecosystems (Wakkinen and Kasworm 1997) are difficult to directly compare against those used to develop the Flathead National Forest's Amendment 19 for a number of reasons. Different software packages and moving windows analysis parameters have been shown to produce contradictory results up to one-third of the time. Additionally, contrasting differences in land ownership patterns within the composite grizzly bear home ranges between the two studies likely influenced the resulting habitat use patterns in regards to available motorized routes, making direct comparison inadvisable and problematic.

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REVIEWED BY

Wayne Kasworm (April 2011)
Wayne Wakkinen (April 2011)
Kathy Ake (August 2011)

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Attachment A. Summary of known productivity, relationship among study animals, and causes of death for the female study bears used in the Selkirk/Cabinet-Yaak and South Fork Flathead River grizzly bear projects. Gray shaded areas represent the time period that individual bear relocation data was included in the respective study for evaluation of habitat selection in relation to roads. Data from Kasworm et al. 2009, Mace & Manley 1993, Mace et al. 1996, Mace & Waller 1997, and Wakkinen & Johnson (2000). NA=Not Applicable; Unk=Unknown (dropped/failed collar).

Ecosystem	Bear ID#	Year		Age[1] OR Productivity of radio-collared female grizzly bears (number young/age of young)										Status[2]	Comments
		1st Captured	Born	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994		
Selkirk	867	1983	1978	2/0.5	1/1.5	2/0.5	2/1.5	2/2.5		1/0.5	2/1.5	2/0.5	NA	Dead	Poaching mortality 11/93
	1015	1985	1980	A	A	2-0.5	2/1.5	2/2.5	2/0.5	2/1.5	2/2.5	NA	NA	Dead	Self Defense mortality 9/92
	1984	1987	1969	-	-	2/2.5	A	A	A	A	Unk	Unk	Unk	Unknown	Collar failed 10/91
	1087	1987	1979	-	-	A	A	3-0.5	Unk	Unk	Unk	Unk	Unk	Unknown	Collar dropped 9/89
Cabinet - Yaak	106[a]	1986	1978	-	2/0.5	1/1.5	3/0.5	3/1.5	3/2.5	2/0.5	2/1.5	2/0.5	2/1.5	Unknown	Collar dropped 7/94
	206[a]	1990	1988	-	-	-	-	-	SA	SA	SA	A	2/0.5	Unknown[3]	Collar failed spring of '94
Northern Continental Divide South Fork Flathead River Study	1[b]	1987	1975	-	-	2/1.5	2/2.5	NA	NA	NA	NA	NA	NA	Dead	Mistaken ID mortality 5/88.
	97	1988	1972	-	-	-	A	NA	NA	NA	NA	NA	NA	Dead	Natural causes 9/88
	14	1989	1977	-	-	-	-	A	2/0.5	2/1.5	2/2.5	Unk	Unk	Unknown	Unsure of status after 1992
	5	1987	1979	-	-	A	A	A	A	1/0.5	1/1.5	1/2.5	Unk[4]	Active	Unsure of status after 1993
	45	1990	1970	-	-	-	-	-	A	1/0.5	1/1.5	1/2.5	Unk[4]	Active	Unsure of status after 1993
	48[c]	1990	1979	-	-	-	-	-	A	2/0.5	2/1.5	2/2.5	Unk[4]	Active	Unsure of status after 1993
	94	1988	1979	-	-	-	A	2/0.5	2/1.5	2/2.5	1/0.5	1/1.5	1/2.5	Active	
	96[d]	1988	1972	-	-	-	3/1.5	3/2.5	A	2/0.5	2/1.5	2/2.5	2/3.5	Active	
	143	1988	1982	-	-	-	A	A	A	2/0.5	NA	NA	NA	Dead	Natural death w/cubs in 5/91
	3[b]	1987	1986	NA	NA	SA	SA	SA	SA	A	A	NA	NA	Unknown	Collar dropped ≤1992
	8[c]	1993	1991	NA	NA	NA	NA	NA	NA	-	-	SA	SA	Active	
	18[d]	1990	1987	NA	NA	NA	NA	NA	SA	SA	1/0.5	1/1.5	1/2.5	Active	
	26	1992	1987	NA	NA	-	-	-	-	-	A	A	A	Dead	Mistaken ID mortality, 9/94
	69	1992	1988	NA	NA	NA	-	-	-	-	SA	A	A	Active	
	137[d]	1988	1987	NA	NA	-	SA	SA	SA	SA	A	NA	NA	Unknown	Collar failed ≤1992
	147[b]	1987	1986	NA	-	SA	SA	SA	2/0.5	2/1.5	2/2.5	A	NA	Dead	Management Removal mortality 9/93

[1] A = Adult; SA = Subadult (<5 years old)
[2] Known status at completion of project.
[3] Known to have successfully produced at least two sets of cubs from 1994-1999
[4] Unsure whether this bear was still collared/alive in 1994. This review assumes these 3 bears were likely alive and part of the South Fork Study in 1994.

[a] Indicates Cabinet-Yaak ecosystem mother/daughter relationship
[bcd] Indicates Northern Continental Divide ecosystem mother/daughter relationship

Mace and Manley (1993) bears (N=9 bears)   **Flathead Amendment 19 (1994) bears (N=7 bears)**   **Mace et al. (1996) bears (N=13 bears)**

Attachment B. Summary of data analysis and biological data used in the South Fork Flathead River study in the Northern Continental Divide grizzly bear recovery zone versus the Selkirk and Cabinet-Yaak recovery zones.

	Grizzly Bear Study Area Research Parameters	Grizzly Bear Ecosystem, Research Effort Authors, and Reporting Method			
		Northern Continental Divide (Mace and Manley 1993) *Progress Report*	**Northern Continental Divide Flathead NF Amendment 19** *Additional Characterization of Mace & Manley data for FS document by R. Mace*	**Northern Continental Divide (Mace et al. 1996)** *Journal Article*	**Selkirk/Cabinet-Yaak (Wakkinen and Kasworm1997)** *SCYE IGBC Report*
Study Area	Recovery Zone Area (mi^2)	9,575 mi^2- NCDE	9,575 mi^2- NCDE	9,575 mi^2- NCDE	2,200 mi^2-Selkirk Mountains (US/BC) 2600 mi^2- Cabinet-Yaak (US)
	Study Area (mi^2)-Multiple Use	563 mi^2- S. Fork Flathead	563 mi^2- S. Fork Flathead	563 mi^2- S. Fork Flathead	829 mi^2 (composite home range of 6 bears)
	Land Ownership of Composite Home Range	National Forest only	National Forest only	National Forest only	Mixed Ownership—NFs, B.C. provincial lands, Idaho state lands, industrial forests, & private
	Study Period	1987-1992	1987-1992	1990-1994	Selkirks:1989-1991 / Cabinet-Yaak:1990-1994
Data Analysis & Access Parameters	Home Range Estimator	CALHOME—95% Adaptive Kernal	CALHOME—95% Adaptive Kernal	CALHOME—95% Adaptive Kernal	CALHOME—95% Adaptive Kernal
	Type of Data Used to Quantify Habitat Use	3rd Order—Composite Multi-Year	No	Partial 2nd Order--Composite Multi-Year 3rd Order—Individual Multi-Annual	3rd Order—Individual Multi-Year Average
	Use:Availability Order of Selection Completed[1]	Partial 2nd Order 3rd Order of Selection	No	Partial 2nd Order 3rd and 4th Order of Selection	3rd Order of Selection
	Open Motorized Route Density (OMRD) >1.0 mi/mi^2	Males + Females = **13%**	**19%**	Not reported--"*Not the author's aim to evaluate sensitivity of varying road density scales to grizzly*"	**33%** (Individual values for six female grizzlies = 28.1, 34.9 16.7, 35.4, 34.5, and 51.5%)
	Total Motorized Route Density (TMRD) >2.0 mi/mi^2	Males + Females = **22%** Females only = **18%**	**19%**	Not reported--"*Not the author's aim to evaluate sensitivity of varying road density scales to grizzly*"	**26%** (Individual values for six female grizzlies = 25.1, 27.3 14.3, 23.8, 27.7, and 38.2)
	Description of non-motorized areas available in the Home Range	**46% Unroaded**	**68% Core Area**	**56% Roadless Area**[2]	**55% Core Area** (Individual values for six female grizzlies = 40.0, 53.3, 53.4, 53.7, 55.3, and 71.5%)
	GIS Software	**EPPL7** 1-mi^2 square window	**EPPL7**[3] 1-mile^2 square window	**EPPL7** 1-km^2 square window	**ARC Info** 1-mile^2 round window
	Road Buffer	**0.5 miles**	**500 meters/0.31 miles**	**NA**	**500 meters/0.31 miles**
Biological Data	Estimated Population Size	Recovery Zone: 306 (USFWS 1993) Project Area: 36-48	Recovery Zone: 306 (USFWS 1993) Project Area: 36-48	Recovery Zone: 306 (USFWS 1993) Project Area: 36-48	Recovery Zone: 40 (USFWS 1993) (i.e., 25 Selkirks; 15 Cabinet-Yaak)
	Average Home Range Size	Average (Range) = **48** (18-105) sq. miles (derived from 10 females used in the overall study)			Average (range) = **120** (83-335) sq. miles
	# of Females/Average Age[4]	**9 / 13.1 years old**	**7 / 12.5 years old**	**13 / 10.9 years old**	**6 / 11.5 years old**
	Age Distribution of Females[5]	9 Adults	7 Adults[6]	6 Adults: 7 Subadults[7]	5 Adults:1 Subadult[8]
	% Representation of Total Estimated Population	NCDE Recovery Zone: < 3% Project Area: 19-25%	NCDE Recovery Zone: < 2 % Project Area: 15-19%	NCDE Recovery Zone: 4% Project Area: 27-36%	SCYE Recovery Zone;15% (Larger project included 38% of total pop.)
	Reproduction	Yes-8 females produced cubs	Yes-all 7 females produced cubs	Yes-8 females produced cubs	Yes-all 6 females produced cubs
	Mortality During Study Period?	Yes-3 mortalities (1 Human; 2 Natural)	Yes-1 natural mortality	Yes, 2 females killed in 1993 & 1994[9]	No
	Mortality After Study Period?	No	No	No	Yes- 2 Selkirk bears killed in 1992-93[10]

1 Resource section includes first order (geographic range of a species), second order (individual home range within a geographical range), third order (use of habitats within the home range), and fourth order (use of particular elements within the home range) (Johnson 1980).
2 Mace et al. (1996) reported "roadless areas" (0 km/km^2).
3 Described as being analyzed by R. Mace (EPPL7) using Forest Service data (USDA Forest Service 1994a, 1994b; Allen and Ake pers. comm. 2011).
4 Average age was determined by computing the average age of study bears each year of the study and then calculating the average for the study period.
5 Grizzly bears are considered as adults at age five, although Mace and Waller (1997) documented reproduction of one of their female grizzlies at age four.
6 Assumes that three females (#1, #44, and #97) that died of human and natural causes were not included in this subset of the Mace and Manley (1993) females.
7 Seven bears were included in the 1990-1994 study effort that were subadults when first collared. In no single year did subadults outnumber the adults in the study sample. This resulted in a ratio of adults:subadults of 7:3 in 1990, 8:2 in1991, 10:1 in 1992, 9:1 in 1993, and 8:1 in 1994.
8 Bear 206 was a subadult for two (1991-92) of the three years (1991-1993) she was used in the study.
9 Bear 147 was destroyed in a management removal after becoming habituated to humans. Two of her offspring (male and female) were destroyed in 1992 for the same reason. Bear 26 was killed in a mistaken identity shooting in 1994.
10 Bear 1015 was shot in a self-defense killing in B.C. in 1992; bear 867 was shot in a malicious killing in 1993.

Attachment C.Development of Road Layer for Resource Selection Assessment

We developed a GIS road layer reflecting a conservative approximation of the amount of core habitat the study bears experienced before and during the tenure of the research effort as part of our review of Wakkinen and Kasworm (1997).

Rationale for Our Approach: The majority of new road construction occurred in the recovery zones during the late 1960s through the early 1980s in association with timber harvest on NFS, state, and commercial timber lands. Subsequent post-harvest activities (such as burning, planting, and precommercial thinning contracts) continued for many years after the original harvesting which necessitated keeping many (if not most) of these roads open for some level of administrative use. Beginning in the late 1980s, the Forests began implementing grizzly bear habitat security standards (i.e., Habitat Effectiveness) by installing administrative use-only gates and closing roads. However, these were often ineffective at keeping motorized use at minimum levels or eliminating motorized use all together due to ineffective design and vandalism during these early days of implementation (Platt 1992, USDI Fish and Wildlife Service 1993). Likewise, administrative use levels in the late 1980s and early 1990s were not as stringent as defined in more recent times (i.e., <1 trip per day, Wakkinen and Kasworm 1999). Therefore, we concluded that a conservative assessment of how much secure habitat (i.e., core) was available to the six study bears should consider **all** roads known to have been constructed before 1994 as well as all roads of unknown construction date-—and consider all of them to be accessible by motorized vehicles.

Using this conservative approach, a map of available core habitat and TMRD was developed by combining the 1987 Forest Plan roadless areas and designated and proposed wilderness on NFS lands and then buffering the following road layers by 0.31 miles (500 meters):

- roads from the 2011 Idaho Department of lands roads layer;
- all Idaho Panhandle National Forest roads built prior to 1994 (using Forest Service INFRA database); and
- all Kootenai National Forest roads (using Forest Service INFRA database).

As such, these unroaded areas do not necessarily reflect that actual on-the-ground conditions that existed in the SE from 1989-1991 or Cabinet-Yaak Ecosystem from 1990-1994[93]. Rather they reflect the **most conservative** (and roaded) portrayal of what would have been available across these large landscapes during this time period and provide the best characterization of what grizzly bears were experiencing prior to implementation of habitat security measures dictated by the Forest Plans (i.e., 1986-1987). We recognize that some roads included in this portrayal were actually constructed throughout the 1990s (especially on commercial forest lands and state lands where the roads inventory database information is sparse) and that others were so grown over as to be considered barriered (and part of core habitat) in the Wakkinen and Kasworm (1997) study. However, these types of instances occurred both within the home ranges and throughout the recovery zones, so the comparison between the two is consistent in this regard.

[93] The original Wakkinen and Kasworm road layer reflected on-the-ground conditions in Selkirks and Cabinet-Yaak ecosystems in 1990 and 1991, respectively.

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Appendix D. Analysis of Public Comment on the Draft Supplemental EIS

Introduction

The Idaho Panhandle, Kootenai, and Lolo National forests released the "Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones" Draft Supplemental EIS in the Federal Register on May 8, 2009 to begin the official comment period, which ended on June 22, 2009. The Forests received a total of 86 comment letters from tribes, individuals, organizations, agencies, business owners, and elected officials and were received by U.S. Post Office or email.

All of the comment letters were analyzed using a process called content analysis, which was completed by a third-party contractor (see detailed process in the project record). In addition to the reports that were produced from the content analysis process, the interdisciplinary team members read all of the comment letters. Of the 86 comment letters that contained unique and substantially different comments, there were 857 comments that were coded, analyzed, addressed, and entered into a Microsoft Access database. The 857 comments were then associated with public concern statements and the interdisciplinary team then developed responses to each of them. There were 167 public concern statements and they begin on page 359 of this Appendix.

Content Analysis Process

The Forest Service followed a systematic process of carefully logging in, numbering, reading, coding and summarizing all viewpoints and concerns that were submitted. The comments that were most helpful were those that were unique, substantially different, and were specifically related to the analysis disclosed in the DSEIS. In addition to capturing unique and substantially different comments, this report attempts to reflect the emotion and strength of public sentiment in order to represent the public's values and concerns as fairly as possible. When an individual raised multiple concerns within the same letter, each unique comment was numbered and tracked separately. Each comment was assigned a unique tracking number and coded by subject or topic (see project record for coding structure).

Once the unique and substantially different comments were coded, concerns raised by different commenters on the same subject and with the same intent and issue were grouped and summarized into public concern statements that capture the essence of those similar concerns. In this way, multiple comments may be addressed by one response. In some cases, more nuanced or complex concerns may be answered through multiple responses to multiple concern statements, or they may have a single response dedicated to just that specific commenter. It is important to keep in mind that even though the public concern statements attempt to capture the full range of public issues and concerns, they should be reviewed with the understanding that there is no limitation on who submits comments. Therefore, the comments received do not necessarily represent the sentiments of the public as a whole. This report attempts to provide fair representation of the wide range of views submitted. Every comment has the same value, whether expressed by many, or by one respondent. Analyzing comments is not a vote-counting process. The Forest Service response to the public comments, which in some cases resulted in changes to the SEIS, was not determined by majority opinion but rather by the substance of the comments. The content analysis process ensured that every comment was read, analyzed, and considered.

Demographics of the Comment Letters

Demographic analysis presents an overall picture of respondents: where they live, their general affiliation to various organizations or government agencies, and the manner in which they respond. The database that was used contains public comments organized by subject and then category and demographic information. This kind of database can be used to show public comment from certain geographic locations or show comments associated with certain types of organizations. Thus demographic coding, combined with comment coding, allows managers to use the database to focus on specific areas of public concern linked to geographic area, organizational affiliation, and response format.

It is important to recognize that the consideration of public comment is not a vote-counting process in which the outcome is determined by the majority opinion. Relative depth of feeling and interest among the public can serve to provide a general context for decisionmaking. However, it is the uniqueness, appropriateness, and factual accuracy of comment content that serves to provide the basis for modifications to planning documents and decisions. Further, because commenters are self-selected, they do not constitute a random or representative public sample; therefore, caution should be used when interpreting the demographic information. While demographic information can provide insight into the perspectives and values of commenters, it does not necessarily reveal the desires of society as a whole. All input is considered and the analysis team attempts to capture all relevant public concerns in the analysis process.

Geographic Representation

Geographic representation is tracked for each reply. The following table displays the number of comment letters received per State.

Table 65. Number of comment letters and signatures received by state

State	Number of Comment Letters	Number of Signatures
Colorado	1	1
Georgia	1	1
Hawaii	1	1
Idaho	38	45
Indiana	1	1
Montana	22	28
Oregon	1	1
Oklahoma	2	2
Washington	10	12
Washington DC	1	1
Unknown	8	8
Total	**86**	**101**

Organizational Affiliation

Organizational affiliation is tracked for each comment letter. The following table displays, by organization type, the number of comment letters and signatures.

Table 66. Number of comment letters and signatures received by businesses, organizations, agencies and individuals

Organization Type	Number of Comment Letters	Number of Signatures
Business	3	3
Elected Official	2	6
Federal Agency	4	4
Group or Organization	11	18
Individual	61	65
State Agency	4	4
Tribal	1	1
Total	**86**	**101**

Reply and Delivery Type

The following table displays by comment letter format and how it was received, the number of comment letters and signatures.

Table 67. Number of comment letters and signatures received by method of comment

Reply and Delivery Type	Number of Comment Letters	Number of Signatures
Email	27	29
Letter	57	70
Phone Call	2	2
Total	**86**	**101**

List of Commenters, Public Concern Statements, and Responses

Each public concern statement is accompanied by a response that was developed by subject matter experts. The primary purpose is to provide a topical review of voluminous comments in a format that aids in careful consideration and agency response, but doesn't preclude the Forest Service from reading every comment letter.

Following is a list of the commenters, their letter number, and associated public concern statements. To find the public concern statements that address your comments, find your name or organization (Table 68 lists the organizations and then individuals alphabetically) and then a list of the public concern numbers associated with your comment letter are listed. In Table 69, the public concern statements are organized by subject, so if you look for the subject that most closely aligns with your comment, it might be easier for you to find the public concern number associated with your letter. In some cases, your concerns may be addressed as part of several different, but related public concern statements. The public concern statements and their response follow Table 69 and are organized according to the order shown in Table 69.

Table 68. Public concern statements by commenter's name and organization

Organization	Last Name	First Name	Letter No.	Public Concern Nos.
Alliance for the Wild Rockies	Selder	Liz	56	3, 7, 8, 13, 14, 15, 94, 96, 97, 98, 99, 114, 115, 116, 117, 123, 127, 128, 129, 135, 141, 144, 158
BearKat Ranch	Baum	Bill	1	168
Boundary County Commissioners	Smith Dinning Kirby	Ronald Dan Walt	77	49, 54, 58, 64, 68, 69, 70, 111, 156
Cabinet Resource Group	Hernandez	Cesar	83	8, 15, 43, 52, 110
Capital Trail Vehicle Association	Salo	Ken	26	2, 5, 15, 28, 31, 32, 33, 41, 42, 48, 59, 50, 51, 54, 55, 56, 62, 73, 74, 79, 80, 82, 84, 89, 90, 91, 92, 147, 162, 163, 164, 170
Environmental Protection Agency Region 10	Reichgott	Christine	57	12, 87, 100, 157
Federal Highway Administration	Hasselbach	Brain	40	168
FH Stoltze Land and Lumber Co	Hobday	Brain	48	15, 64, 78, 91, 169
Forest Capital Partners LLC	Moe	Ed	72	12, 50, 109
Great Bear Foundation Defenders of Wildlife Idaho Conservation League Wildlands CPR Natural Resources Defense Council	Peck Proctor Smith Rissien Willcox	Brian Jonathan Brad Adam Louisa	65	4, 8, 13, 15, 44, 67, 72, 81, 103, 104, 105, 106, 107, 108, 114, 115, 121, 122, 127, 128, 130, 138, 139, 140, 141, 143, 158, 159, 166
ID Dept of Fish and Game	Corsi	Charles	50	12, 23, 24, 93, 113, 145
ID Dept of Lands	Groeschi	David	58	11, 19, 25, 50, 57, 65, 118, 142, 149, 150, 169
Idaho Dept of Parks and Recreation	Meinen	Robert	8	5, 12, 26
Idaho for Wildlife	Kimp	Kevin	60	54, 78, 79, 91, 92, 111, 113, 152
Kinnikinnick Chapter of the ID Native Plant Society	O' Reilly	Molly	14	4, 15, 30, 45, 46, 47
Kootenai Environmental Alliance	Mihelich	Mike	24	20, 154, 155
Kootenai Tribe of Idaho	Porter	Jennifer	42	12, 35, 36, 71, 93, 131, 156
Kootenai Valley Resource Initiative	Anderson	Dave	79	68, 70, 93, 156

Table 68. Public concern statements by commenter's name and organization

Organization	Last Name	First Name	Letter No.	Public Concern Nos.
Lincoln County Commissioners	Konzen Roose Berget	John Marianne Anthony	82	1, 5, 15,18, 78, 133, 152
Montanans For Multiple Use	Hodgeboom	Fred	64	15, 18, 20, 27, 39, 41, 50, 60, 64, 101, 136, 137, 146, 158
MT DNRC	Harrington	Robert	49	95, 111, 134, 152
The Lands Council Alliance for the Wild Rockies	Juel Garrity	Jeff Michael	45	4, 7, 8, 9, 10, 13, 15, 16, 17, 21, 22, 37, 38, 45, 63, 66, 81, 86, 94, 111, 112, 123, 124, 125, 126, 131, 132, 133, 143, 144, 151
Troy Snowmobile Club	Wandler	Jerry	63	5, 12, 15, 91, 169
U.S. Border Patrol Planning Branch	Koerner	Elaine	81	70
USDI Office of Environmental Policy and Compliance	Stewart	Robert	29	34
	Artley	Dick	17	6, 13, 111
	Attemann	Rein	18	4, 13, 85, 111
	Banks	Mike	66	12
	Biondo	Nat	39	161
	Brady	Joseph	10	4, 85, 86
	Braun	Rod	31	111
	Braun	Stephen	34	4, 7, 13, 85, 148, 165
	Brown	Ron	78	54, 111
	Capurso	Donna	38	54, 111
	Carrick	David	73	54, 111
	Causton	Robert	35	15, 76
	Cheshire	Robert	5	54, 169
	Cunningham	Bruce	9	54
	Dark	Nicholas	33	111
	Davis	Jayne	52	15, 18, 53, 54, 64, 113
	Davis	Stanley	54	54, 111
	Dilley	Matt	53	54, 111
	Erhard	John	15	111
	Fields	Edwin	6	4
	Fifield	Jim	2	168
	Finch	Jim	20	54, 111
	Finney	John	70	12, 40
	Garvey	Lydia	28	111
	Gidel	Arthur	4	5, 15, 54, 161, 169

Table 68. Public concern statements by commenter's name and organization

Organization	Last Name	First Name	Letter No.	Public Concern Nos.
	Halvorsen	Ray and Joyce	43	54, 161
	Hart	Eric	32	15, 54, 111, 161
	Haynes	Michael	30	53, 75, 111
	Head	David	3	111
	Helmer	Rose Marie	41	12, 64, 111
	Helmer	Robert	44	5, 54, 169
	Hilderman	Larry	16	15, 111
	Hunt	David	46	4, 13, 111, 169
	Jokela	Brian, Mary	68	4, 13, 54
	Latta	John	61	15
	Lee	Doris	25	4, 83, 111
	Lewis	Colleen	22	12, 53, 54, 78, 111
	Lopez	Camilo, Terry	37	4
	Lutes	Mary Kay	12	12, 54, 111
	Mann	David	23	54, 78, 111, 169
	Montgomery	Rachel	13	54, 111,
	Nagel	Barbara	21	54, 111
	Olmstead	Kyle	62	15, 54, 91, 93, 111, 119, 120
	Paulson	Steve	80	59, 61, 167
	Pluid	Ina	76	12, 70, 156
	Porter	Ed, Mary	7	12, 54, 78
	Roady	Chuck	59	12, 15, 64, 91
	Robertson	Evan	11	54, 87, 88
	Robertson	Amy	71	18, 53, 54
	Rose	Neil	86	51, 54
	Schaible	David	84	64, 64
	Schroeder	Jerry	85	111
	Shields	Royal, Jana	47	54, 90, 111, 113
	Stenros	Dawna	74	54, 111
	Stenros	Pete	75	29, 54, 111
	Ulrich	Roberta	27	4, 13, 50, 111
	Valentine	Jim	69	29, 54, 111
	Wenk	Dave	51	54
	West	Tim	55	33, 54, 64, 111
	Wheeler	Donald, Elaine	67	53, 54, 111
	Wood	Dave	36	15, 54, 111
	Zwinger	Diane	19	53, 111

Table 69. Public concern statements organized by subject

Subject	Public Concern Numbers Associated With This Subject
Air Quality	1
Alternatives	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 170
Best Available Science	158, 159
Fire	16, 17, 18, 19
Fish	20, 21, 22, 23, 24, 25
Forest Plan	26, 27
Management Indicator Species	28
NEPA	29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44
Plants	45, 46, 47
Public Involvement	48, 49, 50, 51, 52
Recreation	53, 54, 55, 56, 57, 58, 59, 61, 75
Roads	62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 76
Social and Economics	77, 78, 79, 80, 81, 82
Soils	83, 84
Threatened, Endangered, and Sensitive Species	85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150
Timber	60, 151, 152
Watershed	154, 155, 156, 157
Out of Scope	161, 162, 163, 164, 165, 166, 167
Thank you for your comment and voting issue	168, 169

Complete letters from Federal, State, and local agencies are attached at the end of this Appendix as required (FSH 1909.15, 24.1 (3)). The remaining letters are available for review in the project record.

The following public concern statements and the response to comments are organized by subject. A detailed report that displays all the public comments that are associated with each public concern statement and response can be found on the website and in the project record.

Air Quality

Public Concern No. 1. The Forest Service should not change existing motorized access without more supportable and acceptable levels of scientific data because of the potential negative effects to air quality from increased fire risk.

Response: Fires are a natural process in the west, and fires will continue to burn and produce smoke and this smoke that is produced can sometimes cause localized impacts to air quality. Larger fires that burn for a longer duration also tend to produce more smoke over time, thus increasing the probability of potential impacts to air quality. As described in the Fire, Fuels, and Air Quality section, reducing road access for firefighting forces does increase the chance that a fire will escape initial attack and grow to a larger size, thus producing more smoke than if the fire was controlled at a small size. However, even though there may be delayed response times for firefighting forces responding by road, other viable methods will still be employed such as the use of aircraft for delivering firefighters and for direct suppression actions (i.e., water and retardant). These actions may still allow a fire to grow but still may keep the fire at a size where the impacts to air quality will be minimal.

Other factors that influence the spread of fires are the weather conditions at the time and location of the ignition. If the fire starts in conditions that are wetter, the likelihood for fire spread is low, thus the air quality impacts would be lower. This reduced probability of fire spread also allows a longer window of opportunity for firefighting forces to reach the fire and keep it small. Weather and atmospheric conditions at the time of the ignition also play a role as atmospheric winds will also dictate where the smoke travels (i.e., away from a community or towards a community).

This analysis can't predict where the smoke impacts will be or for how long they might last due to too many complexities with weather influences as well as potential location of fires and the availability of firefighting resources. This analysis does conclude that there will be an increased risk of smoke being produced due to the reduced access. However, this decision does not analyze the effects of individual closed roads, which will be addressed in future site-specific decisions, and thus cannot describe where the impacts will be. This decision cannot assess what is the likelihood of a fire growing due to weather conditions, firefighting resource availability, and local management decisions to prioritize an individual fire burning in a specific location for the type of suppression response. In summary, we can state that there is an increased risk of smoke being produced, thus potentially having impacts to air quality; however due to the scope of the analysis we can't say where, when, or for how long those impacts may occur.

Alternatives

Public Concern No. 2. The Forest Service should develop a true No Action Alternative that is compliant with NEPA and other planning regulations so as to enable the decisionmakers and public to compare and contrast other management alternatives; and accurately and reasonably evaluate the Alternatives.

Response: From CEQ's Memorandum to Agencies on NEPA's Forty Most Asked Questions: "Section 1502.14(d) requires the alternatives analysis in the EIS to "include the alternative of no action." There are two distinct interpretations of "no action" that must be considered, depending on the nature of the proposal being evaluated. The first situation might involve an action such as updating a LRMP where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases, "no action" is "no change" from current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed. Consequently, projected impacts of alternative management schemes would be compared in the EIS to those impacts projected for the existing plan. In this case, alternatives would include management plans of both greater and lesser intensity, especially greater and lesser levels of resource development.

"The second interpretation of "no action" is illustrated in instances involving decisions on proposals for projects. "No action" in such cases would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward."

The forest plan amendments proposed in this analysis are similar to the first situation described above. The amendments involve updating three forest plans where ongoing programs will continue; therefore, the no action alternative has been analyzed in terms of continuing with the present course of action until that action is changed.

Public Concern No. 3. The Forest Service should provide sufficient evidence that, if implemented, Alternative E Updated would create suitable habitat with sufficient security for grizzly bear recovery.

Response: The IGBC recommended that in individual BMUs with greater than 75 percent Federal ownership, the Forests are to: 1) attain 55 percent core habitat; 2) have less than 33 percent of each BMU with open motorized route densities exceeding 1 mi/mi^2; and 3) have less than 26 percent of each BMU with total motorized route densities exceeding 2 mi/mi^2. These parameters were based on the best available science of the 1997 Wakkinen and Kasworm study. Since January 1999, the Forest Service has been working toward achieving the Wakkinen and Kasworm recommendations within the Selkirk and Cabinet-Yaak ecosystems. Since that time, habitat conditions for grizzly bear have been steadily improving as existing road miles within the two recovery zones have been reduced.

Both within the Selkirk and Cabinet-Yaak Recovery Zones, there has been a decreasing trend in mortalities occurring over time on NFS lands since beginning implementation of the IGBC guidelines (FSEIS, pages 55-59). Within the Cabinet-Yaak, as the overall population increased over the last two decades (i.e., from estimated 15 in 1993 to 47 bears in 2008) the average number of bears that died due to human causes has remained about the same but the percentage of human-caused mortality occurring on NFS lands has dramatically decreased within each time period. Within the Selkirk Recovery Zone, there is also an apparent decreasing trend in mortalities occurring on NFS lands within-and-around this recovery zone over time. This is true both in terms of the average number of bears killed per year by time period, and the percentage of human-caused mortality within each time period (FSEIS, pages 56-59). However, implementing tighter access restrictions on wheeled motorized vehicle access within the recovery zones cannot completely remove grizzly bear mortality risk within and around the recovery zones. Minimizing habituation and mortality levels on adjacent ownerships as well as addressing other risk factors such as sanitation, agricultural food attractants, hunter identification errors, and human attitudes toward grizzly bear all plays a role. This document focuses on wheeled motorized vehicle access management, but at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear (FSEIS, page 6).

Public Concern No. 4. The Forest Service should select Alternative D Modified for implementation because:

A) it provides maximum security and recovery of grizzly bears, is best supported by research, and better meets the needs of many other threatened, endangered, and sensitive species;

B) it is the most protective of native plant species and their habitat;

C) it reduces human-caused fires which reduces the budget for fire fighting and makes that funding available for habitat improvement; reduces weeds and the road maintenance budget; and protects soils and water quality;

D) the public has been drawn to these areas for generations, however road closure exceptions for a few of the special places are acceptable;

E) it is politically more palatable in the long-term and less expensive now, and as species recover, another amendment can be made to the Forest Plan;

F) it provides greatest potential to reduce appeals and litigation at the project level, and grizzly bear core areas could form basis of restoration zones that could assist in facilitating collaborative agreements.

Response (A, B, C, D, E, and F): Alternative E Updated was selected by the responsible officials for implementation. While Alternative D Modified would provide for increased levels of security habitat for grizzly bears and other threatened, endangered and sensitive animal and plant species, the purpose and need for this proposal included the need to consider social and economic impacts when developing the parameters for road densities and core habitat (FEIS, page 1-6). Upon consideration of comments received on the DSEIS and the potential impacts disclosed in this FSEIS, it was determined that Alternative E Updated would best achieve the purpose and need for this proposal while responding to identified issues, including increased secure habitat for grizzly bears. Of the over 80 individual comment letters or emails received on the DSEIS, only about 15 expressed support for Alternative D Modified. The Record of Decision for this FSEIS discusses in detail the rationale for the selection of Alternative E Updated (see ROD, *Rationale for the Decision*).

(C): While decreased wheeled motorized vehicle access to the general public may decrease the number of human-caused fires, if the total amount of wheeled motorized recreation does not decrease and is simply relocated in different areas, the results may only be that human-caused ignitions are more concentrated into those areas with access, with fewer ignitions in the areas with wheeled motorized vehicle access restrictions (FSEIS, page 246). When fires do start, reduced administrative access could result in delays in initial attack and fire suppression efforts of undesirable fires. This may lead to large, landscape-sized fires with the associated changes in forest resources, including reduced security cover for grizzly bears (FSEIS, page 246).

(F): Since 2001, when this amendment process began, core habitat within the Selkirk and Cabinet-Yaak Recovery Zones has increased by about 21,400 acres. Full implementation (by 2019) of Alternative E Updated will provide for about another 28,000 acres of core habitat being created. Rather than maintenance of the status quo, Alternative E Updated provides for an improvement in grizzly bear habitat conditions. Across the recovery zones, at full implementation, there would be about 1.27 million acres of core habitat (compared to Alternative D Modified which would provide for about 1.53 million acres of core habitat) available for grizzly bears and the percent of core habitat would increase to 58 percent within the Cabinet-Yaak Recovery Zone and 61 percent within the IPNF portion of the Selkirk Recovery Zone, which are above the researcher recommended level of 55 percent (FSEIS, page 89). Additionally, design features include the stipulation that except as provided for in road stabilization projects, there will be no reductions in core area without in-kind replacements until all BMUs administered by the IPNFs, KNF, and LNF in the respective ecosystems achieve their assigned standard (see ROD, *Description of the Decision*).

Public Concern No. 5. The Forest Service should not select Alternative D Modified for implementation as the preferred alternative because:

A) it emphasizes grizzly bear security over public access, which is unpopular with many local residents;

B) it does not comply with the Multiple-Use Sustained Yield Act and National Forest Management Act;

C) the science is not conclusive enough to support more severe restrictions; basis for security measures is that the assumed need for 100 bears is not soundly established on scientific basis; information given concerning bear numbers indicate an increase not decrease.

Response: The responsible officials have selected Alternative E Updated for implementation. Alternative E Updated was selected for the reasons discussed in the accompanying ROD to this FSEIS (see ROD, *Rationale for the Decision*). In deciding upon a selected alternative, the responsible officials took into consideration how the alternatives considered responded to the identified purpose and need for action (see FEIS, pages 1-4 to 1-5), the issues identified through public involvement (see FEIS, page 2-2), and compliance with applicable laws and regulations. The decision weighs and balances the social considerations (public acceptance) with the biological. Alternative D Modified being based on the needs of one bear while Alternative E Updated is based upon the needs of six bears.

Public Concern No. 6. The Forest Service should explain why Alternative D Modified, which was developed in response to court direction, was not selected as the preferred alternative.

Response: Alternative D Modified was not required to be considered in detail by the Court. However, in 2008, the responsible officials directed the interdisciplinary team to conduct additional environmental analysis to address the issue regarding improved habitat conditions for bears in all BMUs. This included development of an alternative (in addition to the alternatives in the 2002 FEIS) that best met the observed secure habitat use by one of the six female grizzly bears in the Wakkinen and Kasworm study (OMRD of less than or equal to 17 percent, TMRD of less than or equal to 14 percent, and core area of greater than or equal to 72 percent in each BMU) (DSEIS, page 15). Consideration of such an alternative would allow the responsible officials to consider the effects of meeting higher levels of secure habitat versus an alternative that considers the biological, social, valuational, and institutional needs (Alternative E Updated).

While Alternative D Modified would provide for increased levels of habitat security for grizzly bears and other threatened, endangered, and sensitive species, it does not consider the social, valuational, and institutional forces (Recovery Plan 1993). The Recovery Plan states "that the future of the grizzly bear will depend on integrating, as Kellert (1986) states: "the socioeconomic and utilitation values of the general [local] population into the establishment and management of preservation programs… A management system that seeks to integrate all biological, social, valuational, and institutional forces toward a common effort involving grizzly bear conservation will have the highest chance of success." Alternative E Updated integrates the biological needs of the grizzly bear with the social, valuational, and institutional needs based on unique circumstances of each BMU. Alternative E Updated considered other factors such as whether or not there was a history of mortality or sanitation related problems associated with important and heavily used recreation sites. It also considered other ongoing efforts, such as efforts to address the attitudes and concerns of the local public. The responsible officials selected Alternative E Updated because it best integrated the needs of the bear with social and economic considerations; therefore, it should have a higher likelihood of social tolerance.

Public Concern No. 7. The Forest Service should improve Alternative D Modified by:

A) examining restrictions under Alternative D because: they are not restrictive enough to repair past management decisions which focused on resource extraction over other uses; gated roads and bermed roads are not suitable restrictions; and roads need to be obliterated because only a small percentage of lands in the drainages will be effective habitat;

B) shortening timeframe for meeting standards equivalent to or quicker than Alternative E Updated;

C) further developing Alternative D Modified to include identification of habitat features that would provide sufficient resources and security for recovery of the grizzly bear.

Response: Per the Inter-agency Grizzly Bear Committee (IGBC 1998a), core areas are delineated by identifying and aggregating the full range of seasonal habitats that are available in the BMU and each BMU represents all available habitats and elevations. Core areas do not include any gated or restricted roads, but may contain roads that are impassable due to vegetation or barriers. The Forest Service monitors closures throughout the course of the active bear season, often multiple times, to determine extent of any unauthorized use on restricted and bermed roads (USDA Forest Service 2008, 2009, 2010). The Forest Service submits annual reports to the USFWS documenting the progress made toward achieving and maintaining the standards for OMRD, TMRD, and core area within the Selkirk and Cabinet-Yaak Recovery Zones. The timeframes for accomplishing meeting the standards have been reviewed and consulted on with USFWS. The agreed upon timeframes have been revised from those contained in the DSEIS and are discussed in the Design Elements for Alternative E Updated, starting on page 26 of the FSEIS.

Public Concern No. 8. The descriptions and analyses of effects are clearly biased against Alternative D Modified. The Forest Service should present the various ways this alternative could be achieved while lessening the recreation and timber management impacts, and still provide the highest level of security and recovery. Furthermore, the Forest Service should provide an independent scientific review of its options and analysis.

Response: Alternative D Modified was developed to focus more fully on the issue of increased secure habitat for grizzly bears (FEIS, page 2-18; DSEIS, page 15). An alternative that is designed to only address one issue, in this case maximum grizzly bear security, without any other considerations, can have substantial impacts on other uses of the national forest. Alternative E Updated is a more balanced alternative because it was developed to address a number of issues, including increased grizzly bear habitat security and some management flexibility in response to issues related to public and administrative access, economics, access to private inholdings (FEIS, page 2-15). Therefore, the potential effects of Alternative E Updated upon motorized access are going to be more moderate than those for Alternative D Modified.

Alternative D Modified and its effects are presented in an unbiased manner and; therefore, an independent scientific review is not warranted. The Forest Service has presented an alternative way Alternative D Modified could be achieved while lessening its associated impacts and still provide for higher levels of security that exceed the research recommended levels for the Selkirk and Cabinet-Yaak Recovery Zones. Alternative E Updated is that alternative (FSEIS, page 35). It provides increased amounts of habitat security for grizzly bear, while lessening impacts on access for other valid uses of the national forest. Full implementation of Alternative E Updated would result in a core area value of 58 percent in the Cabinet-Yaak Recovery Zone and 61 percent in the IPNFs portion of the Selkirk Recovery Zone (FSEIS, page 89). The USFWS in the biological opinion for these amendments has determined that implementation of Alternative E Updated would not jeopardize the continued existence of the Selkirk and Cabinet-Yaak grizzly bear population as long as the design features are implemented (USDI Fish and Wildlife Service 2011a, pages A-75 and A-86).

Public Concern No. 9. The Forest Service should explain how the "estimated" changes in OMRD, TMRD, and core area under Alternative D will retain the stated

greatest degree of access, when the DSEIS doesn't even disclose the specific roads that would be affected.

Response: While there is no strict hierarchy determining which road segments could theoretically have access changes, first priority would usually be given to unclassified open roads or local opened/gated roads with Maintenance Level 1, followed by local and collector roads with Maintenance Level 1 or 2, and finally arterial routes with Maintenance Level 2. Road segments were theoretically eliminated one or a few at a time and densities recalculated each time so that the proposed standards could be met with the least possible change in motorized access. Roads were also identified for their strategic placement on the landscape in order to minimize access changes while maximizing gains in core or reductions in road densities. Therefore, open or currently restricted roads in close proximity to other drivable roads were identified for potential barrier ahead of road segments in relatively unroaded areas, as this would have a greater effect upon road densities at the upper end (greater than 2 mi/mi^2) of the scale. Consequently, open roads theoretically identified for a gate would be likely to occupy a part of the BMU with few roads rather than be in a highly roaded part of the BMU. This approach would maximize reductions in OMRD, since a single road segment is often enough to push the surrounding density into the greater than 1 mi/mi^2 class.

Public Concern No. 10. The Forest Service should address the inadequacy and contradiction within the DSEIS in that Alternative D Modified has the greatest negative cumulative effect on resource management access for vegetation treatment needs and in contrast, is better for other resources such as soils, water quality, fish, and wildlife.

Response: The purpose and need for action recognizes the Forest Service' responsibility under ESA to conserve and contribute to recovery of grizzly bears within the Selkirk and Cabinet-Yaak Recovery Zones (FSEIS, page 11). As acknowledged in the EIS, there are resources for which implementation of Alternative D Modified would provide a greater benefit than Alternative E Updated. For example, Alternative D Modified provides the greatest overall long-term decrease in net associated risk of sediment delivery from roads (FSEIS, page 191); however, Alternative E Updated also provides a benefit, by decreasing the risk of sediment delivery to streams (FSEIS, page 191).

While Frissell and Bayles (1996) and Wuerthner (2006) may advocate a nuanced understanding of the complexity of natural systems and recognition that nature operates beyond human control, there is not a contradiction within the EIS. The Forest Service manages the national forests under the principles/philosophy of ecosystem management, which is an ecological approach to achieve the multiple-use management of national forests and grasslands by blending the needs of people and environmental values in such a way that national forests and grasslands represent diverse, healthy, productive and sustainable ecosystems. The NFMA imposes substantive duties on the Forest Service, including the duty "to provide for diversity of plant and animal communities." However, as described in the recent U.S. Court of Appeals for the Ninth Circuit decision of *Lands Council v. McNair*, it has been consistently acknowledged that the Forest Service must balance competing demands in managing the national forests and it has never been the case that the national forests were to be set aside for non-use. The MUSYA of 1960 states that "it is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes" [16 U.S.C. §528]. NFMA requires that forest plans "provide for multiple use and sustained yield of the products and services obtained therefrom… and [must] include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness" [16 U.S.C. §1604(e)(1)].

Public Concern No. 11. The Forest Service should explain the shortened timeframe for implementing the more restrictive Alternative D Modified (page 17 of the DSEIS), as opposed to Alternative E Updated (page 21 of the DSEIS).

Response: As discussed in the DSEIS (pages 17 and 21): Under Alternative D Modified, those BMUs currently not meeting core area, OMRD, and/or TMRD standards would be brought up to standards in the following manner: 35 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2019; 70 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2025, and 100 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2029.

For Alternative E Updated, those BMUs currently not meeting core area, OMRD, and/or TMRD standards would be brought up to standards in the following manner: 35 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2014; 70 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2017, and 100 percent of those BMUs currently not meeting one or more standard are estimated to meet all standards by 12/31/2019. As can be seen from the above implementation timeframes, Alternative E Updated has a shorter timeframe for implementation than Alternative D Modified because a substantially greater amount of road would need to be barriered or gated under Alternative D Modified. Based upon consultation with USFWS, the timeframe for implementing Alternative E Updated, the selected alternative, has been revised (FSEIS, page 28).

Public Concern No. 12. The Forest Service should select Alternative E Updated because:

- **A) it has the least effect on local economy, recreational access, and timber management;**
- **B) it provides for better local public support and visitor compliance on the ground;**
- **C) the Tribe supports the decision to "not" prescribe site-specific access management; to address future proposals through Tribal-Forest Service collaboration and consultation; to consider multiple jurisdictions; and provide for flexibility in management for access and economic considerations;**
- **D) Wakkinen and Kasworm (1997) is accepted as best available science; recommendations from report were used to develop current standards; and current guidelines were based on local bear data;**
- **E) bear numbers are increasing while mortality is decreasing, thus additional travel restrictions are not necessary and there's a need to reduce existing restrictions.**

Response: The responsible officials have selected Alternative E Updated for implementation. Alternative E Updated was selected for the reasons discussed in the accompanying Record of Decision (ROD) to this FSEIS (see ROD, *Rationale for the Decision*). In deciding upon a selected alternative, the responsible officials took into consideration how the alternatives responded to the identified purpose and need for action (FEIS, pages 1-4 to 1-5), the issues identified through public involvement (FEIS, page 2-2), and compliance with applicable laws and regulations.

Public Concern No. 13. The Forest Service should not select Alternative E Updated because:

A) it fails to provide management direction for increased bear security;

B) the Alternative doesn't address the issues that were identified by the Federal court and are lacking in the DSEIS alternative;

C) there are fewer protective standards which allow higher road density and less secure habitat; it is not acceptable to allow lessened security or maintain status quo; and the assumption in the DSEIS is that access will be reduced yet also in the DSEIS it indicates potential for more access;

D) even though the Alternative provides for more management flexibility, it could challenge managers to meet higher security levels at a later date that are more in-line with grizzly bear biologists' opinions;

E) security will be lowered in BMUs that currently have lower OMRD, TMRD and/or higher core area than the 33/26/55;

F) it will reduce core habitat in 12 (42 percent) BMUs, increase OMRD in 18 (64 percent) BMUs, increase TMRD in 11 (39 percent) BMUs; and Table 5 indicates 9 BMUs core would be increased to minimum standard; and Table 5 proposed minimum standards would decrease core in all but two BMUs;

G) available science suggests 55 percent core may not provide enough spatial security for reproduction and rearing;

H) Table 33 indicates open roads will increase and failure to meet minimum road density standards and reduction of core in many BMUs is unacceptable with population declining;

I) the Forest Service states Alternative D has been modified and analyzed in detailed study to respond to the best available science, thus acknowledging the levels of security provided by Alternative D are more likely to be based on the best available science than that provided by Alternative E Updated;

J) there is false premise that road densities below a standard in some BMUs can offset greater road densities elsewhere and it inflates the merits of Alternative E Updated. Management by BMUs is designed to distribute suitable habitat throughout each recovery zone and deny managers the flexibility to locate secure habitats according to their perceptions of feasibility;

K) the DSEIS provides an explanation for the twisted reasoning that lead to its preference when it states [p.2-15] that Alternative E ". . .was developed to provide more management flexibility in response to issues related to public and administrative access, economics, access to private inholdings and grizzly bear habitat security. Management flexibility is more important than the statutory obligations of the agency to manage these habitats for grizzly bear recovery.

Response (A, C, and K): Alternative E Updated would provide for grizzly bear security, thereby contributing toward conservation of grizzly bear in accordance with Section 7(a) of the ESA (FSEIS, page 92). This alternative incorporates direction for OMRD, TMRD, and core area, and goes beyond recommended levels for these measures in many BMUs, although not to the level of Alternative D Modified (FSEIS, page 91). The alternative also includes conservation measures for grizzly bear in recurring use areas outside of the Selkirk and Cabinet-Yaak Recovery Zones.

When the core standards of Alternative E Updated are fully implemented there would be an increase in core area of about 28,000 acres over the 2009 existing condition (FSEIS, page 89). Across the recovery zones, there would be about 1.27 million acres of core area available for grizzly bears. On average, at full implementation, OMRD would be less than or equal to 33 percent, TMRD would be less than or equal 27 percent, and core area would average about 58 percent across the recovery zones (FSEIS, page 89), while only three BMUs would not achieve the research recommended core area value of 55 percent and 14 would exceed the value (ROD, Table 2). The USFWS in the biological opinion for these amendments has determined that implementation of Alternative E Updated would not jeopardize the continued existence of the Selkirk and Cabinet-Yaak grizzly bear population as long as the design features identified in Chapter Two of this FSEIS are implemented as part of the selected alternative (USDI Fish and Wildlife Service 2011a, pages A-75 and A-86).

(B): The District Court decision held that the analysis must: (1) acknowledge that study authors Wakkinen and Kasworm were uncertain whether the bears they studied had chosen optimal habitat or whether they simply chose the best habitat available, (2) must take into account the misgivings of the USFWS biologists over the 33/26/55 Standards, (3) must consider the findings of other studies measuring habitat parameters in other ecosystems, and (4) must address the status of grizzly bear mortality in the recovery zones. The analysis in the DSEIS and FSEIS has addressed these findings (see FSEIS, page 44 and Allen et al. 2011 in Appendix C of this FSEIS).

(C, E, F, and H): Full implementation of Alternative E Updated will result in 22 BMUs having OMRD less than or equal to 33 percent, 23 BMUs with TMRD less than or equal to 26 percent, and 27 BMUs with core area greater than or equal to 55 percent. The percent of core area would increase to 58 percent within the Cabinet-Yaak Recovery Zone and 61 percent within the IPNFs portion of the Selkirk Recovery Zone, which are above the researcher recommended level of 55 percent (FSEIS, pages 89). Under Alternative E Updated, those BMUs currently exceeding (being better than) the standards for core area, the design criteria stipulate that there be no permanent net losses of core area below the baseline levels identified in the FSEIS until all BMUs in each respective recovery zone have achieved their designated standards. The maximum reduction that could result from reducing the core area in those BMUs currently exceeding their standard would be about 24,000 acres. This would result in average weighted core levels of about 57 percent for the Cabinet-Yaak Recovery Zone and 59 percent for the Selkirk Recovery Zone, which is above the researcher recommended level of 55 percent (FSEIS, page 89). Some permitted changes, such as increases in road densities (i.e., potential increases in open road of 110-330 miles across the recovery zones) or decreases in core area in BMUs that are currently better than standards, would be unlikely to occur to the extent identified in the EIS because changes to one standard affects the others (FSEIS, page 88). For example, the OMRD and TMRD standards are measured in a spatial context so that the location of roads is part of the determination of whether or not a standard is achieved. Regardless, any project that proposes changes that would make the condition worse than the existing condition (but not drop below standards) would require a site-specific analysis. The project level analyses would need to consider all resources and there may be other resource requirements that would prevent roads from being reopened to public wheeled motorized vehicle travel. Public involvement and consultation with USFWS would also be required. In contrast, proposed changes needed to bring deficient BMUs up to standard would be required for compliance with the biological opinion.

(D and J): Both Alternatives D Modified and E Updated are based upon the Wakkinen and Kasworm (1997) grizzly bear research from the Selkirk and Cabinet-Yaak ecosystems. The standards for Alternative D Modified are from the home range data of a single 20-year-old female grizzly bear. The specific standards for Alternative E Updated were developed in consultation with USFWS biologists and the grizzly bear research scientists and reflect the unique features of biological and social factors in the specific BMUs (FEIS, page 2-15). The best available local information has been utilized in development of these standards.

(G): Please see response to Public Concern No.14.

(I): Six radio collared female grizzly bears monitored during 1989-94 represent the basis for the open road, total road and core standards (Wakkinen and Kasworm 1997). These animals were radio collared within the Selkirk and Cabinet-Yaak Recovery Zones. All animals produced young, either during, prior or after this monitoring period with five of the six females producing cubs that are known to have survived to dispersal age (2 or 3 years of age). Individual home ranges for these animals were evaluated for percent of area over one mile per square mile of open road density, percent of area over two miles per square mile of total road density, and percent of area in core. Previous analyses showed less than expected use when these road densities were exceeded. The methods used followed those described by previous research (Mace and Manley 1993) and by guidelines from the Interagency Grizzly Bear Committee (IGBC 1994). These six bears were chosen because they were females that had survived long enough to provide sufficient data for analysis and had reproduced within the study area. Values for these six radio collared bears were averaged to produce these results: 33 percent of the home range had an open road density of one mile per square mile or greater, 26 percent of the home range had a total road density of two miles per square mile or greater, and 55 percent of the home range was core. Once core is established, it must remain in place for 10 years, roughly the generational time for a grizzly bear. This is a widely accepted standard. The IGBC directed each ecosystem to develop ecosystem-specific guidelines using local data where possible. The 33/26/55 numbers were generated with such data. The amendment thus incorporates the best available local information.

Public Concern No. 170. The Forest Service should not select Alternative E Updated because:

A) it is not a reasonable alternative as there is a loss of motorized routes, which doesn't meet the need for public access and motorized recreation;

B) there's predisposition in the process to eliminate motorized access and recreation without addressing public needs and proper evaluation of facts and information;

C) it assumes ecological sustainability is more important than social and economic sustainability, and sufficient data was not provided to substantiate these assumptions;

Response (A, B, and C): While Alternative E Updated could result in the loss of motorized routes within the recovery zones, it is a reasonable alternative because it responds to the need to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency’s responsibilities under the ESA (FSEIS, page 11). Alternative E was developed to more fully address public needs, as well as increased grizzly bear habitat security (FEIS, page 2-15); therefore, it addresses both ecological sustainability and social/economic sustainability.

Public Concern No. 14. The Forest Service should provide the scientific basis for its conclusion that the overall lack of security associated with Alternative E Updated will result in the conservation and recovery of the Selkirk and Cabinet-Yaak grizzly populations.

Response: Full implementation of Alternative E Updated would result in an increase in grizzly bear security levels over 1998 conditions when BMUs were initially analyzed using the

OMRD:TMRD:core area parameters within the two ecosystems AND when compared with the 2002 on-the ground conditions documented in the 2002 EIS (FSEIS, page 89). Furthermore, comparison of the projected 2019 on-the-ground core area conditions at full implementation versus available core area in the 1980s demonstrates the huge gains made in providing secure habitat for the grizzly bear over the last two decades (FSEIS page 11). Alternative E Updated would benefit grizzly bear by requiring up to 324 miles of currently open or gated road be closed to motor vehicle use. Alternative E Updated also includes conservation measures for grizzly bear in those recurring use areas outside of the Selkirk and Cabinet-Yaak Recovery Zones.

While opportunities have been identified for accommodating some increase in wheeled motorized vehicle access, in those BMUs with conditions that are better than the standard, permitted changes, would be unlikely to occur to the extent identified in the EIS (FSEIS, page 88). Any project that proposes changes that would increase OMRD or TMRD or decrease core area (but not drop below proposed standards) would require a site-specific analysis, including public involvement and consultation with USFWS. In contrast, proposed changes needed to bring deficient BMUs up to standard would be mandatory.

Currently (2009), there are about 1.25 million acres of core habitat within the recovery zones. When the core standards of Alternative E Updated are fully implemented there would be an increase in core area of about 28,000 acres over the 2009 existing condition (FSEIS, page 89).Across the recovery zones, there would be about 1.27 million acres of core habitat available for grizzly bears upon full implementation of the alternative. If the maximum amount of permitted changes in core area were to occur, there would still be over 1.25 million acres of core habitat within the recovery zones, an increase of about 4,000 acres over the 2009 condition.

Alternative E Modified is based upon the best available science[94] (FSEIS, page 93; Appendix C). The IGBC directed each ecosystem to develop ecosystem-specific guidelines using local data where possible. The Wakkinen and Kasworm study (1997) numbers (33/26/55) were generated with such data. The methods used by Wakkinen and Kasworm followed those initially developed by research in the Northern Continental Divide ecosystem (Mace and Manley 1993) and later standardized and enhanced by guidelines from the Interagency Grizzly Bear Committee (IGBC 1994).

There has been a decreasing trend in the annual rate and/or percentage of human-caused mortalities occurring over time on NFS lands in both ecosystems since implementation of wheeled motorized vehicle access strategies began on NFS lands in the late 1980s and early 1990s (FSEIS, pages 60-59). Specifically, as the overall population increased over the last two decades in the Cabinet-Yaak ecosystem (i.e., from an estimated 15 in 1993 to 42 bears in 2009) the average number of bears that died annually due to human causes remained about the same but the percentage of human-caused mortality occurring on NFS lands noticeably decreased within each time period (FSEIS page 56). This indicates that human-caused mortality kept pace with the expanding population over time, but the proportion of human-caused mortality shifted dramatically from NFS lands to privately owned properties and areas in British Columbia (FSEIS pages 55-58). In most cases, this shift can be attributed to greater numbers of bears seeking foraging opportunities at lower elevations in the fall where they have a greater chance of having a fatal encounter with people (FSEIS page 60). Likewise, as the overall population of bears increased in the Selkirk ecosystem (i.e., from an estimated 25 bears in 1993 to 46 bears in 1999), there has been an apparent decrease in mortalities occurring on NFS lands within-and-around the Selkirk Recovery Zone over time. This is true both in terms of the average number of bears killed per year by time period, and the percentage of human-caused mortality occurring on NFS lands

[94] Alternative E Updated is based upon the habitat values of six bears, while Alternative D Modified is based upon the habitat values of a single bear.

within each time period (FSEIS, pages 56-59). This shift in the Selkirk ecosystem can primarily be attributed to greater numbers of bears in the British Columbia portion of the recovery zone seeking foraging opportunities at lower elevations where they have a greater chance of having a fatal encounter with people (FSEIS page 60). Given these trends, implementing tighter access restrictions on wheeled motorized vehicle access on NFS lands within the recovery zones would not completely remove grizzly bear mortality risk within-and-around the recovery zones. Minimizing habituation and mortality levels on adjacent ownerships as well as addressing other risk factors such as sanitation, agricultural food attractants, hunter identification errors, and human attitudes toward grizzly bear all plays a role. This document focuses on wheeled motorized vehicle access management, but at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear (FSEIS, page 6).

In the biological opinion for these amendments, the Fish and Wildlife Service concluded with regard to the selected alternative (USDI Fish and Wildlife Service 2011a, page A-65):

> Given the proposed standards for core area, the proposed action is likely to result in adequate levels and distribution of core area within the action area. Based on the findings of Wakkinen and Kasworm (1997), and Allen et al. (2011), this level and distribution of core area is likely to provide levels of secure habitat for grizzly bears, including females, that provide for breeding, feeding, and sheltering activities.

Public Concern No. 15. The Forest Service should develop additional alternatives.

A) An alternative that initiates a Phase-in approach, which would provide for moderate and appropriate road closures over a predicted period of time and would be better for habitat and species;

B) A Pro-Recreation alternative that: 1) meets the needs of the increasing motorized recreational public; 2) limits cumulative effects to motorized users; 3) provides for multiple use, 50/50 sharing of these lands for all users, and equal opportunity of nonmotorized to motorized trails; 4) provides reasonable motorized closures; 5) considers historical and traditional uses; 6) retains high value trailhead access; and 7) balances the need for motorized access with the need for protecting grizzly bears, and in addition provides supportable and acceptable levels of scientific data to substantiate the change in the motorized access;

C) A full range of alternatives, which includes an alternative that provides a better mix of Alternatives D and E;

D) A full range of alternatives, which includes an alternative that provides a balance between protecting grizzly bears and providing recreational access and should be based on best available science; include more precise information regarding the numbers of miles of roads that would be opened, closed with gates, and/or closed with barriers in order to achieve the targets; and be based on requirements for multiple use by law;

E) An alternative that doesn't likely jeopardize the existence of the grizzly bear and firmly reverses decades of fragmenting formerly roadless security habitat;

F) An alternative that considers the science that indicates the need for more access to improve treatments for vegetative habitat, which will then provide for better bear forage and thus greater bear populations;

G) A moderate, reasonable alternative that will provide a balance between protecting grizzly bears and providing recreational access, while also providing access for fire fighting and timber management;

H) An alternative that maintains access at the current condition, which in-turn provides equal access for everyone;

I) An alternative that considers closing a reasonable number of routes during hunting season and other critical seasons and then re-opening during the summer recreation season;

J) An alternative that considers an amendment to reverse the designation of these lands as grizzly bear recovery zones.

Response (A): Both alternatives D Modified and E Updated would provide for a phased in approach to implementation. Under Alternative D Modified, those BMUS currently not meeting one or more standard would be brought up to the assigned standard by 2029. For Alternative E Updated, BMUs currently not meeting standards would be brought up to the assigned standard within eight years of the amendment decision date (2019). Full implementation of Alternative E Updated would benefit grizzly bear by closing up to 324 miles of currently open or gated road to motor vehicle use. Alternative E Updated also includes conservation measures for grizzly bear in those recurring use areas outside of the Selkirk and Cabinet-Yaak Recovery Zones.

(B, H, and I): The FEIS considered programmatic alternatives that would: 1) maintain current levels of access and 2) provide for as much access as possible for recreational and economic activities in the three national forests. These alternatives were not given detailed study because they did not meet important elements of the purpose and need for action (FEIS, page 2-18). Alternative(s) that would site-specifically designate individual roads and trails for motorized and/or non-motorized use, as indicated by the comments, are beyond the scope of this analysis and do not respond to the purpose and need for action. This is not a site-specific analysis done under the auspices of 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need in this instance is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). This programmatic environmental analysis will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use.

Under Alternative E Updated, no decreases in core area would be allowed in an individual BMU until all BMUs in the respective ecosystem (Cabinet-Yaak Recovery Zone or IPNFs portion of the Selkirk Recovery Zone) meet their assigned OMRD, TMRD and core area standards. At that time, in those BMUs with conditions that are better than the standard, it may be possible to accommodate some decrease in core area (FSEIS, page 26). However, no assumption should be made that this option can be utilized to any extent to absorb displaced recreational activities because any project level analyses proposing increases in wheeled motorized access within the recovery zones would need to consider all resources and there are other resource requirements that may prevent roads from being reopened to public wheeled motorized vehicle travel (FSEIS, page 215).

(C, D, and E): The FSEIS (pages 19-31) in conjunction with the 2002 FEIS (pages 2-6 to 2-19) has considered a full range of alternatives. With respect to Alternatives A, B, and C, their analysis was not restated in the DSEIS because there was no new or updated information associated with the analysis area that warranted further analysis of these alternatives (DSEIS, page 9). With respect to other alternatives, NEPA does not require a separate analysis of alternatives which are not significantly distinguishable from alternatives actually considered, or which have substantially similar consequences. From a grizzly bear security standpoint, an alternative that provides a better mix of Alternatives D and E, with respect to security habitat, would not be significantly distinguishable in effect from either Alternative D Modified or Alternative E Updated because both alternatives provide for sufficient levels of security for grizzly bear in a manner consistent with IGBC access direction, current scientific research, and include measures for conservation outside of the Selkirk and Cabinet-Yaak Recovery Zones (FSEIS page 91-94). Both alternatives would have similar consequences by contributing toward conservation of the species in accordance with Section 7(a)(1) of the ESA (FSEIS, page 92). The effectiveness of the ongoing implementation of the OMRD, TMRD, and core area parameters is evidenced by a decreasing trend in moralities occurring on NFS lands within the recovery zones since beginning implementation of the IGBC guidelines in 1998 (FSEIS, pages 55-59). A comprehensive program to minimize human-caused grizzly bear mortalities involves many elements, including wheeled motorized vehicle access management, regulation of hunting, sanitation, law enforcement, and education. While, this document focuses on wheeled motorized vehicle access management, at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear (FSEIS, page 6). The USFWS in the biological opinion for these forest plan amendments has determined that implementation of Alternative E Updated would not jeopardize the continued existence of the Selkirk and Cabinet-Yaak grizzly bear population as long as the design features identified in Chapter Two of this FSEIS are implemented as part of the selected alternative (USDI Fish and Wildlife Service 2011a, pages A-75 and A-86).

Alternatives D Modified and E Updated do not represent extreme ends of the potential grizzly bear security level spectrum. At full implementation, Alternative D Modified would provide for about 1.53 million acres of core habitat across the Selkirk and Cabinet-Yaak Recovery Zones, while Alternative E Updated would provide for about 1.27 million acres. This is not the extreme ends of potential grizzly bear security. While opportunities have been identified for accommodating some increase in wheeled motorized vehicle access, in those BMUs with conditions that are better than their assigned core standard, once all the BMUs in each respective recovery zone reaches its assigned standard, if these opportunities were to be implemented to the fullest extent available under Alternative E Updated, core habitat could potentially decrease to about 1.25 million acres (FSEIS, page 89). However, some permitted changes, such as increases in road densities (i.e., potential increases in open road of 110-330 miles across the recovery zone) or decreases in core area in BMUs that are currently better than the standards, would be unlikely to occur to the extent identified in the EIS because changes to one standard affects the others (FSEIS, page 88). For example, the OMRD and TMRD standards are measured in a spatial context so that the location of roads is part of the determination of whether or not a standard is achieved. Regardless, any project that proposes changes that would make the condition worse than the existing condition (but not drop below proposed standards) would require a site-specific analysis, including public involvement and consultation with USFWS. Additionally, project level analyses would need to consider all resources and there are other resource requirements that may prevent roads from being reopened to public wheeled motorized vehicle travel. Therefore, no assumption should be made that this option can be utilized to any extent to absorb displaced recreational activities (FSEIS, page 215). In contrast, proposed changes needed to bring deficient BMUs up to standard would be required for compliance with the biological opinion.

It is not possible to precisely predict the number of miles of road that may be opened, closed with gates, and/or closed with barriers in order to achieve the OMRD, TMRD, and core area parameters of each alternative. Implementation of the amendments will be accomplished through project level decisions. Roads or trails proposed to be barriered, opened, or gated will only be identified as part of the site-specific implementation of these amendments, when they are ripe for decision. However, as a result of simulations, resource specialists concluded that it takes approximately two to six miles of change in wheeled motorized vehicle access status to achieve a one percent change in OMRD, TMRD, or core area (FSEIS, page 164).

The identified habitat parameters for Alternative E Updated were developed in consultation with grizzly bear research scientists and USFWS Biologists from the both the Helena, Montana and Spokane, Washington field offices. They reflect the unique features of biological and social factors (highways, high quality habitat, residential developments, and linkage zones) in specific BMUs (FEIS, page 2-15). Implementation of either alternative would result in a decrease in road densities within the Selkirk and Cabinet-Yaak Recovery Zones from the 2002 environmental baseline, thereby addressing habitat fragmentation from roads (FSEIS, page 86).

(F and G): Alternative E Updated was developed to address a number of issues, including increased grizzly bear habitat security and the ability of management to respond to issues related to public and administrative access, economics, and access to private inholdings (FEIS, page 2-15) and; therefore, would provide for more balanced levels of reductions in motorized access and increases in grizzly bear habitat security. While there would be reductions in existing levels of public motorized access with Alternative E Modified (potentially up to 102 miles), the reductions would be less than those associated with Alternative D Modified and; therefore, would provide more opportunities for among other things, “improvements in vegetative habitat conducive to better satisfy the food needs of the grizzlies” (FSEIS, pages 25).

Augmentation of the Cabinet-Yaak population is ongoing and has been occurring since 1990. The success of this initial effort resulted in additional augmentations of ten grizzly bears (seven females and three males) from 2005-2011 from the North and South Fork of the Flathead River (U.S.) and the Whitefish Mountain Range. Reproduction by at least one of these females has been confirmed (Kasworm et al. 2007a).

(J): An alternative that considers an amendment to reverse the designation of the grizzly bear recovery zones is beyond the scope of this analysis and would not respond to the identified purpose and need for action. The purpose and need for this proposal is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency’s responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). Designation of the recovery zones is done under the authority of the USFWS.

Best Available Science

Public Concern No. 158. The Forest Service should not use Wakkinen and Kasworm's 1997 report because it is not the best available science and:

- **A) 2 of the 6 studied bears were killed in the small sample size from which behavioral data was drawn, and failure of researchers to determine whether selection of home ranges with high ORMD and TMRD, and low levels of core area was due to lack of available areas with lower ORMD and TMRD and high levels of core area;**
- **B) it failed to consider the interaction between the findings with the best available population trend information;**
- **C) is an obvious attempt to excuse the agency from due diligence in terms of limiting access in grizzly habitat for timber sales;**
- **D) the Merrill 2003 habitat study findings indicate more stringent standards for OMRD/TMRD/core area is needed.**

Response (A and C): The Forest Service acknowledges the small sample sizes, mortality of individual study bears, and the lack of a second-order habitat selection analysis in the 1997 Wakkinen and Kasworm study beginning on page 44 of the FSEIS with an indepth review included in Appendix C of this FSEIS. The Forest Service and the USFWS still consider the Wakkinen and Kasworm study to be the best available science in regards to grizzly bears and access management for the Selkirk/Cabinet-Yaak ecosystem. As such, the Forest Service is committed to working with the USFWS and state wildlife managers to developing appropriate access parameters and implementing them on NFS lands.

As stated in the biological opinion for these amendments (USDI Fish and Wildlife Service 2011a, page A-58):

> In 2006, the United States District Court for the District of Montana upheld the Service's biological opinion on the Forests' 2004 access management proposal, concluding that the Service appropriately relied on Wakkinen and Kasworm (1997) to assess the impacts of access management on grizzly bear habitat (Cabinet Resource Group v. U.S. Fish and Wildlife Service, 465 F. Supp. 2d 1067, 1088). There is no subsequent research which would replace the continued reliance on Wakkinen and Kasworm (1997) as the scientific benchmark against which to analyze the Access Amendment. To emphasize this point, Allen et al. (unpublished report, April 2011) conducted a rigorous review of the Wakkinen and Kasworm (1997) report and concluded that it remains the best available science for the Selkirk and Cabinet-Yaak grizzly bear recovery zones.

(B): Direct correlation between the habitat selection study and modeled population trend rates is inappropriate because grizzly bear mortality (one factor is estimating population growth) is influenced by more than just the availability of motorized access on NFS lands situated within the recovery zones. As outlined in pages 54-57 of the FSEIS, annual rates of human caused grizzly bear mortality (bears killed/year) have increased since 1982, but have shifted dramatically to areas beyond Forest Service control in the last 13 years.

(D): The Merrill paper's approach to evaluating the ability of bears to find more core area in the study area was flawed. The Merrill paper's methods state that home ranges of the same size and shape and apparently orientation were used to test the possibility that bears could have established home ranges in areas with lower road densities and more core area. This approach assumes that bears will not change the size, shape, or orientation of their home range under different places or conditions in the Cabinet-Yaak Recovery Zone. It assumes that a bear can only have a home range of the exact same size, shape, and orientation as the two home ranges they utilized in the Wakkinen and Kasworm (1997) study and suggests that all bears must be exactly the same in their use of the habitat. By not varying the shape or orientation of the home ranges, Mr. Merrill has taken any form of selection by grizzly bears out of the process. Wayne Kaworm a USFWS grizzly bear research biologist and coauthor of the 1997 Wakkinen/Kasworm study reviewed the 2003 Merrill paper. In Mr. Kasworm's professional opinion, the Merrill Paper offers a narrow view of a grizzly bear's ability to adapt to differing conditions and the methodology utilized is inappropriate for testing the question of optimal versus available habitat. Taking such an approach to its logical conclusion would suggest that bears cannot exercise any selection and; therefore, may not be reacting to high road densities at all. Data from the Wakkinen/Kasworm study and other studies indicate that bears do select areas of low road density more than areas of high road density or that bears use areas near roads less than expected (Mattson et al. 1987, McLellan and Shackleton 1988, Aune and Kasworm 1989, Kasworm and Manley 1990, Mace and Manley 1993, Mace et al. 1996 and Wakkinen and Kasworm 1997).

In his review of the Merrill paper, Mr. Kasworm visually examined maps of core area. This and his personal knowledge of the Yaak portion of the study area led him to conclude that there were areas of core that were available but not utilized by the bears in the Yaak portion of the study area.

On the roads data map provided Mr. Merrill, only that portion of the map within the home ranges of the radio collared bears and adjacent drainages were fully edited to reflect the actual road classification at the time the radio location data was gathered in 1991-1994. Portions of the supplied map far outside the home ranges of bears in the study (bears 106 and 206) were not edited and may have had errors. In Mr. Kasworm's review, this area far outside of the home ranges appeared to have a significant portion of the area sampled in the Merrill paper.

The percent of home range in core area was calculated for polygons greater than 5,000 acres. The reason for doing so or the reason for the size of 5,000 acres as a cutoff was not described by Mr. Merrill. The Wakkinen and Kasworm (1997) research could not show a clear relationship between size and core area polygon and actual use by grizzly bears. The Wakkinen and Kasworm study (1997) suggested that if a relationship did exist, it might likely occur at polygon sizes between two and eight mi/m^2 (1,280 to 5,120 acres).

There were numerous inaccuracies about the population data and staus of grizzly bears presented in the Merrill paper with unclear reference for the source of the data used. Also, the Merrill paper's characterization of the grizzly bear population based on bears known to be dead, or last seen on a given date misrepresents the data. The listing of bears by Mr. Merrill appeared to come from tables of bears captured, monitored by telemetry, or observed study personnel in different years during the study. Captures, telemetry, and observations can be affected by effort expended, bear behavior, location of expended effort, type of telemetry, mark observability or longevity dispersal and other issues. For example, bears 128, 303, and 353 which were bears that were captured, ear-tagged, and collared, but lost radio collars and were not recaptured or observed in the study area for two to five years. Bear 244 was first collared from 1992-1994. This bear subsequently lost its radio collar and was not recaptured again until 2003. Though its home range during 2003 was similar to its home range in 1992-1994, this animal evaded detection by trapping for nine years. These examples indicate that one should not assume an animal is dead or has left the area because it could not be detected by trapping or observation.

The Merrill paper argued that neither bears 106 or 206 from the 1997 Wakkinen and Kasworm study was representative of the population and; therefore, should not be used as a basis for the subsequent development of access standards. Bear 206 was thought to be inappropriate because she was young and had not replaced herself in the population and bear 106 because she was too successful at replacing herself, had a small home range, and was too wary. However, both of these bears represent a portion of the variation in the population. In Mr. Kasworm's professional opinion, the attributes of these bears are the very reasons that these bears should be the basis for access standards. Bear 106 produced 13 cubs in 14 years of monitoring (at least three and possibly four female offspring have survived to produce cubs of their own). As of 2003, bear 206 produced at least 4 offspring. Neither bear was known for any nuisance activities around humans.

Public Concern No. 159. The Forest Service has not used the best available science as best available science should include the following reports as they strongly recommend road management be given the highest priority: Mace/Manley 1993 The Effects of Roads on Grizzly Bears; Kasworm/Manley 1988 Grizzly Bear and Black Bear Ecology in the Cabinet Mtns of NW MT; Kasworm/Manley 1991 Road and Trail Influences on Grizzly Bears and Black Bears in NW MT; Aune/Kasworm 1989 Final Report East Front Grizzly Bear Project; Mattson/Knight 1991 Effects of Access on Human-Caused Mortality of Yellowstone Grizzly Bears McLellan/Shackleton 1988.

Response: The Forest Service is well aware of the body of research and scientific studies regarding the negative effects that roads have on grizzly bears and have summarized those effects in the FSEIS (page 87). Furthermore, the document makes no such claim concerning the ineffectiveness of access management. Indeed, the data provided on pages 55-57 of the FSEIS (Table 10-Table 12) indicates that grizzly bear mortality on NFS lands in the Selkirk/Cabinet-

Yaak ecosystem has in general decreased over time since the implementation of access management strategies in the early 1990s.

Fire

Public Concern No. 16. The Forest Service should disclose the ecological benefits of wildland fire.

Response: It is recognized that wildland fire does produce ecological benefits. In the Fire, Fuels, and Air Quality section of the DSEIS and FSEIS, there is mention of the National Fire Plan's direction to increase the use of prescribed fire with the intent to manage fuels across the landscape and restore naturally occurring ecosystem processes. In addition, the Forest Service has the ability to make management decisions to allow naturally occurring wildfires to grow across the landscape to achieve Resource Benefit. This tool is being used more where allowed by Land Management Plans and where practical due to firefighter and public safety, fire resource availability, and the potential for resource benefit and/or resource damage. This decision document does not analyze the effects of allowing fires to burn but rather recognizes that with decreased road access there will be an increased potential of fires growing due to delayed response times. However, decisions made at the time of a fire discovery may decide that it is beneficial to allow the fire to burn and achieve resource benefit. The lack of access by road will not force that decision but would, in all likelihood, be one of many factors as to why a decision would be made to either suppress a fire or allow it to grow.

Public Concern No. 17. The Forest Service is biased in its presentation of the potential impacts from fire and should address the vital natural role that fire plays in these ecosystems.

Response: It is recognized that wildland fire does produce ecological benefits. In the Fire, Fuels, and Air Quality section of the DSEIS and FSEIS, there is mention of the National Fire Plan's direction to increase the use of prescribed fire with the intent to manage fuels across the landscape and restore naturally occurring ecosystem processes. In addition, the Forest Service has the ability to make management decisions to allow naturally occurring wildfires to grow across the landscape to achieve Resource Benefit. This tool is being used more where allowed by Land Management Plans and where practical due to firefighter and public safety, fire resource availability, and the potential for resource benefit and/or resource damage. This decision document does not analyze the effects of allowing fires to burn but rather recognizes that with decreased road access there will be an increased potential of fires growing due to delayed response times. However, decisions made at the time of a fire discovery may decide that it is beneficial to allow the fire to burn and achieve resource benefit. The lack of access by road will not force that decision but would in all likelihood be one of many factors as to why a decision would be made to either suppress a fire or allow it to grow.

As stated above, the Forest Service does recognize fire's role in fire adapted ecosystems and does consider allowing fires to take on more of their natural role on the landscape through Fire Use and Resource Benefit. As fires burn closer to human values and infrastructure, there are management concerns that have to be considered and balanced such as protecting human life and safety with the potential benefits gained from allowing a fire to burn for Resource Benefit. The 10-Year Comprehensive Strategy (USDA Forest Service and USDI Bureau of Land Management 2002) listed four goals: 1) Improve fire prevention and suppression; 2) Reduce hazardous fuels; 3) Restore fire-adapted ecosystems; and 4) Promote community assistance. While it may seem that there are discrepancies (i.e., improve fire prevention and suppression versus restore fire-adapted ecosystems) it is clear that the Agency recognizes that fire has an important role to play and should be allowed to be a feature on the landscape. In addition, it is also clear that there are expectations that when fire's role could have negative impacts that we still maintain an appropriate suppression response.

Public Concern No. 18. The Forest Service should provide supportable and acceptable levels of scientific data and disclose the complete effects of lack of access for fighting forest fires, the fuel buildup contributing to these wildfires (vegetation management), and disclose the probable cost to taxpayers and damage to natural resources from escaped fires due to lack of initial attack access.

Response: This decision does not assume that there will be a lack of access for fighting forest fires due to implementing road closures. The most common form of firefighting access in a roaded area is by engines or by driving firefighters close to the fire by a road system. Where there is no road access, firefighting can and does occur. Oftentimes there may be a delayed response time due to not being able to drive a vehicle such as an engine directly to the fire which means that firefighters may have to hike into the fire without engine support. Other methods such as use of helitack crews, rappel crews, smokejumpers, helicopter water drops, and retardant aircraft are all utilized to initial attack fires where road access is limited. All of these methods are effective; however they usually come with a delayed response time which allows for an increased risk that the fire may grow. Currently, across the landscape there are several roaded systems that are not accessible by engines due to lack of maintenance as well as areas where there has never been road access. In these areas there has already been a transition in how firefighters respond and with how they are delivered to the fire.

Another factor that must be considered is that the Forest Service also recognizes that fire plays a role in the ecosystem and has direction to allow fire to assume more of its natural process where practical and feasible. Managers have the authority, where allowed, to make a decision to let a fire grow and achieve Resource Benefit across the landscape. These decisions must consider firefighter and public safety as the highest priority. As fires burn closer to human values and infrastructure there are management concerns that have to be considered and balanced such as protecting human life and safety with the potential benefits gained from allowing a fire to burn for Resource Benefit. The 10-Year Comprehensive Strategy (USDA Forest Service and USDI Bureau of Land Management 2002) listed four goals: 1) Improve fire prevention and suppression; 2) Reduce hazardous fuels; 3) Restore fire-adapted ecosystems; and 4) Promote community assistance. While it may seem that there are discrepancies (i.e., improve fire prevention and suppression versus restore fire-adapted ecosystems) it is clear that the Agency recognizes that fire has an important role to play and should be allowed to be a feature on the landscape. In addition, it is also clear that there are expectations that when fire's role could have negative impacts that we still maintain an appropriate suppression response. Fires that are allowed to burn for Resource Benefit generally have a lower cost per acre associated with them compared to full suppression fires and achieve several of the goals listed above such as reducing hazardous fuels and restoring fire-adapted ecosystems. In future site-specific decisions, there will be a need to evaluate the effects of changing status of individual roads and what effects that will mean for firefighting forces. Some areas will need aggressive initial attack while other areas may be candidates for allowing fire to play more of a natural role.

Public Concern No. 19. The Forest Service should include potential impacts to state fire management activities on state, private, and federal lands under state protection that will result from road closures.

Response: This decision does not recommend specific roads to be closed. That decision will follow in future site-specific decisions that will be able to consider the effects of individual and specific road closures within smaller project areas. When those decisions are made, an analysis will be included to determine the effects of road closure on fire management activities as they relate to other agencies and fire protection responsibilities.

Fish

Public Concern No. 20. The Forest Service should indicate whether removal of fish passage barriers on existing roads will occur only as funding becomes available.

Response: Fish passage barriers would be addressed when site-specific projects are identified and analyzed, and as funding becomes available. The KNF, LNF, and IPNFs have been very successful over the past ten years at acquiring funds and implementing fish passage projects. For example, the LNF has replaced approximately 80 culverts and the IPNFs has replaced approximately 25 culverts and removed at least 10 culverts. Over the past 10 years, one district on the IPNFs has received funding to decommission or place into long-term storage (hydrologically stabilized) over 80 miles of road, which would have included removal of culverts.

Public Concern No. 21. The Forest Service should include hydrologically neutralizing roads upon closure of the road to address effects to stream channels.

Response: Current forest plan direction as embodied in the Inland Native Fish Strategy (INFS) Decision Notice and Finding of No Significant Impact (1995) requires that projects and activities not retard the attainment of riparian management objectives (RMOs). Consistency with INFS standards and guidelines for road management include providing for: 1) Pre-, during-, and post-storm inspections and road maintenance (RF-2) and; 2) Closing and stabilizing roads not needed for future management activities (RF-3).

In addition to INFS standards and guidelines, the Idaho Forest Practices Act and State of Montana Best Management Practices provide for regular preventive maintenance operations to minimize disturbance and damage to water quality and fish habitat. On barriered roads, achieving consistency with these requirements could include maintaining culverts left in place or removing the drainage structures. Per the alternative design features and USFWS Biological Opinion, roads closed to create core habitat will be put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years (FSEIS, p. 20; USDI Fish and Wildlife Service 2011a, page A-13). Furthermore, as part of incidental take statement for the selected alternative, terms and conditions require that on roads or any road that is closed by a barrier (i.e., not a gate) and is intended to be kept closed for at least 5 years is hydrologically neutral (as defined in subsequent project level consultations with the Service) and capable of passing at least a 100-year flood event with minimal erosion. (USDI Fish and Wildlife Service 2011a, page B-66).

As a result of these requirements, we expect implementation of the selected alternative to provide additional opportunities to address watershed concerns through site-specific projects developed to meet the selected TMRD and core objectives. Where site-specific projects propose to barricade roads, the analyses will consider the risks of not removing culverts and will demonstrate consistency with forest plan standards, the Idaho Forest Practices Act, and Montana Best Management Practices as applicable. Therefore, we expect aquatic systems to benefit as needs are site-specifically identified through additional analyses (FSEIS, page 192).

Public Concern No. 22. The Forest Service should provide quantitative estimates of instream habitat quality in order for a meaningful comparison of the alternatives to be made regarding water quality parameters and fish habitat.

Response: The FSEIS discusses watersheds within the project area in Chapter 3, section Aquatics; Watershed and Fisheries, Affected Environment for Watersheds. Greater detail regarding instream habitat quality, including quantitative estimates of habitat within specific streams, would be presented when specific projects are identified and NEPA documents are prepared.

Public Concern No. 23. The Forest Service should protect bull trout spawning streams within several Bear Management Units by stabilizing or decommissioning roads prior to closing the core areas.

Response: This FSEIS is a programmatic document that will provide guidance for future decisions conducted at the site-specific or project level. The Forest Service has a responsibility to protect bull trout and other aquatic species. When site-specific projects are proposed and NEPA initiated, the protection of bull trout and other aquatic species will be considered and could assist in the development of the proposed action.

Public Concern No. 24. The Forest Service should assess the effects of entry restrictions that may prohibit important activities (i.e., State fisheries management programs) necessary to promote recovery of bull trout in Trestle Creek and other watersheds in the Bear Management Units.

Response: The need for Idaho Department of Fish and Game access to specific roads within BMUs for survey and other purposes would be considered by the Forest Service at the project-specific level when individual roads/road segments are identified and public comment sought on the potential changes in access status for these roads. The potential impact of Alternative D Modified on IDF&G access to survey areas would likely be greater than Alternative E Updated because Alternative E Updated balances the need for increased grizzly bear security with other needs within the BMUs, such as the need for administrative access, whereas Alternative D Modified was designed to address increased grizzly bear security only.

Public Concern No. 25. The Forest Service should include the most recent information from the Idaho Department of Fish and Game on the status of westslope cutthroat trout.

Response: Current information regarding the status of the westslope cutthroat trout has been added to the Affected Environment for Fisheries section of the FSEIS.

Forest Plan

Public Concern No. 26. The Forest Service should consider adding a guideline to the Idaho Panhandle National Forests Forest Plan that institutes consultation with Idaho Department of Parks and Recreation (IDPR) when an IDPR Grant Project will be affected by route restriction or decommissioning.

Response: It is in everyone’s best interests if potential issues are resolved early in the process. To that end the list of recreation projects completed utilizing IDPR grant monies has been forwarded to the ranger districts on the IPNF for their use. We currently do not see a need for inclusion of a guideline into the amendment for the purposes of requiring consultation between the IDPR and the IPNF. Such an arrangement would best be addressed more informally between the parties.

Public Concern No. 27. The Forest Service should revise the IPNF, KNF, and LNF Forest Plans versus completing this DSEIS and Forest Plan amendment because:

A) the DSEIS is proposing significant changes that allocates multiple use lands to de-facto wilderness;

B) there is significant new information in the DSEIS that makes the current plans illegal and changed conditions require a plan revision per NFMA statutes and violates the Administrative Procedures Act, NFMA, and NEPA by agreeing to settle a lawsuit with an amendment

C) the DSEIS does not disclose the real consequences of this amendment, such as elimination of roads for motorized access; the means to implement current direction for vegetation management, forest protection, and recreation opportunities promised by the current forest plans are removed; no alternative roadless management prescription is disclosed; and no site-specific analyses and site-specific analyses at the project level do not evaluate long-term cumulative effects or reduced access;

D) the decision being made is insignificant because of the short period of time it would be in effect is misinformation as it will be carried into the forest plan revision process as current direction.

Response (A and B): In the spring of 1999, the Alliance for the Wild Rockies filed a lawsuit challenging the KNF and IPNFs implementation of the Interim Rule Set without amending their forest plans. The national forests settled the lawsuit in March 2001 and agreed to amend their respective forest plans to address grizzly management. Settlement of the lawsuit was not a violation of the Administrative Procedures Act, NFMA or the NEPA.

The KNF, LNF, and IPNFs are currently in the forest plan revision process. The revised forest plans will include standards to protect grizzly bear (ROD, *Description of the Decision*). It is expected that the specific provisions of this amendment will be carried forward into the revised forest plans and is being addressed during the forest plan revision process (ROD, *NFMA Significance of the Amendment*). The programmatic ROD changes the forest plans by amending the objectives, standards, and guidelines that address grizzly bear management within the Selkirk and Cabinet-Yaak Recovery Zones. The ROD for these amendments describes, from an NFMA perspective, the significance of these amendments based upon planning direction found in a final rule reinstating the National Forest System Land and Resource Management Planning rule of November 9, 2000, as amended (2000 rule) (74 FR 242 [67059-67075]) (ROD, *NFMA Significance of the Amendment*). Based upon the information and analysis contained in the FSEIS, it was determined that adoption of the management direction contained in Alternative E Updated would not result in a significant amendment to the existing forest plans (ROD, *NFMA Significance of the Amendment*).

(C): The programmatic ROD changes the Forest Plans by amending the objectives, standards, and guidelines that address grizzly bear management within the Selkirk and Cabinet-Yaak Recovery Zones; it does not consider site-specific future activities that implement the amendments. Site-specific decisions will implement this decision. Future project level analyses and decisions used in implementation of these programmatic actions will provide a more detailed assessment of the effects to specific resources and opportunities. There will not be project-by-project site-specific changes (amendments) to the existing Forest Plans (ROD, *Introduction*). The FSEIS does not establish new Management Areas, nor change the land base considered suitable for timber production. Reconsideration of goals, objectives, and land allocations will be part of the analysis of the longer-term strategy considered when the Forest Plans are revised (FEIS, page 1-7).

Many of the indirect and cumulative effects disclosed in Chapter 3 of the FSEIS include an assessment of forgone opportunities. Any direct effects would occur at the project-level when site-specific decisions are made about road and trail use restrictions. Most of the effects identified in this analysis are indirect effects in that they would occur later in time as a result of this programmatic decision. Cumulative effects of past and present activities are considered in the existing condition and are discussed as part of the affected environment. Cumulative effects of ongoing and foreseeable activities on threatened and endangered species, watershed and fisheries, transportation, timber, recreation, and social/economic analyses are addressed in the FSEIS (please see the Table of Contents for applicable page numbers).

(D): The ROD states that the future revised Forest Plans will need to include standards to protect grizzly bear. The specific provisions of this amendment would be carried forward into the revised Forest Plans and addressed during the revision process (ROD, *Description of the Decision*).

Management Indicator Species

Public Concern No. 28. The Forest Service should protect wildlife by placing more emphasis on hiking restrictions than on motorized recreation and access closures because studies have found greater disturbance to elk or deer resulting from hikers than from motorized vehicles (Telemetered Heart Rate of Three Elk As Affected By Activity and Human Disturbance by A.L. Ward and J.J. Cupal 1976; and Response of Mule Deer to Persons Afoot and Snowmobiles by David J Freddy, et al. Wildlife Society Bulletin 1986).

Response: The purpose of this Forest Plan Amendment is to address motorized access for the threatened grizzly bear within-and-around the Selkirk or Cabinet-Yaak grizzly bear recovery areas. Specifically, the scope of the analysis pertains to access standards for wheeled motorized vehicle use during the active bear year (FEIS, page 1-2; FSEIS, page 2). Therefore, the effects analysis for elk and deer that focuses on motorized access impacts is appropriate (FEIS, pages 3-46 to 3-38; FSEIS, pages 144-146).

NEPA

Public Concern No. 29. The Forest Service should provide local citizens more say in the decision made by the decisionmaker.

Response: The Forest Service considers all comments equally.

Public Concern No. 30. The Forest Service should be more specific when comparing alternatives, as there is a lot of disparity between Alternative D Modified and Alternative E Updated and this makes it difficult to estimate and compare impacts between the two alternatives.

Response: It is not possible to precisely predict the number of miles of road that may be opened, closed with gates, and/or closed with barriers in order to achieve the OMRD, TMRD, and core area parameters of each alternative. Implementation of the amendments will be accomplished through project level decisions. Roads or trails proposed to be barriered, opened, or gated will only be identified as part of the site-specific implementation of these amendments, when they are ripe for decision. However, as a result of simulations, resource specialists concluded that it takes approximately two to six miles of change in wheeled motorized vehicle access status to achieve a one percent change in OMRD, TMRD, or core area; therefore the DSEIS and FSEIS present a range in the number of miles of road potentially affected (FSEIS, page 164).

Public Concern No. 31. The NEPA process should have been an issues-driven process and the significant issues for a travel plan should be those that have the greatest impact on motorized recreationists. The Forest Service should address all comments that affect motorized recreationists even though they didn't show up on the agency's significant issue list (i.e., importance of each existing route, cumulative effects of all motorized closures, and need for more, not less motorized recreational opportunities).

Response: The NEPA process for this EIS was an issues driven process and identified public access for recreation and social uses as a significant issue (FEIS, page 2-2). However, this is not a site-specific analysis completed according to 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need in this instance is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). This programmatic environmental analysis will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use.

Public Concern No. 32. The Forest Service should base their schedule for this project on allowing the time to adequately address the current and future needs of motorized recreationists, not to meet a specific deadline.

Response: This is not a site-specific analysis completed according to 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need in this instance is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). This programmatic environmental analysis will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use.

Public Concern No. 33. The Forest Service decisionmaking process should fairly analyze all comments received disregarding number or specificity, and not use comments as a voting process.

Response: The Forest Service considers and analyzes all comments received during the comment period; however, this is not a voting process. This process is about comments that identify areas within the document that need further study or clarification and/or provide rationale for the comment. The number of comments received and the number of comments pertaining to any given resource or alternative do not constitute a vote.

Public Concern No. 34. The Forest Service design elements for Alternative D Modified and Alternative E Updated should be clarified and edited through the section 7 consultation process, then determinations should be made as to which, if any, are to be adopted as standards for the alternatives versus kept as terms and conditions to a new biological opinion.

Response: The design elements as presented in the DSEIS were the best information available at the time the document was published to assist in disclosing the potential effects of the alternatives. Since that time, the terms and conditions have been updated and finalized. The final version is presented in this FSEIS and ROD.

Public Concern No. 35. The Forest Service should monitor the progress of the DSEIS and implement standards that will assist with future revision of motorized access management standards.

Response: The Forests have and will continue to monitor their progress in implementing the standards. Annual reports are submitted to USFWS detailing the progress made toward achieving and maintaining the standards for OMRD, TMRD, and core area within the Selkirk and Cabinet-Yaak Recovery Zones. The amount of administrative use is also reported.

Public Concern No. 36. The Forest Service should have stronger accountability in the management, updates, and accuracy of the road system GIS data.

Response: The GIS roads layer is updated annually for the purposes of providing accurate information to the USFWS on the ability of the Forest Service to achieve and maintain the standards for OMRD, TMRD, and core area within the Selkirk and Cabinet-Yaak Recovery Zones. While errors in the data are certainly possible, they are corrected upon discovery.

Public Concern No. 37. The Forest Service should include road density columns for all ownership in Table 17 for the table to be biologically meaningful.

Response: The information presented in Table 25 of the FSEIS (formerly Table 17 in the DSEIS) displays the size, land ownership, and linear miles of open and total roads for the identified recurring use areas, which are outside of the Selkirk and Cabinet-Yaak Recovery Zones. The standards for linear miles of open and total road will only apply on NFS lands within the recurring use areas; therefore, adding a column for other ownerships would not serve a purpose.

Public Concern No. 38. The Forest Service should be more specific in identifying which roads and trails would require closure to meet standards under various alternatives, thus enabling the public to assess which alternative is more compatible with their needs for access.

Response: Planning for units of the NFS involves two levels of decisionmaking. The first level, often referred to as programmatic planning, is the development or amendment of forest plans that provide management direction for resource programs, uses, and protection measures. Forest plans and associated amendments are intended to set out management area prescriptions or decisions with goals, objectives, standards, and guidelines for future decision-making through site-specific planning. The environmental analysis accomplished at the plan amendment level guides resource management decisions and aids the next level of site-specific planning.

The second level of planning involves the analysis and implementation of management practices designed to achieve goals and objectives of the Forest Plan. This is commonly referred to as site-specific or project-level planning. It requires relatively detailed information that includes the location, condition, and current uses of individual roads and trails, and the identification of when and where individual roads and trails will be open or closed to various types of use. This step is most often accomplished at the ranger district (local) level.

This FSEIS and the accompanying ROD do not prescribe site-specific access management decisions within the Selkirk and Cabinet-Yaak Recovery Zones. This analysis has examined the effects of setting various levels of human access within the Selkirk and Cabinet-Yaak Recovery Zones. Implementation of this programmatic decision will be accomplished through project level decisions; so it is not possible to predict the actual effect of each alternative in this programmatic analysis. A series of computer simulations were run in order to determine an approximation of what changes in wheeled motorized vehicle access status may be necessary to meet the standards for OMRD, TMRD, and core area.

A Moving Windows computer application was used for OMRD and TMRD simulations. Core area simulations were performed using a GIS buffering routine. Each simulation produces a different numerical result in the number of miles of change in wheeled motorized vehicle access status it may take to move towards the standards for OMRD, TMRD, and core area. The degree of change in OMRD, TMRD, and core area varies from BMU to BMU. It is relative to the degree of change in wheeled motorized vehicle access status and the variability of spatial relationships resulting from those changes. For example, the buffering of a switchback road can have a different result in core area compared to buffering an equal length of road that traverses in a continuous manner across a hillside. As a result of the simulations, resource specialists concluded that it takes approximately two to six miles of change in wheeled motorized vehicle access status to achieve a one percent change in OMRD, TMRD, or core area.

Site-specific decisions on individual roads and trails will be proposed through future project-level planning. These proposals will require public notification and will seek public input for identification of issues and concerns and development of alternative actions. This FSEIS and ROD will not be directly authorizing any specific action; rather, they will identify and select a programmatic action which sets standards for implementation of site-specific proposals.

Public Concern No. 39. The Forest Service should evaluate actions fairly and unbiased, as required by law, and make concise disclosures of the rationale for their decisions.

Response: The analysis of the probable effects of each alternative has been presented in a clear and unbiased manner. This FSEIS and the accompanying ROD do not prescribe site-specific access management decisions within the Selkirk and Cabinet-Yaak Recovery Zones, so it is not possible to predict the actual effect of each alternative (FSEIS, page 164). The ROD provides the rationale for selecting Alternative E Updated for implementation.

Public Concern No. 40. The Forest Service should address actions programmatically in the DSEIS and refine them in future site-specific decisions.

Response: Site-specific decisions on individual roads and trails will be proposed through future project-level planning.

Public Concern No. 41. The Forest Service should analyze the cumulative effects of motorized closures over the past 30 years and:

A) analyze past, current, and reasonably foreseeable actions, which includes other planning efforts such as forest planning and travel management planning, that will result in motorized closures in the States of Montana and Idaho; and includes human environment (issues, needs, alternatives, and impacts on the public associated with reduction or lack of adequate motorized recreation) and social, cultural, historic use, current use, future needs, economic impact from perspective of motorized recreationists.

Response: Past, present, and reasonably foreseeable actions (40 CFR 1508.7) that could affect the issues pertinent to this analysis were considered for the cumulative effects of implementing Alternative D Modified and Alternative E Updated. Reasonably foreseeable actions include those Federal and non-Federal activities not yet undertaken, for which there are existing decisions, funding, or identified proposals (36 CFR 220.3). These activities may occur regardless of which alternative is selected for implementation. Cumulative effects of past and present activities are considered in the existing condition and are discussed as part of the affected environment. Cumulative effects of ongoing and foreseeable programmatic activities on threatened and endangered species, watershed and fisheries, transportation, timber, recreation, and social/economic analyses are addressed in the FSEIS (please see the Table of Contents for applicable page numbers). Because of the programmatic nature of the decision, many of the indirect and cumulative effects disclosed in Chapter 3 include an assessment of forgone opportunities.

The FSEIS includes a list of activities, decisions, and environmental documents that are applicable to all or portions of the NFS lands included in the analysis area (FSEIS, page 41). The list is divided into three sections: 1) programmatic or relatively large-scale decisions, plans, projects, and policies; 2) management practices that directly or indirectly result in ground disturbance; and 3) activities that typically do not result in ground disturbance. These lists are not all inclusive, as other activities may be considered in the given resource sections of Chapter 3.

The accompanying ROD clearly explains why the decision to amend these forest plans is not a significant amendment (see *NFMA Significance of the Amendment*). Future revised forest plans will need to include standards to protect grizzly bear. It is expected that the specific provisions of this amendment would be carried forward into the revised forest plans and are addressed during the revision process (ROD, *NFMA Significance of the Amendment*).

Public Concern No. 42. The Forest Service should consider grizzly bear delisting under the Reasonably Foreseeable Actions.

Response: We are not aware of any USFWS proposal to delist grizzly bear within the Selkirk and Cabinet-Yaak Recovery Zones; therefore, grizzly bear delisting was not considered as a reasonably foreseeable action within the analysis.

Public Concern No. 43. The Forest Service should include the cumulative effects of additional motorized access from the Montanore and Rock Creek Mine projects.

Response: The cumulative effects from the Montanore and Rock Creek Mine projects have been considered in the cumulative effects analysis for the grizzly bear. Each of these projects includes a substantial mitigation plan that addresses multiple risk factors including changes in wheeled motorized vehicle access, potential displacement, attractants, law enforcement, and small grizzly bear population numbers. The mitigations are not expected to provide security levels above those provided for in this decision, but rather are expected to assure achievement of the selected standards, which will result in an improvement over the existing conditions (FSEIS, page 99).

Public Concern No. 44. The Forest Service should include a law enforcement strategy to monitor and enforce all closures and restrictions under the final decision.

Response: The Forest Service currently monitors and enforces closures and restrictions within the Selkirk and Cabinet-Yaak Recovery Zones. The Forest Service monitors closures throughout the course of the active bear season, often multiple times, to determine extent of any unauthorized use on restricted and barriered roads (USDA Forest Service 2008, 2009, 2010) and financially supports state bear biologists in monitoring and enforcing closures on the Idaho Panhandle portion of the project area. The Forest Service submits annual reports to the USFWS documenting the progress made toward achieving and maintaining the standards for OMRD, TMRD, and core area within the Selkirk and Cabinet-Yaak Recovery Zones. In 2009, monitoring of closures/maintenance of habitat within the Selkirk and Cabinet-Yaak Recovery Zones included (USDA Forest Service 2010):

- The CNF accomplished road closure enhancements on 17 roads within the Selkirk Recovery Zone. These treatments were mainly intended to block OHVs from illegally driving on closed roads.
- On the IPNFs, closure devices (i.e., gates, guard rails) that were considered ineffective in controlling motorized vehicles were enhanced by boulder placement alongside the closure device, by relocating the closure device to a more defensible location, or constructing new berms or tank traps at 15 sites on the Priest Lake Ranger District, 10 sites on the Sandpoint Ranger District, and 10 sites on the Bonners Ferry Ranger District.
- On the KNF, closure devices on each district were checked and maintained, including signing. In addition, weekend patrols were conducted throughout the hunting season to provide agency presence during the high mortality risk period for grizzly bears. Administrative use of restricted roads was closely monitored.

In 2009, some information, education, and other efforts across the Selkirk and Cabinet-Yaak Recovery Zones included (USDA Forest Service 2010):

- During the hunting season, forest protection officers (FPOs) conducted emphasis patrols in the CNF's portion of the grizzly bear recovery area. These patrols informed/educated hunters about grizzly bear recovery and camping and hunting safely in grizzly bear habitat. Patrollers stopped at every camp and contacted every hunter they encountered. Proper food storage requirements were discussed, brochures, maps, and other materials were handed out, and other information was provided as requested. Patrollers also checked for compliance with the CNF's food storage order, motor vehicle use map, and other regulations. Over the course of a day, all vehicle descriptions and plate numbers were recorded. Gates and other road closures in the Selkirk Recovery Area were monitored. Typically FPOs will write a number of law enforcement incident reports on each patrol. Occasionally they write citations or assist the district's law enforcement officer (LEO) with investigations. These hunter contact patrols provided an agency "presence" in the recovery area when the mortality risk to bears is highest. Patrollers worked in pairs, are always in uniform, and drive recognizable agency trucks. Patrols mainly occurred on weekend days. The CNF also performed 12 patrols in the recovery area in 2009. Washington Department of Fish and Wildlife game agents/biologists assisted with these efforts on two separate patrols and approximately 200 – 300 hunters were contacted.
- On the KNF and IPNFs, districts posted grizzly bear info signs (Hunters Know Your Bears) at trailheads, behind gates and other access points, dispersed sites, and campgrounds. On the Priest Lake Ranger District of the IPNFs, employees conducted approximately 205 visitor contacts to relay information such as the proper storage of bear attractants, sanitation, bear identification, general wildlife information and other rules and regulations. Informative literature, including "Be Bear Aware" and "Living in Bear Country" was disseminated to the public via front desks at the Ranger District and Forest Supervisor offices, brochures and kiosks at Ranger Stations and campgrounds to emphasize the importance of proper bear identification, as well as how residents and recreationists should properly store their food, garbage and other bear attractants while in bear country.

Plants

Public Concern No. 45. Alternative D Modified in the DSEIS is biased. The Forest Service should acknowledge that the ecological and economic benefits of having fewer noxious weed infestations far outweighs the slight difficulty caused by

administratively, not being allowed to drive to every noxious weed site to find and treat the infestation.

Response: This concern, for Alternative D Modified, is partially addressed in the FSEIS on pages 261 - 263. There are ecological and economic benefits of having fewer noxious weed infestations. Restricting all motorized vehicle travel on roads, including road maintenance, would help reduce the spread of noxious weeds and/or their seeds. However, because wind, birds and animals are vectors for seed spread, and because fire increases the potential for establishment, noxious weeds can and will spread regardless of whether administrative use is allowed on a road or not. In addition, most forest roads already have established noxious weeds with a seed bank established in the ground that can remain viable for many years. For example, spotted knapweed seed is our most common noxious weed, with seeds that can remain viable for up to ten years or more. Established populations usually require multiple years of treatment and monitoring to control. Restricting a road does not automatically guarantee an ecologically or economically beneficial result. In fact, access and cost factors would guarantee that fewer populations would be treated, which in turn could impact native plant and animal populations. Limiting public access while allowing administrative access to locate and treat populations over time would result in ecological benefits that are accomplished in the most efficient and economical way.

Public Concern No. 46. The Forest Service should more accurately estimate the impacts on native plant species if Alternative E Updated is adopted because this alternative has fewer closed routes and additional routes are being opened.

Response: The 2002 FEIS and the 2011 FSEIS do not specifically discuss the impacts of access management on native plant species, with the exception of those identified as threatened, endangered or sensitive. They were addressed in the FEIS (pages 3-122 and 3-123), and in the FSEIS (pages 257-259). The Vegetation and Timber Management Sections in both documents did address the environmental effects of the alternatives on forest vegetation; however, those discussions were related to changes in administrative access to suitable NFS lands for vegetation management and timber harvest.

Generally, the effects of opening or closing roads on native vegetation are not identified as an issue or concern. Native plants are usually widespread in suitable habitat and those colonizing disturbed road or roadside surfaces are usually common in surrounding areas. If impacts to native plants (other than TES) were of concern, then comparing the effects of alternatives would be based on the number of miles of access changes that would occur. The following table shows the change in access (roads and trails) that could occur for all alternatives to show how Alternative E Updated compares to other alternatives in the number of miles that could be closed or opened. Since administrative access can occur on gated roads, both public and administrative use changes are shown.

As shown, there is a wide range in the miles of potential road access changes. Theoretically, closing roads could reduce impacts on native plant species, while opening roads could increase impacts, although this would not be true for some species such as those that prefer regularly disturbed soil or those that need an open canopy. Alternative E Updated does have the potential to close fewer roads to public access than any other alternative, but Alternative C would potentially open more roads to the public. Alternatives B and E Updated are similar and would potentially close fewer roads to administrative use than other alternatives, while Alternatives C and E could potentially open more roads to administrative use than Alternative E Updated. These miles of access changes are the only and most accurate way to compare the potential impacts of the alternatives on native plants.

Table 70. Change in types of access by alternative as analyzed in the 2002 FEIS and 2011 FSEIS

	Change in Public Access		Change in Administrative Access	
Type of Change:	**From access (open) to no access (gated or barriered)**	**From no access (gated or barriered) to access (open)**	**From access (open or gated) to no access (barriered)**	**From no access (barriered) to access (open or gated)**
Alternative A (2002 FEIS, Table 3-21, pg. 3-59)	160-161	0	0	0
Alternative B (2002 FEIS, Table 3-23, pg. 3-62)	168-179	0	139-197	0
Alternative C (2002 FEIS, Tables 3-25 and 3-26, pgs. 3-64 and 3-65)	164-231	239-520	504-709	152-287
Alternative E (2002 FEIS, Tables 3-28 and 3-29, pgs. 3-67 and 3-68)	51-70	103-316	367-514	43-132
Alternative D Modified (2011 FSEIS, Table 40, page 169)	880-1,171	6-18	1,263-1,767	8-19
Alternative E Updated (2011 FSEIS, Table 42, page 173) [preferred]	34-102	110-330	90-270	36-108

Public Concern No. 47. The Forest Service should acknowledge that lack of monitoring and road maintenance may also have a positive impact on native plant species versus an indicator of negative impacts as cited throughout the DSEIS.

Response: Monitoring in the DSEIS and FSEIS generally refers to the practice of surveying forest roads, trails and other disturbed soil areas for the presence of noxious weeds (which are then treated), and checking previously treated areas to re-treat as needed so that populations are controlled or eradicated. Most forest roads are monitored every year or two, therefore, the miles of road that would be restricted to administrative motorized access (refer to the table in Public Concern No.46) would be the best estimate of monitoring that could be curtailed. Some roads may still be monitored by non-motorized methods such as by foot, bicycle, or horses. Most monitoring does not involve site-specific monitoring projects, although there are some locations that are intensely monitored. These are usually where initial new invasive species become established.

Existing native plant species would not be affected by road maintenance activities or by vehicles used to survey, monitor or treat noxious weeds if all motorized access was restricted. In terms of direct, physical damage to native plants, a lack of monitoring and/or road maintenance would be positive. However, there are negative impacts associated with a lack of monitoring as well, which include new infestations escaping detection and spreading beyond our ability to control when they first become established, existing infestations that continue to spread, and increased cost of controlling larger, more widespread infestations. These impacts are addressed on page 258 of the FSEIS. Road decommissioning or other projects may actually increase the potential for establishment of noxious weeds by providing a disturbed soil bed that can be colonized by wind, bird or animal-borne seeds.

Public Involvement

Public Concern No. 48. The Forest Service should conduct an open and fair comment period for those persons or organizations that may be interested or affected by the closures, such as a segment of the motorized community who feel they lose every time in the travel planning process.

Response: A fair and open comment period for these amendments has been provided (see FEIS Chapter 4 and p. 353 of this FSEIS). This is not a site-specific analysis done under 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need for this proposal derived from a need to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). This programmatic environmental analysis and decision will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use. When those proposals are ripe for a decision, a separate public involvement process, under the auspices of NEPA will be conducted.

Public Concern No. 49. The Forest Service should develop a comment process that is not influenced by politics and/or special interest groups and based on the size or budget of their organization, so as to provide a fair process that benefits the majority of the public and it's needs from the national forest.

Response: A comment process that is fair has been provided for these amendments (FEIS, Chapter 4 and FSEIS, page 353). The Responsible Officials have considered all comments received equally. After consideration of comments, the potential impacts disclosed in this FSEIS, and compliance with laws and regulations, it was determined that Alternative E Updated would best achieve the purpose and need for this proposal, while responding to identified issues, including increased secure habitat for grizzly bears.

This programmatic environmental analysis and decision will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use. When those proposals are ripe for a decision, a separate public involvement process, under the auspices of NEPA will be conducted.

Public Concern No. 50. The Forest Service should clearly identify all proposed site-specific motorized road and trail closures for each alternative utilizing maps, tables, and summaries to provide for adequate public participation and comment and include:

- **A) disclosing the miles of open roads and miles that would be closed with closure percentages, in the affected ranger districts and the two recovery zones;**
- **B) identifying any potential road closures affecting state or private forest land management so adjacent landowners can adequately assess the impacts of the closure on their management and economic returns;**
- **C) informing Forest Capital Partners as to which roads, if any, will be permanently closed and how these closures will affect their forestland access;**
- **D) disclosing roads that are to be decommissioned.**

Response: This is not a site-specific analysis done under 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need for this proposal derived from a need to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4).

(A): Table 39 (FSEIS, page 162) provides a comparison of the existing condition for miles of road and trail by BMU within the Selkirk and Cabinet-Yaak Recovery Zones and Table 40 and Table 42 (FSEIS, pages 169 and 173) display by BMU the estimated change in wheeled motorized vehicle access by alternative within the Selkirk and Cabinet-Yaak Recovery Zones.

(B and C): This programmatic environmental analysis and decision will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use. When those proposals are ripe for a decision, a separate public involvement process, under the auspices of NEPA will be conducted.

(D): The DSEIS and FSEIS adequately disclose that barriered roads would be made unusable by the public or forest managers. However, the biological opinion's terms and conditions recognize that emergency situations will periodically occur. In the event of a wildfire, temporarily reopening restricted or barriered/reclaimed roads within a BMU may be necessary for effective fire suppression. Emergency situations such as this will be consulted on with the USFWS. As disclosed in the DSEIS (page 115) and FSEIS (page 156), reclaimed/obliterated and barriered roads are roads that are managed with the long-term intent for no motorized use. These roads have been treated in such a manner to no longer function as a road. An effective means to accomplish this is through one or a combination of several means, including recontouring to original slope, placement of logging, or forest debris, planting shrubs or trees, obliterating/barriering the entrance, etc.

Public Concern No. 51. The Forest Service should use various methods to work with the public, gather comments, and ensure that the public is sufficiently notified of the comment period, which would include:

- **A) contacting motorized recreationists directly in the field and at club meetings;**
- **B) collaborative sessions that produces reasonable multiple use outcomes and involves all recreational interests.**

Response: Chapter 4 of the FEIS (pages 4-1 to 4-7) and the beginning of this appendix (page353) detail the extensive public involvement effort undertaken for this analysis. Public involvement efforts were varied and included ads, mailings, open house public meetings, and presentations to numerous organizations.

Public Concern No. 52. The Forest Service should consider the length of the comment period, based on that other Forest Service projects were released for public comment at the same time, and that the comment period is too short considering the time taken to develop the DSEIS by the Forest Service.

Response: EIS's require a minimum 45-day comment period (40 CFR 1506.10(c)). Because it takes a week or more after EPA receives an EIS to get the notice of availability in the Federal Register, the public is typically given 1-2 weeks longer to review EISs than the required 45-day comment period. For this project, the DSEIS was made available to the public late in the week of April 20th to early in the week of April 27, 2009, which is one to two weeks prior to the Notice of

Availability being published in the Federal Register on May 8, 2009. The length of the comment period for this document was sufficient.

Recreation

Public Concern No. 53. The Forest Service should continue motorized access to Lunch Peak, Carr Creek, Roman Nose Recreational Area, Black Mountain, Deer Creek, and Canuk Basin for all types of recreational use, including access for persons with disabilities or the senior citizens.

Response: This FSEIS and subsequent ROD would not prescribe site-specific access management decisions within the Selkirk and Cabinet-Yaak Recovery Zones. The decision to change the status of a specific road or trail would be proposed through project-level analyses and decisions. Site-specific decisions on individual roads and trails will be proposed through future project-level planning. These proposals will require public notification and will seek public input for identification of issues and concerns and development of alternative actions. This FSEIS and ROD will not be directly authorizing any specific action; rather, they will identify and select a programmatic action which sets standards for implementation of site-specific proposals.

Alternative D Modified was developed to focus more fully on the issue of increased secure habitat for grizzly bears (FEIS, page 2-18; DSEIS, page 15). To achieve the higher security standards prescribed by this alternative, additional secure habitat would be needed; thereby reducing the opportunity for motorized access to the national forest. Alternative E Updated was developed to address a number of issues, including the ability to respond to issues related to public and administrative access, economics, access to private inholdings, and increased grizzly bear habitat security (FEIS, page 2-15). Therefore, the potential effects of Alternative E Updated upon motorized access are more moderate than those for Alternative D Modified (FSEIS, pages 211-216).

Public Concern No. 54. The Forest Service should provide motorized access to more national forest system (NFS) lands and facilities rather than less (do not lock us out of our NFS lands) because:

- **A) by dispersing the recreational use versus concentrating it in one area, a more quality recreational experience will be realized;**
- **B) the population is increasing, thus use is increasing on NFS lands;**
- **C) OHV users are increasing and there are less non-motorized users;**
- **D) the Forest Service mission is to provide access for multiple use on NFS lands, which includes access for: the senior citizens, persons with disabilities and/or physically impaired, the young, hikers, hunters, fisherman, horseback riders, firewood cutters, berry pickers, snowmobilers etc.;**
- **E) you need to consider the social and economic impact of the road closures (we live here for the very reason to get in the woods with our families, it's a way of life);**
- **F) the public needs access to NFS lands, just as much as the grizzly bears need NFS lands for security - need to balance public access with providing grizzly bear security.**

Response: The purpose and need for action for these Forest Plan amendments originates from the need to include a set of motorized access and security guidelines to meet our responsibilities under the ESA to conserve and contribute to recovery of grizzly bears. A range of alternatives have been considered both in the 2002 FEIS and 2010 FSEIS that would work toward achievement of the purpose and need while addressing resource issues, including public access for recreation and social uses (FEIS, page 2-2). Of the alternatives considered in the FSEIS, Alternative D Modified was developed to focus more fully on the issue of increased secure habitat for grizzly bears (FEIS, page 2-18; FSEIS, page 19). As such, it could have greater impacts on other uses of the national forest, including motorized recreation. In contrast, Alternative E Updated balanced public access with providing for increased grizzly bear security (FEIS, page 2-15). Therefore, Alternative E Updated would have potentially less effect on access and motorized recreation use within the Selkirk and Cabinet-Yaak Recovery Zones.

An analysis of the social and economic impact of the alternatives was included in the DSEIS and FSEIS (pages 222-243). While Alternative D Modified was identified as having the greatest potential to affect the area economy and lifestyle of the residents and visitors to the analysis area, Alternative E Updated had the potential for similar effects, but to a lesser extent (FSEIS, pages 239-242).

Public Concern No. 55. The Forest Service should develop a complete inventory of all existing and closed routes that will provide for an adequate and fair evaluation of the road and trail system.

Response: The Forest Service has compiled an inventory of existing roads and trails within the Selkirk and Cabinet-Yaak Recovery Zones for this analysis (see FSEIS, pages 158-163). However, it is important to highlight that this is not a site-specific analysis done according to 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need for these amendments is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). This programmatic environmental analysis will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use.

Public Concern No. 56. The Forest Service should manage public lands for those people that visit the national forest and disregard the visitor use data, which is based on a percentage of the total population, thus this adjustment should be made in the evaluation in the Final SEIS.

Response: This is not a site-specific analysis done under 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need for these amendments is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). This programmatic environmental analysis will provide guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use.

Public Concern No. 57. The Forest Service should consider that the loss of recreational opportunities on NFS lands will likely increase recreational demands on Idaho Department of Lands (IDL) lands and require additional monitoring and enforcement.

Response: There could be increased recreational demands upon IDL lands resulting from implementation of either Alternative D Modified or Alternative E Updated. Alternative D Modified has the greatest potential for cumulative effects to recreational opportunities outside the

Selkirk and Cabinet-Yaak Recovery Zones because 776 to 995 miles of open road in the Cabinet-Yaak Recovery Zone and 104 to 176 miles of open road in the Selkirk Recovery Zone could potentially be gated or barriered (FSEIS, pages 213, 215, and 216). As recreational opportunities and participation decreases in the Selkirk and Cabinet-Yaak Recovery Zones, users may seek other local areas to recreate. Therefore, more people might use sites and areas already being utilized resulting in overcrowding and a reduction in the quality of the recreational experience. Using a standard of two hours, or approximately 100 miles from home as the local area, the FSEIS estimates that effects could occur on the entire KNF, the IPNFs' north and central zones, most of the LNF and extend to the Bitterroot, Flathead, and Colville National Forests.

For Alternative E Updated, which is the preferred alternative, an estimated 34 to 102 miles of road would be changed from open to gated or barriered. The majority of the change would occur within the Cabinet-Yaak Recovery Zone, particularly BMUs 7 (Silver Butte) and 21 (Mt. Headley; FSEIS, page 215). Subsequently, at the project level, where specific roads or motorized trails would be proposed for a change in access status, the potential for loss of recreational opportunities on NFS lands would likely be an issue addressed in the environmental analysis process if impacts to the recreation resource were identified.

Public Concern No. 58. The Forest Service should consider allowing the current use of the November gate opening on some roads in the Boulder Bear Management Unit for hunting and firewood gathering.

Response: Impacts to female grizzly bears have been a critical measurement, because of their reproductive contribution to a species with a low reproductive rate. The April 1 through November 15 "bear year" definition did not line up well with the updated information on den entry for female grizzly bears within the Cabinet-Yaak ecosystem. While a date at the end of the first week of December would be in line with 95 percent of the female den entry dates, using the date of November 30 would provide protection during the hunting season when mortality risk would be higher. That date matches well with hunting season and the current start date (December 1) for use of snow machines on roads otherwise closed to motorized vehicles. This change would provide additional protection from disturbance for an estimate 44 percent more female den entrance dates (a total of 77 percent of the known den entrance dates would be covered (Johnson et al. 2008).

The den entrance dates cover a wide range of weather conditions, including extremes from virtually no snow (den entrance dates extending into December due to availability of food sources) to several feet by mid-November (early entrance dates as no food sources available). An "average" bear year that contributes to reducing mortality risk is desired.

The USFWS began considering November 30 as the end of the bear year in the Cabinet-Yaak ecosystem for administrative use purposes in 1996 (McMaster 1996). The Yellowstone and Northern Continental Divide ecosystems use November 30 as the ending date for their bear year. Using this ending date would make it consistent across three ecosystems.

Public Concern No. 59. The Forest Service should designate their trails closed for motorized use unless specifically designated as open.

Response: This FSEIS and accompanying ROD do not prescribe site-specific access management decisions within the Selkirk and Cabinet-Yaak Recovery Zones. The analysis examines the effects of setting various levels of human access within the recovery zones. The decision to change the status of a specific road or trail would be proposed at a later date through project-level analyses and decisions (FSEIS, page 1).

Public Concern No. 61. The Forest Service should protect the nonmotorized recreational opportunities in the Blacktail Roadless Area.

Response: The overall purpose of this proposal is to amend the three Forest Plans to include a set of motorized access and security guidelines to meet our responsibilities under the ESA to conserve and contribute to recovery of grizzly bears within the Selkirk and Cabinet-Yaak Recovery Zones. The Blacktail Roadless Area, located on the IPNFs, is not located within either the Selkirk Recovery Zone or Cabinet-Yaak Recovery Zone; therefore, it would not be affected by this proposal. The Blacktail Roadless Area would continue to be managed as provided for in the Idaho Roadless Rule and the IPNFs LRMP.

Public Concern No. 75. The Forest Service should provide less access to national forest system (NFS) lands for berry pickers, thus reducing the number of people picking berries on NFS lands.

Response: In order to achieve the proposed security standards of Alternative D Modified, about 598 to 768 miles of open road would need to be barriered (FSEIS, page 169). Barriered roads by definition do not provide for wheeled motorized use (FSEIS, page 271).

Roads

Public Concern No. 62. The Forest Service should use the Forest Service Roads Analysis Manual (FS-643) to evaluate the social, economic, cultural, and traditional values that motorized roads and trails provide for the public.

Response: Travel analysis (formerly known as Roads Analysis) is typically conducted to inform decisions related to identification of the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of NFS lands per 36 CFR 212.5(b)(1) or designation of roads, trails and areas for motor vehicle use per 36 CFR 212.51 [FSH 7709.55(20)]. This programmatic environmental analysis and decision does not identify specific routes for motorized use; rather it identifies a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA. Future analyses conducted at the site-specific or project level will identify specific roads and trails for possible change of status in motorized use. When those proposals are ripe for a decision, a roads analysis would typically be used to inform any decision(s) regarding the social, economic, cultural, and traditional values that motorized roads and trails provide for the public.

Public Concern No. 63. The Forest Service should disclose the quantitative economic benefits from not having to maintain, repair, and mitigate the ecological damage of so many roads that might be decommissioned.

Response: Please see the Social and Economic section of the FSEIS. The Cost Efficiency discussion beginning on page 242 provides information on the cost of implementing Alternative D Modified and Alternative E Updated, including road maintenance savings costs. The potential road maintenance savings have been included in the overall cost of each alternative.

Public Concern No. 64. The Forest Service should use temporary barriers for road closures, should not decommission roads or place them in intermittent status, and administrative access should be allowed on barriered roads because:

A) access is needed for fire suppression efforts, future forest management projects, and recreational uses;

B) it is costly to build roads just to turn around and close them and reopen them;

C) when roads are decommissioned, more sediment is released into streams, therefore the solution is to leave the road and just remove the culverts;

D) when grizzly bears are recovered and no longer a listed species, if a temporary barrier is used it would be easier to reopen these roads for public access.

Response: This programmatic analysis does not propose to put any specific road or trail into intermittent stored service. The analysis and accompanying decision only identify a set of wheeled motorized vehicle access and security guidelines for incorporation into the respective forest plans. Limited administrative access will still be available under either alternative, on any road where the traffic control device is a gate. On roads where the traffic control device is an earth berm, there will still be the option for use in the case of an emergency. The biological opinion's terms and conditions recognize that emergency situations will periodically occur. In the event of a wildfire, temporarily reopening gated or barriered roads within a BMU may be necessary for effective fire suppression. Emergency situations such as this will be consulted on with the USFWS.

The responsible officials have selected Alternative E Updated for implementation. Potential impacts to motorized access that may be needed for fire suppression, future forest management, or recreation under Alternative E Updated are more moderate in their magnitude than those for Alternative D Modified (FSEIS, see Table 8, page 33). This alternative would provide sufficient amounts of habitat for grizzly bear security while providing greater access for fire suppression (FSEIS, page 249), timber management (FSEIS, pages 202-204), and recreation (FSEIS, pages 215-216) when compared to Alternative D Modified.

Core areas do not include any gated or restricted roads but may contain roads that are impassible due to vegetation or barriers. The terms and conditions in the biological opinion require that roads closed to create core area subsequent to this decision be put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years (FSEIS, page 27). This could involve removal of culverts or recontouring of unstable fill material depending upon the site-specific conditions. The terms and conditions further prescribe that until such closed roads are placed in the above-described condition, they will not be considered as contributing to core area. Future project level analyses and decisions implementing these amendments would address closure methods, whether to decommission, and/or the need to remove culverts from individual road segments. Such analyses would also identify and provide a more detailed assessment of the effects and opportunities with respect to the site-specific specific resources.

The treatments of barriered roads do pose a short-term negative impact but there are also long-term beneficial effects to the watershed and associated fisheries habitat (FSEIS, page 189). Short-term effects are associated with sediment generated in close proximity to active channel stream crossings. The greatest short-term effects are associated with removing culverts in live stream crossings. After treatments, negative effects from sediment would be reduced as disturbed areas are revegetated. When revegetation occurs prior to fall rains, associated sediment generation is usually negligible (FSEIS page 189). Benefits include restoration of the stream channel and fish habitat from removing culverts and reconstructing the stream channels where the culverts were located (FSEIS, page 189).

Public Concern No. 65. The Forest Service should consider the objectives and agreements in the August 2005 Road Closure Supplement, Priest Lake and Kootenai Valley Areas document between the Idaho Department of Lands Priest

Lake and Kootenai Valley Supervisory Areas, and the Idaho Department of Fish and Game for the purpose of protecting, conserving, and managing fish and wildlife resources of the State of Idaho within the ownership of state endowment lands.

Response: The Road Closure Supplement for the Priest Lake and Kootenai Valley Areas has been considered as appropriate within the cumulative effects analysis of the FSEIS.

Public Concern No. 66. The Forest Service should clarify if they really mean they are committed to not using barriered roads for firelines or other firefighting access in the event of a wildfire, as discussed on page 29 of the DSEIS.

Response: This inconsistency has been corrected in the FSEIS. The decision to use a road that is gated or bermed, when emergency response conditions arise is an option that is available. This will depend upon the nature of the emergency and the values at risk. The biological opinion's terms and conditions recognize that emergency situations will periodically occur. In the event of a wildfire, temporarily reopening gated or barriered roads within a BMU may be necessary for effective fire suppression. Emergency situations such as this will be consulted on with the USFWS.

Public Concern No. 67. The Forest Service should use multiple closure devices for barriered routes to be most effective, otherwise most of the miles claimed to be closed will be phantom closures.

Response: The type of traffic control device used on roads will vary. The effectiveness of the different traffic control devices is dependent upon multiple factors. One hundred percent effectiveness cannot be guaranteed. The Forest Service uses the prudent operator principle in the operation and management of NFS roads. When it comes to traffic control devices and their effectiveness the prudent operator will not violate any legal prohibitions nor act in an illegal manner. When violations or vandalism do occur, appropriate law enforcement or repair actions are initiated.

The Forest Service currently monitors and enforces closures and restrictions within the Selkirk and Cabinet-Yaak Recovery Zones. The Forest Service monitors closures throughout the course of the active bear season, often multiple times, to determine extent of any unauthorized use on restricted and bermed roads (USDA Forest Service 2008, 2009, 2010). The Forest Service submits annual reports to the USFWS documenting the progress made toward achieving and maintaining the standards for core area, OMRD, and TMRD within the recovery zones. Based upon available monitoring data, closures have been found to be effective (USDA Forest Service 2010, pages 65 to 67).

Public Concern No. 68. The Forest Service should improve the accuracy of the roads inventory and their status within the recovery zones.

Response: The Forest Service road management program continues to improve the completeness and accuracy of the road inventory. The GIS and tabular data are corrected and updated on a regular basis as verification efforts are completed by field going personnel.

Public Concern No. 69. The Forest Service should disclose the need for further consultation with the U.S. Fish and Wildlife Service and any additional changes to access beyond that represented in the DSEIS.

Response: Given the programmatic nature of this document, it is not possible to disclose site-specific changes in motorized access in the FSEIS. However, maximum changes in miles of road open for public access is displayed for each of the Action Alternatives A through C (FEIS, pages 3-59, 3-60, 3-62, 3-63,3-65, and 3-66) and Alternative D Modified and Alternative E Updated (FSEIS, pages 168-176). Subsequent site-specific activities planned within the framework of the selected action will be subject to a separate NEPA review and documentation and further consultation with the USFWS (FEIS, page 1-2; FSEIS, page 1).

Public Concern No. 70. The Forest Service should consult with Department of Homeland Security (DHS) and the U.S. Fish and Wildlife Service concerning Homeland Security access in this DSEIS because:

A) there are security risks involved with border security and the requirements for effective monitoring and response to threats identified in the border regions and it's critical that access be maintained and in a few locations improved for the security of the nation;

B) the Forest Service needs to recognize national security activities within the international border regions, within and around wilderness boundaries where road closures are contemplated, and request that the national security activities be included in Alternative E management flexibility;

C) the Forest Service needs to recognize the statutorily mandated functions DHS deploys in the wilderness and incorporate it into new wilderness legislation;

D) without consultation with DHS, there is potential for unacceptable risk to the efficacy of DHS operations;

E) they should consult, however it should be separate from the Grizzly Bear Recovery Plan.

Response: Department of Homeland Security (DHS) is included in the review of management flexibility for Alternative E Updated, i.e., "management flexibility in response to issues related to public and administrative access (including DHS), economics, access to private inholdings" (FSEIS, page 25). More specifically, requests for access by the DHS will be taken into consideration for site-specific roads in individual BMUs for future evaluation and consultation with the USFWS. Administrative use of restricted roads currently accommodates DHS motorized access and will be included in the FSEIS document and project record documentation. All other requests for changes in access-related recovery standards will be accomplished through direct discussions with the USFWS.

Public Concern No. 71. The Forest Service should include the "Tribe" under the Administrative Use definition in the DSEIS, thus the definition should read "...can be accessed by agency, Tribe, or other authorized personnel."

Response: The administrative use definition is directly taken from the Interagency Grizzly Bear Committee (IGBC) Taskforce Report language. Specifically, that motorized administrative use by personnel of resource management agencies includes "contractors and permittees in additional to agency employees". This 1998 document is included in the literature cited for the FEIS (page B-3) and FSEIS (page **Error! Bookmark not defined.**). Resource management agencies are considered to be those agencies which have direct authority to oversee or implement resource management actions on NFS lands located behind restricted points of access. However, guidance on tribal consultation directs the Forest Service to involve tribes in the decision-making process in the areas where our decisions affect tribes and their treaty rights and interests. The Forests are required by law to consult with all federally recognized tribes that had or continue to have traditional uses within the Forests' boundaries. Consultation with the Confederated Salish and

Kootenai Tribes, the Kootenai Tribe of Idaho, the Kalispel Tribe, and the Coeur d'Alene Tribe has been initiated and is ongoing (FSEIS, page 43).

Public Concern No. 72. The proposed standard for administrative use has no basis in grizzly bear science, but rather represents manager preference. The Forest Service should use the best available science to determine the amount of administrative use allowed on gated/barriered roads (see page 7 of the DSEIS).

Response: There are no trip limits on roads used in OMRD calculations ("open" roads). For those roads counted toward TMRD, but not OMRD ("restricted" or "gated" roads), the scientific basis for administrative use limits is summarized in the project record (Wakkinen and Kasworm Administrative Use Levels). This approach follows the Mace et al. (1996) definition of "Class 1 roads" averaging less than 1 pass per day with a median near zero. The researchers calculated that using a median value of zero and a mean of 0.5 vehicle passes per day, a total of 57 round trips per year would be available, divided proportionately among the grizzly bear spring, summer and fall, using the April 1-November 15 "bear year". If the bear year is extended to November 30, as is proposed for the Cabinet-Yaak ecosystem, the total number of round trips is raised to 60 per year.

Public Concern No. 73. The Forest Service should consider any routes proposed for closure and in existence before 1976 as having RS-2477 rights-of-way to provide citizens access to public lands.

Response: This programmatic analysis and decision only include a set of wheeled motorized vehicle access and security guidelines that provide guidance for future decisions conducted at the site-specific or project level. The amendments do not identify any specific roads for changes in access. Future project level analyses and decisions implementing these amendments would address R.S. 2477 rights as applicable, because it is those site-specific analyses that would identify specific roads for possible change of status in motorized use. When those proposals are ripe for a decision, a separate public involvement process, under the auspices of NEPA would be conducted. Currently, Congress has put a moratorium on any efforts for assertion of rights under R.S. 2477.

Public Concern No. 74. The Forest Service should consider the needs of persons with disabilities, senior citizens, and physically impaired in closing access to the NFS lands and clarify the balance between resource protection and accessibility.

Response: Alternative D Modified and Alternative E Updated represent programmatic actions that would guide future decisions about specific activities and projects, and therefore, would have no direct effects on recreation. The effects to recreation identified in the analysis are based on assumptions about implementing future project and levels of future uses that might occur under various projects. While these future actions and their effect are uncertain, the analysis is useful for a relative comparison of the alternatives.

The needs of persons with disabilities and senior citizens have been considered in the design of the alternatives. The alternatives considered would provide for a range of recreational opportunities within the Selkirk and Cabinet-Yaak Recovery Zones. Alternative D Modified was developed to focus more fully on the issue of increased secure habitat for grizzly bears (FEIS, page 2-18; FSEIS, page 19). An alternative that is designed to only address one issue, in this case maximum grizzly bear security, without any other considerations, can have substantial impacts on other uses of the national forest. Alternative E is a more balanced alternative because it was developed to address a number of issues, including management flexibility in response to issues related to public and administrative access, economics, access to private inholdings, and increased grizzly bear habitat security (FEIS, page 2-15). Therefore, the potential effects of Alternative E Updated upon motorized access and recreation are going to be more moderate than those for Alternative D Modified (FSEIS, pages 211-216).

Public Concern No. 76. The Forest Service should maintain access to private inholdings for logging and mining activities.

Response: Reasonable rights of access to private in holdings are addressed under the Alaska National Interest Lands Conservation Act (ANILCA). According to ANILCA, the Forest Service must provide for adequate access to private land inholdings within the national forests. We acknowledged early in this project that the Forest Service has a legal obligation to provide access to private inholdings. Alternative E Updated was developed in response to issues related to public and administrative access, including access to private inholdings. In determining the effects of the habitat security standards, scenarios were modeled that did not change existing access to private lands.

Social Economic

Public Concern No. 77. The Forest Service should evaluate social and economic issues per the Social Impact Analysis Principles and Procedures Training Course 1900-03 and Environmental Justice issued per Departmental regulation 5600-2 to assess the impacts from motorized recreational closures.

Response: Social and economic impacts have been evaluated for all of the alternatives (FSEIS, pages 239-243). These effects will be taken into consideration by the decisionmakers when selecting the preferred alternative and making the decision. The ROD will document this consideration. Environmental Justice is part of the regulatory framework for this project and was considered in the development and analysis of alternatives. Results are documented on page 266 of the FSEIS. The impacts of the alternatives do not have a disproportionate affect on any minority or low-income populations.

Public Concern No. 78. The Forest Service should fully analyze the negative economic impacts to jobs and income caused by the proposed motorized access closures especially in Alternative D Modified, and these closures need to be supported by acceptable levels of scientific data.

Response: The impacts to jobs and income was analyzed and discussed by resource. The relative difference in alternatives and their impact on jobs and income is described in the FSEIS, (pages 239-242).

The best available scientific information regarding wheeled motorized vehicle access management in grizzly bear habitat is considered to include sources from two areas. The first of these is the research from the South Fork of the Flathead River regarding how road access affects grizzly bears (Mace and Manley 1993, Mace and Waller 1997). This research resulted in development of OMRD, TMRD, and core area as management measures for ensuring grizzly bear habitat security. It also resulted in development of the moving windows computer technique for assessing OMRD and TMRD. The second source is research from local bear populations that applies the South Fork technology to the recovery zones (Wakkinen and Kasworm 1997). This second source is considered the best science to be applied directly to the recovery zones (Allen et al. 2011; FSEIS Appendix C).

The IGBC recommended that in individual BMUs with greater than 75 percent Federal ownership, the Forests are to: 1) attain 55 percent core habitat; 2) have less than 33 percent of each BMU with open motorized route densities exceeding 1 mi/mi^2; and 3) have less than 26 percent of each BMU with total motorized route densities exceeding 2 mi/mi^2. These parameters were based on the best available science of the 1997 Wakkinen and Kasworm study.

Alternative D Modified primarily focuses on the biological needs of the grizzly bear; without consideration of social, valuational and institutional needs. Alternative D Modified is designed to provide OMRD, TMRD, and core area standards by individual bear management unit (BMU) that achieve the highest security parameters for bears (where possible), as identified in Wakkinen and Kasworm (1997). The basis for these parameters comes from the 1989-1990 home range data of a single 20-year-old female grizzly bear.

Alternative E Updated integrates the biological, social, valuational, and institutional forces by considering the IGBC recommendations, inherent capabilities of each BMU including important habitat features, private land and roads, and important recreational areas. The recommendations were based on an average of conditions used by grizzly bears in the Cabinet-Yaak and Selkirk Recovery Zones. This implies some bears required less secure habitat and some bears required more security. The BMU-specific standards in this alternative apply similar conditions across the landscape as required by individual bears within the population. In some BMUs that exceed the recommendations, standards for the proposed action have been set slightly lower than the existing condition. This will provide for the needs of grizzly bears while allowing some flexibility for forest management activities.

Public Concern No. 79. The Forest Service should use actual local data versus economic models to determine the true economic and social impact of proposed motorized access closures on the public because economic models can be manipulated to predict any result.

Response: The use of IMPLAN is accurate for describing the tradeoff to jobs and income by alternatives. The model used contained the most recent data available. Local data is used in generating the information used by IMPLAN. No data or models were manipulated in predicting the results in the DSEIS or FSEIS.

IMPLAN is the best science available for estimating impacts on jobs and income and is an input-output modeling system. The system was first developed by the Forest Service in cooperation with the Federal Emergency Management Agency and the BLM during the late 1970s. The system includes both data and software. In 1987, data generation for IMPLAN was provided by the University of Minnesota. In 1993, the Minnesota IMPLAN Group, Inc. was formed to privatize the development of IMPLAN data and software.

IMPLAN datasets are prepared annually using the latest economic data that are publicly available and includes local data. Unique datasets are available by county for the entire United States (U.S.). Data from a variety of Federal sources are reconciled to provide a consistent set of estimates that can be aggregated to state and national levels. Proprietary techniques are used to estimate data that cannot be disclosed because of Federal confidentiality requirements, allowing users to publish detailed study results. Proprietary estimates of trade flows for 440 commodities between all U.S. counties are key to the creation of credible, local models.

IMPLAN has gone from a system employed by a few Federal agencies to one that is embraced by economists throughout the U.S. IMPLAN has been used by over 250 academic institutions across the country, including Yale, Stanford, Duke, University of Michigan, and University of California-Berkeley. Over 200 Federal, state, and local government agencies have used IMPLAN. By adding private firms and non-profit organizations, the IMPLAN client list exceeds 600. Hundreds of publications have referenced IMPLAN, ranging from peer-reviewed academic journals to local economic development newsletters. The Minnesota IMPLAN Group, Inc. hosts a conference for IMPLAN users every other year in conjunction with the annual conference for the Mid-Continent Regional Science Association. Proceedings are available at www.implan.com.

In recent years, IMPLAN has expanded its datasets to other countries. In response to requests from academic and government economists outside the U.S., IMPLAN has produced national data sets for several countries, including Italy, Egypt, and China.

Public Concern No. 80. The Forest Service should quantify and compare the impact of private residences' permanent encroachments to the relatively minor impact that mechanized forest visitors have on wildlife habitat.

Response: The impacts of development on private lands on grizzly bears are discussed on pages 97-99 of the FSEIS. While the Forests have worked cooperatively with adjacent landowners to improve sanitation efforts on these ownerships, the Forest Service has no authority to restrict or regulate use on adjacent private lands.

Public Concern No. 81. The Forest Service should consider management practices that occur on state, corporate, and private lands (i.e., access, habituation, mortality levels) and mitigate for private land conditions on public land, where uses must be more balanced for rare wildlife.

Response: The cumulative effects of motorized access on private and state lands within the 29 individual BMUs was considered in the development of the existing condition and effects analysis in both the FEIS and FSEIS (FEIS, Tables 2-2 and 2-3, pages 2-11 and 2-14; FSEIS, Table 5 and Table 6, pages 24and 31). For each action alternative (i.e., C, D Modified, and E Updated) access parameters would be met within an individual BMU via changes in available motorized access on NFS lands. This includes providing adequate access to private land inholdings within the national forests (i.e., ANILCA; FSEIS, page 167).

Public Concern No. 82. The Forest Service's proposed action should correct the disproportionate significant adverse impacts to motorized recreationists by complying with the:

A) Forest Service Departmental Regulation 5600-2 and the requirements as initiated by EO 12898;

B) EPA's Office of Environmental Justice.

Response: Environmental Justice is part of the regulatory framework for this project and was considered in the development and analysis of alternatives and the results are documented on page 264 of the FSEIS. The impacts of the alternatives do not have a disproportionate affect on any minority or low-income populations.

Soils

Public Concern No. 83. Motorized access has already done a lot of damage to the soil, and water pollution would increase as ruts are dug into the existing roads. The roads need to be "rested", to heal the years of logging that made the roads possible. The Forest Service should analyze the damage to soil and water from motorized access.

Response: There is no doubt that roads and motorized access on all three Forests have had some negative effects to soils and water resources. However, ruts are only a small culprit for water quality decline since it is the drainage, location, parent material, engineering, and maintenance etc. that determine proper road function.

The necessity of a road or road system is usually determined during project-level analysis where individual sections are identified to remain, be treated, removed, or "rested" at various levels. As stated on page 1 of the FSEIS, this document supplies a programmatic environmental analysis that will "provide guidance for future decisions conducted at the site-specific or project-level" and applies to "all future site-specific decisions regarding wheeled motorized vehicle use in the Selkirk and Cabinet-Yaak Recovery Zones (as described in the analysis area)". In other words, the site-specific damage to soil and water from motorized access will be addressed as part of future projects and their associated NEPA analyses.

Public Concern No. 84. The Forest Service should examine road closures based on sediment indicators and the magnitude of the sediment yield should be compared to naturally occurring conditions such as fire, where thousands of cubic yards of sediment are discharged into the streams, which is greater than the effects from all motorized routes.

Response: Roads are important as they provide access not only for resource administration but also for recreation and tactical fire management. Closures of roads are only as effective as the long-term planning that is associated with them is since "the greatest long-term risk to the soil resource would arise when roads are closed and put into intermittent stored service without having critical areas . . . stabilized prior to the road status change" (FSEIS, page 253). Roads are attributed as being one of the greatest contributors to sediment movement (Cacek 1989; Elliot et al. 1999; Luce and Wemple 2001; Reid et al. 1994) (FSEIS, page 253). The generally short-term pulses of sediment mobilization after a fire are no reason to disregard the long time continuous sediment supply that may arise from a non-functioning road system.

The FSEIS supplies a programmatic environmental analysis meaning that the site-specific damage to soil and water from motorized access will be addressed as part of future projects and their associated NEPA analyses. Closures of roads are usually closely reviewed, discussed in a interdisciplinary team setting, are based on overall need, function, and maintenance requirements, and do not solely rely on whether they produce a certain amount of sediments.

Threatened, Endangered and Sensitive Species

Public Concern No. 85. The Forest Service should limit motorized access within the Selkirk and Cabinet-Yaak recovery zones.

Response: The intent of the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones is to set new access standards within these recovery areas (FEIS, pages 1-5; FSEIS, page11). Implementation of any of the Action Alternatives (Alternatives C, D Modified, and E Updated) would result in less motorized access than is currently available to the public. Alternative E Updated is the preferred alternative (FSEIS, page 25).

Public Concern No. 86. The Forest Service should enforce closures by patrolling the area because signs and closures (i.e., gates, earthern berms etc.) alone are not effective in managing fragmentation of grizzly bear habitat.

Response: Disclosure and enforcement of road closures (including restricted and barriered) is aided through distribution of travel maps (available at district offices, local stores, and on the World Wide Web) and their associated closure orders, signing, law enforcement patrols, and gate and barrier monitoring. Monitoring of existing closures and subsequent repairs/improvement to fix ineffective closures is provided in reports to the USFWS on an annual basis and included in Forest Monitoring Reports (citations USDA). Annual reports submitted to the USFWS and the

IGBC Selkirk-Cabinet Yaak ecosystem subcommittee provides additional details of these efforts (e.g., USDA Forest Service 2009, 2010, 2011).

Public Concern No. 87. The Forest Service should incorporate the conservation recommendation from Appendix B of the 2004 Record of Decision regarding use of information signs to properly identify grizzly bears from black bears to help reduce human-caused bear mortalities in and around the recovery zones.

Response: The KNF and IPNFs have developed and installed grizzly bear information signs at locations throughout both ecosystems since the early 1990s. Information and education topics have included the following: bear identification, public notification that they are traveling in grizzly country, bears and sanitation, and avoiding confrontations in bear country. This has been part of a larger, interagency effort involving numerous state and Federal entities to educate the public about grizzly bears through the use of signs, presentations, interpretive kiosks, window clings, and coloring books. The most recent Forest Service-specific efforts have been documented in annual reports submitted to the USFWS and the IGBC Selkirk-Cabinet Yaak ecosystem subcommittee (e.g., USDA Forest Service 2009, 2010, 2011).

Public Concern No. 88. A recent population analysis determined that there were at least three times more grizzly bears than there were thought to be. The Forest Service should evaluate if grizzly bears need continued protection.

Response: The USFWS, not the Forest Service, is the agency responsible for reviewing the status and need for continuing protection of a species listed under the ESA. In addition, USFWS takes the lead in developing recovery plan goals and objectives that would determine the types of protection necessary for a listed species.

A population analysis of the North Continental Divide ecosystem was completed in 2009 by Kate Kendall and others (Kendall et al. 2009). In that study, the noninvasive genetic sampling effort conducted in 2004 showed an overall estimated population of 765 bears, which was 2.5 times larger than the recovery program estimate. The 2002 FEIS and FSEIS considered motorized access for populations of bears in the Selkirk and Cabinet-Yaak ecosystems. These recovery zones and populations are much smaller than the North Continental Divide ecosystem, with current population estimates for the Selkirk ecosystem of approximately 46 bears in 1999, and a minimum population estimate of 42 bears in the Cabinet-Yaak ecosystem in 2009 (FSEIS, page 52). Even if populations are grossly underestimated, it is unlikely that either ecosystem would meet all recovery criteria set forth in the Recovery Plan, and continued protection would still be warranted.

Public Concern No. 89. The Forest Service should consider that motorized use on existing trails has little or no substantiated effect on big game and does not create a significant impact on wildlife.

Response: The purpose of this Forest Plan Amendment is to address motorized access for the threatened grizzly bear within-and-around the Selkirk or Cabinet-Yaak grizzly bear recovery areas. Specifically, the scope of the analysis pertains to access standards for wheeled motorized vehicle use during the active bear year (FSEIS, page 2). Research has consistently shown that grizzly bears can be adversely affected by human use of roads (Mace and Manley 1993, Mace and Waller 1997, Wakkinen and Kasworm 1997, among others). Human use of motorized roads and trails within occupied grizzly bear habitat may produce or facilitate several kinds of adverse effects to grizzly bears including the following: (1) shooting mortality; (2) displacement from preferred habitat by human disturbance associated with road use and resultant reduction in habitat availability; (3) habituation to humans and motor vehicles via an increase in human and pet foods, as well as garbage, which may result in them being destroyed (FEIS, page 3-16; FSEIS, page 87). Additional research on the effects of motorized use on big game species is provided on pages144-148 of the FSEIS.

Public Concern No. 90. The Forest Service should consider that road closures and obliteration are not reasonable or productive and that grizzly bears can coexist at a reasonable population density with multiple use recreation.

Response: Your concern is understood, however, we disagree with your assertion that road closures and obliteration are not reasonable or productive in assisting with grizzly bear recovery. Research has consistently shown that grizzly bears can be adversely affected by human use of roads (Mace and Manley 1993, Mace and Waller 1997, Wakkinen and Kasworm 1997, among others). Human use of motorized roads and trails within occupied grizzly bear habitat may produce or facilitate several kinds of adverse effects to grizzly bears including the following: (1) shooting mortality; (2) displacement from preferred habitat by human disturbance associated with road use and resultant reduction in habitat availability; (3) habituation to humans and motor vehicles via an increase in human and pet foods, as well as garbage, which may result in them being destroyed (FEIS, page 3-16; FSEIS, page 87). This impact of roads on grizzly bear recovery was recognized in the original 1983 Grizzly Bear Recovery Plan. Therefore, measures of habitat security were incorporated into the Forest Plans for the Idaho Panhandle, Kootenai, and Lolo National Forests (USDA 1985 and USDA 1986) or were applied as a result of consultation with USFWS after the release of these Plans (i.e., linear open road density, habitat security, and limitations on administrative use of restricted roads (FEIS, page 3-13 to 3-15; FSEIS, pages 73). Beginning in the early 1990s, road closures and installation of roads to restrict motorized use began to be implemented to achieve these early access standards (FSEIS, pages 74-77).

Furthermore, unlike the population situation in the North Continental Divide ecosystem (i.e., the Kendall et al. 2009 research), the Selkirk and Cabinet-Yaak populations are not considered to have achieved a “reasonable population density” by any of the researchers or agencies that have been studying these two populations for years. Current population estimates for the Selkirk ecosystem are approximately 46 bears in 1999, and a minimum population estimate of 42 bears in the Cabinet-Yaak ecosystem in 2009 (FSEIS, page 52).

Public Concern No. 91. The Forest Service should consider the findings of Katherine Kendall’s Greater Glacier Bear DNA study done for the Northern Continental Divide ecosystem recovery zone, which indicates that bear populations far exceed the recovery goal and should be delisted; and/or further research be completed to establish sustainable bear numbers and:

- **A) complete a similar study for the Selkirk and Cabinet-Yaak recovery zones before further restrictions are placed on motorized use;**
- **B) consider that more research is needed to establish habitat needed for sustainable bear numbers per Bear Management Unit;**
- **C) consider that more research is needed before further restrictions are placed on motorized use, however use a different method than placing collars on bears as this method is not a true representation of bear's habits.**

Response: The purpose of this Forest Plan Amendment is to address motorized access for the threatened grizzly bear within-and-around the Selkirk or Cabinet-Yaak grizzly bear recovery areas. Specifically, the scope of the analysis pertains to setting access standards for wheeled motorized vehicle use during the active bear year (FEIS, page 2; FSEIS, page 2). The 1997 Wakkinen and Kasworm research regarding female grizzly use of habitats in relation to roads in these recovery zones is considered the best available science by the Forest Service and USFWS and was used in development of the action alternatives for this effort (FEIS, pages 1-4 to 1-5; and 2-9 to 2-14 - Alternatives B and C; FSEIS, pages 19-31 - Alternatives D Modified and E Updated). While additional research aimed at determining population estimates and trends, seasonal habitat use and distribution, and habitat use in relation to differing access situations would be helpful to the recovery and management of these grizzly populations, these analysis are beyond the scope of this Forest Plan amendment effort.

At this point, evidence does not indicate that grizzly bear habitat is “fully occupied” in either ecosystem. In the Cabinet-Yaak ecosystem, only 12 BMUs were occupied by females with young in 2009 based on a running 6-year sum of verified evidence (the Recovery Plan calls for 18 of 22 BMUs to be occupied); and only 4 Selkirk BMUs were considered occupied during this same time period (Recovery Plan objective is 7 of 10 BMUs).

A number of grizzly bear DNA research projects have been implemented within the Selkirk and Cabinet Yaak ecosystems since 1999 (Kasworm 2009, Proctor et al. 2007, Wakkinen and Johnson 2006, Wakkinen et al. 2008, IGBC 2009). In addition, habitat use modeling by the USFWS and IDFG research biologists is underway (IGBC 2009). Alternatives B, C, D Modified, and E Updated include the intention to pursue habitat-based access management when information becomes available to do so.

Public Concern No. 92. The Forest Service should develop new management guidelines that reflect the habitat most critical for bears as one that is harvested (timber), prescribed burned, and roaded per the findings of the Swan Valley study in Montana.

Response: The Forest Service acknowledges that the early seral conditions produced by timber harvest, prescribed burning, and wildfire can produce seasonal habitats that may be used by grizzly bears. However, we disagree with your assertion that road conditions in harvested areas provide the best habitat for grizzly bears.

Research has consistently shown that grizzly bears can be adversely affected by human use of roads (Mace and Manley 1993, Mace and Waller 1997, Wakkinen and Kasworm 1997, among others). Indeed, the 2007 Proctor et al. research for the grizzly bear populations in the Selkirk and Yaak mountains north of the international border provided additional evidence of grizzly bear aversion to use of early seral harvest units situated near roads.

Human use of motorized roads and trails within occupied grizzly bear habitat may produce or facilitate several kinds of adverse effects to grizzly bears including the following: (1) shooting mortality; (2) displacement from preferred habitat by human disturbance associated with road use and resultant reduction in habitat availability; (3) habituation to humans and motor vehicles via an increase in human and pet foods, as well as garbage, which may result in them being destroyed (FEIS, page 3-38 to 3-46; FSEIS, pages 87-87).

In 2005, Dr. C. Servheen presented GPS collar monitoring data collected from 11 grizzly bears living in the Swan Valley. Unlike the bears observed in the Mace and Waller (1997) study, these bears apparently spent the majority of their time in the valley. These bears were observed on private property as well as Plum Creek commercial forest lands. Dr. Servheen noted that the researchers did not have a representative sample of bears at that time to drawn conclusions concerning bear response to roads at night or changes in bear behavior or cub production (Servheen 2005). Therefore, these preliminary results should not be used to form the basis of any kind of change in access management for this population. There are no similar studies for the Cabinet-Yaak or Selkirk population of grizzly bears. Rather, the Forest Service and USFWS consider the 1997 Wakkinen and Kasworm research regarding female grizzly use of habitats in relation to roads in these recovery zones as the best available science and it was used in development of the action alternatives for this effort (FEIS, pages 1-4 to 1-5; and 2-9 to 2-14 - Alternatives B & C); FSEIS, pages 19-31 - Alternatives D Modified and E Updated).

It is our intent to incorporate all seasonal habitats within core where possible, per the Interagency Grizzly Bear Committee (IGBC 1998) recommendations. Alternatives B, C, D Modified, and E Updated also include intent to pursue habitat-based access management when information becomes available to do so.

Public Concern No. 93. The Forest Service should acknowledge the efforts of local communities that work in proactive ways to assist in recovery through implementation of techniques and education to increase human safety and decrease the likelihood of bear-human conflicts.

Response: The Forest Service acknowledges that there has been an interagency effort involving numerous state and Federal entities to help educate the public about grizzly bears as well as providing support for sanitation efforts within-and-around the recovery zone boundary. Annual reports by the IGBC Selkirk-Cabinet Yaak Ecosystem Subcommittee provide details of these interagency efforts (e.g., IGBC SCYES 2009c and 2010b, Wakkinen et al. 2010).

Public Concern No. 94. Due to the biases contained in the DSEIS, the Forest Service should acknowledge the DSEIS is inadequate for accomplishing grizzly bear recovery as mandated by the Endangered Species Act, and complete another DSEIS.

Response: Your concern is understood, however, we disagree with your assertion that the document is biased and inadequate for meeting the stated objective of setting access standards that should help facilitate grizzly bear recovery in these two ecosystems.

Public Concern No. 95. The Forest Service should recognize that an insufficient number of roads exist under Forest Service jurisdiction to adequately reduce access in order to meet grizzly bear standards and that the DSEIS does not adequately disprove the initial recommended road density standards.

Response: The Forest Service acknowledged that there are an insufficient number of roads under Forest Service jurisdiction in some BMUs to meet the standards of Alternative D, and therefore Alternative D Modified was developed. As described on page 19 of the FSEIS, Alternative D Modified was designed to best meet Wakkinen and Kasworm (1997) highest levels of secure habitat (OMRD of less than or equal to 17 percent, TMRD of less than or equal to 14 percent, and core area of greater than or equal to 72 percent in each BMU). In BMUs where the standards (OMRD of less than or equal to 17 percent, TMRD of less than or equal to 14 percent, and core area of greater than or equal to 72 percent in each BMU) could not be achieved, habitat parameters were set at the highest level possible. The standards (OMRD of less than or equal to 17 percent, TMRD of less than or equal to 14 percent, and core area of greater than or equal to 72 percent in each BMU) were utilized in those BMUs where the standards could be met.

The 2002 FEIS, 2009 DSEIS, and the 2011 FSEIS examined a range of alternatives that set OMRD, TMRD, and core area at varying levels (see Table 2 and Table 3 on pages 16-18 in the FSEIS). Alternative D Modified was designed to best meet the highest levels of secure habitat based on the habitat needs of one bear (Wakkinen and Kasworm 1997). In Alternative E Updated, standards for individual BMUs were developed to provide increased grizzly bear habitat security based on the average needs of six bears while allowing management flexibility in response to issues related to public and administrative access, economics, and access and potential development of private inholdings. These standards were determined through consultation with USFWS and grizzly bear research scientists, and reflect the unique biological features and social factors (e.g., seasonal bear habitats and use, highways, recreational sites, residential development, private inholdings) found within specific BMUs (Kaiser 2003).

Public Concern No. 96. The Forest Service should consider that Wakkinen and Kasworm failed to assess whether areas with lower road densities and larger core area were available to the female bears in the study area, or whether the levels were the best, most secure habitat that was available to them; and it is not possible to determine whether the averages derived from W/K 1997 (33-26-55) represent optimal habitat or minimum security needs of reproducing females because:

A) this unpublished report, not subjected to peer review report, disregards extensive literature and draws inappropriate conclusions.

Response: Your concern is understood, however the fact of the matter is that nearly all of the Wakkinen and Kasworm (1997) “deficiencies” cited in comments also exist in research conducted in the South Fork Swan River held up as a model to emulate. The FSEIS includes additional discussion about the shortcomings of the Wakkinen and Kasworm report and also discusses the consideration of other reports (FSEIS pages 44-50; FSEIS Appendix C).

The Forest Service developed Alternative D Modified in response to public comments to establish security at the highest levels reported for bears in the Wakkinen and Kasworm (1997) study. The proposed standards and potential effects of this alternative are discussed in the FSEIS.

Public Concern No. 97. The Forest Service should consider the science that proves grizzly bears are displaced and repelled from habitat that occurs near roads, independent of traffic volume.

Response: The FEIS (page 3-6) and FSEIS (pages 13 and 67) considered the research regarding how access management in grizzly bear habitat affects grizzly bears. More specifically, human use of motorized roads and trails within occupied grizzly bear habitat may produce or facilitate several kinds of adverse effects to grizzly bears including the following: (1) shooting mortality; (2) displacement from preferred habitat by human disturbance associated with road use and resultant reduction in habitat availability; (3) habituation to humans and motor vehicles via an increase in human and pet foods, as well as garbage, which may result in them being destroyed (FEIS, page 3-38 to 3-46; FSEIS, page 87

Public Concern No. 98. The Forest Service should consider that habitat standards cannot be established from the mean results of Wakkinen and Kasworm 1997 as proposed in the DSEIS, managing for conditions occupied by the studied females will not allow population recovery, and no management decisions should be made based on the presumption of the demographic health of these populations.

Response: The IGBC has directed the Forest Service to develop ecosystem-specific guidelines using local data, where possible, for each grizzly bear ecosystem (IGBC 1994). The Forest Service maintains that the recommendations reported in Wakkinen and Kasworm (1997) represent the best available scientific data for the Selkirk/Cabinet-Yaak ecosystem, for reasons discussed the FSEIS (pages 44-50) and summarized in a white paper located in the project record and in Appendix C of the FSEIS (Allen et al. 2011).

Public Concern No. 99. The Forest Service should establish standards for grizzly bear spring habitat and its spatial relationships to other seasonal habitats to insure adequate access for recovered grizzly bear populations.

Response: It is our intent to incorporate all seasonal habitats within core area, where possible. Alternatives B, C, D Modified, and E Updated also include intent to pursue habitat-based access management when information becomes available to do so.

Public Concern No. 100. The Forest Service should include a discussion in the Final SEIS of the potential effects from climate change on grizzly bear recovery and the potential effects from increased bark beetle and wildfire risk associated with climate change.

Response: Thank you, your comment is noted. Within the scope of this proposal, which is related to selecting a set of forest plan standards for motorized access management within the Cabinet-Yaak and Selkirk Recovery Zones, there is no nexus between the selected standards and potential effects to grizzly bear recovery resulting from climate change and its potential for increased bark beetle and wildfire risk.

Recent agency guidance on land management plan revision includes the recognition that climate change information should be integrated in appropriate sections of the plan, the environmental impact statement and the planning record. Ongoing forest plan revision efforts on the three forests are expected to address climate change. It is anticipated that most of the focus of the evaluation of climate change for plan revision would be to understand how climate change is affecting the planning unit and to determine if parts of the plan need to be changed to maintain sustainability.

From the USFWS Biological Opinion (2011) on these amendments:

> "Climate change trends in the Pacific Northwest region will be important to grizzly bears with respect to how these trends may affect denning behavior, foraging habitat availability, and fire-regimes.
>
> Predicted decreases in snowpack levels may shorten the denning season as foods are available later in the fall and earlier in the spring. Spring and fall encounters between grizzly bears and hunters and/or recreationists would therefore likely increase; escalating the mortality risk to bears during these times.
>
> An additional effect of climate change could be changes in the availability of and distribution of foraging areas due to increasing temperatures and seasonal changes in precipitation. The extent and rate to which plant species and communities would be affected is difficult to predict. Changes in vegetative distributions may also influence other mammal distributions, including prey species like ungulates.
>
> As described earlier, grizzly bears are opportunistic feeders and will consume almost any available food. Because grizzly bears are such successful omnivores, climate-induced vegetative changes may not have detectable, negative effects on grizzly bear populations in the lower 48 States.
>
> An indirect effect of climate change may be an increase in wildfires that may result in reductions in forest cover and some types of foraging habitat, while potentially creating other types of foraging habitat, e.g., shrub, berry, and grassland forage areas. Increasing insect outbreaks may result in more decadence and die-outs of whitebark pine stands, thus, reducing a potential food source for grizzly bears. However, whitebark pine is not a key food source of grizzly bears in the SE or CYE.
>
> <u>Summary of climate change effects to grizzly bears</u>
>
> It is difficult to predict how this large, wide-ranging species would respond to environmental changes associated with climate change. At this time, the scope and scale of such changes are unknown, and the effects (positive or negative) on grizzly bears would likely be variable across the landscape.
>
> Through the Forests' significant participation in the IGBC, the Forests are made aware of new findings relative to grizzly bears in the action area. If a causal relationship can be established between

> climate change and changes in habitat relationships that may be affected by motorized access in a manner not considered here, it may be addressed by future Federal action or reinitiation of formal consultation in an effort to offset some of the effects of climate change."

Impacts to whitebark pine from white pine blister rust and mountain pine beetle outbreaks are already occurring within the recovery zones. Over the past several decades in the Selkirk Mountains, thousands of whitebark pine trees have died from this disease (USDA Forest Service 2004a, page 10). However, even with the relatively high levels of mortality caused by the blister rust fungus an adequate number of healthy trees have persisted, due to natural resistance to this disease. In turn, these healthy trees have provided a seed source for potentially blister rust resistant seedlings and continued natural regeneration of whitebark pine.

Recently, mountain pine beetle infestations have been killing whitebark pines in the Selkirk Mountains. Aerial surveys in 1999 discovered a major mountain pine beetle outbreak. Ground surveys in 2001 and 2002 showed that the outbreak was very large, and growing; killing a high percentage of whitebark pine trees in some areas. These disturbance factors are expected to continue for the foreseeable future. However, the selected standards in this amendment would not have an impact or influence this ongoing trend within either ecosystem.

Within, the Selkirk Recovery Zone, the Idaho Panhandle National Forests has recently undertaken an effort to maintain the presence of white bark pine within the Selkirk Mountains. The Whitebark Pine Restoration project (2004) has treated approximately 1,730 acres of white bark pine habitat utilizing slashing and prescribed burning and release cuttings for the purposes of returning whitebark pine stocking levels to those within the historic range of variability; reintroducing the role of fire into the ecosystem, and providing for wildlife habitat diversity.

From a wildland fire perspective, a warmer climate is expected to lead to more frequent fires, possibly more severe fires, and a longer fire season here in the Western United States. As discussed by the USFWS in the biological opinion for the Idaho Roadless Rule (USDI Fish and Wildlife Service 2008f):

> "Fire in grizzly bear habitat can be beneficial or detrimental depending on when and where it occurs, and the scale (number of acres burned) at which it occurs. In general, fire is thought to have a positive effect on grizzly bear habitat, and the decline of grizzly bear populations has been attributed to fire suppression (Willard and Herman 1977; Tirmenstein 1983; Contreras and Evans 1986). Grizzly bears are opportunistic species with large home ranges, and their populations change little in response to fire (Smith 2000). Fires promote and maintain many important berry-producing shrubs and forbs and provide a medium for insects and carrion (primarily in the instance of very large fires). However, fire can also affect other food sources, such as whitebark pine nuts. Although grizzly bears generally benefit from periodic burns because of improved habitat quality, a very large burn could destroy a large percentage of available habitats resulting in habitat fragmentation.
>
> As for most species, the effects of fire on grizzly bears are highly dependent on numerous factors that are difficult to predict for this analysis. It is generally agreed that historically wildfire was the primary disturbance factor in the Selkirk and Cabinet-Yaak Recovery Zones. In the past, fire has destroyed grizzly bear cover and food and has altered habitat. Although such disturbances may not have a major impact when a large acreage of habitat is available, in the present conditions of limited, fragmented habitat, a fire could burn a large percentage of the remaining available habitat. This potential effect can be minimized by implementing projects designed to prevent stand-replacing and uncontrollable wildfires."

Sterling Miller, a senior wildlife biologist with the National Wildlife Federation in Missoula Montana recently wrote (January 1, 2010) about the Yellowstone grizzly bear population in a Missoulian newspaper guest column:

> "As the climate warms because of increasing accumulation of greenhouse gases, habitats for many wildlife species will change. The species most at risk from these changes will be

specialist species that require specific habitats or food (e.g., moose, mountain goats, wolverine, polar bears, etc.). Grizzly bears, in contrast, live in the widest habitat range of any bear species. As adaptable generalists, grizzly bears are low on the list of species threatened by global warming. The real threats to grizzly bears are excessive killing and fragmentation and destruction of habitat by roads and subdivisions. Although these are far from trivial problems, they are problems that people have managed and can continue to manage if we have the will. To address the threats to wildlife posed by climate change, we need to focus on real problems and not highly speculative or unlikely ones."

Public Concern No. 101. The Forest Service should base road and trail management on site-specific evaluations of habitat and bear use by season and not precise standards spread across large landscapes.

Response: Road density and core standards were developed from data that did not include information on seasonal habitats. In the absence of this information, the Forests must base motorized access management on the best available science found in Wakkinen and Kasworm (1997). Additionally, many motorized routes traverse several seasonal habitats or areas that may receive concentrated bear use at different times of the year. It would be difficult and time-consuming, and beyond the scope of this proposal, to attempt to implement seasonal or site-specific closures at this time. In addition, see responses to public concern statements 136 and 137 for clarification of general misrepresentation of the Mace and Waller (1997) report regarding non-motorized use.

Public Concern No. 103. The Forest Service should consider the study conducted by Michael Proctor in 2004 for grizzly movement across British Columbia Highway 3 regarding declines in population and the findings of the Selkirk Recovery Zone as a female habitat island.

Response: Since the Proctor (2004) study was published, at least one female that was originally sampled north of Highway 3 has turned up in the U.S. portion of the recovery zone during DNA sampling (Wakkinen et al. 2010). In addition, a young female grizzly bear that was captured east of the Myrtle Creek BMU and released in the Idaho Department of Lands BMU in the spring of 2009 traveled north into Canada and across Highway 3. She was subsequently killed as she attempted to recross Highway 3 in the summer of 2010. It is possible that the South Selkirks are less of a "female habitat island" than originally thought.

Public Concern No. 104. The Forest Service should recognize that the Cabinet-Yaak and the Selkirk Recovery Zones do not meet the three standards set forth in the 1993 Grizzly Recovery Plan for grizzly bears to reach viability and recovery.

Response: This information is included in the FSEIS (pages 63-65) and the Biological Assessment for this project.

Public Concern No. 105. The Forest Service should consider that 22 percent of the Cabinet-Yaak ecosystem and 31 percent of its grizzly bears would be cut off if both the Montanore and Rock Creek Mines operate at the same time, leaving too small a population to remain viable.

Response: It is recognized in the cumulative effects discussion of the FSEIS that major mining activities, such as the Rock Creek and Montanore, are active or planned within the Cabinet-Yaak Recovery Zone (FSEIS, page 99). Consideration of project impacts on grizzly habitat and viability resulting from the Rock Creek and Montanore mines will be dealt with in separate project-specific consultation with the USFWS. Each of these projects includes a substantial mitigation plan that addresses multiple risk factors including changes in wheeled motorized vehicle access, potential displacement, attractants, law enforcement, and small population numbers. These changes are not expected to provide security levels above those proposed in the decision for this FSEIS, but rather are expected to assure achievement of the selected standards, which would result in an improvement over existing conditions.

Public Concern No. 106. The Forest Service should clarify and correct the following statements found in the DSEIS regarding access management, road densities, and grizzly bear mortality because they seem to contradict one another even though nothing can "guarantee" lower mortality rates:

> *** On page 36 of the DSEIS it states, "Despite the uncertainty as to why individual bears in these studies selected the habitat they did, it can be reasonably concluded that areas of lower road density or providing higher amounts of core area does not necessarily guarantee lower mortality rates"; and**
>
> *** On page 61 of the DSEIS it states, "In 1995, the USFWS determined that road densities are 'impairing essential behavioral patterns, increasing mortality risk, and resulting in significantly less use of habitat than expected' on the KNF (USDI 1995). These conditions were determined to contribute to incidental take of grizzly bears."**

Response: The Forest Service is aware of the body of research and scientific studies regarding the negative direct and indirect effects that roads have on grizzly bears and have summarized those effects in the FSEIS (page 87) and the Biological Assessment. Specifically, human use of motorized roads and trails within occupied grizzly bear habitat may produce or facilitate several kinds of adverse effects to grizzly bears including the following: (1) shooting mortality; (2) displacement from preferred habitat by human disturbance associated with road use and resultant reduction in habitat availability; (3) habituation to humans and motor vehicles via an increase in human and pet foods, as well as garbage, which may result in them being destroyed (FEIS, pages 3-46 to 3-38; FSEIS, page 87). This impact of roads on grizzly bear recovery was recognized in the original 1983 Grizzly Bear Recovery Plan. Therefore, measures of habitat security were incorporated into the Forest Plans for the KNF, LNF and IPNFs (USDA 1985 and USDA 1986) or were applied as a result of consultation with USFWS after the release of these Plans (i.e., linear open road density, habitat security, and limitations on administrative use of restricted roads (FEIS, pages 3-13 to 3-15; FSEIS, pages 67-69). Beginning in the early 1990s, road closures and installation of roads to restrict motorized use began to be implemented to achieve these early access standards (FSEIS, pages 74-76).

The document does not claim that lower road densities and higher core would have little to no benefit to individual grizzly bears, but does seek to clarify that lower mortality rates would not be guaranteed through additional motorized access closures on NFS lands. This is because grizzly bear mortality is associated with other factors than just motorized road density in-and-around recovery zones on NFS lands. This includes factors such as the proximity of key seasonal habitats to urban areas, state hunting regulations in the area, and sanitation on private, state, and public lands. To date, grizzly bears continue to die both in areas outside of NFS land, as well as on NFS lands that are not near motorized roads and trails. The data in Table 11 through Table 13 (FSEIS, pages 56-58) speaks for itself. Mortalities can and will continue to occur on private in-holdings, in British Columbia, areas beyond the recovery zone boundaries, and even areas that are located away from motorized roads and trails. The November 2, 2009 mortality of a sow (who had two cubs) in the CYE provides an excellent example of this point as she was shot in a self-defense killing in identified core habitat in the St. Paul BMU (IGBC SCYES 2009b; Annis and Allen 2009, Dueker and Allen 2010). Furthermore, these same data indicate that access management efforts by the Forest Service to reduce motorized access have helped reduce the incidence of grizzly bear mortality on NFS lands since implementation began in the early 1990s.

Public Concern No. 107. The Forest Service should re-evaluate the habitat parameters of road density standards, core area size, and administrative use as they do not correlate to the standards found in Mace et al. 1996, which resulted in Amendment 19 to the Flathead National Forest Plan.

Response: In the DSEIS, the "results were consistent" is being taken much too literally. This assertion comes from a passage in Wakkinen and Kasworm (1997) page 24: "A similar moving window, univariate analysis of road density and grizzly bear use patterns was conducted in the South Fork of the Flathead River (Mace and Manley 1993). Their analysis resulted in similar patterns of grizzly bear distribution in relation to road densities. As in this study, they found less than expected use of total road densities in excess of 2 mi/mi^2 of total roads and less than expected use of open road densities in excess of 1 mi/mi^2 of open roads by adult female grizzly bears."

Additionally, we suggest this comment "bends the facts" by implying that the 19/19/68 standards and core block size come directly from Mace et al. (1996). In fact, the motorized access standards in the Flathead National Forest Amendment 19 were derived from a subset of adult female grizzly bears used in the preliminary Mace and Manley (1993) report on the South Fork Flathead River research effort (USDA 1994a, 1994b). The 68 percent core area result from this separate analysis differs markedly from the 56 percent "roadless area"[95] depiction of female grizzly bear home ranges in the afore-mentioned peer review publication (i.e., Mace et al. 1996). In addition, there are a number of differences in the analysis and study area land ownership patterns between the two research efforts, as well as significant differences in the size of the two population's home ranges that make direct comparison between results of Wakkinen and Kasworm (1997) the South Fork Flathead River study (Mace and Manley 1993, USDA 1994a, USDA 1994b, and Mace et al. 1996) inappropriate (FSEIS, pages 44-50 and FSEIS Appendix C). Furthermore, a minimum core block size was never established in any of the South Fork Flathead River research reports or publications, although the minimum core size recommendation of 2,500 acres used in the Flathead National Forest Amendment 19 appears to have some connection with the preliminary radio-telemetry findings from that study as of 1993 (FSEIS, Appendix C) (also see response to public concern statement 127). The process that established administrative use levels is summarized in Wakkinen and Kasworm (Wakkinen and Kasworm 1999). In addition, see the response to public concern statement 131.

Public Concern No. 108. The Forest Service should consult and collaborate with researchers from the Northern Continental Divide ecosystem (NCDE) and Selkirk-Cabinet-Yaak ecosystems (SCYE) to examine ways in which the NCDE findings may result in better SCYE standards. This would then indicate that the DSEIS should be based on connectivity rather than divisions between the recovery zones in regards to food sources and movement.

Response: The Forest Service does not "deny the possibility of a relationship between the North Continental Divide ecosystem and Selkirk/Cabinet-Yaak ecosystem," but stresses that the standards that have been developed in the different ecosystems are not directly comparable for a variety of reasons as summarized in the FSEIS (pages 44–50) and in a white paper located in Appendix C of this FSEIS (Allen et al. 2011).

[95] Mace et al. (1996) reported "roadless areas" (road densities of 0 km/km^2) rather than core habitat. Analysis of three Selkirk ecosystem BMUs using ARCInfo and a square window revealed that the amount of BMU within the 0 km/km^2 category underestimates core by approximately five percent on average (page 3, Appendix C).

The Forest Service has determined and the U.S. District Court upheld (*AWR vs. USFWS*), that the issue of maintaining linkage between the two ecosystems is not part of the stated purpose and need for this project. Nonetheless, the Forest Service has identified and developed standards for the Tobacco and West Kootenai BORZ areas based in part on the possibility that they may serve as linkage areas between the North Continental Divide ecosystem and the Cabinet-Yaak ecosystem. Additionally, the Forest Service refers to the findings of Servheen et al. (2003) in regards to the issue of linkage. This document states that “the primary causes of grizzly bear habitat fragmentation are human activities such as road building; and residential, recreational, and commercial developments.” The authors go on to discuss “habitat fracture zones” that are generally caused by human developments in “linear fashion along valley floors.” Human developments along highways and major river valleys, in all likelihood, do far more to disrupt linkage than forest roads in otherwise undeveloped NFS lands.

The DSEIS may have overstated the importance of whitebark pine seeds and army cutworm moths in the North Continental Divide ecosystem, and at this point in time, most bears in all three recovery zones may rely on essentially the same plant foods. However, it is not accurate to say that whitebark pine was “functionally gone from the NCDE for 20 years” at the time Mace and Manley acquired data from studied bears (1990-1994). Whitebark pine nuts were historically an important part of East Front grizzly bear diets in the North Continental Divide ecosystem (Mace and Jonkel 1986) (while there is no evidence that it was ever an important dietary component in the Selkirk/Cabinet-Yaak ecosystem) and continued to be in portions of the ecosystem into the 1980s. It is possible that some of the sampled North Continental Divide ecosystem bears had learned to utilize this resource before widespread whitebark pine mortality took place and continued this behavior for several years, despite the shrinking food supply. Similarly, while army cutworm moths may only be present in a few areas of the North Continental Divide ecosystem, these areas tend to draw aggregations of bears from considerable distances and are nutritionally important to the bears that use them.

Public Concern No. 109. This EIS focuses on creating core habitat with little or no attention on improving the quality or availability of habitat. The Forest Service should consider timber harvest and prescribed burning in their plans to enhance existing grizzly bear habitat.

Response: The Forest Service acknowledges that the early seral conditions produced by timber harvest, prescribed burning, and wildfire can produce seasonal habitats that may be used by grizzly bears. It is our intent to incorporate all seasonal habitats within core where possible, per the IGBC (1998a) recommendations. Alternatives B, C, D Modified, and E Updated also include intent to pursue habitat-based access management when information becomes available to do so. Site-specific projects addressing vegetation conditions would be completed under separate NEPA and USFWS consultation.

Public Concern No. 110. The Forest Service needs to include security guidelines, which address non-wheeled motorized use within the proposed forest plan amendments regardless of seasonal distinction.

Response: The original purpose and need for this EIS is to amend the three Forest Plans to include a set of motorized access and security guidelines for the active bear year (i.e., April 1 through November 15) based on more recent research and interagency direction regarding grizzly bear habitat use in relation to motorized routes (FEIS, pages 1-4 and 1-5). It was not designed to address management direction for winter motorized recreation (FSEIS, page 2). However, the effects of the alternatives on winter motorized use by vehicles such as snowmobiles are considered in this analysis (FSEIS, page 98). In addition, the IPNFs is currently in the process of completing a Winter Travel Plan that addresses the Selkirk Mountain Range.

Public Concern No. 111. The Forest Service should consider varying perceptions of grizzly bears, in regards to management of the grizzly bear, such as:

- **A) take no action and let the grizzly bears adapt like the black bears; however hunting should not be allowed;**
- **B) humans matter more than grizzly bears, thus don't reduce our access for the grizzly bears;**
- **C) humans and grizzly bears can coexist in the woods, with people using common sense when around grizzly bears;**
- **D) grizzly bears in Yellowstone are not bothered by human encounters, so why is it different for this area;**
- **E) if the forest is closed, it should be closed to everyone including the Forest Service;**
- **F) frustrations as a result of more road closures will cause detrimental effects to the grizzly bears;**
- **G) the grizzly bear population is thriving, thus no need for more road closures;**
- **H) maximize or limit motorized use restrictions in and near grizzly bear habitat and it will improve habitat;**
- **I) access is not the issue, it is all about uninformed hunters that endanger the grizzly bears;**
- **J) grizzly bears are a plains animal, therefore do not close any more roads and open the gates;**
- **K) do not manage multiple-use lands like wilderness, just for the grizzly bears;**
- **L) as the world population increases, grizzly bears need to be socialized to minimize mortality;**
- **M) educate the public about the benefits of hunting as a population management tool;**
- **N) post warning signs in grizzly bear areas indicating the threat to human life;**
- **O) the cost of self-defense items against grizzly bear attacks are a costly burden on the user;**
- **P) some roads could be closed to limit motorized access, however leave the popular areas open;**
- **Q) it is short-sighted to hamper opportunities to improve: forest conditions through timber management, community economic stability through renewable energy development and forest products, enhance recreation, and reduce fire suppression costs;**
- **R) consider the effects of the Eastern British Columbia hunting seasons and those effects on the Cabinet-Yaak Recovery Zone in the United States;**
- **S) augmentation of the grizzly bears that have been removed will be needed to obtain goal of delisting.**

Response (A): The Forest Service did analyze a No Action Alternative (Alternative A), which would maintain grizzly bear access management as of 11/30/98, before the Interim Access Rule Set.

(B): The ESA of 1973 declares that all Federal agencies … " utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act." In other words, the Forest Service is legally required to participate in the conservation and recovery of the grizzly bear. However, it may be possible to conserve and recover grizzly bears while still meeting the demand for other uses of NFS lands. For example, in Alternative E Updated, standards for individual BMUs were developed to provide increased grizzly bear habitat security while allowing management flexibility in response to issues related to public and administrative access, economics, and access and potential development of private inholdings.

(C): An important component of grizzly recovery is the ability and willingness of humans to share the landscape. Human actions, such as proper storage of food and garbage when camping, are very important in minimizing the chance of human-bear conflicts. However, grizzly bears can be disturbed by human activities and can be displaced from otherwise good habitat. Roads tend to be focal points of human presence. Local information (Wakkinen and Kasworm 1997) also shows that bears prefer areas where road densities are low.

(D): Grizzlies are more numerous in Yellowstone than in the Selkirk and Cabinet-Yaak Recovery Zones. As with any species, individuals' tolerances to disturbance can vary, and some individuals can become habituated to human presence. However, in general, grizzlies are sensitive to human disturbance, particularly near roads. Additionally, Yellowstone has a tremendous amount of unroaded backcountry. Yellowstone covers 3,472 mi^2, but only has 466 miles of road (information found at http://www.nps.gov/yell/planyourvisit/factsheets.htm, accessed on 11/10/10). Compare that to the Selkirk and Cabinet-Yaak Recovery Zones that combined cover 4,560 mi^2 (FSEIS, page 2) but had a combined 4,333 total miles of motorized routes in 2009 (FSEIS, Table 39, page 162). Additionally, in Yellowstone there is approximately 1,000 miles of backcountry trails but a very small percentage of the annual visitors venture off of the roads and into the backcountry. For example, in 2009 there were 3,295,187 visitors but only 39,736 backcountry overnight "stays." (http://www.nature.nps.gov/stats/park.cfm?parkid=421, accessed on 11/10/10). In other words, most of Yellowstone has very little human visitation compared to the roads in Yellowstone.

(E): "The Forest" is not being closed, only some motorized routes. The public is welcome to use NFS lands; however, nonmotorized methods may be necessary to reach some areas. Forest Service motorized access is also being restricted. Table 3 (page 18) in the FSEIS describes how much administrative use is allowed on gated roads by alternative. Also, if a road is closed via a berm, then even the Forest Service would not have motorized access to those roads.

(F): Sadly, some people would risk a prison sentence and a hefty fine to illegally kill a grizzly bear because of their personal negative attitudes towards grizzlies. On page 98 of the FSEIS, the Forest Service describes the possibility that the negative attitudes towards grizzly bears of some people may increase if more roads are closed and those negative attitudes may lead some people to illegally kill bears.

(G): Table 14-Table 17 in the FSEIS (pages 63-65) summarizes information provided in Kasworm et al. (2009) and Wakkinen et al. (2009). These show how far below delisting targets both recovery zones are as of 2009. This indicates that there is still work to be done to get grizzly populations in these two recovery zones to the point of delisting.

(H): Alternative D Modified was crafted to analyze the highest level of secure habitat for grizzlies based on the habitat needs of one of the six study bears using the least roaded conditions from the Wakkinen and Kasworm study (1997).

(I): Page 98 of the FSEIS addresses the concern over grizzly bear mortality due to hunting. Hunting for black bears may contribute to grizzly bear mortality through mistaken identity, self-defense, or opportunistic poaching. Changes in access availability with implementation of the Access Amendment would influence grizzly habitat use and attendant mortality risk by reducing access within the United States portion of the Selkirk and Cabinet-Yaak Recovery Zones. This would result in a net cumulative decrease in mortality risk throughout the recovery zones.

(J): Grizzlies are habitat generalists. They were indeed once found on the Great Plains, among a variety of other habitats in North America. As they were killed off, only those populations in remote or protected areas were able to hang on. Roads and motorized trails facilitate easy human travel, and human disturbance can lead to grizzlies underutilizing otherwise good habitat and increase bear mortality risk. As described in Wakkinen and Kasworm (1997), grizzlies preferred areas with lower road densities.

(K): Although Wilderness makes up a portion of both recovery zones, those areas outside of Wilderness are not managed as Wilderness. Although motorized routes may be closed to enhance grizzly habitat, those old road beds may still allow mechanized use (e.g., game carts during hunting season), or even snowmobile use. Wilderness does not allow any mechanized use. Land management activities may still occur in those areas outside of Wilderness (e.g., fuels reduction), and they are not allowed in Wilderness. These lands may still be available for many uses, it's just the means of access to conduct those activities that may be restricted. Additionally, there are lands within and outside of the recovery zones where all the current uses would continue, including the means of access to conduct those uses. Multiple use does not necessarily mean every acre is available for every type of use, it means that NFS lands as a whole, provide for a variety of uses.

(L): As previously discussed, grizzlies generally prefer areas with lower road densities (Wakkinen and Kasworm 1997). As with any species, there may be individuals that can tolerate more disturbance than the average grizzly. The world human population is undoubtedly increasing, and it is the education of peopleon how to coexist with grizzlies that will reduce grizzly mortality, rather than attempting to "socialize" grizzly bears. Human behavior is a key to reducing grizzly-human conflicts (e.g., making garbage and food unavailable to bears), as is ensuring grizzlies have enough habitat away from roads.

(M): Legal hunting is one tool to manage healthy wildlife populations. The Forest Service does not set hunting regulations as it is outside of our jurisdiction. It is better that the agencies that manage hunting seasons inform the public about the role of hunting in wildlife population management.

(N): There are signs along some of the more heavily used roads indicating that this is bear country. In cases where a bear, either black or a grizzly, poses a safety concern, the Forest Service has then taken action to notify the public and limit public access until the problem has been remedied (e.g., closing a campground until a bear can be captured).

(O): It is a personal choice to carry "self-defense" items, not a requirement.

(P): In Alternative E Updated, standards for individual BMUs were developed to provide increased grizzly bear habitat security while allowing management flexibility in response to issues related to public and administrative access, economics, and access and potential development of private inholdings. These standards were determined through consultation with USFWS and grizzly bear research scientists, and reflect the unique biological features and social factors (e.g., seasonal bear habitats and use, highways, recreational sites, residential development, private inholdings) found within specific BMUs (Kaiser 2003).

(Q): Again, in Alternative E Updated, standards for individual BMUs were developed to provide increased grizzly bear habitat security while allowing some management flexibility in response to issues related to public and administrative access, economics, and access and potential development of private inholdings.

(R): Table 10 in the FSEIS (page 55) displays the number of grizzly mortalities in the British Columbia portion of the Cabinet-Yaak Recovery Zone, including hunting mortalities. More information on grizzly mortalities in Canada can be found on the pages following that table, as well as the next few tables. Additionally, this topic is discussed again on page 98 as a cumulative effect.

(S): Augmentation has been occurring since 1990 (FSEIS, page 54) in the Cabinet-Yaak Recovery Zone and continued into 2010. Augmentation is one tool that can be used to move a population towards delisting. The success of the augmentation program is reflected in the increase in the estimated population within the CYRZ since the early 1990s.

Public Concern No. 112. The Forest Service should clarify the definition of "habitat" with respect to grizzly bear mortality and explain which of its' parameters do not matter in terms of mortality risk (see page 39 of DSEIS).

Response: “Habitat” is being used in this context to refer to conditions that exist with regard to road densities and habitat security. The DSEIS and FSEIS do not state that these aspects of habitat “do not matter’ with regard to grizzly bear mortality, but that current habitat (roaded) conditions on NFS lands in the Selkirk and Cabinet-Yaak ecosystems do not appear to significantly contribute to mortality risk based on mortality patterns from the last ten years.

Public Concern No. 113. The Forest Service should provide specific statistics on human-caused bear mortality and explain how additional road closures would significantly reduce human-caused mortalities on NFS lands when 54 percent of human-caused mortalities occurred on private or State lands.

Response: Table 10-Table 13 of the FSEIS (pages 55-58) provides the best available data on known grizzly bear mortality in the Selkirk and Cabinet-Yaak ecosystems. While it is true that numerous mortalities have occurred in areas outside of Forest Service control, grizzly bears continue to die on NFS lands, including two bears in the CYRZ in the last two years (2009-2010).

We would like to clarify your assessment that mortality has continued to increase within the recovery zones over time. The mortality data presented in Table 11 and Table 12 indicate that the percentage of known human-caused mortality on NFS lands has been decreasing since the late 1990s and after implementation of access management standards was begun in earnest in the early 1990s. Indeed, although there is 6.6 time more Federal land than non-Federal land in the U.S. portions of these ecosystems, the rate of human-caused mortality is 4.2 times higher on non-Federal land than Federal land (USDI Fish and Wildlife Service 2011a).Although not definitive proof, this implies that access management on NFS lands has been successful in reducing grizzly bear mortality.

Public Concern No. 114. The Forest Service should explain how there is a 67 percent probability that the Selkirk grizzly bear population is increasing when the population has had excessive mortalities for 13 of the last 14 years.

Response: The Selkirk ecosystem has had “excessive” mortalities in 13 of the last 14 years (16 of the last 18 from 1994-2011) only in the sense that there has been at least one human-caused mortality in 16 of these 18 years; when the Recovery Plan set the interim goal of zero because of low estimated population and uncertainty of population estimates when the Recovery Plan was updated in 1993. However, the Recovery Plan allows for a human-caused mortality rate of four percent of the population, with no more than 30 percent of this being females. Assuming a minimum of only 25 grizzly bears in the ecosystem (a low estimate based on the fact that Proctor (2007) identified 33 different bears in just a portion of the ecosystem), the ecosystem could theoretically withstand human-caused mortality of one male per year and still avoid population decline. Eleven of the last 18 years had no human-caused female mortalities while nine of the last 18 years had total human-caused mortalities of one or fewer bears[96]. Therefore, it is not unreasonable to expect an increasing population even though the amount of human-caused mortalities technically "exceeds" Recovery Plan goals (zero mortality) during 16 of the last 17 years.

Public Concern No. 115. The Forest Service should more clearly address the results of the augmentation program associated with the grizzly bears in the Cabinet-Yaak ecosystem.

Response: The Forest Service acknowledges that augmentation of the Cabinet-Yaak population has been occurring since 1990 and is consistent with the Montana Grizzly Bear Management Plan (Montana Department of Fish, Wildlife, and Parks 2006; FSEIS page 54). As noted by Kasworm et al. (2007), "[h]uman-caused mortality dominates grizzly bear population dynamics in the region (McLellan et al. 1999, Wakkinen and Kasworm 2004) and its reduction can aid recovery of small bear populations. The USFWS is currently implementing strategies to minimize human-caused mortality, improve interpopulation linkage with adjacent areas, improve habitat quality and security, and enhance public support for coexistence with grizzly bears (Servheen 1995, Proctor et al. 2004). Augmentation is a necessary additional component, and is key to increasing numbers of bears so that the comprehensive management program can be successful" (Kaswormeet al. 2007b, pages 1261-1266).

Public Concern No. 116. The Forest Service should focus on access management standards that provide adequate high quality secure habitat for grizzly bears on national forest system lands and not on how many grizzly bears have been killed in Canada or by trains.

Response: As stated on page 11 of the FSEIS, the overall purpose is to amend Forest Plans to include a set of motorized access and security guidelines to meet our responsibilities under the ESA to conserve and contribute to recovery of grizzly bears. A number of other key directives that eventually led to this proposal to amend the Forest Plans are found in the 2002 FEIS on pages 1-4 to 1-5. In addition, the purpose and need to prepare the SEIS originates from the District Court for the District of Montana, December 13, 2006 ruling, in which the Court directed the Forest Service to prepare a new analysis that complied with NEPA Regulations [40 CFR 1502.22 (a) and (b)] and included detailed information on grizzly bear mortality (see FSEISpages 54-61).

To meet the purpose and need, the Forest Service has analyzed several access management alternatives. They range from the No Action Alternative (Bear Access Management as of 11/30/98, before the Interim Access Rule Set) to Alternative D Modified, which was designed to primarily focus on the biological needs of the grizzly bear; without consideration of social, valuational and institutional needs.

[96] Of the 39 grizzly bears that died due to human causes from 1994-2011, 11 were females, 19 were males, and 9 were of unknown sex.

The data on grizzly mortalities across all land ownerships is included to provide context and a better understanding of how the Forest Service's access management can contribute to providing secure habitat for grizzlies in the recovery zones but cannot eliminate grizzly mortalities on lands outside of its jurisdiction. If the goal is to contribute towards recovery and delisting of these grizzly populations, then it needs to be clear what the Forest Service has control over and what it does not. By describing all the factors that cause grizzly mortalities in these recovery zones, the reader should have a better understanding of how access management on NFS lands can contribute towards recovery of the species, but is not the single cure-all to stop all grizzly mortalities within these recovery zones (FSEIS, pages 54-61 for additional information).

Public Concern No. 117. The Forest Service should acknowledge the detrimental impacts of both open and closed roads on bears that have been documented over and over again in the scientific literature as well as in USFWS section 7 consultation documents. There are several ways in which roads in grizzly habitat are detrimental to bears and indirectly cause bear mortalities: Bears can become habituated to people and food conditioned around roads. This learned behavior often results in a bear becoming a "nuisance" and requires management removal, which often means a dead bear. Bears that choose to ignore the presence of roads and the developments they serve die at disproportionately high rates.

Response: The Forest Service acknowledges that grizzly bears can become habituated to people and food conditioned around roads (FSEIS, page 87).

Public Concern No. 118. The Forest Service should clarify the statement made on page 45, paragraph 1 of the DSEIS regarding mortalities on State lands that do not provide any restriction on motorized access, as this statement is misleading in the fact that Idaho Department of Lands does in fact close numerous roads within the area and has a formal agreement with Idaho Department of Fish and Game for patrol and enforcement of these closures.

Response: The FSEIS (page 57) provides the following clarification: "…of human-caused mortality occurring within 500 meters of an open road takes place on private and Crown lands in British Columbia, and private or state lands that may or may not provide restrictions on motorized access".

Public Concern No. 119. The Forest Service should consider the potential increase of self-defense mortalities resulting from the lack of access to roads and having vehicles close by for safety.

Response: The Forest Service has no statistics on the number of close encounters between individuals and grizzly bears where deadly force was averted due to the availability of a nearby motor vehicle. While your scenario may occur, it is much more likely based on the available data that grizzly bear mortality is likely to decrease over time with decreasing road densities.

Public Concern No. 120. The Forest Service should consider the negative effects that result from further access restrictions and realize, that education accompanied with the assurance that access will not be restricted, will do more for recovery of the grizzly bears.

Response: The Forest Service acknowledges the potential social ramifications of implementing additional wheeled motorized vehicle restrictions (FSEIS, pages 95-97) as well as the need for continuing public education (FSEIS, page 63). More specifically, a change in motorized vehicle access may indeed result in a higher mortality risk for grizzly bears.

Public Concern No. 121. The Forest Service is equally responsible for the recovery of grizzly bears, both inside and outside the recovery area, and should work cooperatively with other responsible agencies to maximize habitat security on their own jurisdictions because recovery of grizzly bears is dependent on management of all lands.

Response: The Forest Service has no authority over road management on non-NFS lands. While the agency is willing (and often has in the past) to work cooperatively with adjacent landowners and other agencies on various issues related to grizzly bears (including sanitation), it is not the place of the Forest Service to dictate road closures on other properties. Only a few sentences on page 36 of the DSEIS discuss the potential link between access management and grizzly bear mortality. Patterns of human-caused grizzly mortality within the project area are discussed in detail on pages 54-61 of the FSEIS. On page 54 of the FSEIS, it clearly states that habitat security (limiting motorized access) is important in minimizing human-caused bear mortalities. The document does not "downplay" the relationship between open roads and grizzly bear mortality, but merely emphasizes that access management is only one element within a matrix of other factors that limit grizzly population growth. Though it may be inconsistent with the view that Forest Service management of the Selkirk/Cabinet-Yaak ecosystem is the greatest obstacle to grizzly bear recovery, the fact remains that only 12 of 61 (20 percent) of all known human-caused mortalities in the last 13[97] years occurred on NFS lands, with at least three of these grizzly bears killed by hunters more than 500 meters from any open road. Meanwhile, more than one-third (27 of 71 from 1982 to 2011) of the human-caused mortalities known to have occurred within 500 meters of an open road were killed in management actions related to sanitation issues (i.e., attractants such as garbage, orchards, livestock) on private lands or in Canada. It is not the intent of the document to place blame, but to disclose the potential effects of the action in context with ongoing activities on other ownerships.

Public Concern No. 122. The Forest Service should clarify the contradictions in the DSEIS that discuss the effects of management on lowering mortality on NFS lands versus non-NFS lands (see pages 36 and 37; and Tables 10, 11, and 12 on pages 43-45).

Response: The Forest Service disagrees with your assessment of the mortality information provided in the DSEIS (see pages 54-61 of the FSEIS). In addition, the document does not claim that lower road densities and higher core area would have little to no benefit to individual grizzly bears, but does seek to clarify that lower mortality rates would not be guaranteed through additional motorized access closures on NFS lands. This is because grizzly bear mortality is associated with other factors than just motorized road density in-and-around recovery zones on NFS lands. This includes factors such as the proximity of key seasonal habitats to urban areas, state hunting regulations in the area, and sanitation on private, state, and public lands. To date, grizzly bears continue to die both in areas outside of NFS land, as well as on NFS lands that are not near motorized roads and trails (FSEIS, pages 56-58, Table 11 to Table 13). Mortalities can and will continue to occur on private in-holdings, in British Columbia, areas beyond the recovery zone boundaries, and even areas that are located away from motorized roads and trails. The November 2, 2009 mortality of a sow (who had two cubs) in the CYE provides an excellent example of this point as she was shot in a self-defense killing in identified core habitat in the St. Paul BMU (IGBC SCYES 2009b; Annis and Allen 2009, Dueker and Allen 2010). Furthermore, these same data indicate that access management efforts by the Forest Service to reduce

[97] Reflects the time period since the Wakkinen and Kasworm access recommendation began to be incorporated on-the-ground and on NFS lands within the respective ecosystems (i.e.1999-2010).

motorized access have helped reduce the incidence of grizzly bear mortality on NFS lands since implementation began in the early 1990s.

Public Concern No. 123. The Forest Service should specify the duration of "temporary" and disclose the scientific basis for allowing temporary reduction of core area up to three years of the 10-year time span.

Response: The Agencies have dropped the provision for temporary three-year incursions into core habitat from the Design Elements in the FSEIS. As currently written, there can be no core reductions in BMUs exceeding the core area standard without in-kind replacements until all BMUs in the respective ecosystems are up to standard, with one exception being provided for in road stabilization projects.

Public Concern No. 124. The Forest Service should be specific in defining the effectiveness of road closure methods used to increase core area and to decrease Open Motorized Route Density (OMRD) and road miles in BORZ areas, because some types of road closures are vulnerable to illegal breach.

Response: Roads closed to meet the no net increase in linear road miles in BORZ areas will be closed in such a way that a drivable road surface does not remain, similar to how roads will be closed in the future to provide core habitat. The methods used (e.g., culvert removal, surface ripping, full recontour, etc.) will be determined by the site-specific requirements of a particular road.

Roads closed to decrease OMRD may employ the same methods. However, a gate or guardrail would also effectively decrease OMRD as long as administrative use levels are not exceeded and motor vehicle use by the public is excluded during the active bear year. Gated (restricted) roads are regularly monitored for illegal use and administrative use compliance. In addition, see response to public concern statement 139.

Public Concern No. 125. The Forest Service should acknowledge that applicable studies show displacement is occurring even with seasonally open roads and that it is included in the definition of "take" under the ESA.

Response: The Forest Service acknowledges that displacement is likely to occur as an indirect effect of defining new access management standards in the FSEIS (page 100). Specifically, …"bears may be displaced from preferred habitat by the human disturbance associated with road use, with a resultant reduction in habitat availability and quality and potential effects on nutrition and reproduction"(ibid). The USFWS, in the biological opinion for these amendments, has determined that incidental take would likely occur in those BMUs where one or more of the access parameters (i.e., core area, OMRD, or TMRD) are not currently achieved. Furthermore, it is the USFWS's opinion that the incidental take of grizzly bears is likely to occur in the form of harm (displacement) through significant habitat modification or degradation, which causes actual injury to grizzly bears by significantly disrupting normal behavioral patterns, including breeding, feeding, or sheltering (USDI Fish and Wildlife Service 2011a, pages A-81 and A-82).

Public Concern No. 126. The Forest Service should re-evaluate the LeClerc Bear Management Unit because many small slivers of land are considered core area even though they are highly roaded.

Response: The 2002 FEIS and this FSEIS address amendments for the KNF, LNF and IPNFs. Approximately 90 percent of the LeClerc Bear Management Unit is within the Colville NF, which is not part of this analysis (FEIS, page 2-5). The USDI Fish and Wildlife Service (2001b) Biological Opinion for the Colville NF included Terms and Conditions for no net decrease in core or increase in TMRD on NFS lands. Furthermore, Stimson Lumber Company manages approximately 21,000 acres of land within the LeClerc BMU and has entered into a Conservation Agreement with the Colville National Forest and the USFWS to minimize adverse affects to grizzly bears (USDI Fish and Wildlife Service 2001c).

Public Concern No. 127. The Forest Service should establish a minimum size for core area, similar to the Flathead National Forest access standards for the Northern Continental Divide ecosystem.

Response: The minimum core area size of 2,500 acres (3.9 square miles) used in the Flathead National Forest Plan Amendment 19 apparently has some connection with the preliminary 1988-1992 radio-telemetry data from the South Fork Flathead River study and appears to have been based on a personal communication from researcher Tim Manley (McLellan et al. 2000). However, core block size was not analyzed or determined in any of the research reports or peer reviewed publications that came out of this 10-year research effort (see core block section in Allen et al. 2011, FSEIS Appendix C). Conversely, Wakkinen and Kasworm (1997) attempted to statistically determine if grizzly bears in their study area were actively selecting a minimum core size but were unable to do so; based on the available data set. However, they suggested that if a minimum core block size occurred, it was likely between 2 mi^2 and 8 mi^2. While this study demonstrated that grizzly bears used core area blocks of greater than 8 mi^2 disproportionate to their availability, it is inaccurate to say that bears showed a preference for blocks of 4-8 mi^2. Regardless, a minor amount (about four percent) of core habitat in both ecosystems is in blocks smaller than 4 mi^2, and all BMUs in this analysis contain portions of large blocks of interconnected core habitat. Please see pages 78-81 and Appendix C of this FSEIS for a discussion of core area block size and distribution.

Public Concern No. 128. The Forest Service should provide the scientific basis for its conclusion that the effects of displacement are minor; for example, displacement is minor as a result of logging activities that are short-term.

Response: With all due respect to the commenter, they have misinterpreted a passage from the Rock Creek Mine BO (USDI Fish and Widlife Service 2001e). USFWS never states that grizzly bears can be displaced by short-term disturbances for up to 35 years, but that grizzly bears would likely be displaced for the 35-year or more period that is the expected life of the mine itself. Similarly, the “long-term displacement” referred to in USDI Fish and Wildlife Service (1998b) is in the context of proposed mines with an “indefinite” period of expected activity. This document also states that “mining in grizzly bear habitat generally results in greater potential effects to grizzly bear recovery and survival than timber harvest.” It is inappropriate to equate disturbance associated with mining in grizzly bear habitat to that of timber harvest, for reasons summarized in USDI Fish and Wildlife Service (1998b) on page 21. The requirement that core habitat remain in place for at least ten years comes from IGBC access management direction (IGBC, 1994), and is based on the generation time for a female grizzly bear or the time it takes a female grizzly bear to replace herself.

There will be no administrative use of “core roads” – core habitat, by definition, is free from motorized use during the non-denning period. Mace and Waller (1997) defined Class 1 roads as those with less than one vehicle per day and Class 2 roads as those with 1-10 vehicles per day. Fifty-seven round trips per year (60 proposed in the CYE) averages out to less than 0.5 vehicle passes per day (also see response to public concern statement 131). Clearly this number more closely approximates Mace and Waller’s (1997) definition of Class 1 roads than of Class 2 roads.

The Agencies have dropped the provision for temporary three-year incursions into core area from the Design Elements in the FSEIS. As currently written, there can be no core reductions in BMUs exceeding the core area standard without in-kind replacements until all BMUs in the respective ecosystems are up to standard, with one exception being provided for in road stabilization projects.

Public Concern No. 129. The Forest Service should recognize the relative ineffectiveness of earth barriers and gates to close roads and require protection of secure areas utilizing road obliterations as an effective method of road closures.

Response: The literature cited either predates or was concurrent with earlier efforts to implement habitat security measures via road closures on NFS lands to benefit grizzly bears. The Forest Service acknowledges that early efforts to maintain road closures through earthen berms, boulders, fixed barriers, and gates were not as effective as desired in the early 1990s. However, the approach to creating restricted roads (via gates) and road closures to create core area (via berms, boulders, planting of vegetation, full recontouring of the road prism, and partial ripping and seeding of a portion of the road prism) has evolved since the early 1990s. Gate design and installation has been improved, monitoring and enforcement has become commonplace, and the need to repair or fix an ineffective point closure is part of annual budgeting and wildlife targets. Monitoring of OMRD is reported annually to the USFWS and provides documentation of breached closures and use in excess of administrative trips that would result in an increase in OMRD for individual BMUs. Also see response to public concern statement 139.

Public Concern No. 130. The Forest Service should rework the entire core area section of the DSEIS to ensure that core area is not entered, lost, or shifted except under the most unusual of circumstances.

Response: Design Elements clearly state that any roads closed to create core areas must be “put in a condition such that any need for motorized access is not anticipated for at least 10 years”; in other words, no newly created core areas will contain roads that will require future road decommissioning or stabilization activities. There are roads within existing core areas that are currently undrivable as a result of years, or even decades, of non-use. If these roads are to be permanently decommissioned, it will be necessary to enter these areas in order to remove culverts and otherwise hydrologically stabilize these roads. While this may not satisfy the commenter’s definition of “the most unusual of circumstances,” it is a short-term disturbance necessary to gain long-term habitat security.

Public Concern No. 131. The Forest Service should clearly identify the scientific basis or management's decision criteria for selecting and prioritizing use changes in individual roads and related Open Motorized Road Density (OMRD) and Total Motorized Road Density (TMRD); and disclose the scientific basis for allowing certain number of exceptions for administrative use.

Response: Given the programmatic nature of this document, it is not possible to disclose site-specific changes in motorized access by individual road in the FSEIS. However, maximum changes in miles of roads open for public access, as well as total road density, is displayed for each of the Action Alternatives A-C (FEIS, pages 3-59, 3-60, 3-62, 3-63, 3-65, and 3-66) and Alternatives D Modified and E Updated (FSEIS, pages 169-176). Subsequent site-specific activities planned within the framework of the selected action will be subject to a separate NEPA review and documentation and further consultation with the USFWS (FEIS, page 1-2; FSEIS, page 1).

There are no trip limits on roads used in OMRD calculations (“open” roads). For those roads counted toward TMRD, but not OMRD (“restricted” or “gated” roads), the scientific basis for administrative use limits is summarized in the project record (Wakkinen and Kasworm Administrative Use Levels). This approach follows the Mace et al. (1996) definition of "Class 1 roads" averaging less than 1 pass per day with a median near zero. The researchers calculated that using a median value of zero and a mean of 0.5 vehicle passes per day, a total of 57 round trips per year would be available, divided proportionately among the grizzly bear spring, summer and fall, using the April 1-November 15 "Bear Year". If the Bear Year is extended to November 30, as is proposed for the Cabinet-Yaak ecosystem, the total number of round trips is raised to 60 per year.

Public Concern No. 132. The Forest Service should re-evaluate the minimum standards as recommended by Wakkinen and Kasworm 1997 because we don't believe these specialists intended for you to take the word "minimum" so literally.

Response: Per IGBC direction in 1994, each ecosystem was to develop standards based on research of bear habitat use in local population (IGBC, 1994, page 6). The Wakkinen and Kasworm 1997 report fulfilled that expectation and provided the Forest Service with the average access parameters of 33:26:55. Based on discussions with the authors, the USFWS and the Forest Service, the average amount of OMRD, TMRD, and core area were brought forward and incorporated as the "research parameters" to strive for in Alternative C. However, Alternative E (USDA Forest Service 2002a) and Alternative E Modified (FSEIS) provide higher levels of core area and meet or exceed the Wakkinen and Kasworm average values for OMRD and TMRD across both recovery zones.

Public Concern No. 133. The Forest Service should explain the statement on page 57 of the DSEIS that recommended levels of OMRD, TMRD, or core area cannot be met due to the social consequences of closing certain important forest roads. There is not enough information in the DSEIS to make such a statement, because the DSEIS doesn't specify which roads it is referring to closing.

Response: It appears that the commenter is editing the statement from the DSEIS to imply that the Forest Service would not close certain roads purely in response to social pressure. The complete statement from the DSEIS reads, "In a few BMUs, recommended levels of OMRD, TMRD, or core area cannot be met due to a lack of legal authority to close highways and county roads, the high percentage of non-Federal lands, or the social consequences of closing certain important forest roads". The Forest Service has no authority to close state highways or county roads, and has no interest in closing roads leading to private inholdings that may be under permanent easement or would subsequently be litigated under the Alaska National Interest Lands Conservation Act (ANILCA). The project record contains information on jurisdiction, location, and access needs of other owners for all roads considered to be "unavailable" for closure. Since this is a programmatic document, roads are not specified for closure under Alternative E Updated, although project record documents do specify which roads would not be closed for the reasons stated above.

Public Concern No. 134. The Forest Service should explain why the OMRD, TMRD, and core area standards were increased and are more restrictive in Alternative E Updated, yet conditions have not changed, the Forest Service hasn't violated the Endangered Species Act, and the biologists' recommendations were adopted.

Response: In the 2004 ROD, Alternative E was the selected alternative and consultation with USFWS focused on Alternative E. Even though the court's motion states that the Forest Service was not in violation of ESA, the USFWS later withdrew their BO as a result of the Forest Service needing to issue another NEPA decision. To capitalize on previous efforts and aid in consultation for the SEIS, Alternative E Updated and Alternative D Modified in the DSEIS included the Terms and Conditions from the original BO as Design Elements. The Reasonable and Prudent Measures (2004 ROD, page 75) were also included and apply to reoccurring use areas (BORZ polygons). As described on page 3 of the DSEIS, consultation has been ongoing during this process and the original Terms and Conditions from the BO and Reasonable and Prudent Measures from the 2004 ROD have been updated for the FSEIS (see FSEIS, pages 9-11 for additional information).

In the FSEIS, Alternative E Updated proposes a stricter TMRD standard for only two CYRZ BMUs (i.e., Vermillionand North Lightning) and more stringent core standards for four CYRZ BMUs (i.e., Spar, St. Paul, Pulpit, and Northwest Peak). Additionally, the core standard was lowered for one CYRZ BMU (i.e., Bull). The changes were generally the result of a reassessment of conditions in the affected BMUs since the 2004 ROD was issued.

Public Concern No. 135. The Forest Service should acknowledge the science-based conclusion that roads are the major factor in the degradation of grizzly bear habitat and that one of the ways to provide adequate security is to reduce the number of OMRD and TMRD and establish and maintain large areas free from motorized use.

Response: The potential effects of roads on grizzly bear habitat are discussed on pages 54 to 61 and 67 of the FSEIS, as well as on pages 3-6 to 3-11 of the 2002 FEIS. These passages are in no way dismissive of the relationship between road density and reduced habitat quality. Nonetheless, it is obvious from the data in Table 11 and Table 12 of the FSEIS that NFS roads have been much less of a factor in grizzly bear mortality in the last 12 years. This does not imply that reducing the presence of roads is no longer an important aspect for grizzly bear recovery, but that other issues, particularly big game hunting and sanitation, may currently play a larger role in limiting this recovery.

Currently, about 96 percent of the core habitat in the Selkirk and Cabinet-Yaak ecosystems is in blocks larger than four square miles, with much of this in blocks of over 100 square miles (for more information on core area block size and distribution, please see pages 78-81 and Appendix C of this FSEIS).

Public Concern No. 136. The Forest Service should explain the adoption and enforcement of precise numerical standards when there is nothing in the Mace and Waller 1997 final report on Grizzly Bear Ecology in the Swan Mountains of Montana supporting these standards, nor does it support the inflexible enforcement of these standards or the necessity for permanent decommissioning or blocking of public roads or closure of trails to motorized use.

Response: Mace and Waller (1997) do not report percentages of BMUs in certain road density categories, although they did report “roadless areas[98]” of 56 percent for the multi-annual composite home range for female grizzly bears. However, the Flathead National Forest Amendment 19 access standards were derived from a subset of the South Fork Flathead River (Mace and Waller) data.

The standards proposed in this Forest Plan Amendment were generated from research conducted in the Selkirk and Cabinet-Yaak ecosystems by Wakkinen and Kasworm (1997). The IGBC has directed that information on OMRD, TMRD, and core area be incorporated into the management

[98] Mace et al. (1996) reported “roadless areas” (road densities of 0 km/km^2) rather than core habitat. A cursory analysis of three Selkirk ecosystem BMUs using ARCInfo and a square window revealed that the amount of BMU within the 0 km/km^2 category underestimates core by approximately five percent on average (page 3, Appendix C).

of grizzly bears and that each grizzly bear ecosystem develop ecosystem-specific guidelines using local data where possible. Based on this direction, research data from radio-collared grizzly bears in the Selkirk and Cabinet-Yaak ecosystems were used to determine the appropriate levels of these three parameters. This study was conducted by two research biologists with a combined experience of more than 45 years monitoring grizzly bear populations in these ecosystems; and the resulting publication was peer-reviewed by nine biologists, whose comments were incorporated into the final report. The Forests also disagree with the interpretation that Mace and Waller "recommends against" establishment of road density standards. The researchers stress achieving a balance between grizzly bear security and survival, and human sociological and economic concerns. Alternative E Updated (proposed action) attempts to strike this balance.

Public Concern No. 137. The Forest Service should consider Mace and Waller (1997) findings that use of nonmotorized trails and areas displaced bears even more than motorized roads.

Response: The purpose of this Forest Plan Amendment is to address motorized access for the threatened grizzly bear within-and-around the Selkirk or Cabinet-Yaak grizzly bear recovery areas. Specifically, the scope of the analysis pertains to access standards for wheeled motorized vehicle use during the active bear year (FEIS, page 2; FSEIS, page 1). Therefore, the effects analysis for grizzly bear and other wildlife species that focuses on motorized access impacts is appropriate.

The Forest Service disagrees with this interpretation of the findings of Mace and Waller (1997). The report does not imply that nonmotorized trails and areas displaced bears more than motorized roads. While bears avoided areas of human use, most (66 percent) of trails were in forest cover types that were avoided by bears regardless. The authors do cite the McLellan and Shackleton (1989) finding that grizzly bear response to off-trail hikers was greater than that observed for other types of disturbances. However, these authors specifically state that responses of bear in the study area "were not associated with hiking trails." While the effects of nonmotorized human use on grizzly bears are not well documented and what research exists is somewhat contradictory, studies have consistently demonstrated grizzly bear avoidance of roads and motorized traffic (FSEIS, page 49).

The bears in the Mace and Waller (1997) study demonstrated increased use of timber harvest units during summer and autumn, and the researchers suggest that certain harvest methods may promote fruit production in *Vaccinium* and *Sorbus* species. However, nothing in this study implies that increased road use can be beneficial to bears. With one exception, the researchers only found positive selection of preferred habitats near roads of 10 or fewer vehicles per day, and selection for areas near roads of greater than or equal to one vehicle per day only occurred in spring. The report states that "few bears exhibited positive selection towards areas near roads having greater than 60 vehicles per day," but does not say that positive selection occurred near roads of less than 60 vehicles per day. In fact, most bears showed negative selection towards 0.5 km buffers around all road classes except Class 1 (less than or equal to one vehicle per day). Later on page 73, the document states that "spatial avoidance [by bears] will increase and survival decrease as traffic levels, road densities, and human settlement increases." There are no statements on this page or elsewhere in the document that lend support to the idea that increased use of roads positively affects grizzly bear habitat.

Public Concern No. 138. The Forest Service has repeatedly misrepresented the meaning of the standards for OMRD, TMRD, and core area as a way to permit continued road building in grizzly bear habitat. This is a subversion of sound science. The Forest Service must clearly address this misrepresentation by noting

that all numbers from 0-33 percent, 0-26 percent, and 55-100 percent meet (not exceed) standards, and that no degradation of any Bear Management Unit from current levels will be permitted.

Response: Whether a BMU "meets" or "exceeds" the standards is a purely semantic argument being used to imply that there can be no loss of core habitat or increase in road densities. The statement that "no degradation of any Bear Management Unit from current levels will be permitted" reflects a value statement on the part of the commenter, and is not found anywhere in the Forest Service proposed action or the USFWS Biological Opinion, and is not recommended in available research. The intent of Alternative E Updated is to "provide increased grizzly bear habitat security while allowing management flexibility" for public and administrative access. Providing this flexibility may involve core loss or road density increases in cases where this activity is consistent with Design Elements of the FSEIS. Additionally, Chief Judge Molloy of the U.S. District Court repeatedly makes references to "overperforming" BMUs "exceeding" research standards in the *Cabinet Resource Group v. USFWS* decision.

Public Concern No. 139. The Forest Service should disclose that under conditions described in Alternative E Updated, standards for OMRD, TMRD, and core area will fail to be met because:

> **A) this takes into consideration that there is documentation that gate closures fail to work; and the DSEIS shows that the number of miles changing from gated/barriered to open, indicates 110-330 miles become more secure, while 160-480 miles become less secure.**

Response: The Forest Service disagrees with the assertion that gate closures fail to work "90 percent" of the time and no data are provided to support it. Additionally, the assumption that any use behind a gate renders the closure completely ineffective is not accurate (Hammer 2005; where gated roads receiving "administrative" use [quotes in original] are discussed as being "ineffective"). In fact, any reduction in motorized use from closure devices can be expected to decrease mortality risk and potential displacement compared to roads with no restrictions.

The Forests have spent considerable time and money replacing and improving closure devices in the 15 years since the last documentation of closure effectiveness in the Selkirk or Cabinet-Yaak ecosystems cited. Additionally, the Districts involved regularly monitor closures in grizzly bear habitat, and make timely repairs when damage or unauthorized use is observed (e.g., USDA Forest Service 2008, 2009, 2010). Gate locks are regularly replaced on the IPNFs, with key use closely monitored and the keys themselves (in most cases) impossible to duplicate. In recent years, illegal motorized use has become uncommon, and violations of closures by full-sized vehicles a rare event. As roads are closed to provide security, they are no longer simply "bermed" or "tank-trapped" to prevent motorized use. Instead, decommissioned or stored roads have culverts removed, have non-drivable waterbars or slash placed on the surface, are partially or fully recontoured, or some combination of these. As a result, roads recently closed to provide core habitat are effective at preventing motorized use.

Regarding USDI Fish and Wildlife Service (1994b), the audit of closures on the IPNFs is dated and was flawed in a number of ways. This information documented the potential for unauthorized access, rather than the actual presence, thus overestimating the amount of "failed" closures. Several open gates and roads apparently receiving "heavy" traffic had active timber sales being conducted at the time, and were modeled as "open" roads during that bear year. A number of other roads with reported "minimum" or "moderate" use had scheduled administrative activities conducted along them, or provided access to special use permit areas. Ultimately, motorized use behind all but one of the closures was a result of previously planned and authorized use. The one exception was suspected to have been tracks made the preceding winter by timber sale activities during the grizzly bear denning season (USDA Forest Service 1994c).

The Forests have made steady progress towards the research levels since the Interim Access Management Rule was adopted. In the affected Selkirk ecosystem BMUs, core habitat has increased by 13,755 acres (nearly 3 percent) between 1999 and 2009, with additional increases that will be realized as a result of activities in 2010. In the Cabinet-Yaak ecosystem, core habitat has increased by about 45,200 acres and 5 percent total in 17 BMUs for which these data were available in 1999.

While opportunities have been identified for accommodating increases in wheeled motorized vehicle access, such opportunites only exist in those BMUs with conditions that are better than the standard. For those BMUs, changes would not be permitted that would result in conditions for OMRD, TMRD or core area being worse than their selected standard. Therefore, standards for OMRD, TMRD, and core area will be met. It is also important to note that permitted changes would be unlikely to occur to the extent identified in the EIS (FSEIS, page 88). Any project that proposes changes that would increase OMRD or TMRD or decrease core area (but not drop below selected standards) would require a site-specific analysis, including public involvement and consultation with USFWS. In contrast, changes needed to bring deficient BMUs up to standard would be mandatory.

Public Concern No. 140. The Forest Service should determine whether the grizzly bears in the Wakkinen and Kasworm study had chosen optimal habitat or whether they simply chose the best habitat available; and assess the relevance and importance of this uncertainty.

Response: Wakkinen and Kasworm (1997) were unable to complete a second-order resource selection analysis in regards to home range selection and motorized routes because a GIS layer of the road system was not available for the recovery zones at that time. However, these circumstances have changed and an overall road layer is now available for development of a map reflecting the approximate amount of core habitat[99] available during the tenure of the research effort (1989-1994). The Forest Service revisited the habitat security conditions available to the six study bears south of the international border and discovered they did indeed have several large areas of core habitat available to them outside of their home ranges (Allen et al. 2011 in FSEIS Appendix C). These large blocks of core habitat included an array of vegetation types, elevations, slopes, and aspects. More specifically, the composite home ranges of the Cabinet-Yaak and Selkirk study bears in the U.S. reflected 28.7 and 41.8 percent core habitat, respectively, versus 38.2 and 44.3 percent core habitat available throughout the respective recovery zones in the U.S. This demonstrates that the core area results from the Wakkinen and Kasworm (1997) research effort are a reflection of bears actively choosing these areas and not an indication that they had a lack of opportunity to select home ranges with fewer roads (ibid). This evaluation lends additional support to our use of the Wakkinen and Kasworm (1997) study results in developing access parameters for grizzly bears in these two ecosystems.

Public Concern No. 141. The Forest Service should address establishing and maintaining connectivity or functional linkage zones within and between recovery

[99] The 1970s and 1980s represents the peak of road construction and associated logging on the NFS, state, and commercial timber lands located in-and-around the recovery zones. Additionally, the 1987 Fores Plans habitat security standards were just beginning to be implemented (e.g. gate installation and road closures), but were often ineffective at keeping motorized use out due to vandalism or ineffective design (e.g. Platt 1994). Therefore, developing a “maximum core habitat” layer (based on 500 meter buffer around **all** roads known to have been constructed within the recovery zone) provides the most conservative—and likely most accurate—portrayel of what the study bears had available to them in regards to secure habitat, i.e., core habitat selection (see Allen et al. 2011 in FSEIS Appendix C).

zones because it's essential for the genetic diversity and the recovery of grizzly bears and:

A) roads fragment otherwise large blocks of secure habitat into smaller habitat islands which may be insufficient to maintain viability, road networks lower carrying capacity of an area, and higher road density equals lower value for grizzly bear habitat.

Response: The scope of the proposed action pertains to access standards for wheeled motorized vehicle use during the active bear year (FEIS, page 1-2; FSEIS page 2). Designation or management of linkage corridors between recovery zones, while important, is beyond the scope of the proposed action. The FSEIS does address your concern that roads fragment large blocks of secure habitat into smaller habitat islands (FSEIS page 78).

Public Concern No. 142. The Forest Service should explain the difference between core area and buffer habitat, which is broken down on the GIS layers on the IPNF website and whether the buffer habitat would be subject to the same requirements as the core areas.

Response: Buffer habitat as displayed in the GIS layers are those areas situated within the 500 meter 'influence zone' of open roads. Therefore, buffer habitats represent lower quality habitat where grizzly bear use is expected to be minimal based on their juxtaposition to the open road corridor.

Public Concern No. 143. The Forest Service should provide scientific support or justification for not limiting OMRD or TMRD levels in "Bears Outside Recovery Zones" (BORZ) areas, given there is no core area within the BORZ.

Response: The recurring use areas (i.e., BORZ) are not part of the official recovery zone area. Therefore, applications of the access parameters developed to identify use levels within a prescribed cumulative effects area (i.e., Bear Management Unit=home range of an adult female grizzly bear or approximately 100 square miles) are not appropriate for these areas. Changes in the recovery zone boundaries are the responsibility of the USFWS and would require supporting research and documentation on the amount of use by grizzly bear(s), availability/use of seasonal habitats, and the designation of an appropriate cumulative effects boundary (i.e., BMU) that is consistent with the direction used in that recovery zone (i.e., size of female home range)[100]. The latter is particularly important to ensure a consistent approach in application of the road density parameters and to afford comparison of areas throughout the ecosystem. This information would have to undergopublic disclosure and an environmental analysis to disclose the impacts of changing management direction. The USFWS has recently completed a five-year status review for the grizzly bear (USDI Fish and Wildlife Service 2011b). It is expected that the Selkirk/Cabinet-Yaak ecosystem recovery plan will be revised in the near future.

Recovery and delisting goals are targeted at the recovery zones, not outside of them. Because of the documented recent recurring grizzly bear use in the BORZ areas, Alternative D Modified and Alternative E Updated include conservation measures in BORZ areas that would maintain the not decrease the current level of security in these areas by not allowing an increased amount of wheeled motorized access beyond the baseline conditions.

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[100]Currently there is a paucity of grizzly bear use data, a lack of information on the availability and use of season habitats, and a large disparity in the current size of BORZ (from 53 square miles for the Pack River BORZ to 449 square miles for the Tobacco BORZ).

It is stated on page 18 of the Recovery Plan (USDI Fish and Wildlife Service 1993a) that areas outside of the recovery zones are not primarily managed for grizzly bear use: "It is recognized that grizzly bears occasionally will move and even reside permanently in areas outside recovery zones. Bears can and are expected to exist outside recovery zone lines in many areas. However, only the area within the recovery zone will be managed primarily for grizzly habitat. Bears residing within the recovery zone are crucial to recovery goals and hence to delisting. The mere presence of bears outside a recovery zone does not warrant changes in the boundary line…Bears both inside and outside the recovery zone are listed as threatened under the Act and are protected under provisions of the Act against illegal killing. Management efforts such as pursuit, capture, and relocation will not be directed against grizzly bears outside the recovery zone if such bears do not come into conflict with people or domestic livestock or do not represent a demonstrable threat to humans. It is recognized that such areas are not primarily managed for grizzly bear use. Bears outside the zone that come into conflict with humans will be captured and relocated into the recovery zone according to the nuisance bear criteria in the Guidelines (USDA Forest Service 1986a). Capture and removal of nuisance bears outside the recovery zone by authorized agency action is necessarily more lenient than within the recovery zone."

Some of the BORZ areas have relatively high road densities compared to the recovery zones. However, the presence of grizzly bears in these areas indicates that some bears have apparently acclimated to the conditions within them, and at least in the short term, seem able to find and secure the resources necessary for their needs and avoid human encounters resulting in mortality (USDI Fish and Wildlife Service 2011a). Since these bears have presumably adapted to these conditions, management of BORZ areas will guarantee no deterioration of habitat as a result of increased road miles (FSEIS pages 22-25).

Public Concern No. 144. The Forest Service should change the BORZ standards to include no net increases in linear open road mileage and no permanent increases in linear total road mileage.

Response: The Forest Service acknowledges that the road metric used in the 2004 USFWS Reasonable and Prudent Measure (USDI Fish and Wildlife Service 2004) needed to be changed for greater ease in calculation and for the sake of transparency in reporting. Consequently, the Design Element on pages 22-23 of the FSEIS have been changed to refer to “total linear miles of open road” and “total linear miles of permanent road.”

Public Concern No. 145. The Forest Service should recognize that further designation of security areas within the recovery zones would not seem to address a limiting factor for grizzly bear recovery, but it may result in negative attitudes about grizzly bears from some segments of the public.

Response: The Forest Service acknowledges the potential social ramifications of implementing additional wheeled motorized vehicle restrictions (FSEIS, pages 95 and 97). More specifically, a change in motorized vehicle access may result in a higher mortality risk for grizzly bears.

Public Concern No. 146. The Forest Service should base management decisions on the necessities of multiple use and scientific data that supports the necessity of even more restrictions on national forest system lands in the Bears Outside Recovery Zone (BORZ).

Response: In Alternative D Modified and Alternative E Updated, the current/baseline amount of permanent roads (open and total) in the BORZ areas is not to be exceeded, therefore the current "multiple uses" of those areas can continue. Roads may be constructed or reopened if they are compensated for with in-kind closures. The variety of uses within the BORZ areas can continue, but there won't be an increase in wheeled-motorized access over current/baseline conditions. "Multiple use" does not mean that every acre is available for every conceivable type of use, but that the Forest in general will provide for a variety of uses. Also, a range of alternatives was analyzed, and only Alternative D Modified and Alternative E Updated would not increase the amount of wheeled-motorized access over current/baseline conditions within BORZ. As stated on page 18 of the 1993 Grizzly Bear Recovery Plan (USDI Fish and Wildlife Service 1993a), even though grizzlies may occur outside of the recovery zones they are still protected from illegal killing. It also states that areas outside of the recovery zones are not managed primarily for grizzly bears.

The Forest Service is not proposing managing those areas the same as within the recovery zone. However, in order to minimize the displacement of bears that are using these areas and reduce opportunities for someone to illegally kill a grizzly bear in the BORZ areas, then Alternative D Modified and Alternative E Updated would cap the amount of roads available for wheeled motorized use at their current/baseline conditions.

Page 82 of the FSEIS explains where these BORZ design criteria originated: "Although withdrawn because the action was no longer pending, the BO on Alternative E (USDI Fish and Wildlife Service 2004) is an important document because it contains direction that the USFWS considers important for grizzly bear recovery, including bears found outside the Selkirk and Cabinet-Yaak Recovery Zones and was found to comply with the requirements of ESA by the District Court. This direction is anticipated to be included in the BO for the FSEIS. The Terms and Conditions in the BO for bears outside the recovery zones (BORZ) have been incorporated into Alternative D Modified and Alternative E Updated in anticipation of the BO." Information on bear mortality, including mortality related to roads, can be found on pages 54-61 in the FSEIS and pages 19-26 in the Biological Assessment (USDI Fish and Wildlife Service 2011a).

Public Concern No. 147. The Forest Service should evaluate the lynx study completed in the Seeley Lake area and its findings that there were no adverse impacts to lynx from winter snowmobile use.

Response: The FSEIS does not change current management direction for winter motorized recreation such as snowmobile use (FSEIS, page 2). It pertains to access standards for wheeled motorized vehicles use during the active bear year, which is April 1 to November 15 in the Selkirk Recovery Zone and April 1 to November 30 in the Cabinet-Yaak Recovery Zone. Therefore, there is no need to evaluate the scientific literature in regards to snowmobiling impacts on various wildlife species.

Public Concern No. 148. The Forest Service should consider that caribou are very sensitive to motorized uses and will require the removal of roads and reduction of snowmobile use, which Alternative D Modified will go a long way in achieving.

Response: The Forest Service acknowledged that woodland caribou appear to avoid roads (FSEIS, page 112). However, some members of the Selkirk mountain caribou population have become habituated to the high-volume/high-speed British Columbia Highway 3, which bisected prime caribou habitat in the Stagleap Pass area with its construction in 1963. While caribou are likely attracted to the road in part due to the salting of the highway in the winter months, the area also provides high quality habitat year-round which the caribou continue to use in spite of the traffic. As a consequence of this use, caribou continue to die in collisions with motor vehicles (Wakkinen et al. 2009).

The FSEIS does not change current management direction for winter motorized recreation such as snowmobile use (FSEIS, page 2). It pertains to access standards for wheeled motorized vehicle use during the active bear year, which is April 1 to November 15 in the Selkirk Recovery Zone and April 1 to November 30 in the Cabinet-Yaak Recovery Zone.

Public Concern No. 149. The Forest Service should correct the statement on page 77 of the DSEIS: "Timber harvest in caribou habitat on Idaho Department State lands in the Priest Lake Basin and in British Columbia continues to convert suitable caribou habitat into an unsuitable condition by harvesting mature and old growth cedar, hemlock and Engelmann Spruce, subalpine fir stands.", as the Idaho Department of Lands has worked to ensure that while maximizing revenues for the endowments, the needs of threatened and endangered species are taken into account.

Response: The Forest Service acknowledges the Idaho Department of Lands efforts to ensure that the needs of threatened and endangerd species are taken into account, while meeting its mandate to maximize revenues for the state endowment. The statement in the DSEIS was based upon the history of timber harvest during the last 15+ years, where timber sales in the Two Mouth Creek and Abandon Creek drainages resulted in the conversion of suitable caribou habitat. More recently, proposed timber sales (2010-2011) indicate that the majority of harvest units and associated road construction are located outside of the caribou recovery zone.

Public Concern No. 150. The Forest Service should specify if Table 24 in the DSEIS is taken directly from the 2007 Kinley and Apps report and also clarify the table's title and description regarding which lands are included and the fact that acreage habitat potentially occurring on these lands was modeled and the Idaho Department of Land lands were ground-truthed.

Response: Page 112 of the FSEIS includes a corrected version of this table.

Timber

Public Concern No. 60. The 2002 FEIS inaccurately portrayed potential effects of the rule set by falsely claiming they will not constrain suitable timberlands in roadless areas. The Forest Service should ensure that the Final SEIS clearly portray potential effects to suitable timberlands in roadless areas as a result of the proposed road closures.

Response: The Roadless Area Conservation Rule (RACR; USDA Forest Service 2001b), if in effect in Montana, permits timber harvest within IRAs provided at least one of the exceptions found at 36 CFR 294.13(b) is met. Road construction or reconstruction within these areas for the purposes of addressing forest health improvement objectives (for example, thinning to improve vigor or fuels reduction) is not permitted. Helicopter would be the principal yarding method utilized for timber harvest under the RACR, except in those areas that may be accessed by existing roads that do not require reconstruction. Because of the high cost of this logging system, cost per acre would increase substantially and proportionally with the distance of such harvest from the nearest road, thus effectively limiting its use. Therefore, the RACR would combine cumulatively with the alternatives considered to further restrict access to suitable acres for timber harvest and stand tending purposes. If the RACR is not in effect in Montana, then the 1987 Forest Plan management direction would apply and there would be no cumulative effects to access suitable timber acres for timber harvest.

In the Idaho Roadless FEIS and Rule [36 CFR 294 Subpart C (USDA 2008c and 2008d)], the Primitive theme permits timber harvest: to improve threatened, endangered, proposed, or sensitive species habitat; to maintain or restore characteristics of ecosystem composition and structure; or to reduce the significant risk of wildland fire effects to an at-risk community or municipal water supply system. However, only existing roads or aerial systems would be able to be used. It is expected that timber cutting in the Primitive theme would be rare and therefore, roadless characteristics would be maintained.

In the Idaho Roadless FEIS and Rule, the Backcountry theme permits road construction and/or reconstruction when done to facilitate timber harvest within a community protection zone. While some roads could be constructed outside the community protection zone for activities designed to reduce the significant risk of wildland fire to communities and municipal water systems, the Idaho Roadless FEIS and Rule expects these instances to be limited because of additional conditions that would have to be met. The Idaho Roadless FEIS and Rule is expected to be more effective in addressing forest health concerns in the IRAs than the RACR, but less effective than existing forest plans. Therefore, the Idaho FEIS and Rule, in conjunction with the alternatives considered in this FSEIS, could further restrict access to suitable acres.

Public Concern No. 151. The Forest Service should clearly define suitable lands giving consideration to the type of management and the cumulative damage caused by previous management of the suitable timber.

Response: Timber land suitability was discussed on page 150 of the DSEIS and page 196 of the FSEIS. The individual forest plans have identified lands as suitable or not suitable for timber production. Table 3-38 of the FEIS displayed the amount of land considered suitable for timber production on each national forest (FEIS, page 3-96). The identification of the suitability of lands for timber harvest and timber production at the land management plan level is not a final decision compelling, approving, or prohibiting projects and activities. A final determination of suitability of lands for timber and other resource uses is made through project and activity decision-making. Because the programmatic nature of the analysis does not allow for knowledge of which roads would be proposed for closure at some future date, the acres represented in the analysis are only relative estimates and not a true representation of the accessible acres for the purpose of timber management and are used only to compare the effects of Alternative D Modified and Alternative E Updated (FSEIS, pages 198 and 204). As forest plan revision proceeds on the three forests, timberland suitability is being considered in those analyses.

Public Concern No. 152. The Forest Service should reconsider that, even though Alternative D Modified and Alternative E Updated improve habitat for ranking sensitive species and management indicator species, the ability to manage timber has decreased, flexibility of resource management has decreased, access to suitable acres is lost, and the ability to tend to previously treated stands is lost and:

A) Should not change existing motorized access without more supportable and acceptable levels of scientific data because of the negative effects to resource and timber management

Response: In selecting an alternative to implement, one of the factors considered by the responsible Officials was the potential effect on the ability to manage timber. While Alternative E Updated potentially provides some flexibility for resource management, the overall purpose and need for the amendments is to include a set of wheeled motorized vehicle access and security guidelines within the three forest plans that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). Under the NFMA, the Forest Service is to provide for diversity of plant and animal communities and balance competing demands in managing the national forests. Alternative E Updated, the selected alternative, is the alternative that best provides for that diversity and balance among the competing demands of the national forest.

The ability of the Forest Service to access stands for timber management purposes would be affected under either Alternatives D Modified or E Updated. Alternative E Updated was developed to address a number of issues, including more management flexibility in response to issues related to public and administrative access, economics, access to private inholdings, and increased grizzly bear habitat security (FEIS, page 2-15). Alternative E Updated is based upon the best available science (FSEIS, page 93). The IGBC directed each ecosystem to develop ecosystem-specific guidelines using local data where possible. The Wakkinen and Kasworm study (1997) numbers (33/26/55) were generated with such data. In addition, the identified habitat parameters for Alternative E Updated were developed in consultation with grizzly bear research scientists and USFWS Biologists from the Helena, Montana and Spokane, Washington field offices. They reflect the unique features of biological and social factors (highways, high quality habitat, residential developments, and linkage zones) in specific BMUs (FEIS, page 2-15).

Watershed

Public Concern No. 154. The Forest Service should clarify in the aquatics analysis whether active roads in the subbasins on the IPNF would be barriered or gated.

Response: The FSEIS is a programmatic document, which will not provide determinations as to which specific active roads would be barriered or gated; therefore this information cannot be displayed in the aquatics analysis. On page 1 of the FSEIS, in the Introduction, paragraph 3; it states "The programmatic environmental analysis (FSEIS and subsequent ROD) will provide guidance for future decisions conducted at the site-specific or project level." Chapter 2 of the FSEIS includes a description of the design elements for this project. Design elements I.B.1.f, II.A, and II.B discuss the use of barriers and gates to achieve desired results but do not specify on which roads they will be used.

Affects of gated and barriered roads to the aquatic environment are discussed on pages 188-189 of the FSEIS. Changes to the miles of gated or barriered roads are described on page 191 and 192 of the FSEIS.

Public Concern No. 155. The Forest Service should provide in the final aquatics analysis, expert agency comments indicating whether the preferred alternative, as it applies to the areas on the IPNF, is consistent with, and in full compliance with, each applicable Forest Practices Act road maintenance regulation found at IDAPA 20.02.01.040.04.

Response: The implementation of this programmatic document will not alter Forest Service road maintenance. The following direction is provided in IDAPA 20.02.01.040.04, titled "Road Maintenance": "Conduct regular preventative maintenance operations to minimize disturbance and damage to forest productivity, water quality, and fish and wildlife habitat." The Forest Service does regular preventative maintenance. Each system road is assigned a maintenance level (ML) and based on that ML; a specific schedule of maintenance needs is performed. The objective of the Road Maintenance Program is to maintain the road system to the approved maintenance levels within the constraints of funding allocations and authorizations. Currently, maintenance is performed on a regular cyclical basis. Condition surveys are performed on 20 percent of all Maintenance Level 3, 4, and 5 roads every year, resulting in identification of conditions on all of these routes every five years. Condition surveys on Maintenance Level 1 and 2 roads are performed on a random sample number of roads decided upon by direction from the Regional Forester's office.

Public Concern No. 156. The Forest Service should include language that would provide for management within the Bear Management Units for protection of any watershed providing municipal drinking water, especially in emergency situations, and protect these watersheds from extreme fuel loading or sedimentation.

Response: The FSEIS takes into consideration the need for contingencies in the case of emergencies. This is described under the Design Elements No. 1.B.1.e in the FSEIS, "Therefore, except for emergencies or other unforeseen circumstances consulted on with the Service . . . ".

Public Concern No. 157. The Forest Service should add clarifying language to Design Element D that would provide assurance that minimizing risks to water quality through the establishment of hydrologic stability is an essential element for the implementation of Design Element D in the Water Quality section of the DSEIS.

Response: See response provided for Public Concern No. 21.

Outside of Scope

Public Concern No. 161. The Endangered Species Act needs to be amended so that the majority of taxpayers and citizens are guiding decisions instead of environmental group lawsuits and threats of legal action because:

- **A) we have enough grizzly bears to worry about as it is;**
- **B) the grizzly bears are here and we don't need more introduced into this area.**

Response: The purpose and need for this proposal is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). Amending the ESA is beyond the scope of this analysis, as the ESA can only be amended by the U.S. Congress. At recovery levels, it is anticipated that the minimum grizzly bear population for the Selkirk and Cabinet-Yaak Recovery Zones would be approximately 90 bears and 100 bears, respectively. Currently, a minimum population estimate of 40 bears was made for the Cabinet-Yaak Recovery Zone and 47 bears for the Selkirk Recovery Zone (FSEIS, page 52). Augmentation of large carnivore populations can be a valuable management and recovery tool. Recent augmentation of the grizzly bear population in the Cabinet-Yaak Recovery Zone suggests that experimental augmentation affected the persistence, size, and genetic diversity of the Cabinet Mountains grizzly bear population between 1990 and 2005 (Kasworm et al. 2007).

Public Concern No. 162. The Forest Service should redirect the route designation process for motorized use and inventory all existing motorized routes and designate them for motorized use versus initiating motorized closures.

Response: This is not a site-specific analysis done according to 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need for this proposal is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4). This programmatic environmental analysis and decision provides guidance for future decisions conducted at the site-specific or project level. It is those site-specific analyses that will identify specific roads and trails for possible change of status in motorized use. When those proposals are ripe for a decision, a separate public involvement process, under the auspices of NEPA will be conducted.

Public Concern No. 163. The Forest Service should include new road and trail construction for the purpose of establishing motorized loops in this DSEIS.

Response: This is not a site-specific analysis done according to 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose and need for this proposal is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears (FEIS, page 1-4).

Public Concern No. 164. The Forest Service needs to clarify the objectives and the cumulative effects on motorized travel management from revision of the 1987 Forest Plans, Travel Management planning, and this DSEIS.

Response: This programmatic environmental analysis and decision neither identifies routes nor designates areas for motorized or nonmotorized use. The purpose is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to conserve and contribute to recovery of grizzly bears. Future analyses conducted at the site-specific or project level will identify specific roads and trails for possible change of status in motorized use. When those proposals are ripe for a decision, a separate public involvement process, under the auspices of NEPA will be conducted.

Public Concern No. 165. The Forest Service should provide a break from extractive industries on national forest system lands because the timber market has declined, many mills have closed, the economy has changed, and people move here for the natural environment.

Response: The mission of the Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. As set forth in law, including the National Forest Management Act and Multiple Use-Sustained Yield Act, the Forest Service mission is to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people.

Public Concern No. 166. The Forest Service should apply for and use any appropriation available to study and implement the best method for route removal and to target this activity in a manner that builds community support.

Response: It is anticipated that a variety of funding sources would be used to implement these amendments. Future analyses conducted at the site-specific or project level would identify the specific roads and trails for possible change of status in motorized use. When those proposals are ripe for a decision, potential funding sources would be identified and a separate public involvement process, under the auspices of NEPA would be conducted.

Public Concern No. 167. The Forest Service should manage roadless areas for wilderness qualities and protect them from motorized use.

Response: While portions of the Selkirk and Cabinet-Yaak Recovery Zones include inventoried roadless areas, this is not a site-specific analysis done under 36 CFR Part 212 for the purposes of designating specific roads, trails, and areas on NFS lands for motor vehicle use. The purpose for this proposal is to amend the three forest plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the Endangered Species Act (FEIS, page 1-4). Subsequent site-specific analyses would identify specific roads and trails for possible change of status in motorized use.

Comment

Public Concern No. 168. Thank you for your comment.

Response: The Forest Service received the following comment letters that contained comments that were unsupported opinion or a statement of fact with no stated request for action, and therefore, do not warrant further response. Letters include 1, 2, and 40.

Vote

Public Concern No. 169. Thank you for your comment.

Response: Alternative E updated was selected by the responsible officials for implementation because it would best achieve the purpose and need for this proposal, while responding to identified issues, including increased secure habitat for grizzly bears. The ROD for this FSEIS discusses in detail the rationale for the selection of Alternative E Updated (see ROD, *Rationale for the Decision*). The Forest Service received the following comment letters and within these letters there were some comments that appeared to be a vote; however the comment period for the DSEIS is not a vote-counting process; the most useful comments are those that are unique, substantially different, provide rationale, and suggest specific changes to the DSEIS. Therefore, the comments that appeared to be a vote within these comments letters do not warrant further response. Letters include 4, 5, 23, 44, 46, 48, 58, and 63.

Letters from Federal, State and Local Agencies

The following pages contain letters we received from Federal, State, and local government agencies in their entirety. Because these letters have their own page numbering, we have not numbered the pages to coincide with this document's page numbering. The next page number for this document, page 439, is the beginning of Appendix E.

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Ronald R. Smith, Chairman
Dan R. Dinning, Commissioner
Walt Kirby, Commissioner

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6/24/09 Received
77 Communication #
Contact #
Respondent Type
Signatures
1st Read/Code
2nd Read/Code
Entered Comments

RECEIVED 6/24/09

June 22, 2009

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RE: DSEIS - Forest Plan Amendments for Motorized Access Management Within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Lolo and Idaho Panhandle National Forests

Dear Ms. McNair and Mr. Bradford:

Boundary County is acutely aware of the importance to recover the Grizzly Bear so that the economic impact from the bear's listing can be removed. Boundary County has done many things in a pro-active manner, with the assistance of many agencies and partners, to reduce where it can the human bear interaction. We have closed many unmanned dumpster sites and fenced others, along with making some of those manned.

Boundary County has participated in the Kootenai Valley Resource Initiative as a full and supporting partner with the Kootenai Tribe of Idaho and the City of Bonners Ferry in educating the public to reduce the bear – human conflicts. We ask that the following comments be considered.

1. Consider some type of statement in the document that would allow for treatment in the community watersheds in this community for what we consider extra-ordinary, and almost emergency situations regarding the health of these areas that provide drinking water to our citizens. Currently there exists no measure to speed the process for protecting these vital areas from extreme fuel loading or sedimentation.

2. We would like to see the necessary and vital access requested from Homeland Security be exempted from any negative impact to the recovery standards, as the security of the United States of America is vital. We suggest that this be accomplished with direct consultation between the U. S. Fish and Wildlife

Service and Homeland Security in the Grizzly Bear Recovery Plan rather than in the Forest Plan.

3. Consider improving the accuracy of the inventory of roads, and their status within the recovery zones.

4. We also feel that the portion of the United States that is within the recovery zone is being managed extremely well, but that the portion in Canada does not have the same standards. Our community should not be suffering economically because of different management criteria from another country in which we have no input or ability to affect change.

5. Our major concern is that those that have presented us with the data and the effects of the additional road closures still will need to consult with U.S. Fish and Wildlife, and that there will be changes to access beyond what was represented to us. We also are concerned that this document does not tell our community what roads specifically will be closed and we wish to be kept informed and be allowed involvement in that process prior to any permanent road closure.

6. We would request that any road that is allowed to have its status changed not be obliterated, so when the Grizzly Bear is recovered there will be opportunity for the public to access these roads again.

7. Consider some mechanism to allow our citizens to continue the customary and current use of the November gate opening on some roads in the Boulder BMU for firewood gathering and hunting.

We want to commend you and your staff for your open and honest interaction with us and our community regarding the management of the National Forest for all of us.

Respectfully,

BOUNDARY COUNTY
BOARD OF COMMISSIONERS

RONALD R. SMITH, Chairman

DAN R. DINNING, Commissioner

WALT KIRBY, Commissioner

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
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6/22/09 Received
57 Communication #
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Signatures
OFFICE OF ECOSYSTEMS, TRIBAL AND PUBLIC AFFAIRS
1st Read/Code
2nd Read/Code
Entered Comments

June 18, 2009

Karl Dekome, Team Leader
Access Management EIS
3815 Schreiber Way
Coeur d' Alene, Idaho 83815

RE: U.S. Environmental Protection Agency (EPA) review and comments for the U.S. Forest Service's (USFS) Draft Supplemental Environmental Impact Statement (DSEIS) on Forest Plan Amendments for Motorized Access Management Within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones. **EPA Project Number: 01-035-AFS**

Dear Mr. Dekome:

This review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Under our policies and procedures, we evaluate the environmental impact of the proposed action and the adequacy of the impact statement. We have assigned a Lack of Objections (LO) rating to the DSEIS. A copy of the EPA rating system is enclosed.

We appreciate the close coordination between the USFS and U.S. Fish and Wildlife Service (USFWS) in the design of these Forest Plan Amendments and respect the challenge inherent in balancing grizzly bears' habitat needs with the social and economic well-being of the local communities. We do not object to the Forest Service's preferred alternative, Alternative E Updated.

In our enclosed comments we suggest a mitigation measure that could be accomplished with only minor changes to the proposal and recommend the addition of clarifying language. Our suggested mitigation measure is the addition of a Design Element for the installation of grizzly bear information signs at major access points in and around the recovery zones. Our recommendations for additional clarifying language and information relate to the importance of establishing hydrologic stability for roads that are closed to create core area, and the potential effects of climate change on grizzly bear recovery.

Thank you for this opportunity to comment and if you have any questions please contact Erik Peterson of my staff at (206) 553-6382.

Sincerely,

Christine B. Reichgott

Christine B. Reichgott, Manager
Environmental Review and Sediment
Management Unit

Enclosures:
EPA Region 10 Detailed Comments
EPA Rating System for Draft EISs

EPA REGION 10 DETAILED COMMENTS FOR THE USFS DSEIS ON FOREST PLAN AMENDMENTS FOR MOTORIZED ACCESS MANAGEMENT WITHIN THE SELKIRK AND CABINET-YAAK GRIZZLY BEAR RECOVERY ZONES

Grizzly Bear Information Signs

According to Table 9 in the DSEIS ten grizzly bear mortalities within the Cabinet-Yaak and Selkirk Recovery Zones (CYRZ and SRZ) between 1982 and 2008 were caused by self defense and human error in identifying bear species and another eight mortalities resulted from unknown human causes. Taken together these human-caused mortalities represent 50% of the known mortalities over the 26 year time period.

We appreciate that both alternatives are rated "high" for "Level of mitigation for grizzly bear mortality risk" and believe that further conservation opportunities exist. One such opportunity - which is consistent with the conclusions detailed on pages 45-53 of the DSEIS (e.g., that an effective grizzly bear recovery program involves many elements) – is to combine grizzly bear information signs with project level access management actions.

Recommendation

We recommend that the Final SEIS consider the potential benefits of incorporating the following Conservation Recommendation from Appendix B of the Forest Service's 2004 Record of Decision as a programmatic Design Element. The Service's Conservation Recommendation reads as follows, "The Forests install grizzly bear information signs at major access points advising the public of grizzly bear presence, proper sanitation and food storage techniques, and providing information on distinguishing characteristics between grizzly bears and black bears." Incorporating this recommendation into any final compliance strategy may help to reduce human caused bear mortalities in and around the recovery zones.

Water Quality and Hydrologic Stability

We believe additional information on how Design Element D would be implemented at the project level would clarify how road closures lead to long-term water quality benefits. Design Element D currently states, "Roads closed to create Core Area...: Will be put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years. Until such closed roads are placed in the above described condition, they will not be considered as contributing to Core Area." (DSEIS, p. 18). The DSEIS also states that, "...roads closed to create Core Area would have hydrologic function restored," (p. 211). From these statements it appears that establishing hydrologic stability (e.g., removing culverts and reconstructing stream channels) is a goal of Design Element D.

Elsewhere in the DSEIS, however, Design Element D's implication for the establishment of hydrologic stability is less clear. On page 210, stabilization treatments are a "potential" and on page 146 the DSEIS concludes that long-term water quality benefits would be realized "Provided that the treatments of barriered and gated roads are adequate..." These statements imply that establishing hydrologic stability is an optional part of meeting Design Element D.

EPA believes that (i) the establishment of hydrologic stability (at least the reduction of road-related mass wasting and erosion potential) is central to the effective implementation of Design Element D and (ii) the specific methods for protecting long-term water quality are best determined at the project level.

Recommendation

We recommend that clarifying language be added to Design Element D. This clarifying language should provide assurance that minimizing risks to water quality – through the establishment of hydrologic stability - is an essential element for the implementation of Design Element D.

Climate Change
Likely impacts from an increased number of warm days and changes in the amounts and seasonal distributions of rainfall and snowpack include: altered water quantity and quality (e.g. temperature); timing of flow; spatial and temporal shifts of vegetative communities and wildlife habitat; increased frequency and intensity of wildfires; increased potential for bark beetles and other insects; potential increases for invasive species resistance to mitigation measures[1]; and increased opportunities for warm weather recreation.

Recommendation
EPA recommends that the FSEIS discuss the potential effects of climate change on grizzly bear recovery. We are particularly interested in potential effects from the increased bark beetle and wildfire risk associated with climate change.

Suggested Climate Change References
EPA understands that many questions surrounding climate change remain unanswered, including what effects climate change might have on grizzly bear recovery in the CYRZ, SRZ and Bears Outside Recovery Zones. We believe the following resources, and especially those from the USFS's Climate Change Resource Center, provide useful background for a climate change discussion.

- Botkin, D.B. et al., 2007. Forecasting the effects of global warming on biodiversity. Bioscience 57, 227–236
- Grace, J., Berninger, F., Nagy, L., 2002. Impacts of climate change on the tree line. Annals of Botany 90, 537–544
- Morin, X., Thuiller, W. 2009. Comparing niche- and process-based models to reduce prediction uncertainty in species range shifts under climate change. Ecology, 90(5), 1301-1313
- Opdam, P., Wascher, D., 2004. Climate change meets habitat fragmentation: linking landscapes and biogeographical scale levels in research and conservation. Biological Conservation 117, 285–297
- Peterson, David L., McKenzie, Don. 2008. Wildland Fire and Climate Change. (May 20, 2008). U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. http://www.fs.fed.us/ccrc/topics/wildland-fire.shtml
- Ruggiero, Len; McKelvey, Kevin; Squires, John; Block, William. 2008. Wildlife and Climate Change. (May 20, 2008). U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. http://www.fs.fed.us/ccrc/topics/wildlife.shtml
- SAP 4.4. Adaptation Options for Climate-Sensitive Ecosystems and Resources | National Forests. http://www.climatescience.gov/Library/sap/sap4-4/final-report/sap4-4-final-report-Ch3-Forests.pdf

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[1] http://www.ars.usda.gov/research/publications/Publications.htm?seq_no_115=134271

U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987

<Brian.Hasselbach@dot.gov>
06/17/2009 09:08 AM

To <comments-northern-idpanhandle@fs.fed.us>
cc
bcc
Subject Forest Plan Amendment for Motorized Access Management DSEIS

To Whom It May Concern:

Thank you for the opportunity to review the draft supplemental Environmental Impact Statement (SDEIS) for the Forest Plan Amendments for Motorized Access Management within the Selkirk/Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Lolo, and Idaho Panhandle National Forests.

I reviewed the SDEIS, as a representative of the Federal Highway Administration's Washington Division, and do not have any comments or revisions to offer at this time.

Thank you again for the opportunity to review the SDEIS.

Brian D. Hasselbach
Area Engineer - Northwest Region (Non-King Co.)
Federal Highway Administration
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Olympia, WA 98501

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6/20/09 Received
50 Communication #
Contact #
Respondent Type
Signatures
IF Read Code
Read Code
Comments

RECEIVED

IDAHO DEPARTMENT OF FISH AND GAME
PANHANDLE REGION
2885 West Kathleen Avenue
Coeur d' Alene, Idaho 83815

~~C.L. "Butch" Otter/Governor~~
~~Cal Groen/Director~~

June 16, 2009

Ms. Ranotta McNair, Forest Supervisor
Idaho Panhandle National Forest
3815 Schreiber Way
Coeur d'Alene, ID 83815

Dear Ranotta:

REFERENCE: DRAFT SUPPLEMENTAL EIS – FOREST PLAN AMENDMENTS FOR MOTORIZED ACCESS MANAGEMENT WITHIN THE SELKIRK/CABINET-YAAK GRIZZLY BEAR RECOVERY ZONES

We have reviewed the Draft Supplemental EIS (DSEIS) that describes proposed Forest Plan amendments for motorized access within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones (SRZ and CYRZ respectively) in the Idaho Panhandle, Lolo, and Kootenai National Forests. Alternative E Updated is the preferred alternative in this DSEIS.

Two alternatives were evaluated in this DSEIS.

- Alternative D Modified provides the maximum amount of secure grizzly bear habitat based on recommendations from Wakkinen and Kasworm (1997); open motorized route density (OMRD) of less than or equal to 17 percent, total motorized route density (TMRD) of less than or equal to 14 percent, and Core Area greater than or equal to 72 percent. The recommendations of Alternative D Modified can not be achieved in some BMUs; therefore, levels were set at the highest achievable levels.

- Alternative E Updated, also based on recommendations from the Wakkinen and Kasworm study, provides a high level of habitat security, but not as much as Alternative D Modified. Alternative E Updated would provide an OMRD of greater than 1 mile per square mile on no more than 33 percent of a Bear Management Unit (BMU), a TMRD of greater than 2 miles per square mile on no more than 26 percent of a BMU, and a Core Area of at least 55 percent of a BMU.

Each BMU will have a Core Area, which must remain in place for at least 10 years (average life span of a grizzly) to be functionally effective and can not be shifted, moved or impacted in any other way by activities more than once every 10 years. The Forest Service (USFS) may enter a Core Area more than once in the 10 year period only to decommission or stabilize a road.

Core Areas have not yet been delineated in the BMUs. Some roads may be closed to create the Core Area and "Will be put in a condition such that a need for motorized access for maintenance is not anticipated for at least 10 years." Ideally, when Core Areas are established, roads will be decommissioned or stabilized (e.g., removing culverts) prior the closing the roads. The UFSF road network in our region is currently, and has in the past, suffered from lack of funding for maintenance or correction of "legacy" problems. There are several bull trout (USFWS Threatened) spawning streams within several BMUs. If no entry for road/culvert maintenance can occur, it will be particularly important that roads are stabilized or decommission prior to closing the Core Area to avoid culvert/road failures that may severely affect water quality and habitat.

Trestle Creek, one of the most important bull trout spawning streams in North America and has been designated as Critical Habitat by the U.S. Fish and Wildlife Service. We are unaware of any stream that supports a higher density of spawning bull trout anywhere. On average Trestle Creek accounts for approximately 40% of the Lake Pend Oreille spawning. If, for example, Trestle Creek is primarily contained within the BMU Core Area, entry restrictions may prohibit important activities necessary to promote recovery for this Threatened species.

The DSEIS describes a limited number of allowable USFS vehicle round trips per active bear year: 57 in the SRZ (≤19 trips April 1 – June 15, ≤23 trips June 16 – September 15, and ≤15 trips September 16 – November 15) and 60 in the CYRZ (≤18 trips April 1 – June 15, ≤23 trips June 16 – September 15, and ≤19 trips September 16 – November 30). (Page 2 – Scope of this Analysis states that the active bear year in the SRZ is April 1 through November 15, and for the CYRZ April 1 through November 30; however, on page 18 – E. the text indicates that the active bear year for the SRZ is April 1 through September 30. We are assuming the text on page 18 is in error.) As mentioned above, there are several bull trout spawning streams within several BMUs. IDFG conducts numerous surveys (e.g., redd counts, population estimates) during the year that are essential for bull trout recovery. Additionally, IDFG conducts similar surveys on various streams throughout both Recovery Zones for westslope cutthroat trout, a State Sensitive Species. Again, entry restrictions may exclude these important activities from taking place.

The majority of human-caused mortalities, which appear to be the driving factor in grizzly bear recovery, has been associated with private, state, or railroad land, or on national forest outside of the Recovery zones. Approximately, 54 percent of the human-caused mortalities occurred on private, state, and Crown (Canada) lands that do not have any motorized restrictions. Therefore, there are no indications that additional road closures within the Recovery Zones would significantly affect (reduce) human-caused mortalities on USFS land. (Page 43, first paragraph indicates 35 bear deaths from 1999-2008; however, in Table 10 from 1999-2008, 31 bear deaths are indicated. The discrepancy should be explained or corrected.)

While not specific to the access amendment, significant gains have been made regarding sanitation in and around the Selkirk and Cabinet-Yaak ecosystems. This in conjunction with educational efforts, has and will continue to benefit grizzly bears.

The DSEIS describes areas outside of the SRZ and CYRZ that are adjacent to the recovery zones as BORZ (Grizzly Bear Outside the Recovery Zones). The BORZs are not included in the analysis, but are mentioned because they are areas of reoccurring use, and Reasonable and

Prudent Measures in the 2004 ROD apply to these areas. Recent evidence has indicated bears are expanding their range beyond the BORZs (e.g., Kelly Creek within the Bitterroot Experimental Population Area; Kingston, Idaho just north of Interstate 90), and increasing in numbers within the Recovery Zones under current management programs. Therefore, it appears that current management has been providing regulatory mechanisms for bear recovery. Further designation of security (more road closures) areas within Recovery Zones would not seem to address a limiting factor for grizzly bear recovery, but may result in negative attitudes about grizzly bears from some segments of the public.

Wakkinen and Kasworm (1997) has been accepted as the best available science and recommendations from this report have been used to develop current standards. Current guidelines represented in Alternative E Updated, were based on local grizzly bear data (radio collared females in the Selkirk and Cabinet-Yaak ecosystems) so they are appropriate for this document. Alternative E Updated most closely resembles the recommendations; therefore, we support Alternative E Updated.

IDFG recognizes the immense value of federally managed lands to fish and wildlife, and the conservation and recreational values they provide. I hope these comments are useful as you and your staff move forward, and as always, feel free to contact us with any questions or feedback.

Thank you for the opportunity to comment.

Sincerely,

Charles E. Corsi
Regional Supervisor

CEC:MTB:WW

C: Sharon Kiefer, Boise
USFWS, Spokane

File: USFS Forest Plan Amendments-motorized access-griz DSEIS

COEUR D'ALENE ADMINISTRATION
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IDAHO DEPARTMENT OF LANDS

GEORGE B BACON
DIRECTOR
EQUAL OPPORTUNITY EMPLOYER

6/11/09 Received
58 Communication #
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2nd Read/Code
Entered Comments

Karl Dekome- Team Leader
Access Management EIS
3815 Schreiber Way
Coeur d'Alene, ID 83815

Dear Mr. Dekome,

The Idaho Department of Lands (IDL) is the agency responsible for the management and administration of over 2.3 million acres of State Trust Lands. These lands were granted to the State of Idaho in 1890 by the federal government. As per the State Constitution, these lands are to be managed "*in such manner as will secure the maximum long term financial return*" to the trust beneficiaries.

In addition to trust land management responsibilities, IDL also has regulatory and fire protection responsibilities across state and private ownerships.

We appreciate the opportunity to comment on the Draft Supplemental EIS for the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones.

<u>General Comments</u>

1. Certain parcels of IDL ownership are only accessible via USFS lands/ roads. Our access could potentially and signficantly be impacted by proposed road closures. It would be helpful to see more specifically which roads are proposed for closure under each of the alternatives. The EIS should specifically identify any potential road closure affecting State or private forest land management. Once these segments are identified, the adjacent landowners can adequately assess the impacts of the closure on their management and economic returns. The Idaho Panhandle National Forest GIS website has layers which include Core Habitat for Grizzly bears. Within this layer, the habitat is broken down into 'core' and 'buffer' habitat. Buffer habitat is not mentioned in the DSEIS. It would be helpful to understand where this 'buffer' habitat fits into the DSEIS, and whether the 'buffer' habitat would be subject to the same requirements as the core areas.

2. Without specific identification of proposed road closures, IDL cannot assess how our fire management and control operations on State and private forestlands will be impacted. In addition, a portion of USFS lands are under IDL jurisdiction for fire response. The EIS should identify any potential road closure affecting State fire management activities on state, private and Federal lands under State protection.

3. By closing additional roads on USFS lands, there will be fewer recreational opportunities for the public; it is also likely that recreational access on IDL lands will increase. This increase in recreational access will likely require additional monitoring and enforcement on the part of IDL from what is currently in place.

4. There are a number of references throughout the DSEIS document which refer to the USFS needing to mitigate for potential cumulative effects on lands outside their control. For example, on p. 75, "Decisions made by these landowners regarding management of wheeled motorized roads and trails on their lands could potentially result in cumulative effects to wolves. In many cases, the USFS would ultimately mitigate for these effects through additional wheeled motorized vehicle access management on NFS lands." We understand that the USFS does not have jurisdiction over non-USFS lands; it also seems to be unrealistic that the USFS would be held accountable to provide more motorized vehicle access management on their lands in order to "mitigate" for standards that are not the same on non-USFS lands. The implication appears to be that other landowners within BMUs should be held to the same standards as the USFS. However, non-federal landowners are not held to the same requirements to contribute to recovery of T&E species as federal agencies.

Specific Comments

1. Why are there different (counterintuitive) implementation timeframes for Alternative D (page 17) and Alternative E (page 21)? It would seem more realistic that the implementation for Alternative D (the more restrictive alternative) would potentially take longer to implement than Alternative E, however the dates as currently written suggest the opposite.

2. The statement on page 45, paragraph 1 that "A closer look at the available data reveals that 54 percent ... of human-caused mortality occurring within 500 meters of an open road takes place on private and Crown lands in British Columbia, and private or state lands that do not provide any restrictions on motorized access..." could be misleading. It could imply that most/ all private or

state lands do not provide any restrictions on motorized access. IDL does in fact close numerous roads within the area, and has a formal agreement with Idaho Department of Fish and Game for patrol and enforcement of the closures.

The Road Closure Supplement, Priest Lake and Kootenai Valley Areas, was created in August 2005, between the Idaho Department of Lands Priest Lake and Kootenai Valley Supervisory Areas (Areas) and the Idaho Department of Fish and Game Panhandle Region (Region) for the purpose of protecting, conserving and managing fish and wildlife resources of the State of Idaho within the ownership of state endowment lands. According to Idaho Code Section 36-104(b)(10), the Idaho Department of Fish and Game is authorized to enter into cooperative agreements to enforce road closures for the protection of wildlife and wildlife habitat on state lands that lie within or adjacent to the proclaimed boundaries of the national forest.

Objectives of this agreement are:

1. *Reduce road erosion caused by hunters, fishermen and other recreationists.*
2. *Enhance security of wildlife.*
3. *Assist the Region and the Area in achieving management goals and objectives.*
4. *Reduce human caused grizzly bear mortality.*

In order to accomplish the above objectives, all parties agree to the following efforts:

1. *A road closure map that includes gate locations and the types of associated road closures will be updated annually by concurrence of the Region and the Areas.*
2. *Administrative access will be limited based upon this document.*
3. *Signing of gates will be accomplished and maintained according to specifications in section 36-104 (b)(10) Idaho Code by the Areas.*
4. *All public notification procedures will be developed and handled cooperatively by the Areas and the Region.*
5. *Meetings will be held as needed between the Areas and the Region to discuss problems and review/ modify this agreement.*

This agreement can be expected to benefit grizzly bears in a number of ways, including decreasing bear/ human interactions and direct human caused grizzly bear mortality.

3. The phrasing on p. 77: “Timber harvest in caribou habitat on Idaho Department State lands in the Priest Lake Basin and in British Columbia continues to convert suitable caribou habitat into an unsuitable condition by harvesting mature and old growth cedar/ hemlock and Engelmann Spruce/ subalpine fir stands.” seems to

be a very broad statement. What is this statement based on? There are no citations to offer any support for this statement. The Idaho Department of Lands has worked to ensure that while maximizing revenues for the Endowments, the needs of threatened and endangered species are taken into account. This can be evidenced by the Kinley and Apps 2007 report which you reference which was funded by the IDL to model and assess caribou habitat on IDL managed lands.

4. Table 24 on p. 77 presents some questions: The table title and description do not seem to match (the title indicates that both IPNF and IDL lands are included, however the description listed above the title states that it is only IPNF land in the table). The table does not appear to come directly from the 2007 Kinley and Apps report. It would be helpful to clarify if this table was created based upon data in the Kinley and Apps report, or whatever sources are relevant. Finally, it would be helpful to add to both the table description and title that the acreage/ habitat POTENTIALLY occurring on these lands was in fact modeled. IDL land was ground-truthed, but the remainder was modeled.

5. Page 139, paragraph 2. The statement that distribution and abundance of westslope cutthroat has declined... "... persist in only 39 % of their historic range in Montana." We are not familiar with WSCT populations in Montana, but Idaho Fish and Game recently found WSCT populations to be strong throughout Idaho, with some exception in the Pend Oreille basin. This most recent status review indicated ESA listing of WSCT was not warranted.

6. It would be helpful to obtain a GIS layer/ shapefile of the BORZ polygons.

After review of the DSEIS, the Idaho Department of Lands is very concerned about the potential impacts to the State's timber sale and fire protection programs. IDL does not support Alternative D Modified and has concerns about Alternative E Modified as well.

Thank you for the opportunity to submit comments on this plan.

Respectfully submitted,

David A. Groeschl

David A. Groeschl
Assistant Director, Forestry & Fire
Idaho Department of Lands

IDAHO DEPARTMENT OF
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May 20, 2009

Ranotta K. McNair, Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d' Alene, ID 83815

RE: Forest Plan Amendments for Motorized Access Management SEIS

Dear Ms. McNair:

The Idaho Department of Parks and Recreation (IDPR) staff reviewed the Forest Plan Amendments for Motorized Access Management Draft Supplemental Environmental Impact Statement (DSEIS). The Kootenai, Idaho Panhandle, and Lolo National Forests are considering to amend their forest plans to establish motorized route standards in Grizzly Bear Management Units (BMUs).

Our staff has been following this project closely. Motorized route standards can impact motorized recreation access to National Forest lands. These standards can also impose restrictions on motorized use in BMUs. Sometimes, these standards can conflict with IDPR Grant Program Rules.

It is in the best interests of recreationists, the Forest Service and IDPR if we can resolve potential issues early in the process. To that end, we are including a list of completed projects on the IPNF (attached). We are working to have this information updated into a GIS layer within the next year. Meanwhile, this will alert your staff to the need to work with IDPR staff on specific routes to find alternatives that will protect the interests of recreationists while still meeting the needs of grizzly bear management.

We understand why these standards have to be incorporated into the Forest Plans. At the same time, IDPR is obligated to protect the investment of recreationist dollars we have made in building and maintaining Forest Service facilities.

We would like to see another guideline in the Idaho Panhandle Forest Plan advises the decision maker or the ID Team to consult with IDPR staff when an IDPR Grant Project will be affected by a route restriction or decommissioning project. This guideline would give the decision maker the necessary information to avoid a conversion or get the conversion process started before a decision is signed. That would avoid the need for IDPR to appeal a decision based on grant rules.

The SEIS analyzes two different alternatives. Alternative D places lower route density standards than Alternative E. If Alternative D is adopted, it will lead to more route closures than Alternative E.

While Alternative D provides greater Grizzly Bear security than Alternative E, it does so at the expense of greater public access restrictions. Greater access restrictions are unpopular with many local residents. In order to have successful Grizzly Bear recovery levels, there needs to be support at the local level. Alternative E strives to balance public access with Grizzly Bear Security while Alternative D places security over public access.

We believe that Alternative E should be the selected alternative. This alternative will have better local public support than Alternative D and lead to better visitor compliance on the ground. In order to have true security, forest visitors need to understand and comply with travel restrictions.

The ID Team did a good job of outlining the impacts that the Alternatives would have on recreation and access. We appreciate the opportunity to review this draft SEIS. If you have any questions about our comments, please contact Jeff Cook, Outdoor Recreation Analyst at (208) 514-2483.

Sincerely,

Robert L Meinen

Robert L. Meinen, Director
Idaho Department of Parks and Recreation

Enclosure

Cc: Idaho Department of Fish and Game

Project Award Date	Project Number	Grantee	Project Name	Grantor Award Amount
01-May-95	1-4-96	Idaho Panhandle National Forests	Shadowy St. Joe Redevelopment	$130,999.00
18-Jun-93	1-1-94	Idaho Panhandle National Forests	Luby Bay Redevelopment	$408,540.00
14-Apr-95	1-2-96	Idaho Panhandle National Forests	Reeder Bay Redevelopment	$190,419.00
05-May-97	1-4-98	Idaho Panhandle National Forests	Sam Owen Toilet Rehabilitation	$6,640.00
03-Nov-89	1-4-90	Idaho Panhandle National Forests	Bell Bay Campground Improvements	$157,511.81
18-Jun-93	1-2-94	Idaho Panhandle National Forests	Bell Bay Water System	$48,760.00
05-May-97	1-1-98	Idaho Panhandle National Forests	Osprey Campground	$312,403.00
24-Apr-94	1-1-95	Idaho Panhandle National Forests	Upper Landing Visitor Information Center	$173,100.00
01-Jul-98	99RB01	Idaho Panhandle National Forests	Big Cr.	$50,000.00
01-Jun-98	98RB03	Idaho Panhandle National Forests	Idaho Panhandle NF Fernan Saddle Enlarge Existing	$60,900.00
01-Jun-97	9808	Idaho Panhandle National Forests	Sandpoint RD Reconstruction of 8500' of Trail Trea	$35,118.00
01-Jun-97	9809	Idaho Panhandle National Forests	Bonners Ferry RD Trailhead & Trail Construction to	$67,786.00
01-Jun-96	9711	Idaho Panhandle National Forests	Fernan RD S. Chilco Mtn. Trail Rehab	$33,000.00
01-Jun-96	9712	Idaho Panhandle National Forests	Sandpoint RD Little Blacktail Mtn. Trail Rehab	$36,300.00
01-Jul-94	9507	Idaho Panhandle National Forests	Cinnabar-Coal Trails Relocation Wallace Ranger Dis	$45,200.00
01-Jul-94	9509	Idaho Panhandle National Forests	Stateline Trail Relocation Wallace Ranger District	$55,200.00
01-Jul-94	9510	Idaho Panhandle National Forests	St. Joe Divide Trail Relocation Wallace Ranger Dis	$55,200.00

01-Jul-92	9302	Idaho Panhandle National Forests	Lake Elsie Trail Rehabilitation Project Wallace Ra	$48,601.00
01-Jul-91	9201	Idaho Panhandle National Forests	(9101) Canfield-Nettleton Trail Complex Phase II,	$40,820.00
01-Jul-90	9103	Idaho Panhandle National Forests	Graham-Coal Connection Trail #18 Construction Reco	$50,491.00
01-Jul-89	9019	Idaho Panhandle National Forests	Rebuild Trailhead Reconstruct Rest Rooms Avery Ran	$9,900.00
01-Jul-89	9013	Idaho Panhandle National Forests	Graham Creek Trail Rehabilitation Project, Wallace	$23,758.00
01-Jul-83	8415	Idaho Panhandle National Forests	Independence Trail Fernan R.D. Panhandle N.F.	$9,567.00
01-Jul-82	8307	Idaho Panhandle National Forests	Flume Cr./Prostpect Trail Rehab. Avery R.D. Shosho	$11,841.00
01-Jul-80	8119	Idaho Panhandle National Forests	Chilco Mountain Trail Fernan R.D., Panhandle N.F.	$6,340.00
01-Jul-80	8118	Idaho Panhandle National Forests	Canfield Trail Fernan R.D. Panhandle N.F.	$6,472.00
03-May-98	4399M08.00	Idaho Panhandle National Forests	Lake Darling Trail Reconstuction	$21,910.00
05-May-97	4398MB-07	Idaho Panhandle National Forests	Stampede Trail System Improvements	$11,830.00
01-Jul-98	384-9802	Idaho Panhandle National Forests, Bonners Ferry RD	Ruby Ridge Trailhead and Trail Relocation	$67,786.00
01-Jul-97	384-9703	Idaho Panhandle National Forests	Branch Fork N. Fork Gold Cr Trail Reconstruction	$35,118.00
09-May-98	1-1-99	Idaho Panhandle National Forests	Emerald Creek Renovation	$179,593.07
01-Jul-00	01V09	Idaho Panhandle National Forests	Sidehill Trail #415 - Rehabilitation and Trailhead	$75,539.26
01-Jul-00	01V11	Idaho Panhandle National Forests	Canfield to Horse Heaven Trail Connection	$31,513.93
07-Feb-96	1-2-97	Idaho Panhandle National Forests	Dickensheet Wayside/Dump Station	$213,204.00
03-May-99	1-9-00	Idaho Panhandle National Forests	Cedar Creek Rehabilitation	$55,471.00

03-May-99	1-3-00	Idaho Panhandle National Forests	Upper Landing Parking	$79,923.00
05-Nov-93	384-9301	Idaho Panhandle National Forests	Slate Cr. Headwaters Trails, Phase II	$22,530.00
02-Aug-96	384-9607	Idaho Panhandle National Forests	Peewee/Steep Cr. Trail Reconstruction	$30,265.23
02-Feb-96	384-9609	Idaho Panhandle National Forests	Packsaddle Mtn. Trail Reconstruction	$45,000.00
05-May-97	384-9709	Idaho Panhandle National Forests	Stampede Trail System Improvements	$16,430.00
03-May-99	1-6-00	Idaho Panhandle National Forests	Luby Bay-Owen Amphitheaters	$19,561.00
05-May-97	1-6-98	Idaho Panhandle National Forests	Dickensheet Interpretive Signs	$28,042.65
01-May-01	Q94-0118	Idaho Panhandle National Forest	Marble Creek Trails Network Rehabilitation	$229,446.00
01-May-01	Q94-0123	Idaho Panhandle National Forest	Blacktail Lake Trail Bridges	$9,922.08
01-May-01	1-3-02	Idaho Panhandle National Forests	Copper Creek Renovation	$189,132.88
03-May-99	1-7-00	Idaho Panhandle National Forests	Mokins Bay Campground	$41,001.85
01-Jul-04	GMV51111	Idaho Panhandle National Forest	Trail Rehabilitation	$53,000.00
01-Jul-04	GMB41111	Idaho Panhandle National Forest	Stampede OHV Area	$9,000.00
01-Jul-02	1-1-03	Idaho Panhandle National Forest	North Fork Coeurd'Alene River	$40,225.00
17-May-06	GRV71091	US Army Corps of Engineers	Dump Station	$6,343.00
01-Oct-05	GRT61113	Idaho Panhandle National Forest	Trail Rehabilitation	$19,600.00
26-Jul-05	GRT61401	Idaho Panhandle National Forests	Trail Construction	$85,000.00

Kootenai Tribe of Idaho

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Bonners Ferry, ID 83805
Ph# (208) 267-3519
Fax (208) 267-2960

June 9, 2009

Ranotta K. McNair
Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, ID 83815

Paul Bradford
Forest Supervisor
Kootenai National Forest (KNF)
31374 US Hwy. 2
Libby, Montana 59923

RE: DSEIS - Forest Plan Amendments for Motorized Access Management Within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Lolo and Idaho Panhandle National Forests

Dear Ranotta and Paul:

The Kootenai Tribe of Idaho submits the attached recommendations as a continuation of the government-to-government consultation process.

As you both know, the Kootenai Tribe of Idaho and the Forest Service enjoy a close working relationship and collaborate often on issues of common concern to protect and manage National Forest System land within our territory, which includes the Idaho Panhandle and Kootenai National Forests. Management of the National Forests within Kootenai territory is important to the Tribe to fulfill our Covenant with our Creator to keep and guard the land forever.

The Tribe possesses federally-reserved hunting, fishing and gathering rights on open and unclaimed lands within its territory, including the National Forests. As a sovereign entity possessed of inherent powers of self-determination, the Tribe has a right

Kootenai Tribe of Idaho

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and a responsibility to protect its federally-reserved rights. The United States government also has a responsibility to protect and enhance Kootenai rights and consult with the Tribe prior to making decisions that may impact Kootenai rights and interests.

From the inception of the first meeting to discuss the Motorized Access Management related to grizzly bears (i.e., IPNF - Bonners Ferry District Ranger, Mike Herrin; March 29, 2004), the Kootenai Tribe of Idaho has been encouraged by the USFS programmatic approach in Forest Plan Amendments and hopes to see this programmatic principle enacted well into the future.

The Tribe supports the decision to "not" prescribe site-specific access management decisions within the two recovery zones and, instead, to address future proposals through Tribal-USFS collaboration and consultation. The Tribe acknowledges that the USFS states it will maintain flexibility in setting road density and core area standards, and take into account Tribal and public input and agency and Tribal jurisdiction. Moreover, the key to the DSEIS Alternative E is to provide for flexibility in forest management, public coordination, Tribal consultation and administrative access, while ensuring economic considerations are considered and addressed.

In an attempt to improve coordination and support USFS efforts in a decision-making process that collaboratively involves all interested parties, the Tribe submits the attached comments.

We look forward to continuing our government-to-government discussions with the USFS throughout this process to address these comments and other issues that may be identified in direct consultation.

Sincerely,

Jennifer Porter

Jennifer Porter
Tribal Chairperson

Kootenai Tribe of Idaho

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Fax (208) 267-2960

DSEIS - Forest Plan Amendments for Motorized Access Management Within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Lolo and Idaho Panhandle National Forests

Kootenai Tribe of Idaho Comments:

1. Clearly identify management decision criteria for selecting and prioritizing use changes in individual roads and related Open Motorized Road Density (OMRD) and Total Motorized Road Density (TMRD).

2. Acknowledge the efforts of local communities that work in a proactive way to assist grizzly bear recovery. Many local communities have implemented effective actions and techniques to increase human safety and decrease the likelihood of bear-human conflicts (i.e., Boundary County in coordination with others has fenced numerous county refuse disposal sites to reduce bear problems). To improve coordination and collaboration of local, state, federal and Tribal natural resource activities, community organizations like the Kootenai Valley Resource Initiative (KVRI) established working groups (i.e., grizzly bear sub-committee) that have produced information and educational tools (http://www.kootenai.org/documents/GrizzBear_Brochure.pdf). Moreover, these local endeavors have assisted in recovery efforts and in the Idaho portion of the IPNF, no grizzly mortalities have occurred in recent years.

3. Currently the term Administrative Use is defined as "Usually refers to roads that are restricted to public use by a gate or other restrictive device, but that can be accessed by agency or other authorized personnel specifically for performance of administrative duties. These roads are outside of grizzly bear Core Areas, and receive low levels of use. Administrative use also includes contractors and permittees." The Kootenai Tribe of Idaho recommends the following changes to Administrative Use: "Usually refers to roads that are restricted to public use by a gate or other restrictive device, but that can be accessed by agency, Tribe or other authorized personnel specifically for performance of administrative duties. These roads are outside of grizzly bear

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Core Areas, and receive low levels of use. Administrative use also includes contractors and permittees."

4. Include language in the DSEIS that would provide for management within the BMU's in emergency situations for protection of any watershed providing municipal drinking water (i.e. treatment of fuel loading and reduce sedimentation).

5. Identify and implement standards that track the DSEIS progress and monitor, review and assist in the future revision of motorized access management standards.

6. Recommend stronger accountability in the management, updates and accuracy of data, maps and Geographical Information System (GIS) of the USFS road systems.

6/29/09 Received
82 Communication #
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Signatures
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2nd Read Code
Entered Comments

BOARD OF COUNTY COMMISSIONERS

LINCOLN COUNTY

STATE OF MONTANA

ANTHONY J. BERGET, Commissioner
DISTRICT NO. 1, LIBBY

JOHN C. KONZEN, Commissioner
DISTRICT NO. 2, TROY

MARIANNE B. ROOSE, Commissioner
DISTRICT NO. 3, EUREKA

TAMMY D. LAUER
CLERK OF THE BOARD AND COUNTY RECORDER

JUN 29 2009

June 24, 2009

Paul Bradford
Forest Supervisor
Kootenai National Forest
31374 US Hwy 2 West
Libby, MT 59923-3022

RE: Draft SEIS – Motorized Access Management within the SRZ and CYRZ

Dear Supervisor Bradford:

Thank you for the opportunity to comment on the above referenced DEIS. As the chief elected officials of Lincoln County, which essentially is encompassed by the Kootenai National Forest, we are highly cognizant of how hugely dependent the vitality and stability of our social and economic processes are on your actions and decisions. Future access management practices based on potential amendments to the KNF Forest Plan that may result from decisions contingent upon this document have a possibility of significantly affecting the socio-economic structure and culture of our communities, and are of critical importance to us and our constituents.

It appears to us that the proposed decision is between, essentially, the status quo (Alternative E) and an alternative that extends grizzly bear "security" to the highest level possible with little consideration for anything else (Alternative D modified), with, curiously enough, no middle range of alternatives considered.

We do not believe the emerging "science" is conclusive enough to support the more severe restrictions of Alt D (modified). First of all, it seems the basis for the security measures is the assumed need for "100" bears across these ecosystems. This is a nice round number, but is it soundly established on a solely scientific basis? Or might some other number just as easily been haphazarded as the goal based on someone else's biased and elusive guess? How can we really know what the "right " number is? Secondly, there seems to be some inventory "issues". Several years ago, we were given an estimate of "30 to 40" bears, while this year our information indicates a "minimum of 45" bears, accompanied with a concern over the decrease. What decrease?? It seems to us that "45" is an <u>increase</u> over "30 to 40"!

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Another major driver for Alt D(modified) is concern over increased mortality within these Recovery Zones. Now it seems to us that the extensive road closures and access restrictions in these Zones over the past many years would have begun to show some reduced mortality – yet mortality has increased in the face of these restrictions. Now it is suggested that many more roads be closed to reduce mortality?? Where is the logic and correlation to support this??

We do not support nor accept changes as extensive as those enumerated below, without more supportable and acceptable levels of scientific persuasion:

- Loss of hundreds of miles more to motorized access
- Extensive loss of flexibility for resource management
- Extensive loss of administrative access
- Loss of ability to access "suitable" acres
- Extensive loss of ability to tend previously treated stands
- Extensive loss to motorized developed recreation (22 developed sites impacted)
- Loss of 57 miles of motorized trails
- Extensive negative impact on dispersed motorized summer recreation
- Loss of access for preparing and grooming winter snow trails
- Loss of access to summer recreation trailheads
- Decrease in recreation jobs and income
- Decrease in timber jobs and income
- Increased fire risk
- Potential of negative effects to air quality from increased fire risk
- Reduced access for vegetative treatments, fuel reductions, fire suppression

Finally, Paul, we are definitely not "anti-grizzly", and believe in the potential for increasing their numbers. But we believe the "science" could as easily be interpreted to suggest the need for more access, not less, to provide treatments for improvements in vegetative habitat conducive to better satisfying the food needs of the grizzlies ; bears observed outside the core areas are usually there looking for food. Feed them and they will come. Perhaps an alternative based on more bear forage rather than more closed roads could have a greater impact. And....why has the augmentation discussion gone by the wayside?

Sincerely, Lincoln County commissioners

John Konzen, Chairman   Marianne B. Roose, Member   Anthony J. Berget, Member

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION
2705 Spurgin Road, Missoula, MT 59804-3199
(406) 542-4300 Telefax (406) 542-4217

BRIAN SCHWEITZER
GOVERNOR

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-2074
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June 16, 2009

6/19/09 Received
49 Communication #
Contact #
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Signatures
1st Read Code
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JUN 19 2009
SO: MAIL ROOM IPNF

Ms. Ranotta McNair, Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, ID 83815

RE: FOREST PLAN AMENDMENTS FOR MOTORIZED ACCESS MANAGEMENT DSEIS

Dear Ms. McNair;

In 1994, the Interagency Grizzly Bear Committee (IGBC) issued a Task Force Report recommending the Selkirk/Cabinet-Yaak Subcommittee develop parameters for road densities and Core Area in the Selkirk Recovery Zone (SRZ) and the Cabinet Yaak Recovery Zone (CYRZ).

The US Fish and Wildlife Service (USFWS) issued an *Amended Biological Opinion and Incidental Take Statement* on the Kootenai, Lolo and Idaho Panhandle National Forests' Forest Plans in 1995, 1996 and 2001, directing the US Forest Service to adopt the IGBC recommendations. An appeal in 1995 directed the Regional Forester to incorporate the IGBC Subcommittee recommendations in their entirety into the three Forest Plans.

An Access Management Task Force was formed in 1996 in response, which developed a set of guidelines based on the best available science, public comments, and social impacts. These recommendations were presented to the IGBC Subcommittee in 1998 and Implementation Guidelines were developed. The Subcommittee proposed implementation of the recommendations as Interim Guidelines while the three Forest Plans were under revision.

The Subcommittee approved the *Interim Access Management Rule Set* in December of 1998. Implementation of the *Interim Rule* was litigated in 1999. The lawsuit contended that the Kootenai and Idaho Panhandle National Forests could not implement the *Interim Rule* without first amending their Forest Plans.

In 2001, the Forests settled the lawsuit by agreeing to amend their Forest Plans to address grizzly bear habitat management. In compliance with the settlement agreement, the Forests released an FEIS in March 2002. Subsequently, a Record of Decision (ROD) was signed on March 24, 2004 amending the Forest Plans on the Kootenai, Lolo and Idaho Panhandle National Forests selecting Alternative E for implementation. This Alternative was modified to incorporate the Terms and Conditions identified in the USFWS Biological Opinion issued in 2004.

The Forests analyzed grizzly bear habitat using the Biological Opinion as the benchmark. In November and December of 2004 a lawsuit was filed in U.S. District Court of Montana against the US Forest Service and the US Fish and Wildlife Service contending that the Access Amendment decision adopted was in violation of the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), and the Endangered Species Act (ESA).

August of 2006, the District Court ruled in favor of the US Forest Service and the US Fish and Wildlife Service except for the alleged NEPA violation, thus ordering the 2002 FEIS and the 2004 ROD be set aside as contrary to law and that the matter be remanded to the US Forest Service for preparation of a supplemental environmental analysis. Specifically, the court held that the analysis must:

1) acknowledge that study authors Wakkinen and Kasworm were uncertain whether the bears they studied had chosen optimal habitat or whether they simply chose the best habitat available,
2) must take into account the misgivings of the USFWS biologists over the 33/26/55 Standards,
3) must consider the findings of other studies measuring habitat parameters in other ecosystems, and
4) must address the status of grizzly bear mortality in the SRZ and the CYRZ.

However, the District Court found the 2004 USFWS biological opinion complied with the requirements under the ESA. Overall, the purpose and need for action has not significantly changed from the 2002 FEIS, which is to amend the three Forest Plans to include a set of wheeled motorized vehicle access and security guidelines that meet the agency's responsibilities under the ESA to "conserve and contribute to recovery" of grizzly bears.

Under NEPA, the issues remanded back to the US Forest Service were the four stated above. Since there is no new or updated information associated with the analysis area that warrants further analysis of Alternative A, B and C, further analysis of these alternatives was not required by the court. Therefore, the DSEIS updates the environmental analysis for **Alternative E** from the 2002 FEIS and reanalyzed dropped Alternative D, resulting in an **Alternative D Modified.**

Even though the Access Management Task Group utilized research performed by grizzly bear research scientists Wayne Wakkinen (Idaho Department of Fish and Game) and Wayne Kasworm (US Fish and Wildlife Service) recommending:

1. Open Motorized Route Density (OMRD) of greater than 1 mile per square mile on no more than 33 percent of a Bear Management Unit (BMU);
2. Total Motorized Route Density (TMRD) of greater than 2 miles per square mile on no more than 26 percent of a BMU; and
3. Core Area of at least 55 percent of the BMU.

The court ultimately questioned the recommendations resulting in a US Forest Service official to direct the Interdisciplinary Team (IDT) to conduct additional environmental analysis (**Alternative D Modified**) meeting the highest levels of secure habitat in each BMU.

Alternative D was originally dropped from the 2002 FEIS since an insufficient number of roads exist under US Forest Service jurisdiction to adequately reduce access to meet the standards. The jurisdiction over public access has not changed since the 2002 FEIS or the 2004 ROD, nor has the DSEIS adequately proven that the initial road density standard recommended by the grizzly bear biologists, the IGBC or the Access Management Task Group inadequate to "conserve and contribute to the recovery" of grizzly bears.

Unfortunately, the new DSEIS suggests a significant increase in the negative impacts to forest management both within **Alternative D Modified** and **Alternative E Updated**.

While **Alternative D Modified** and **Alternative E Updated** improve habitat for ranking sensitive species and management indicator species, the effects on timber management on over 159,000 acres are highly impacted in four specific areas:

1. flexibility for resource management;
2. level of administrative access;
3. ability to access suitable acres; and
4. ability to tend to previously treated stands

The allowable sale quantity for the Kootenai and Lolo National Forests is 227 MMBF from 16,500 acres and 107 MMBF from 17,113 acres respectively. Due to budget constraints, biological and agency capacity and litigation, these targets are rarely met. As a result, there are many stands that are not meeting land management objectives.

Alternative D Modified sets the highest standards for OMRD, TMRD, and Core Area, with BMU's unable to meet these standards set at the highest level possible. Alternative E Updated sets road densities and Core Areas individually for each BMU based on the presence of uncontrollable factors such as highways, county roads, etc. It provides for some flexibility for management access, but not the same level of flexibility as in the 2002 FEIS.

The question is, did the US Forest Service go beyond the court's 2006 concerns when updating the 2002 FEIS and the 2004 ROD. The IDT indicated that conditions have not changed, eliminating the need to reanalyze Alternatives A, B and C. The court's motion states the US Forest Service was not in violation of the ESA. The IGBC and the Access Management Task Group adopted the biologists' recommendations. It is not clear in the DSEIS why the standards were increased and became more restrictive.

The DSEIS even goes beyond the Flathead National Forest's Amendment 19. The KNF Amendment 19, even though restrictive, offers flexibility for resource management, access to administrative and suitable acres and the ability to tend to previously treated stands. Management in BMU's proving successful, with an initial population count of over 700 grizzly bears. In addition, timber management in Core Areas has been recently upheld by the District Court.

Since the Kootenai and the Lolo National Forests are conserving and contributing to the recovery of the grizzly bear, it seems short-sighted to hamper opportunities to improve forest health conditions through timber management, community economic stability through renewable energy development and forest products, enhance recreation and reduce fires suppression costs.

Thank you for this opportunity to comment. Please feel free to contact me regarding this important issue.

Sincerely,

ROBERT A. HARRINGTON
State Forester

RAH: jaa

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

June 15, 2009

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ER 09/491

Ms. Ranotta McNair
Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, Idaho 83815

Dear Ms. McNair:

Thank you for the opportunity to comment on the Supplemental Draft Environmental Impact Statement (SDEIS) for the Forest Plan Amendments for Motorized Access Management, jointly proposed by the Kootenai National Forest, Lolo National Forest, and Idaho Panhandle National Forest (Forests).

The U.S. Fish and Wildlife Service (Service) has been working closely with the Forests through the Endangered Species Act (ESA) section 7 consultation process on technical issues of the proposal that may affect listed species, particularly the grizzly bear and bull trout; and much of their interagency communications are captured in the record of section 7 consultation. Our comments on the SDEIS are directed toward the "design elements" of alternatives D modified, and E updated. Both alternatives incorporate the non-discretionary terms and conditions from the 2004 biological opinion on the project (since withdrawn) as "design elements" of the proposed action. There are two issues with these design elements:

1. The combined Service and Forest Level 1 biologist team recognized at their May 12, 2009, meeting that some of those terms and conditions are open to broad and differing interpretation. The final intent of these must be clarified and edited between Service Regions (1 and 6) and between the Service and the Forests. As of this writing, this process is ongoing through the section 7 consultation process.

2. Once the intent of the 2004 terms and conditions are clarified and edited, the agencies must discuss which, if any, should be adopted as "design elements" (i.e. standards) of the alternatives versus kept as terms and conditions to a new biological opinion.

We appreciate the opportunity to comment on this DSEIS. Please send both an electronic and paper copy of the Final Supplemental Environmental Impact Statement and signed Record of Decision to the USFWS Ecological Services Field Office, 585 Shepard Way
Helena, Montana 59601. The USFWS looks forward to working with the Forest through the ESA consultation process once a final alternative has been selected. If you have any questions, please contact Ben Conard at (406) 758-6878, or ben_conard@fws.gov.

Sincerely,

Robert F. Stewart

Robert F. Stewart
Regional Environmental Officer

cc: Karl Dekome, Team Leader

From:	SCHROEDER, DANIEL W
To:	comments-northern-idpanhandle@fs.fed.us
Cc:	kdekome@fs.fed.us; MARTINO, GERALD B; KOERNER, ELAINE M.; DAHLSTROM, ROY G; HOFFMAN, DAVID R; SCUDDER, RYAN J; JEFFREYS, JACK T; SHAW, CHRISTOPHER D; PINKERTON, LEALAN L
Subject:	Border Patrol Comments
Date:	06/29/2009 01:36 PM
Attachments:	Wilderness Comments (USBP 06-29-2009).doc

Good afternoon. I am submitting the attached comments on behalf of Program Analyst Elaine Koerner of Border Patrol Headquarters. Please do not hesitate to contact Elaine or me with any questions. Thank you!

Daniel W. Schroeder
Management & Program Analyst
U.S. Customs and Border Protection, Office of Border Patrol
Strategic Planning, Policy and Analysis Division/Planning Branch
Phone: 202.344.2643
Mobile: 202.369.5591
FAX: 202.344.1520
E-Mail: daniel.schroeder@dhs.gov

"You have not done enough, you have never done enough, so long as it is still possible that you have something to contribute." – Dag Hammarskjöld

6/29/09 Received
81 Communication #
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Signatures
1st Read/Code
2nd Read/Code
Entered Comments

Comments on the programmatic Draft Supplemental Environmental Impact Statement supplements the 2002 Final Environmental Impact Statement for Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones

A) Current consideration of road closures or new wilderness along the Northern Border of the United States must include modifications to the land and resource management paradigms which existed prior to September 11, 2001. Appropriate consideration of security risks faced by the United States clearly must include border security and the requirements for effective monitoring and response to threats identified in border regions. In mountainous, forested, remote regions of the Northern Border, routes of egress (roads) are often limited in number. This is one (and only one) point at which a violator can be funneled into the intelligence pipeline. To accomplish appropriate border security specific access is required for law enforcement operations. Much is accomplished through alliances between appropriate agencies, governments, and communities, however it remains absolutely necessary that access be maintained, and in a few locations improved, so that critical security functions take place when and where they must to provide for the security of the nation.

The Draft Supplemental Environmental Impact Statement (supplemental to the 2002 Final Environmental Impact Statement for Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones) should include recognition of Department of Homeland Security (DHS) activities within the international border regions and the potential impacts of the proposed alternatives in relation to those DHS activities. The ability of DHS personnel to identify and react to cross border crime is vital to national security, thus DHS should be included in any discussions of Federal roads closures and road/land status designation. Additional consideration may prove necessary to support DHS activities within and around proposed wilderness boundaries outside of immediate border areas, especially where road closures are contemplated. As roads and lands continue to be reclassified in the vital effort to protect natural resources and wild areas so valued by the American people and depended upon for our future generations, DHS endeavors to work as a partner with land and resource management agencies. The development of strategies to augment land and resource managers, thus providing additional protection to the resources while minimizing any detrimental impacts is a tangible way in which mission overlap can be exploited to benefit the nation. Alternative E includes "management flexibility in response to issues related to public and administrative access, economics, and access to private inholdings". DHS requests that national security activities be included in this statement". The document needs to assure briefing of Core Areas and Bear Management Units to DHS to ensure that future critical road access is maintained for purposes of national security.

B) Road closures and wilderness law developed without appropriate consideration for national security may be detrimental to DHS operations as well as technology and infrastructure deployments. Roads allow necessary, though in many areas minimal levels of access, and wilderness imposes restrictions to all installations and to mechanized travel. In most wilderness areas, aircraft flight is limited to 2000' above ground or higher and landing is prohibited within wilderness. The performance of these practices by DHS is occasionally necessary, so must be taken into account as a part of the statutory requirements under which DHS functions. There will be occasions where DHS activities can fit within the "emergency" and administrative exceptions to the Wilderness Act. However, those two exceptions may not cover all the necessary law enforcement activities. As law enforcement proactively addresses security issues, it mitigates risk to the nation. Thus, to the extent new wilderness areas are designated, it is extremely important that DHS' statutorily mandated functions be appropriately incorporated into new wilderness legislation. For example, when Congress created the Otay Mountain Wilderness Area and designated new wilderness in the Cabeza Prieta National Wildlife Refuge—two areas where there is a need for a border security law enforcement presence—it included language in both public laws allowing for continued operational activities. *See* the Otay Mountain Wilderness Act of 1999 (Pub. L. 106-145); The Arizona Desert Wilderness Act (Pub. L. 101-628, Secs. 301 (a)-(f) (1990), 16 U.S.C. 1132 note). Exceptions of this type would allow new wilderness law to harmoniously protect wilderness areas and the people of the United States.

C) Without adequate review and engagement with DHS concerning the proposed reclassification of roads as well as development of wilderness legislation, there exists potential for unacceptable risk to the efficacy of DHS operations.

Appendix E. Consistency with Management Direction for Management Situations

Management Direction for Management Situation 1 Grizzly Bear Habitat states: "Grizzly habitat maintenance and improvement, and grizzly-human conflict minimization will receive the highest management priority. Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land use values compete. Land uses which can affect grizzlies and/or their habitat will be made compatible with grizzly needs or such uses will be disallowed or eliminated. Grizzly-human conflicts will be resolved in favor of grizzlies unless the bear involved is determined to be a nuisance. Nuisance bears may be controlled through either relocation or removal but only if such control would result in a more natural free-ranging grizzly population and all reasonable measures have been taken to protect the bear and/or its habitat (including area closures and/or activity curtailments)." (USDA Forest Service 1986)

Further, the Interagency Grizzly Bear Guidelines identify guidelines for each management situation. If the guidelines are met, then the management direction for each management situation is met. Table 71 through Table 73 lists the IGBC elements on how to maintain and improve habitat in Management Situation 1, 2 and 3. Only the wildlife management elements are identified since this action does not propose timber and fire management, range management, minerals, watershed, and special uses management.

Table 71. Management Situation 1 - How the alternatives apply the IGBC wildlife management direction

Maintain and Improve Habitat / Minimize grizzly-human conflict potential	How the Proposed Amendments Maintain and Improve Habitat / Minimize Grizzly – Human Conflict Potential
1. Maintain close contact with research organizations to assure that current research data are being used in resource planning and administration affecting grizzly bears	The analysis provided in this FSEIS is based on the best available research at this time (see Appendix C).
2. Complete a biological assessment (may use USDA Forest Service (1977) procedures and Interagency Cumulative Effects Assessment (1986)) of existing or proposed land uses (under Recreation, Range, Timber and fire, and Minerals, Watershed and Special Uses Management Systems) which could affect grizzlies and/or their habitat.	This programmatic environmental analysis does not make site-specific decisions it only provides guidance for future decisions conducted at the site-specific or project level at a later date involving land uses. Our biological assessment (BA) concluded that during the time period of eight years from our decision or prior to all BMUs meeting standards, the existing environmental baseline condition may affect, and is likely to adversely affect the grizzly bear or its habitat. While human use of roads may contribute to disturbance and displacement of grizzly bears, research has shown that bears can co-exist and survive with a certain level of roads (Wakkinen and Kasworm 1997) without apparent adverse effects. Once the selected access management standards are achieved, disturbance and displacement is not expected to be at levels that result in adverse effects to bears as evidenced by the available research and consultation with USFWS (Biological Assessment, p. 61). Therefore, we are confident that implementation of the selected alternative will contribute to the conservation and recovery of grizzly bears within the recovery zones.

Maintain and Improve Habitat / Minimize grizzly-human conflict potential	How the Proposed Amendments Maintain and Improve Habitat / Minimize Grizzly – Human Conflict Potential
3. Use cumulative effects analysis to assess spatial and temporal effects on habitat suitability and availability and mortality risk.	The analysis presented in the FSEIS and BA considers the potenial cumulative effects of the management direction on grizzly bears.
4. Initiate consultation procedures with U.S. Fish and Wildlife Service, as necessary, if the biological assessment results in a "may affect" determination.	Because of the potential effects to grizzly bear resulting from the environmental baseline condition during the eight years from this decision, we requested formal consultation with USFWS. The action that was consulted on with the USFWS was the continued implementation of each forest plan as modified by this amendment.
5. With full awareness of the Biological Opinion, recommend project or land use modification which will provide compatibility between grizzly bears and other land uses without degrading conditions for grizzlies. If projects or land uses cannot be made compatible, recommend project or use elimination	The Grizzly Bear Recovery Plan identified concerns with the management of roads and provided recommendations for road management in grizzly habitat (Grizzly Bear Recovery Plan Appendix B). It specifically recommended that open road density in all MS1 and MS2 areas be standardized using best available data, and that this standardized approach could take into account ancillary needs for security such as road use, trail use, and the availability and extent of security areas. The management direction incorporated into both alternatives meet this recommendation. It incorporates a standardized analysis process, identifies habitat parameters (standards) for ORMD, TMRD and core area (security), utilizes a moving windows analysis, and considers these standards in comparison to where grizzly bears are reproducing and where there are mortality risks. In addition, many of the roads that access primary recreation areas are in Management Situation 3 habitat, where grizzly habitat maintenance and improvement are not management considerations.
6. With full awareness of the Biological Opinion, specify measures to be taken within different management systems which will protect, maintain and improve (NF, BLM) grizzly bear populations and habitat.	Design elements for both alternatives include parameters for establishing and managing core habitat in all BMUs subject to these amendments. Full implementation of either of the alternatives would provide for an improvement in grizzly bear security within the two recovery zones. Under Alternative D Modified core area would total about 1.53 million acres at full implementationa. Under Alternative E Updated, core area would total about 1.28 million acres at full implementation and 1.25 million acres at standard. Both alternatives were determined to provide for high levels of mitigation for grizzly bear mortality risk and displacement (p. 94) and are consistent with sections 7(a)(1) and 7(a)(2) of the Endangered Species Act (p. 92).
7. With full awareness of the Biological Opinion, specify measures to, be taken independent of other resource management systems, to improve grizzly bear management. For example, inform the public of agency grizzly bear management goals and objectives. Enlist their support in meeting these goals and objectives	All three Forests have been actively engaged in improving sanitation issues related to grizzly bear. In many cases, management removals of grizzly bears are the result of bears becoming habituated to unnatural food sources such as human food or garbage. The Forests continue placement of bear resistant garbage recepticles and food storage containers in developed recreation sites. The Forests also are implementing mandatory food storage orders for those portions of the forest located within and around the recovery zones (p. 6). Public education is an important element of any program designed to reduce grizzly bear mortalities. The Forest Service and cooperating agencies maintain a regular program of public information and education within the Selkirk and Cabinet-Yaak Recovery Zones (p. 63).

Maintain and Improve Habitat / Minimize grizzly-human conflict potential	How the Proposed Amendments Maintain and Improve Habitat / Minimize Grizzly – Human Conflict Potential
	An active law enforcement program can be a deterrent against illegal grizzly bear mortality. The Forest Service actively cooperates with State and Federal law enforcement officials concerning any illegal killings of grizzly bears (p.7). In the Selkirk and Cabinet/Yaak ecosystems, at least 91 grizzly bears have died due to human causes since 1982, the majority of which occurred during big-game hunting seasons. Enforcement patrols and in-field educational efforts are a high priority during these periods.
8. Monitor the application of these guidelines to assure they are properly and effectively used. Recommend improvements in guidelines and application procedures. Identify grizzly-human conflict potential within the different resource management systems and recommend measures to minimize conflict potential.	In monitoring the application of these amendments, in addition to all existing forest plan monitoring requirements, each of the three national forests would: 1) Meet annually with USFWS to discuss progress made towards achieving established standards for each BMU. 2) Prepare a detailed annual report displaying the accomplishments in implementation of the habitat security standards. This report would quantify the levels of Open Motorized Route Density, Total Motorized Route Density, core area, and administrative use for all BMUs at the end of each year and would also summarize actions taken to comply with the terms and conditions for minimizing incidental take to grizzly bear in areas outside the recovery zones. 3) To ensure the effective implementation of the open road density parameter, at least 30 percent of closure devices (gates and barriers) would be monitored annually within each respective ecosystem. A comprehensive program to minimize human-caused grizzly bear mortalities within the Selkirk and Cabinet-Yaak Recovery Zones involves many elements, including wheeled motorized vehicle access management, regulation of hunting, sanitation, law enforcement, and education. This document focuses on wheeled motorized vehicle access management, but at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear (p. 6).

Table 72. Management Situation 2 - How the alternatives apply the IGBC wildlife management direction

Maintain and Improve Habitat / Minimize grizzly-human conflict potential	How the Proposed Amendments Maintain and Improve Habitat / Minimize Grizzly – Human Conflict Potential
1. Maintain close contact with research organizations to assure that current research data are being used in resource planning and administration affecting grizzly bears	The analysis provided in this FSEIS is based on the best available research at this time (see Appendix C).
2. Complete a biological assessment (may use USDA (1977) procedures and Interagency Cumulative Effects Assessment (1986)) of existing or proposed land uses (under Recreation,	This programmatic environmental analysis does not make site-specific decisions it only provides guidance for future decisions conducted at the site-specific or project level at a later date involving land uses. Our biological assessment (BA) concluded that during the time period of eight years from our decision or prior to all BMUs meeting standards, the existing environmental baseline condition may affect, and is likely to

Maintain and Improve Habitat / Minimize grizzly-human conflict potential	How the Proposed Amendments Maintain and Improve Habitat / Minimize Grizzly – Human Conflict Potential
Range, Timber and fire, and Minerals, Watershed and Special Uses management systems) which could affect grizzlies and/or their habitat.	adversely affect the grizzly bear or its habitat. While human use of roads may contribute to disturbance and displacement of grizzly bears, research has shown that bears can co-exist and survive with a certain level of roads (Wakkinen and Kasworm 1997) without apparent adverse effects. Once the selected access management standards are achieved, disturbance and displacement is not expected to be at levels that result in adverse effects to bears as evidenced by the available research and consultation with USFWS (Biological Assessment, p. 61). Therefore, we are confident that implementation of the selected alternative will contribute to the conservation and recovery of grizzly bears within the recovery zones.
3. Use cumulative effects analysis to assess spatial and temporal effects on habitat suitability and availability and mortality risk.	The analysis presented in the FSEIS and BA considers the potenial cumulative effects of the management direction on grizzly bears.
4. Initiate consultation procedures with U.S. Fish and Wildlife Service, as necessary, if the biological assessment results in a "may affect" determination.	Because of the potential effects to grizzly bear resulting from the environmental baseline condition during the eight years from this decision, we requested formal consultation with USFWS. The action that was consulted on with the USFWS was the continued implementation of each forest plan as modified by this amendment.
5. If grizzly population and habitat use is likely, and with full awareness of the Biological Opinion, recommend project or land use modification, which will provide compatibility between grizzly bears and other land uses without degrading conditions for grizzlies. If projects or land uses cannot be made compatible, and grizzly needs are great (as in Management Situation 1) then recommend area be reclassified under Management Situation 1. If grizzly use does not constitute need for species survival and recovery then recommend proceeding with the activity.	The Grizzly Bear Recovery Plan identified concerns with the management of roads and provided recommendations for road management in grizzly habitat (Grizzly Bear Recovery Plan Appendix B). It specifically recommended that open road density in all MS1 and MS2 areas be standardized using best available data, and that this standardized approach could take into account ancillary needs for security such as road use, trail use, and the availability and extent of security areas. The management direction incorporated into both alternatives meet this recommendation. It incorporates a standardized analysis process, identifies habitat parameters (standards) for ORMD, TMRD and core area (security), utilizes a moving windows analysis, and considers these standards in comparison to where grizzly bears are reproducing and where there are mortality risks. In addition, many of the roads that access primary recreation areas are in Management Situation 3 habitat, where grizzly habitat maintenance and improvement are not management considerations.
6. In necessary cases, specify, with full awareness of the Biological Opinion, measures to be taken within the different resource management systems, which will protect and maintain grizzly bears and habitat.	Design elements for both alternatives include parameters for establishing and managing core habitat in all BMUs subject to these amendments. Full implementation of either of the alternatives would provide for an improvement in grizzly bear security within the two recovery zones. Under Alternative D Modified core area would total about 1.53 million acres at full implementationa. Under Alternative E Updated, core area would total about 1.28 million acres at full implementation and 1.25 million acres at standard. Both alternatives were determined to provide for high levels of mitigation for grizzly bear mortality risk and displacement (p. 94) and are consistent with sections 7(a)(1) and 7(a)(2) of the Endangered Species Act (p. 92).

Maintain and Improve Habitat / Minimize grizzly-human conflict potential	**How the Proposed Amendments Maintain and Improve Habitat / Minimize Grizzly – Human Conflict Potential**
7. If applicable, specify feasible measures to be taken independent of other resource management systems, to improve grizzly bear management. For example inform the public of agency grizzly bear management goals and objectives. Enlist their support in meeting these goals and objectives.	All three Forests have been actively engaged in improving santitation issues related to grizzly bear. In many cases, management removals of grizzly bears are the result of bears becoming habituated to unnatural food sources such as human food or garbage. The Forests continue placement of bear resistant garbage recepticles and food storage containers in developed recreation sites. The Forests also are implementing mandatory food storage orders for those portions of the forest located within the recovery zones (p. 6). Public education is an important element of any program designed to reduce grizzly bear mortalities. The Forest Service and cooperating agencies maintain a regular program of public information and education within the Selkirk and Cabinet-Yaak Recovery Zones (p. 63). An active law enforcement program can be a deterrent against illegal grizzly bear mortality. The Forest Service actively cooperates with State and Federal law enforcement officials concerning any illegal killings of grizzly bears (p.7). In the Selkirk and Cabinet/Yaak ecosystems, at least 91 grizzly bears have died due to human causes since 1982, the majority of which occurred during big-game hunting seasons. Enforcement patrols and in-field educational efforts are a high priority during these periods.
8. Monitor the application of these guidelines to assure they are properly and effectively used. Recommend improvements in guidelines and application procedures. Identify grizzly-human conflict potential within the different resource management systems and recommend measures to minimize conflict potential.	In monitoring the application of these amendments, in addition to all existing forest plan monitoring requirements, each of the three national forests would: 1) Meet annually with USFWS to discuss progress made towards achieving established standards for each BMU. 2) Prepare a detailed annual report displaying the accomplishments in implementation of the habitat security standards. This report would quantify the levels of Open Motorized Route Density, Total Motorized Route Density, core area, and administrative use for all BMUs at the end of each year and would also summarize actions taken to comply with the terms and conditions for minimizing incidental take to grizzly bear in areas outside the recovery zones. 3) To ensure the effective implementation of the open road density parameter, at least 30 percent of closure devices (gates and barriers) would be monitored annually within each respective ecosystem. A comprehensive program to minimize human-caused grizzly bear mortalities within the Selkirk and Cabinet-Yaak Recovery Zones involves many elements, including wheeled motorized vehicle access management, regulation of hunting, sanitation, law enforcement, and education. This document focuses on wheeled motorized vehicle access management, but at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear (p. 6).

Table 73. Management Situation 3 - How the alternatives apply the IGBC wildlife management direction

Maintain and Improve Habitat / Minimize grizzly-human conflict potential	How the Proposed Amendments Maintain and Improve Habitat / Minimize Grizzly – Human Conflict Potential
Grizzly habitat needs are not a consideration. 1. Complete a biological assessment of existing or proposed land uses (under Recreation, Range, Timber and Fire, and Minerals, Watershed and Special Uses Management Systems) which could affect grizzlies and/or their habitat. FS (1977) and Interagency (CE) Assessment (1986) procedures may be used.	A biological assessment has been completed for these amendments. Once the selected access management standards are achieved, disturbance and displacement is not expected to be at levels that result in adverse effects to bears as evidenced by the available research and consultation with USFWS.
2. Use cumulative effects analysis to assess spatial and temporal effects on mortality risk.	The analysis presented in the FSEIS and BA considers the potenial cumulative effects of the management direction on grizzly bears.
3. Initiate consultation procedures with the U.S. Fish and Wildlife Service, as necessary, if the biological assessment results in a "may affect" determination.	Because of the potential effects to grizzly bear resulting from the environmental baseline condition during the eight years from this decision, we requested formal consultation with USFWS.
4. Identify grizzly-human conflict potential within different resource management systems and recommend procedures to minimize conflict potential.	A comprehensive program to minimize human-caused grizzly bear mortalities within the Selkirk and Cabinet-Yaak Recovery Zones involves many elements, including wheeled motorized vehicle access management, regulation of hunting, sanitation, law enforcement, and education. This document focuses on wheeled motorized vehicle access management, but at the same time, the Forest Service and other agencies are also pursuing the other elements essential to preventing unnecessary mortalities of the threatened grizzly bear (p. 6).

Index