



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Upper Columbia Fish and Wildlife Office
11103 East Montgomery Drive
Spokane, Washington 99206

Received 3/23/07



March 21, 2007

Ranotta McNair
Forest Supervisor
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, ID 83814-8363

Subject: Biological Opinion for the Myrtle Creek Healthy Forest Restoration Act Project FWS
Reference: 1-9-07-F-0063 (105.0000)

Dear Ms. ^{Ranotta} McNair:

This letter transmits the biological opinion for the Myrtle Creek Healthy Forest Restoration Act Project located on the Idaho Panhandle National Forests in accordance with section 7 of the Endangered Species Act of 1973, as amended.

This biological opinion determines that implementation of the proposed project is not likely to jeopardize the continued existence of the grizzly bear (*Ursus arctos*). We have provided an incidental take statement to exempt the potential incidental take of grizzly bears that may occur as a result of implementing this project. However, we have determined that no reasonable and prudent measures nor terms and conditions are necessary, in addition to those measures incorporated into the project's description, to further minimize such incidental take of grizzly bears.

We have also reviewed your biological assessment and concur with your determination that implementation of the proposed project "may affect, but is not likely to adversely affect" Canada lynx (*Lynx canadensis*) or bull trout (*Salvelinus confluentus*).

If you have questions regarding this opinion, please contact me or Bryon Holt in this office at (509) 891-6839.

Sincerely,

Susan B. Martin

Supervisor

Enclosure

Biological Opinion for the
Myrtle Creek Healthy Forest Restoration Act Project
Idaho Panhandle National Forests
FWS Ref. 1-9-07-F-0063

Prepared by:

U.S. Fish and Wildlife Service
Upper Columbia Fish and Wildlife Office
Spokane, Washington

Date: March 21, 2007

TABLE OF CONTENTS

Introduction	1
Consultation History	1
Description of the Proposed Action	2
Action Area	5
Informal Consultation	5
Canada Lynx	5
Bull trout	6
Conclusion	6
BIOLOGICAL OPINION	7
I. Status of the Species.....	7
A. Species Description/Life History	7
B. Distribution/Status	7
C. Habitat Characteristics	9
D. Listing History	10
E. Reasons for Listing	10
F. Current Status of the SRZ population and Conservation Needs	10
1. Factors Affecting the Status of the SRZ Grizzly Bear Population.....	12
a. Mortality.....	14
b. Habitat.....	14
2. Other Factors	19
II. Environmental Baseline	19
A. Status of the Species within the Action Area.....	19
B. Factors Affecting the Species Environment within the Action Area	19
III. Effects of the Action	19
IV. Cumulative Effects.....	25
V. Conclusion	26
INCIDENTAL TAKE STATEMENT	26
I. Amount or Extent of Take.....	26
II. Effect of Take.....	27
III. Reasonable and Prudent Measures.....	28
CONSERVATION RECOMMENDATIONS	28
REINITIATION – CLOSING STATEMENT	29
LITERATURE CITED	30

Introduction

This document represents the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the proposed Myrtle Creek Healthy Forest Restoration Act (HFRA) project and its potential effects on the threatened grizzly bear (*Ursus arctos*), threatened Canada lynx (*Lynx canadensis*), and the threatened bull trout (*Salvelinus confluentus*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act), (16 U.S.C. 1531 et seq.). Your December 12, 2006, letter requesting initiation of formal consultation on the implementation of the proposed project was received on December 15, 2006.

This biological opinion is based on information provided in the November 30, 2006, fisheries biological assessment (BA), December 6, 2006, wildlife BA, February 26, 2007, additional information related to the description of the proposed action, e-mail correspondence, field investigations, and other sources of information. A complete administrative record of this consultation is on file in this office.

Consultation History

In September 2003, a wildfire burned approximately 3,450 acres in the lower portion of the Myrtle Creek drainage, which is the municipal watershed for the City of Bonners Ferry, Idaho. The wildfire increased the awareness of the potential risks to the city's watershed should another wildfire burn within the Myrtle Creek drainage. This heightened awareness prompted the city to request the Bonners Ferry Ranger District (BFRD) of the Idaho Panhandle National Forests (IPNF) to conduct an evaluation of the current and future conditions within the watershed related to wildfire risks. Pursuant to this request, the BFRD initiated the development of an HFRA project to assess the potential for another catastrophic wildfire and reduce the wildfire risk through management of hazardous fuels within the Myrtle Creek watershed. In accordance with the HFRA process, the Myrtle Creek Work Group (MCWG), a subcommittee of the Kootenai Valley Resource Initiative, was established in late July 2004. The Service was asked to participate on the MCWG. The MCWG met numerous times from 2004 through 2006 to provide overall goals to the BFRD for protecting the city's municipal water supply, and to evaluate several alternative proposals developed by the BFRD to address and reduce the wildfire risk within the watershed.

On December 12, 2006, the IPNF requested initiation of formal consultation on the Myrtle Creek HFRA project that was developed pursuant to the aforementioned process. On February 15, 2007, the Service requested additional information to better assess the potential effects to the proposed project's implementation on grizzly bears and their habitat. On February 26, 2007, the IPNF submitted the requested information.

On March 12, 2007, the Service provided a draft biological opinion to the IPNF for review and comment. On March 16, 2007, the Service received the IPNF's comments on the draft biological opinion.

Description of the Proposed Action

The following project description represents the project description contained in the wildlife BA with only minor Service changes or clarifications.

The Myrtle Creek Healthy Forest Restoration Act (HFRA) project proposes aquatic and vegetation improvement treatments on National Forest System lands in the Myrtle and Snow Creek watersheds of the Bonners Ferry Ranger District. The objectives of the project are to: 1) maintain the Myrtle Creek watershed as a source of high quality drinking water for the City of Bonners Ferry, Idaho; 2) reduce hazardous fuels in the Myrtle Creek watershed and adjacent forests; and 3) trend vegetation in the Myrtle Creek watershed and adjacent forests towards conditions that would be less susceptible to catastrophic fire, while maintaining and restoring habitat for fish and wildlife species.

The proposed action will:

- Treat hazardous fuels and create sustainable stand compositions and structures that are adapted to fire on approximately 2,086 acres of National Forest System lands using a variety of silvicultural and slash disposal tools.
- Include 24 treatment units that utilize commercial thinning, sanitation salvage, group selection, irregular shelterwood, or seed tree harvest prescriptions to achieve the desired conditions for the units. Logging systems will include a mixture of ground-based, skyline and helicopter systems dependant on terrain, access and soil conditions. Slash and the risk of fire will be reduced by prescribed burning, or by piling and burning.
- Improve and maintain the transportation system (roadside and surface maintenance, etc.) on approximately 29 miles of roads that will be used as haul routes.
- Reopen about ½ mile of Forest Road (FR) 402C, a spur road in the Snow Creek drainage, and close it again after prescribed burning operations are completed.

Table 1 provides a summary of the total acreage harvested by silvicultural prescription, logging system, fuels treatments, and road. The proposed action will be under a five-year contract beginning in 2007.

As stated in the wildlife and fisheries BAs, implementation of the following conservation requirements is mandatory, and thus, by definition, part of the proposed action:

- 1) Logging of helicopter units that impact grizzly bear core habitat (B1, B3, B6 & G9) would be restricted during the grizzly bear “spring” season (April 1 – June 14). This restriction also applies to helicopter Units G2 and G7H in the Pack River Occupancy Area (PROA) – a delineated area of recurrent grizzly bear use. Harvest and slashing of submerchantable timber in Unit G9 will be completed in two operating seasons, and harvest of units B1, B3, and B6 will be completed in two operating seasons. Timber harvest, grapple piling and slashing in units B1, B3, B6, and G9 must be completed in four consecutive calendar years. Helicopter yarding of Units B1, B3, and B6 will not be allowed during the same year as helicopter yarding of Unit G9.

- 2) Timber hauling will not be permitted on FR 2405 and FR 1309 during the same bear year (April 1 – November 15) in order to remain compliant with the Forest Plan security standard.

Table 1: Total acreage harvested by silvicultural prescription, logging system, fuels treatments, and road management.

Treatment Type	Acres/Miles
<u>Regeneration Cuts</u>	
Irregular Shelterwood	377
Total Regeneration Cuts	377
<u>Partial Cuts</u>	
Improvement Cut	164
Sanitation Salvage	32
Commercial Thin	302
Group Selection	373
Total Partial Cuts	871
Total Acres Treated	1,248
<u>Logging System</u>	
Ground-based	101
Skyline	176
Helicopter	971
<u>Fuels Treatment</u>	
Grapple Pile	334
Underburn	914
Total Acres of Fuels Treated	1,248
<u>Transportation Miles</u>	
Temporary Road Reconstruction	<0.25
Reconstruction or maintenance	37.5

- 3) The portion of FR 402C reopened for project implementation will be returned to an undrivable condition following post-sale fuels treatments.
- 4) All harvest units utilizing tractor yarding will be logged during the grizzly bear denning period (November 16 – March 31).

- 5) If any endangered or threatened species are located within the areas affected by the proposed action, project activities will be altered, as necessary, in order for the proper protection measures to be taken.
- 6) Standards and guidelines established by the Inland Native Fish Strategy (INFS) will be used to protect water quality and fish habitat, including the designation of Riparian Habitat Conservation Areas (RHCAs). These zones include 300-foot (slope distance) protection zones for fish-bearing streams, 150-foot (slope distance) protection zones for permanently flowing (perennial) non-fish bearing streams, ponds, lakes, reservoirs and wetlands greater than one acre and a 50-foot (slope distance) protection zone for intermittent streams and sensitive landtypes. Commercial timber harvesting would be prohibited in these RHCAs.
- 7) Ephemeral draws will have a 50-foot (slope distance) protection zone if they are either directly tied to an intermittent channel or lack large woody debris and vegetation that prevent scouring or head cutting. Limited timber harvesting will be conducted in designated draws under the limitations described in the “Ephemeral Draws” design feature described below.
- 8) Limited activities would be allowed to occur within the 50-foot RHCA of the specified ephemeral draws in Units G2, G6, G7H, G7S and G9 to reduce the level of hazardous fuels within the draws under the following restrictions:
 - To prevent ground disturbance, no ground based equipment will be allowed within the RHCAs. To reduce the need for multiple breaches of the road cut-slope to provide access for tractor skidding in Unit G6, if crossing one of these draws is necessary, the hydrologist will be consulted to determine the best location of the crossing, considering Best Management Practices (BMPs), topography, and appropriate methods (e.g. snow road, log cribs).
 - To reduce fuels, hand felling and whole tree yarding will be allowed in the draws where a feller buncher cannot reach.
 - Only lodgepole pine (*Pinus contorta*) and Douglas-fir (*Pseudotsuga menziesii*) less than 12 inches diameter breast height (dbh) will be allowed to be removed.
 - All ponderosa pine (*Pinus ponderosa*) and western larch (*Larix occidentalis*) will be designated as leave trees because they are more fire resistant and western larch will continue to add needles annually to the RHCA organic profile.
 - Underburning will be allowed only in the spring to allow for a moist soil mantle and to avoid the consumption of large woody material during the fire.
- 9) To protect RHCAs during prescribed burning, no prescribed fire ignitions or fireline construction will occur within any RHCAs. During spring prescribed burning in Units G2, G4, G5, G6, G7H, G7S and G9, a backing fire will be allowed to creep into the outer edges of the designated 150-foot RHCAs as a low intensity underburn. No prescribed fire will be allowed within RHCAs during fall burns.

- 10) To protect aquatic habitat during in-stream work, activities within perennial streams (e.g. culvert removal/replacement) will only occur between July 15 and September 15 to minimize erosion and sedimentation from these ground-disturbing activities. Implementation of this work window will reduce the risk of effects from sediment during spring runoff, and avoid effects to westslope cutthroat trout (*Oncorhynchus clarki lewisi*) redds and staging or spawning bull trout downstream.
- 11) To protect fish when using streams for prescribed burning control, water removal shall not exceed 90 gallons per minute, and pumping sites will be located away from spawning gravels. The intake hose will be screened to prevent accidental intake of small fish. An emergency spill clean up kit will be on site in the unlikely event of a fuel spill outside the containment system. This is consistent with INFS direction (USFS 2006a).

Action Area

Action area, as defined by the Act, is the entire area to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. For the purposes of this biological opinion, the Service considers the IPNF's project area definition (as defined in the wildlife BA) to adequately define the action area. The action area encompasses the Myrtle Creek watershed (about 17,000 acres), and the lower section of the Snow Creek drainage (about 3,200 acres), within the Selkirk Mountains of northern Idaho. It includes all or portions of Sections 5-9, 15-23, 26-35, T.62N., R..1W., Sections 1-24, 27-33, T.62N. R.2W., Sections 13, 24, T.62N., R.3W., Sections 2-3, T.61N., R.1W., Sections 34-36, T.63N., R.2W., and Section 31, T.63N., R.1W., Boise Meridian, Boundary County, Idaho.

INFORMAL CONSULTATION

The IPNF has requested the Service's concurrence with their determinations of "may affect, not likely to adversely affect" for Canada lynx and bull trout.

Canada Lynx

The proposed project is located within the Myrtle-Cascade and Snow Lynx Analysis Units (LAU). Both LAUs appear to provide lynx habitat conditions consistent with recommendations contained in the Lynx Conservation Assessment and Strategy (LCAS) (Rudiger et al. 2000). Currently, greater than 70 percent of lynx habitat within each LAU is considered to provide suitable habitat conditions for lynx, less than 15 percent of lynx habitat within each LAU has been converted to a temporarily unsuitable condition through management actions within the last decade, and denning habitat comprises greater than 10 percent of each LAU. After project completion, unsuitable habitat within the Myrtle-Cascade and Snow LAUs will be increased from 3.7 to 7.1 percent and from 6.9 to 7.6 percent of each LAU, respectively. The conversion of suitable lynx habitat into a temporarily unsuitable condition through management actions within the last decade will remain well below the 15 percent threshold within each LAU at 3.4 percent of the Myrtle-Cascade LAU, and 1.1 percent of the Snow LAU. Denning habitat within the Myrtle-Cascade LAU will be slightly reduced, but will continue to comprise greater than 22 percent of the LAU. Denning habitat within the Snow LAU will not be impacted. Project implementation will not result in permanent increases of road miles that would likely contribute

to increased motorized winter recreation within either LAU. Therefore, the proposed project appears consistent with the LCAS.

Bull Trout

The proposed project will occur within the Myrtle Creek, Snow Creek, and Deep Creek drainages. Myrtle and Deep Creeks are tributaries to the Kootenai River, while Snow Creek is a tributary of Deep Creek. Bull trout have been documented in the lower reaches of both Myrtle and Snow Creeks (USFS 2006a). However, both creeks have natural barriers that prevent upstream bull trout migration, and no bull trout spawning/redds have been documented within the areas of these creeks accessible to and inhabited by bull trout. The natural barrier in Myrtle Creek is located approximately 2 miles upstream of its confluence with the Kootenai River, and the natural barrier in Snow Creek is located approximately 0.5 miles upstream of its confluence with Deep Creek. Fish surveys conducted in both Myrtle and Snow Creeks upstream of the barriers in 2001, 2004, and 2005 did not detect the presence of bull trout. The reaches of both Myrtle and Snow Creeks inhabited by bull trout are well downstream of areas proposed for treatments in both drainages. Thus, direct effects to bull trout resulting from project implementation are highly unlikely. Indirect downstream effects to bull trout are possible, potentially resulting from increased sedimentation produced through timber harvesting and road decommissioning activities, and reconstruction of FR 402C. Reconstruction of FR 402C will involve the replacement of a currently undersized culvert. The implementation of RHCAs with the associated limitation of activities within the appropriate stream buffer widths of the RHCAs, and use of BMPs should reduce the potential for sediment, produced from project related activities, to affect bull trout to negligible levels. The project appears consistent with the INFS. Further, the proposed project will decommission approximately 1.31 miles of roads within the project area, which should reduce the potential for sediment generation and contribution to creeks. Reducing sediment introduction to the creeks should be beneficial to bull trout in the long-term.

Conclusion

We have reviewed the information provided and concur with your finding that implementation of the proposed project “may affect, but is not likely to adversely affect” Canada lynx and bull trout. Concurrence by the Service is contingent upon implementation of the project and conservation measures as described in the BAs.

This concludes informal consultation pursuant to section 7(a)(2) of the Act. This project should be re-analyzed if new information reveals that effects of the action may affect listed species or critical habitat in a manner, or to an extent not considered in this consultation; if the project is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; and/or if a new species is listed or critical habitat is designated that may be affected by this project. Effects to these species will not be analyzed further in this biological opinion.

BIOLOGICAL OPINION

I. Status of the Species

A. Species Description/Life History

The grizzly bear is one of two subspecies of the brown bear (*Ursus arctos*) which occupy North America. Coloration varies from light brown to almost black. Grizzly bears are generally larger than black bears (*Ursus americanus*), ranging between 200 and 600 pounds, and can be distinguished from them by longer, curved claws, humped shoulders, and a more concave face. Although relatively long-lived (20-25 years in the wild), the grizzly bear has a low reproductive rate due to the late age of first reproduction (4-7 years), small litter size (two cubs), long intervals between litters (three years), and limited cub survival (less than 50 percent). Grizzly bears are a wide-ranging species with individualistic behavior, although there is little evidence that they are territorial. Home range sizes vary, and the home ranges of adult bears frequently overlap. Most areas currently inhabited by the species are represented by contiguous, relatively undisturbed mountainous habitat exhibiting high topographic and vegetative diversity. Availability of spring habitat is a concern throughout the current range of the species. A more complete discussion of the biology and ecology of this species may be found in the 1993 Grizzly Bear Recovery Plan (Recovery Plan) (USFWS 1993).

B. Distribution/Status

Originally distributed in various habitats throughout North America from central Mexico to the Arctic Ocean, grizzly bears were thought to number approximately 50,000 in the early 1800's. However, westward human expansion and development in the 1800s led to a rapid distributional recession of grizzly bear populations. Bear numbers and distribution in the lower 48 States dropped precipitously during this period, due to a combination of habitat deterioration, commercial trapping, unregulated hunting, and livestock depredation control. On July 28, 1975, the grizzly bear was listed as threatened in the conterminous United States (U.S.), at which time the species occupied less than two percent of its former range south of Canada and was distributed in five small populations totaling an estimated 800-1,000 bears (USDI 1975). The five remaining self-perpetuating or remnant populations occur primarily in mountainous regions, national parks, and wilderness areas of Washington, Idaho, Montana, and Wyoming.

A Grizzly Bear Recovery Plan was approved on January 29, 1982, and a revised plan was completed on September 10, 1993 (USFWS 1993). The Recovery Plan identifies six separate recovery zones or ecosystems: 1) the Yellowstone (YRZ); 2) the Northern Continental Divide (NCDRZ); 3) the Cabinet-Yaak (CYRZ); 4) the Selkirk (SRZ); 5) the North Cascades (NCRZ); and 6) the Bitterroot (BRZ) (Figure 1). The Recovery Plan outlines a series of goals and objectives necessary to provide for conservation and recovery of the grizzly bear in selected areas of the conterminous 48 States.

The grizzly bear population within the YRZ continues to increase and expand its range. Currently, the population is estimated at more than 580 bears and occupies approximately 7,574,244 acres in the YRZ (USFWS 2002). All population recovery parameters have been

achieved, a conservation strategy has been developed, and on November 17, 2005, the Service proposed to delist the Yellowstone population (USDI 2005). Final action on this proposal is pending.

The exact size of the grizzly bear population in the NCDRZ is unknown, but recent data from the northern one third of this ecosystem indicates that there are more bears than previously thought. Grizzly bears occupy approximately 6,128,129 acres within this ecosystem. Monitoring results indicate that through 1999, recovery criteria for several parameters were met, including: 1) numbers of females with cubs; 2) numbers of bear management units (BMUs) with family groups; 3) occupancy requirements for BMUs; and 4) total human-caused grizzly bear mortality. However, the female grizzly bear mortality recovery criterion was not met (USFWS 2001).

The status of the NCRZ population is unknown, but bear numbers are suspected to be very low and probably less than 15 grizzly bears. The BRZ is not occupied by grizzly bears at this time,

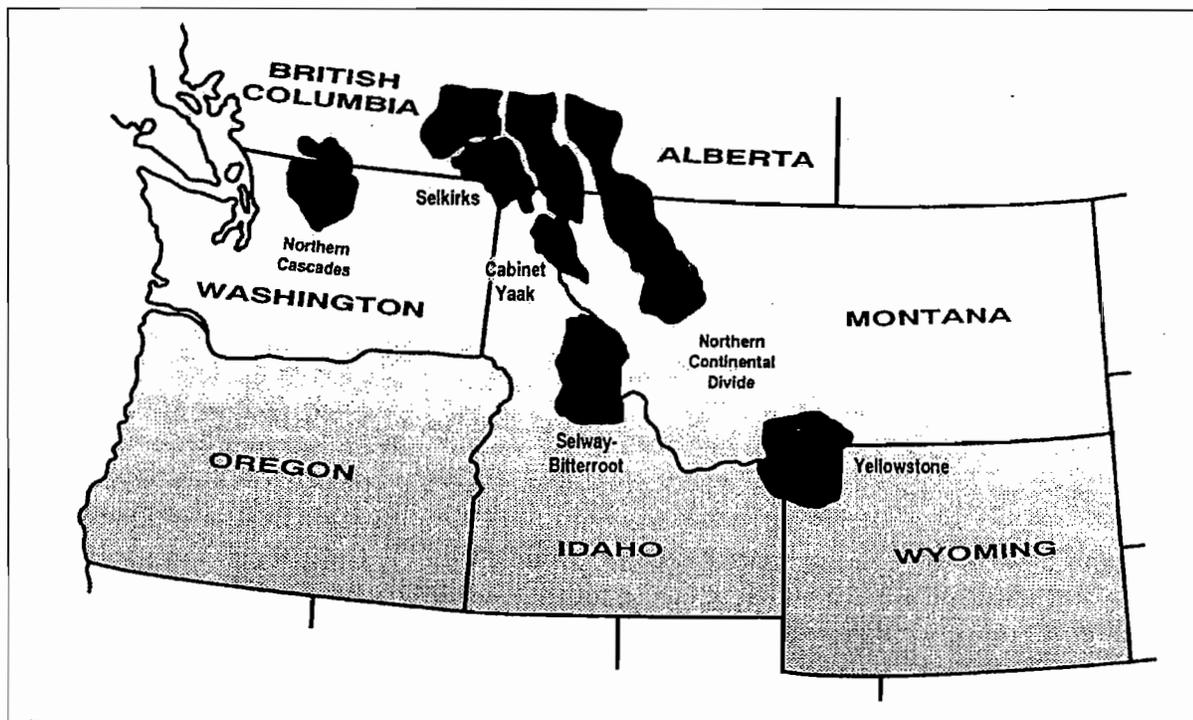


Figure 1. Present grizzly bear ecosystems in the conterminous 48 States, 1990 (the San Juan Mountains area of Colorado is not shown).

but in 2000, the Service released a final environmental impact statement (FEIS) addressing the restoration of grizzly bears to this ecosystem (USFWS 2000).

The CYRZ represents approximately eight percent of the total occupied grizzly bear range remaining within the conterminous 48 States. Grizzly bear numbers in this ecosystem are estimated at 30-40 animals. Known bear mortalities in this ecosystem since 1999 have ranged from 2 to 5 bears per year. Although sample sizes are small, existing data indicate a declining population in this ecosystem (Wakkinen and Kasworm 2004, Kasworm et al. 2005).

Additionally, recovery plan criteria for grizzly bear numbers, reproduction, distribution, and mortality have not been met (Kasworm et al. 2005; Kasworm, pers. comm. 2006).

The SRZ represents approximately six percent of the total occupied grizzly bear range remaining within the conterminous 48 States encompassing approximately 1,957 square miles (mi²) in northeastern Washington, northern Idaho, and southern British Columbia. In its May 12, 1999, administrative finding on the status of the Selkirk population, the Service estimated the population at 46 grizzly bears (USDI 1999). The Selkirk grizzly bear population is contiguous with Canadian populations. This recovery zone is the only one that includes part of Canada because the habitat in the U.S. portion is not of sufficient size to support a minimum population. Approximately 47 percent of the recovery zone lies within British Columbia, where land ownership is 65 percent crown (public) land and 35 percent is private. Land ownership in the U.S. portion of the Selkirk recovery zone is approximately 80 percent Federal, 15 percent State, and 5 percent private lands. Forty-two percent of the entire recovery zone is under Federal ownership and therefore could be subject to management for recovery under the Act. Within the U.S., approximately 1,081 mi² of the SRZ is administered primarily by two national forests [the IPNF and the Colville National Forest (CNF)], and the Idaho Department of Lands (IDL).

On May 17, 1999 (USDI 1999), the Service concluded that the lack of current habitat protection stemming from cumulative impacts related to access, mining, recreation, and forestry, both in the U.S. and Canada, poses a significant threat to the grizzly bear population in the SRZ, rendering the population warranted for endangered status (USDI 1999). However, in that conclusion the Service determined that reclassification of grizzly bears in the SRZ from threatened to endangered was warranted but precluded by work on higher priority species.

C. Habitat Characteristics

A number of factors influence the quality and availability of habitat for grizzly bears. However, the primary factors are: habitat effectiveness and access management. Habitat effectiveness is defined as the amount of secure grizzly bear habitat (habitat at least one quarter mile from open roads, developments, and high levels of human activity) remaining within BMUs after impacted areas are subtracted from the total habitat in the BMUs. Habitat security is accomplished largely through the effective management of restricted roads, and the administrative use of such roads.

Access management pertaining to maintenance of grizzly bear habitat within BMUs primarily involves the density of roads within roaded habitat, and the quantity and quality of unroaded habitat. The effect of roads on grizzly bear behavior (Aune and Stivers 1985, McLellan and Mace (1985 *In* Interagency Grizzly Bear Committee (IGBC) 1987), Kasworm and Manley 1988, McLellan and Shackleton 1988, Aune and Kasworm 1989, and Frederick 1991), grizzly bear populations and patterns of habitat use [IGBC Grizzly Bear Compendium (IGBC 1987), Frederick 1991, Recovery Plan (USFWS 1993), Mace and Manley 1993, Mace et al. 1996, Wakkinen and Kasworm 1997, and Mace et al. 1999], and grizzly bear mortality risk [McLellan and Mace (1985 *In* IGBC 1987), Dood et al. (1986 [cited as Dood et al. 1985 in text] of IGBC 1987), Aune and Kasworm 1989] has been thoroughly documented in the scientific literature. This research has clearly indicated the importance of managing three primary elements to avoid bear displacement from important habitats and to reduce bear mortality risk: (1) open road

density, (2) total road density, and (3) core habitat (areas free of motorized access and high levels of human use).

Recognizing the need to incorporate this new information into the management of grizzly bears, in July 1994, the IGBC issued a Task Force Report that directed the IGBC subcommittees from each recovery zone to develop recommended parameters for core habitat, open road densities, and total road densities using the best biological information and considering the social and economic impacts of implementing those parameters (IGBC 1994). Core habitat is defined as areas greater than or equal to 0.31 miles from any road (open or restricted), motorized trail, or high intensity use area. Core habitat may contain restricted roads, but such roads must be *effectively* (emphasis added) closed with devices, including but not limited to earthen berms or barriers, or naturally closed by vegetative growth (IGBC 1998). Additionally, per IGBC direction, core habitat should incorporate all seasonal components of grizzly bear habitat.

D. Listing History

On July 28, 1975, the grizzly bear was listed as threatened in the conterminous U.S. (USDI 1975). In 1991, the Service received petitions to reclassify the five existing grizzly bear populations (YRZ, NCDRZ, CYRZ, SRZ, and NCRZ) from threatened to endangered. On April 20, 1992, the Service issued a “not warranted for reclassification” finding for the YRZ and NCDRZ populations (USFWS 1992). On February 12, 1993 (USDI 1993), the Service found that reclassification of grizzly bears in the CYRZ from threatened to endangered was warranted but precluded by work on higher priority species, but determined that such reclassification was not warranted for the grizzly bear population in the SRZ. On May 17, 1999 (USDI 1999), the Service found that reclassification of grizzly bears in the SRZ from threatened to endangered was warranted but precluded by work on higher priority species. Also, in its May 17, 1999 finding, the Service determined that preliminary information suggests that the CYRZ and SRZ grizzly bear populations may be connected through Canada. Therefore, the Service will consider formally recognizing a distinct population segment that would encompass both of these ecosystems. Until a final determination is made on a distinct population segment, the Service still considers the ecosystems to be separate.

E. Reasons for Listing

Grizzly bears were listed due to several factors including habitat deterioration, commercial trapping, unregulated hunting, and livestock depredation control.

F. Current Status of the SRZ population and Conservation Needs

According to the Recovery Plan, the minimum population goal for the SRZ is 90 bears (USFWS 1993). Grizzly bears also occur in and use areas outside the SRZ recovery zone and population parameters include bears observed up to 10 miles outside the recovery zone boundary (USFWS 1993). This biological opinion will use the term SRZ to refer to the SRZ recovery zone and the band of habitat up to 10 miles around the SRZ recovery zone within which Recovery Plan parameters are reported.

The following recovery goals are established in the Recovery Plan (USFWS 1993):

1. Six unduplicated females with cubs over a running 6-year average both inside the recovery zone and within a 10-mile area immediately surrounding the recovery zone, including Canada;
2. Seven of the 10 BMUs on the U.S. side occupied by females with young on a running 6-year sum of observations; and
3. Known, human-caused mortality may not exceed four percent of the population estimate based on the most recent 3-year sum of females with cubs; furthermore, no more than 30 percent of this four percent mortality limit shall be females. These mortality limits cannot be exceeded during any two consecutive years for recovery to be achieved. Presently grizzly bear numbers are so small in this ecosystem that the mortality goal is zero known human-caused mortalities.

The most recent available information on the status of this population relative to the demographic recovery plan parameters is presented in Table 2(Wakkinen and Johnson 2006).

Table 2: 2005 status of the Selkirk Ecosystem in relation to the demographic recovery targets (Wakkinen and Johnson 2006).

	TARGET	2005 STATUS
Females with cubs (6-year average)	≥6.0	1.2 (7/6)
Human-caused mortality limit (4% of minimum estimate)	0	2.3 (6 year average)
Female human-caused mortality limit (30% of total mortality)	0	0.8 (6 year average)
Distribution of females with young	7 of 10 BMUs	4 of 10 ¹ BMUs

¹ Blue-Grass, Long-Smith, Kalispell-Granite, and State BMUs were occupied by family groups in 2005.

Based on this information, the SRZ is not currently meeting the recovery goals outlined in the Recovery Plan.

The Recovery Plan identifies three indicators of population status, based on reproduction, numbers, and distribution, to be used as the basis for recovery in each ecosystem: (1) sufficient reproduction to offset the existing levels of human-caused mortality; (2) adequate distribution of breeding animals throughout the area; and (3) a limit on total human-caused mortality. Based on these indicators, three specific parameters have been developed to monitor the status of grizzlies in each ecosystem: (1) the number of unduplicated females with cubs seen annually; (2) the distribution of females with young or family groups throughout the ecosystem; and (3) the annual number of known human-caused mortalities.

Table 3 displays the annual status of the SRZ grizzly bear population relative to the recovery plan criteria for the last 10 years. Wakkinen and Kasworm (2004) reported that of the 40 known grizzly bear mortalities which occurred in the SRZ between 1983-2002, the majority (32) were human-caused. Mortality causes included a combination of management removals, poaching,

hunting, mistaken identity, self-defense, and unknown causes. However, based on the estimated demographic variables for this ecosystem, they indicated a 67.3 percent probability that the SRZ grizzly bear population was increasing.

Table 3 Annual Selkirk recovery zone grizzly bear minimum unduplicated counts of females with cubs and known human-caused mortality, 1995-2005 (after Wakkinen and Johnson 2006).

YEAR	ANNUAL FWC'S	ANNUAL HUMAN CAUSED ADULT FEMALE MORTALITY	ANNUAL HUMAN CAUSED ALL FEMALE MORTALITY	ANNUAL HUMAN CAUSED TOTAL MORTALITY	4% TOTAL HUMAN CAUSED MORTALITY LIMIT ¹	30% ALL FEMALE HUMAN CAUSED MORTALITY LIMIT ¹	TOTAL HUMAN CAUSED MORTALITY 6 YEAR AVERAGE	FEMALE HUMAN CAUSED MORTALITY 6 YEAR AVERAGE
1995	1	0	1	2	0	0		
1996	1	0	0	1	0	0		
1997	1	0	0	1	0	0		
1998	1	0	0	1	0	0		
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	0.0
2002	0	1	2	6	0.6	0.2	2.0	0.3
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

¹ The current mortality goal is zero known human-caused mortalities.

On October 2, 2002, a map of the current grizzly bear distribution was finalized through a coordinated effort involving the Service, U.S. Forest Service, Idaho Department of Fish and Game, and Montana Fish, Wildlife, and Parks (Figure 2) (USFS 2003). The map depicts several areas of grizzly bear occupancy outside of, but adjacent to, the Recovery Zones. Two areas of grizzly bear occupancy adjacent to the SRZ have been delineated: 1) Priest; and 2) Pack River. Some grizzly bears are residing, at least seasonally, in the Pack and Priest River areas. However, as portions of these bears' known movement patterns overlap the recovery zone, they have been included in the population estimate of 46 grizzly bears for the SRZ.

1. Factors Affecting the Status of the SRZ Grizzly Bear Population

The Service's 1999 finding concluded that grizzly bears in the SRZ were in danger of extinction due to: 1) habitat alteration and human intrusion into grizzly bear habitat; and 2) a small population facing potential isolation by activities across the border in Canada (USDI 1999). The finding also concluded that cumulative impacts of recreation, timber harvest, mining and other forest uses with associated road construction had reduced the amount of effective habitat for grizzly bears. Further, the finding stated that access management plans had the potential to reduce this threat, but had not been fully implemented.

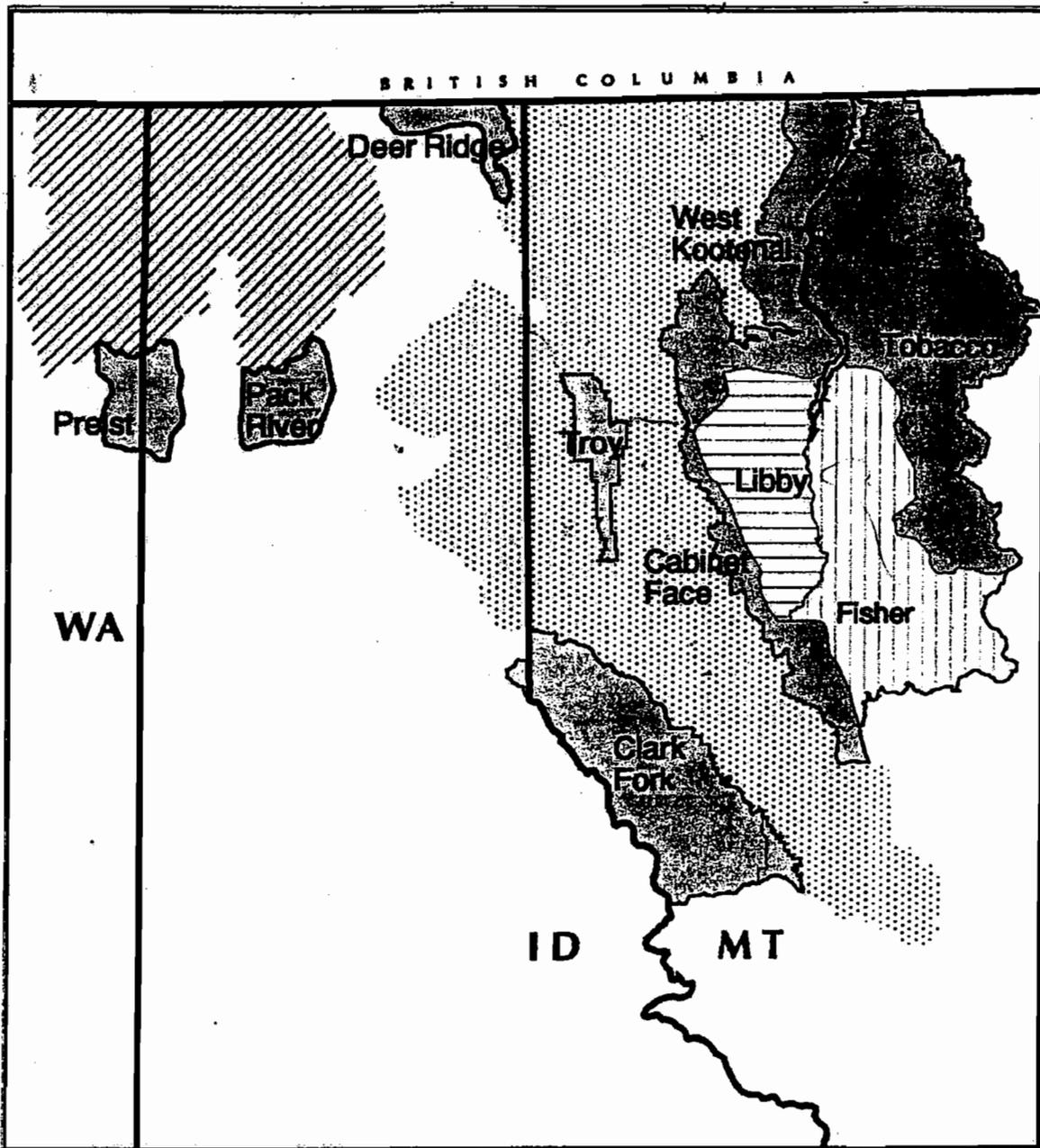
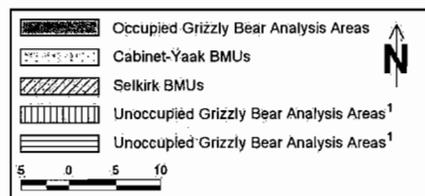


Figure 2 Grizzly Bear Analysis Areas Outside the CYRZ¹.



a. Mortality:

Table 4 reports the total known grizzly bear mortality associated with the SRZ from 1982 to 2005. Within the recovery zone or within 10 miles of it over this 23-year period, there were 40 known grizzly bear mortalities, of which 32 were human-caused (8 were radio-collared bears). Based on a population estimate of 46 grizzly bears, the current annual known human-caused mortality rate is approximately 3.8 percent, or about 1.7 bears per year (40 grizzly bear mortalities over 23 years). The current female grizzly bear human-caused annual mortality rate is approximately 0.9 percent, or about 0.4 bears per year (10 known human-caused female mortalities over 23 years). However, actual mortality numbers are likely to be higher, given the remote habitats typically occupied by grizzlies and the low probability of finding a dead bear unless it was radio-collared. A review of known grizzly bear mortalities in British Columbia and Alberta, Canada, Idaho, Washington, and Montana concluded that of the studies reviewed, management agencies would have been unaware of about half of the deaths of radio-collared grizzly bears if not for the radio collars (McLellan et al. 1999). Adjusting for the unknown, unreported mortality by using methods in McLellan et al. (1999) (i.e., removing a total of 19 human-caused grizzly bear mortalities from the calculation because they were only determined because of a radio collar, or resulted from management agency removals or legal kills) results in a total estimate of 45 human-caused mortalities (known and unknown). Based on a population estimate of 46 grizzly bears, this equates to an average annual known and unknown human-caused mortality rate of approximately 4.3 percent, or about 2.0 bears per year (45 grizzly bear mortalities over 23 years).

Over the most recent 6-year period (2000-2005), there were 8 total known human-caused grizzly bear mortalities within the recovery zone or within 10 miles of it; one of which was a female bear. The total known human-caused grizzly bear mortalities are reflected in the 2005 Recovery Plan goals for this population (Table 2).

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 (USFWS 1993). In 1995, after becoming habituated and conditioned to improperly stored food in a campground, a male grizzly bear was collared and relocated. Soon after being relocated, the bear was illegally killed by a hunter.

b. Habitat:

To facilitate population monitoring and habitat evaluation within each ecosystem, the recovery zones are divided into BMUs. These BMUs, designed to approximate the average home range of a female grizzly (approximately 100 square miles), assist in characterizing grizzly bear numbers and distribution within each ecosystem and in tracking cumulative effects (Christensen and Madel 1982).

The U.S. portion of the SRZ is divided into 10 BMUs, ranging in size from approximately 30-160 mi². Six of the 10 BMUs are administered entirely by the IPNF, 2 BMUs are jointly administered by the IPNF and CNF, 1 BMU is administered entirely by the CNF (LeClerc BMU is located entirely in Washington State), and 1 BMU is administered by the IDL. The area of the

Table 4. Known grizzly bear mortalities associated with the SRZ, 1982-2003.

Mortality Date	Tag #	Sex	Age	Location	Mortality Category and Cause	<500 meters from open road
Spring 1982	None	M	AD	Priest River, ID	Human, Poaching	Unk
Autumn 1982	None	Unk	Unk	LeClerc Creek, WA	Human, Unknown	Unk
1985	867-85a ¹	Unk	Cub	N/A	Natural	Unk
Summer 1985	949 ¹	M	4.5	US/BC border	Human, Unknown	Unk
Autumn 1986	898 ¹	F	1.5	Grass Creek, ID	Human, Unknown ²	Unk
1986	None	M	Unk	BC Unit 4-8	Human, Management Removal	Yes
Spring 1987	1005 ¹	M	10.5	Wall Mtn, BC	Human, Poaching	Unk
Autumn 1987	962 ¹	M	7.5	Trapper Creek, ID	Human, Poaching	No
Autumn 1988	1085 ¹	F	3.5	Cow Creek, ID	Human, Mistaken Identity	No
Autumn 1988	1050 ¹	M	1.5	Porcupine Creek, BC	Natural	No
Spring 1988	None	M	Unk	BC Unit 4-7	Human, Legal Hunt	Unk
Summer 1989	1044 ¹	F	20+	Laib Creek, BC	Natural, Conspecific	No
Autumn 1990	1042	F	3.5	Maryland Creek, BC	Human, Malicious	Yes
1990	None	M	Unk	BC Unit 4-8	Human, Management Removal	Yes
Summer 1991	1076 ¹	F	20+	Next Creek, BC	Natural	No
1991	876-92a ¹	Unk	1.5	Unknown	Natural	Unk
Summer 1992	None	M	Unk	Lost Creek, BC	Human, Defense of Property	Yes
Summer 1992	1090 ¹	M	5.5	Laib Creek, BC	Unknown	Unk
Autumn 1992	1015	F	12.5	Monk Creek, BC	Human, Self Defense	No
Spring 1993	None	M	Unk	BC Unit 4-7	Human, Legal Hunt	Unk
Autumn 1993	867 ¹	F	15.5	Willow Creek, WA	Human, Malicious ²	No
Autumn 1993	867-93a ¹	Unk	0.5	Willow Creek, WA	Human, Malicious ²	No
Autumn 1993	867-93b ¹	Unk	0.5	Willow Creek, WA	Human, Malicious ²	No
1993	None	M	Unk	BC Unit 4-8	Human, Management Removal	Yes
Spring 1994	None	M	Unk	BC Unit 4-7	Human, Legal Hunt	Unk
Spring 1994	13	M	AD	BC Unit 4-20 ³	Human, Legal Hunt	Unk
Spring 1995	None	F	1.5	Boundary Creek, ID	Human, Unknown	Yes
Autumn 1995	1100 ¹	M	2.5	Granite Pass, WA	Human, Mistaken Identity	Yes
1996	1027-96b ¹	Unk	Cub	Unknown	Natural	Unk
Autumn 1996	1022	M	2.5	Boswell, BC	Human, Management Removal	Yes
Autumn 1997	None	M	1.5	Salmo, BC	Human, Management Removal	Yes
Spring 1998	1023	M	4.5	BC Unit 4-26 ³	Human, Legal Hunt	Unk
Summer 1998	None	M	3.5	Usk, WA	Human, Under Investigation	Yes
Autumn 1999	None	M	22	Wyundel, BC	Human, Depredation	Yes
Autumn 1999	1032	M	18	Procter, BC	Human, Depredation	Yes
Autumn 1999	9810	M	10	Smith Creek, ID	Human, Under Investigation	Unk
Summer 2001	7	F	13	Porcupine Creek, BC	Natural	Yes
Autumn 2001	None	M	Unk	Cottonwood Creek, BC	Human, Management Removal	Yes
Spring 2002	17	M	3.5	Nelway, BC	Human, Depredation	Yes
Autumn 2002	None	F	AD	Blewett, BC ³	Human, Under Investigation	Yes
Autumn 2002	None	Unk	1	Blewett, BC ³	Human, Under Investigation	Yes
Autumn 2002	None	Unk	1	Blewett, BC ³	Human, Under Investigation	Yes
Autumn 2002	None	Unk	1	Blewett, BC ³	Human, Under Investigation	Yes
Autumn 2002	19	M	3.5	Lamb Creek, ID	Human, Under Investigation ²	Yes
Spring 2003	None	Unk	Unk	Apple Orchards lower Smith Ck	Human, Under Investigation	Yes
Summer 2003	30	F	2.5	Salmo, BC	Human, Management Removal	Yes
Autumn 2003	None	F	AD	Blewett, BC ³	Human, Under Investigation	Yes
Autumn 2003	None	F	1	Blewett, BC (offspring of above) ³	Human, Under Investigation	Yes
Spring 2004	None	M	AD	Hughes Meadows	Human, Under Investigation	Yes
Autumn 2004	32	M	7	Nordman/Bismark Meadows	Possible mortality, under investigation	Unk
Spring 2005	31	M	5	East of Creston, BC	Human, Legal Hunt	Unk
Spring 2005	None	Unk	Unk	E. Fork Priest River	Likely human caused	Unk

¹Part of radio collar sample at time of mortality.

²Human caused mortality determined only because of the radio collar on the animal at the time of death.

³Mortality outside recovery zone more than 10 miles.

SRZ managed by the IDL encompasses approximately 160 mi² east of Priest Lake, which represents approximately 8 percent of the recovery zone. The smallest 30 square mile BMU (Lakeshore; administered by the IPNF) lies along the west side of Priest Lake. While providing important grizzly bear habitats regularly occupied by grizzlies, the Lakeshore BMU serves primarily as a buffer for development and high human activity associated with Priest Lake.

As stated previously, the management of three primary elements is considered essential to avoid bear displacement from important habitats and to reduce bear mortality risk: (1) open road density, (2) total road density, and (3) core habitat (areas free of motorized access and high levels of human use). Each grizzly bear recovery zone has specific standards relative to these three elements, and these standards are considered necessary for the conservation of grizzly bears.

Due to the importance of roads in affecting grizzly bear behavior and habitat quality, the IGBC directed each of the ecosystems to develop grizzly bear habitat management parameters addressing core habitat, and open and total motorized route densities. A detailed discussion related to the effects of roads on grizzly bears and the history associated with developing motorized access standards within the SRZ is contained in the Service's 2004 "Biological Opinion for the Kootenai, Idaho Panhandle, and Lolo National Forests Land and Resource Management Plans Amendment for Motorized Access Management Within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones" (hereafter referred to as 2004 Access BO) (USFWS 2004a), and is incorporated here by reference.

The current approach to managing motorized access within BMUs in the SRZ involves the management of core habitat, open motorized route density (OMRD), and total motorized route density (TMRD). The Service's 2004 Access BO, mentioned above, established BMU specific standards for these three parameters. Table 5 displays the current condition of each BMU, relative to the established standards. As indicated in the table, just under half of the BMUs within this ecosystem are currently not meeting one or more of the access standards. However, the incidental take statement accompanying the 2004 Access BO called for bringing all BMUs into compliance with the standards by 2013.

Information on the level of habitat security within the remainder of the SRZ is not available as non-Federal entities do not necessarily manage their lands to maintain secure habitat for grizzly bears. State and private forest management activities occur within the SRZ. As indicated previously, the IDL manages an approximately 160 mi² area east of Priest Lake. Table 5 does not contain information for this area relative to core habitat or OMRD or TMRD. The IDL administers these lands primarily for timber production to provide funding for the State school system. This area contains a significant amount of important grizzly bear habitat, and bears are known to occur in this area. Approximately 34 mi² of this area fall within the Upper Priest Lake Scenic Area and the Selkirk Crest Scenic Area, managed primarily for recreational and aesthetic purposes. The remainder of the area is actively managed for timber production. The IDL implements road management with the use of gates to restrict access, however, the Service has no information regarding existing total and open road densities or amount of core habitat within this area. When information on habitat conditions is not available, the Service typically provides the benefit of the doubt to the species and assumes a conservative scenario to provide for protection of the species. Therefore, for purposes of characterizing baseline conditions in the

IDL administered area, the Service assumes that, outside of the 34 mi² of Scenic Areas mentioned above, open and total road densities exceed those values previously described, and that available core habitat is less than 55 percent of the area.

Table 5: Selkirk Recovery Zone Bear Management Unit Summary for the 2005 Bear Year

BMU ¹	Open Roads >1mi/sq.mi (%)	Total Roads >2 mi/sq.mi (%)	% Federal Land	% Core	Priority
Blue-Grass	28 (31)	28 (26)	96	51 (55)	1
Long-Smith	21 (25)	14 (15)	92	73 (67)	1
Kalispell-Granite	29 (33)	27 (26)	96	48 (55)	1
Salmo-Priest	30 (33)	25 (26)	99	66 (64)	2
Sullivan-Hughes	24 (23)	21 (18)	99	59 (61)	1
Myrtle	32 (33)	21 (22)	85	58 (56)	2
Ball-Trout	17 (20)	11 (13)	94	72 (69)	2
Le Clerc	38	58	64	27	3
Lakeshore	81 (82)	51 (56)	86	20 (20)	3

¹The lands managed by the IDL east of Priest Lake are not represented in this table as standards for core habitat, TMRD, or OMRD have not been established for this area.

() Represents the Standards that were agreed to in the Forest Plan Amendment for Motorized Access (3/23/2004) and the associated Biological Opinion (2/9/2004). These numbers are target levels, the specific agreements, including timing of achievement, are contained in the amendment and biological opinion.

Stimson Lumber Company (SLC) and Forest Capital Partners, LLC (Forest Capital), the primary private forest managers in the SRZ, manage their ownerships primarily for timber production. The majority of SLC ownership within the SRZ occurs within the LeClerc BMU; approximately 27 percent (21,000 acres) of the land within the LeClerc BMU is owned by SLC. The SLC has entered into a Conservation Agreement with the CNF and the Service to minimize adverse affects to grizzly bears resulting from implementation of activities on its ownership within the LeClerc BMU through road and vegetation management, including but not limited to ensuring: open road density on its ownership does not exceed 1 mi/mi² during the non-denning period of April 1 through November 15; no increase in roads open to public motorized use, except where such increase will result in additional available habitats for grizzly bear; administrative use levels on certain roads do not exceed 12 round trips during the spring period (April 1 through June 15); that their land contributes proportionally to the maintenance of a minimum of 40 percent vegetative cover; maintenance of vegetative screening adjacent to open roads; and the distance to cover from any point within harvest units does not exceed 600 feet by limiting the size of harvest units.

Currently, Forest Capital has not entered into an agreement with the Service for grizzly bear management on its ownership within the SRZ. However, recognizing the need to manage for grizzly bears within the SRZ, Forest Capital voluntarily: maintains year-round gate closures on many of their roads; replaces damaged gates promptly; installs road closures on newly constructed roads; closes their land to spring and fall black bear hunting; and conducts logging operations during the winter to the extent practicable within BMUs (McClintock pers. comm. 2004).

Additional secure habitat is likely to occur within the British Columbia portion of the SRZ, particularly in the Stagleap Provincial Park, located just north of the border. In 1995, the British Columbia provincial government developed a grizzly bear conservation strategy with a stated goal of enhancing habitat protection through land use planning processes (USDI 1999). Quantitative information on the amount of secure habitat in the British Columbia portion of the SRZ is not currently available.

The project area is located within the Myrtle BMU and the PROA. The Myrtle BMU is one of four BMUs in the SRZ currently meeting all three habitat parameters (Table 5). As of the 2005 reporting year, this BMU contained 58 percent core habitat, which is 2 percent above the minimum core habitat standard of 56 percent (Table 5). Within the BMU, OMRD greater than 1 mile/mi² comprised 32 percent of the BMU, which is 1 percent better than the standard requiring OMRD not to exceed of 33 percent of the BMU. TMRD greater than 2 miles/mi² comprised 21 percent of the BMU, which is 1 percent better than the standard requiring TMRD not to exceed 22 percent of the BMU. According to the wildlife BA, in 2006 approximately 2 miles of the Chimney Rock Trail (Trail No. 256) was converted from a motorized trail to a non-motorized trail, gaining 1 percent of core habitat and reducing OMRD and TMRD by 1 percent each within the BMU. Thus, core habitat in the BMU will increase to 59 percent, OMRD will decrease to 31 percent, and TMRD will decrease to 20 percent.

As identified above, grizzly bears are living in areas outside of but adjacent to the Recovery Zones. Relative to the SRZ, grizzly bear occupancy occurs in two separate mapped areas adjacent to the southwestern (Priest Area) and southeastern (Pack River Area) boundaries of the recovery zone. The Priest Area circumscribes an area of approximately 151 mi², and the Pack River Area circumscribes an area of approximately 103 mi² (Table 6). Both areas contain a mixture of federal and non-federal land.

The status of these areas relative to linear open and total road densities is described in Table 6. In 2005, linear total road densities within the Priest and Pack River Areas across all ownerships were 3.3 mi/mi² and 1.8 mi/mi², respectively, and linear open road densities across all ownerships were 3.3 mi/mi² and 1.8 mi/mi², respectively. On National Forest System lands only within the Priest and Pack River Areas, linear total road densities were 3.3 mi/mi² and 1.2 mi/mi², and linear open road densities were 3.3 mi/mi² and 1.2 mi/mi². We currently do not have any information regarding the quantity of unroaded habitat contained within these areas.

Table 6: Grizzly bear occupancy areas adjacent to the SRZ: size and road density status (USFS 2006b).

Area	Size (mi ²)	Linear Total Road Density Across All Ownerships (mi/mi ²)	Linear Total Road Density on National Forest Lands Only (mi/mi ²)	Linear Open Road Density Across All Ownerships (mi/mi ²)	Linear Open Road Density on National Forest Lands Only (mi/mi ²)
Priest	151	3.3	3.3	3.3	3.3
Pack River	103	1.8	1.0	1.7	0.9

The linear road density information identified in Table 6 is not analogous to, and therefore may not be comparable with, road density information derived using a moving windows analysis technique, upon which the road density standards for the Recovery Zones are based. A moving windows analysis is a spatial analysis of road density distribution, while a linear road density analysis is simply a quantification of the amount (i.e., length) of roads per unit area that exist on the landscape.

2. Other Factors:

The SRZ is one of the smallest grizzly bear recovery zones at approximately 1,957 mi², and only 53 percent is contained within the conterminous U.S. The remainder (47 percent) lies within British Columbia. Because a substantial portion of the SRZ lies within British Columbia, grizzly bear management measures and habitat management efforts in that province play a significant role in the status of grizzly bears in this ecosystem. The British Columbia portion of the SRZ is subjected to the same forestry, mining, recreation, and road construction pressures that exist in the U.S., all of which affect grizzly bear habitat. As noted previously, in 1995, the British Columbia provincial government developed a grizzly bear conservation strategy (Strategy) to ensure effective, enhanced protection and management of habitat through land use planning processes, new protected areas, and the Forest Practices Code.

II. Environmental Baseline

A. Status of the Species within the Action Area

According to the wildlife BA, there have been several confirmed sightings of grizzly bears in the Myrtle and Snow Creek drainages, as well as on the Kootenai National Wildlife Refuge, which is located at the base of Myrtle Creek. In the autumn of 2004, a grizzly sow and three cubs were seen at two different locations along the Myrtle Creek Road by IPNF staff (USFS 2006b).

B. Factors Affecting the Species Environment within the Action Area

Within the action area, grizzly bears are affected by roads, timber harvest, recreation, and human-caused mortality. Forest Capital owns substantial acreage within the Myrtle and Snow Creek drainages. Although we don't have information on roads densities on Forest Capital property, according to the wildlife BA the majority of Forest Capital property is heavily roaded.

III. Effects of the Action

The proposed action will temporarily impact grizzly bear habitat in the Myrtle and Snow Creek drainages. The contractual date for completion of all activities associated with the project is 5 years from the date of origination; the project is scheduled to begin in 2007.

Approximately 1,240 of the acres proposed for treatment are in the Myrtle BMU, including about 551 acres of commercial thinning/group selection and 689 acres of shelterwood/seedtree harvest. Approximately 608 of these acres would be treated by ground-based systems, while approximately 632 acres would be helicopter logged (Units B1, B3, B6, G7H & G9). Of the

acres to be logged using ground-based systems, approximately 358 acres will be tractor logged in winter. The remaining 250 acres of skyline yarding are within the 500 meter influence zone of drivable roads, outside of core habitat. There will be no loss of grizzly bear core habitat or TMRD increases in the Myrtle BMU from the proposed action, because no roads will be constructed or reconstructed within the BMU. No ground-based harvesting activities will occur within grizzly bear core habitat, although helicopter logging and some post-sale activities (e.g., grapple piling, underburning, etc.) will temporarily impact approximately 1,615 acres of grizzly bear core habitat. Implementation of the proposed action will temporarily increase the OMRD within the BMU, but the OMRD levels within the BMU will remain at or below the 33% threshold.

Several authors have documented grizzly bear avoidance of roads and the resulting displacement from adjacent habitat (Aune and Stivers 1985, McLellan and Mace 1985, Kasworm and Manley 1988, McLellan and Shackleton 1988, Aune and Kasworm 1989, Frederick 1991, and Wakkinen and Kasworm 1997). Research indicates that grizzly bears tend to avoid closed roads as well as open roads (Mace et al. 1999, Mace et al. 1996, and Mace and Manley 1993, Wakkinen and Kasworm 1997). Mace and Manley (1993) documented displacement of grizzly bears from closed roads, and found that grizzly bear use of areas declined as total road densities (open and closed roads) exceeded 2 mi/mi² and open road densities exceeded 1 mi/mi². Mace et al. (1996) found that grizzly bears are able to utilize roaded habitats, but that spatial avoidance increases and survival decreases as traffic levels and road densities increase. Wakkinen and Kasworm (1997) found that areas with total road densities greater than 2 mi/mi² and/or open road densities greater than 1 mi/mi² were used less than expected (avoided) by grizzly bears. A number of studies have indicated that female grizzlies with cubs tend to avoid roads (Mace et al. 1996, and Zager 1980 In: USFWS 1993). The occurrence of roads and the associated human disturbance within high quality bear habitats can also influence indirect mortality risk by disrupting efficient foraging strategies resulting in nutritional stress, restricting reproduction and dispersal, and potentially reducing carrying capacity (Mattson et al. 1987 In: Frederick 1991, and Aune and Stivers 1985 In: Frederick 1991). Nutritional demands of female bears with cubs is triple that of other bears, making their access to nutritional food sources and uninterrupted feeding essential during spring and fall (Jonkel 1982 In: Frederick 1991).

As described previously, the proposed action will not increase the TMRD within the Myrtle BMU. As reported in 2005, the TMRD was 21% in the BMU; the standard was established at 22% by the Service's 2004 Access BO. However, in 2006 a portion of the Chimney Rock Trail (Trail 256) was converted from motorized to non-motorized status. Converting a portion of Trail 256 to non-motorized status reduced the TMRD by 1% such that TMRD within the BMU currently equates to 20%. Restricted road densities contribute to the calculation of TMRD. Restricted roads are defined as roads on which motorized vehicle use is restricted seasonally or year-long. Scientific information collected from research conducted on grizzly bears in the Selkirk Ecosystem suggests that grizzly bears in the SRZ can tolerate TMRDs greater than 2 mi/mi² comprising less than or equal to (\leq) 26 percent of their home range (Wakkinen and Kasworm 1997). Thus, while grizzly bears may be displaced from limited vehicle use on restricted roads, as long as total road densities greater than 2 mi/mi² comprise \leq 26 percent of their home range (or BMU as it is used as a surrogate measure for grizzly bear home ranges and assessing conditions therein), such displacement should not result in adverse effects to grizzly

bears. (Note: the TMRD standard for the Myrtle BMU was set at 22% to compensate for other BMUs in the SRZ that may never be able to reduce total road densities below a level comprising less than or equal to 26% of the BMU.) To minimize the potential for displacing grizzly bears, and the effects of displacement should it occur, the Service's 2004 Access BO requires administrative use on restricted roads to be ≤ 57 round trips per year during the active bear year (April 1 through November 15), divided seasonally. The seasonal apportionment of vehicle trips are as follows: ≤ 19 round trips in spring (April 1 thru June 15); ≤ 23 round trips in summer (June 16 through September 15); and ≤ 15 round trips in fall (September 16 through November 15) (USFWS 2004a).

Treatment in several units would include haul traffic on restricted FRs 1309 and 2405 within the Myrtle BMU. Since the number of trips on these roads will exceed administrative use levels for restricted roads, they will be modeled as "open roads" for purposes of OMRD calculations within the BMU (these roads will not be open for general public use). Use of roads exceeding either the seasonal round trips or round trips for the entire active bear year are classified as "open roads" even though they may be closed to the general public, as research has shown that this level of road use is likely to displace grizzly bears. Increased use of roads, including restricted roads, for timber hauling is likely to displace grizzly bears, as grizzly bears, which may have become acclimated to the existing use conditions on the roads, may be displaced by the altered timing and use of the roads. Research has demonstrated that even low levels of use on restricted roads can affect grizzly bear behavior, resulting in decreased habitat use (Mace et al. 1996, Metzgar 1998, Mace et al. 1999).

For the 2005 reporting year, the OMRD level in the Myrtle BMU was reported to be at 32%. However, as described previously, a portion of Trail 256 was converted from motorized to non-motorized status reducing the OMRD by 1%, such that OMRD within the BMU currently equates to 31%. Use of either FR 1309 or 2405 will increase the OMRD within the BMU by 1%, which would increase the OMRD to 32%. Concurrent use of both roads for hauling will increase OMRD within the BMU to 33%, which is compliant with the standard for the BMU. Further, scientific information collected from research conducted on grizzly bears in the Selkirk Ecosystem suggests that grizzly bears in the SRZ can tolerate OMRDs greater than 1 mi/mi² comprising ≤ 33 percent of their home range (Wakkinen and Kasworm 1997). Thus, while grizzly bears may avoid areas with open roads, as long as open road densities greater than 1 mi/mi² comprise ≤ 33 percent of their home range (or BMU as it is used as a surrogate measure for grizzly bear home ranges and assessing conditions therein), such displacement should not result in adverse effects to grizzly bears.

Additionally, even though several treatment units are situated within the influence zones of roads (i.e., within 500 meters of the road), further displacement of grizzly bears outside of the roads' zones of influence may occur as a result of the timber harvesting activities. The displacement influence of the road is likely to be extended temporarily to an additional distance away from the road relative to the location, size, and duration of the timber harvest activity within the buffer. The disturbance effects of the timber harvest will be temporary, but depending on the experience of individual grizzly bears, the impact could result in long or short-term avoidance of the influence zone surrounding the harvest units.

As indicated previously, the proposed action includes helicopter logging within grizzly bear core habitat in the Myrtle BMU. Approximately 280 acres of the area to be helicopter logged within the BMU are in grizzly bear core habitat. In 2005, grizzly bear core habitat within this BMU was reported to comprise 58% of the BMU (Table 5). As noted previously, a portion of Trail 256 was converted to non-motorized status, which gained 1% in grizzly bear core habitat. Thus, core habitat currently comprises 59% of the BMU, which is 3% better than the minimum standard of 56%.

As described previously, per the IGBC definition, grizzly bear core habitat is primarily defined in terms of roads. Thus, as helicopter logging does not require the construction or use of roads, per the IGBC grizzly bear core habitat definition, it does not result in loss of grizzly bear core habitat for which a deduction in the grizzly bear core habitat calculations within BMUs is required.

Arguably, the IGBC probably did not define core habitat in terms of helicopter logging, because helicopter logging does not pose the same long-term displacement effects and increased mortality risk to grizzly bears as roads do. Helicopter logging is transitory and does not bring additional human use into grizzly bear habitat, whereas roads are generally longer term or permanent features on the landscape and facilitate human access into grizzly bear habitat. Helicopter logging may, however, result in short-term adverse impacts to grizzly bear core habitat because the ability of the area to function as grizzly bear core habitat is compromised, and grizzly bears are likely to be displaced from the area during the time the helicopter logging operations are on-going. Thus, while helicopter logging within grizzly bear core habitat may not necessarily require a deduction in core habitat (unlike road construction within grizzly bear core habitat, which does require a deduction in the core habitat calculations), the temporary adverse displacement effects to grizzly bears associated with helicopter logging within grizzly bear core habitat must be considered. Repeated helicopter flights less than 1,500 feet in altitude are considered to result in grizzly bear displacement on the ground (USFWS 2004b). As described previously, the nutritional demands of female bears with cubs is triple that of other bears, making their access to nutritional food sources and uninterrupted feeding essential during spring and fall (Jonkel 1982 In: Frederick 1991). Thus, similar to the potential displacement effects upon grizzly bears resulting from roads (Mattson et al. 1987 In: Frederick 1991, and Aune and Stivers 1985 In: Frederick 1991), the potential displacement effects associated with helicopter logging within grizzly bear core habitat, and especially spring grizzly bear habitat, can also influence indirect mortality risk by disrupting efficient foraging strategies resulting in nutritional stress, restricting reproduction and dispersal, and potentially reducing carrying capacity.

Similar to roads, which have a buffered zone of influence, helicopter logging activities have a zone of influence extending out from these activities in which displacement of grizzly bears is assumed likely due to the noise and activity associated with the helicopter logging activity. The zone of influence for helicopter logging is currently accepted to generally extend outward ½ mile from the helicopter logging activity. Buffering the helicopter logging units by ½ mile equates to approximately 1,615 acres of grizzly bear core habitat in the Myrtle BMU potentially being influenced by disturbance. The proposed helicopter treatment units will impact two separate blocks of grizzly bear core habitat in the Myrtle BMU. Units B1, B3, and B6 are situated in a

single block of grizzly bear core habitat in the Myrtle Creek drainage, while Unit G9 is situated in a separate block of grizzly bear core habitat in the Snow Creek drainage.

Treatment Unit G9, located in the lower portion of the Snow Creek drainage within a block of core comprising approximately 2,000 acres, will impact about 677 acres in the middle of the core block. The treatment area is on south-facing, dry forest types dominated by Douglas-fir and lodgepole pine, and often with strong representations of ponderosa pine and western larch. The area provides succulent forage early in the season and supports populations of wintering ungulates. However, potential forage species dry out and lose palatability fairly early in the season, even in shaded areas. Due to the relative unavailability of forage plants later in the season, grizzly bear use of the area is most likely uncommon outside the spring season. Thus the greatest potential for disturbance to grizzly bears utilizing the area is likely to be during the spring. While helicopter logging activities will not occur in this block during the spring, prescribed fire (underburning) ignition may occur during the spring grizzly bear season. However, if prescribed fires are implemented during the spring, they will only occur over a 1 to 2 consecutive day period (Lyndaker, pers. comm. 2007), limiting the potential impact upon grizzly bears foraging within the area. Given the relatively small size of the block (about three square miles) and its location on the landscape (mostly spring habitat), the mitigation measures, including the timing constraint discussed below, minimizes to the extent practicable the potential displacement effects to grizzly bears that may result from the implementation of project related activities.

The second core block in the Myrtle BMU, which will be impacted by treatment Units B1, B3, and B6, is located in the Myrtle Creek drainage and includes more than 75,000 acres of grizzly bear core that is contiguous with grizzly bear core habitat in the Ball-Trout, Long-Smith, and Blue-Grass BMUs of the SRZ, and includes the Selkirk Roadless Area. Although a small portion of this block extends to the east of the proposed harvest units along a ridge between Myrtle and Cascades Creeks, the core block primarily extends to the north, west, and south of the proposed treatment units. Approximately 940 acres of this core area will be impacted. The grizzly bear core habitat in the Myrtle Creek drainage is comprised of more mesic habitats containing western red cedar/mountain hemlock (*Thuja plicata/Tsuga heterophylla*) and grand fir (*Abies grandis*) dominated stands with a component of lodgepole pine and occasionally Douglas-fir. However, with the exception of Unit B1, these proposed units generally contain a dense canopy layer of small diameter (<8" dbh) trees that restrict wildlife movement and impede the growth of herbaceous vegetation. These stands may have value to grizzly bears as cover, but are likely limited in their usefulness as foraging habitat. Conversely, Unit B1 is highly variable in both tree size and species composition, and generally has a more open structure, particularly near the upper (north) end. This open canopy results in a denser shrub and herbaceous ground cover, including huckleberries at the upper elevations. Consequently, while spring is still a sensitive time period, this portion of Unit B1 may attract grizzly bears throughout the summer. The harvest timing restrictions (discussed below) minimizes to the extent practicable the potential disturbance to and displacement of grizzly bears that may utilize the area of core habitat within the treatment units. Additionally, the portion of the core block in the Myrtle Creek drainage on the south facing slope of the ridge between Myrtle and Cascade Creeks east of the proposed harvest units provides good spring habitat that is most likely utilized by grizzly bears in the spring. Further, the large size of the core block encompassing multiple drainages in several

BMUs (i.e., 75,000 acres) provides displacement habitat for bears whose use patterns are disrupted by summer logging activity.

Limiting the timing and duration of helicopter use within grizzly bear core habitat may reduce the potential for displacement of, and effects to, grizzly bears that may result from the harvest activities. Even though a seasonal grizzly bear habitat analysis has not been completed within the SRZ, currently spring grizzly bear habitat is generally assumed to be limited in distribution, abundance, and availability to grizzly bears. As such, it is particularly important to ensure areas providing spring grizzly bear habitat are free of disturbance, especially long-term (more than a couple of days), repeated disturbances [several entries over the course of a single season or multiple consecutive annual seasons (e.g., entering the same core block of spring grizzly bear habitat over two or more consecutive years)]. Recognizing the importance of limiting disturbance within spring grizzly bear habitat, the proposed action stipulates that helicopter logging within grizzly bear core habitat (treatment Units B1, B3, B6 & G9) will not occur during the grizzly bear “spring” season (April 1 – June 14). Due to helicopter logging logistics as well as other requirements, timber harvesting activities within the grizzly bear core habitat in the Myrtle BMU will require multiple years for completion of all activities. However, the proposed action requires that timber harvest, grapple piling and slashing in Units B1, B3, B6, and G9 be completed in four consecutive calendar years. It may be logistically feasible to compress the helicopter logging activities within grizzly bear core habitat into three years, however, to do so would violate the IPNF’s 1987 Land and Resource Management Plan Standard 4c. Standard 4c requires the IPNF to “Strive for at least 70 square miles of security ...” To compensate for the length of time grizzly bear core habitat within the Myrtle BMU will be affected by project related activities, the proposed action further requires helicopter yarding of Units B1, B3, and B6 not to occur during the same year as helicopter yarding of Unit G9. Thus, while grizzly bear core habitat within the Myrtle BMU will be impacted by disturbance for four years, the two separate blocks of grizzly bear core habitat will only be affected by helicopter logging activities for two consecutive years each. As discussed above, Units B1, B3, and B6 are situated in a block of grizzly bear core habitat in the Myrtle Creek drainage, while Unit G9 is situated in a separate block of grizzly bear core habitat in the Snow Creek drainage. The two separate blocks of grizzly bear core habitat are separated by a major ridgeline between the Snow and Myrtle Creek drainages.

The remaining acres (i.e., approximately 960 acres) of grizzly bear habitat proposed for treatment within the Myrtle BMU are located outside of grizzly bear core habitat (i.e., they are within 500 meters of a road) and will be harvested utilizing either ground-based, helicopter, or a combination of both logging methods. These “non-core” acres are, by definition, affected to some degree by human disturbance. However, the proposed action may represent an activity to which grizzly bears are not accustomed within the area, and thus, may result in additional displacement of grizzly bears. The disturbance effects of the timber harvest are likely to be temporary, but depending on the experience of individual grizzly bears, the impact could result in long or short-term avoidance of the area harvested, including the influence zone surrounding the harvest units. The conservation measures, in conjunction with the type and availability of core habitat as discussed above, appropriately minimize, to the extent practicable, the potential magnitude and duration of adverse effects that may occur to grizzly bears in the Myrtle BMU as a result of project implementation.

As indicated previously, the proposed action will occur in a portion of the PROA. The PROA is an area of delineated grizzly bear occupancy outside of but adjacent to the SRZ. Both ground-based and helicopter logging treatments are proposed to occur within the PROA. However, with the exception of helicopter Unit G2, the other units are within 500 meters of open roads. Even though grizzly bear core habitat has not been identified and is not managed for outside of recovery zones, because Unit G2 is in potential spring grizzly bear habitat and is outside the presumed influence zone of drivable roads, the proposed action will restrict harvest during the grizzly bear spring season in this unit as well. The proposed action will also reconstruct approximately ½ mile of closed road (FR 402C), temporarily raising the linear total road density in the PROA by 0.01 mile per square mile. However, there will be no change in the linear open road density, as the reconstructed portion of the road will not be open to the public, which is consistent with the Service's 2004 Access BO. Following implementation and post-harvest activities, this road would be returned to an undrivable condition.

In summary, implementation of the proposed project will not affect TMRD, but OMRD will slightly increase within the Myrtle BMU. The existing condition of the TMRD and the slight increase in OMRD levels within the BMU are not expected to adversely affect grizzly bears. Both TMRD and OMRD levels within the BMU will remain lower than the thresholds at which scientific research suggests may result in grizzly bear displacement. The temporary impacts to approximately 1,615 acres of grizzly bear core habitat stemming from helicopter logging and related activities compromise the functionality of grizzly bear core habitat and are likely to displace grizzly bears, at least during the time helicopter logging operations are ongoing, which is likely to result in adverse effects to grizzly bears. The temporary adverse effects stemming from implementation of the proposed project and impacts to grizzly bear core habitat are expected to begin with the initial intrusion into grizzly bear core habitat and continue until the cessation of all activities within grizzly bear core habitat, which may entail up to four consecutive years. The proposed action is expected to require 5 years for completion of all activities, but some of these activities (at least 1 year worth) are outside of grizzly bear core habitat, and are not expected to adversely affect grizzly bears.

IV. Cumulative Effects

We are currently unaware of specific non-federal projects proposed within the action area that would cumulatively affect grizzly bear. However, ongoing land management activities with the often associated road construction and management are reasonably certain to occur on lands within the action area. For example, Forest Capital owns substantial acreage within the action area, which they manage for timber production. Road construction and use is typically implemented to facilitate access for timber management. Thus, road construction and use associated with timber management, is likely to continue on Forest Capital lands within the action area. As stated previously, while Forest Capital has not entered into an agreement with the Service for grizzly bear management on its ownership within the SRZ, they have recognized the need to manage for grizzly bears within the SRZ by controlling public motorized access of their property, and closing their lands to spring and fall black bear hunting.

V. Conclusion

After reviewing the current status of the grizzly bear, environmental baseline, effects of the proposed action, and cumulative effects, it is the Service's biological opinion that the proposed action is not likely to jeopardize the continued existence of the grizzly bear within the SRZ and, by extension, the listed population in the conterminous United States. No critical habitat has been designated for this species, therefore, none will be affected.

We based our conclusions on the following:

- 1) TMRD will not increase within the Myrtle BMU or the action area.
- 2) While OMRD will slightly increase within the Myrtle BMU and action area during implementation of the project, they will remain below the Myrtle BMU OMRD standard, and will return to pre-project levels upon project completion.
- 3) Implementation of the proposed action will not result in a loss of grizzly bear core habitat, as defined by IGBC. Upon completion of the proposed action, the area will be unroaded and continue to function as grizzly bear core habitat.
- 4) Timing constraints restricting the implementation of helicopter logging activities within grizzly bear core spring habitat during the spring season minimizes the potential for the displacement of grizzly bears to result in long term avoidance of the impacted areas.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulations pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

I. Amount or Extent of Take

It is the Service's opinion that repeated point source disturbances, such as helicopter logging within grizzly bear core habitat, can result in incidental take of grizzly bears as it may compromise the functionality of the core habitat, at least during the time in which the helicopter

logging operations are on-going (Christensen and Madel 1982, USFWS 1993 and 2004b). It is the Service's opinion that 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.

Currently, the Service is unaware of scientific or commercial information that could be used to quantify the exact level of incidental take of grizzly bears as a result of such impacts to or degradation of their habitat, disturbance, or displacement. Reduced reproductive success of females as a result of displacement effects could include grizzly bear cub mortality and/or reabsorption of fetuses. However, this type of mortality usually cannot be documented. Grizzly bear offspring (cubs, sub-adults) also have naturally high mortality rates. Therefore, the anticipated level of incidental take of grizzly bears as a result of the implementation of the proposed action is numerically 'unquantifiable'. In these instances, we use the surrogate parameters addressing levels of grizzly bear core habitat within individual BMUs as measures of incidental take of grizzly bears.

Therefore, it is the Service's opinion that helicopter logging (including actual acres logged and buffered acres) of 1,615 acres of grizzly bear core habitat in the Myrtle and Snow Creek drainages in the Myrtle BMU results in significant habitat modification or degradation, which causes actual injury to grizzly bears by significantly disrupting normal behavioral patterns, including breeding, feeding, or sheltering.

However, the Service anticipates that the level of incidental take of grizzly bears as a result of project implementation will be low. We expect this incidental take to occur as impairment of the normal breeding and feeding behavior of grizzly bears, which would impair potential levels of reproductive success. We do not expect adult or subadult grizzly bear mortality as a result of the displacement.

It is also the Service's opinion that, within the Recovery Zone, decreasing core habitat below the existing conditions (i.e., a loss of grizzly bear core habitat), or increasing TMRD or OMRD above the standards, or impacting greater than 1,615 acres of grizzly bear core habitat due to helicopter logging operations will exceed the amount of incidental take analyzed and exempted by this biological opinion.

II. Effect of Take

In the accompanying biological opinion, the Service determined that this level of anticipated incidental take is not likely to result in jeopardy to the grizzly bear. Some low level of indirect incidental take may occur as a result of displacement of grizzly bears from essential habitat. Such take is unquantifiable. In cases where the amount of take is unquantifiable, the Service uses surrogate parameters to measure the impact of the take on the species, and provide the threshold at which the anticipated level of incidental take is likely to occur. Based on research related to the displacement of grizzly bears from roads and roaded habitat (Mace and Manley 1993, Mace et al. 1996, Wakkinen and Kasworm 1997), the Service uses surrogate measures of

core habitat, OMRD, and TMRD to establish the levels of incidental take, and the thresholds at which incidental take is likely to occur. Currently, several BMUs within the SRZ contain substantially more core habitat than research indicates is required to support an average adult female grizzly bear home range. Similarly, several BMUs within the SRZ contain substantially lower OMRDs and TMRDs than research indicates the average adult female grizzly bear can tolerate within her home range. Given the current grizzly bear population levels and distribution, BMUs providing conditions substantially better than the research parameters offer ample opportunities and areas for grizzly bear displacement, moderating the potential displacement effects of the proposed action within the Myrtle BMU.

III. Reasonable and Prudent Measures

The Service believes no reasonable and prudent measures are necessary to further reduce the incidental take of grizzly bears as a result of this action for the following reasons. To minimize impacts to grizzly bears, the IPNF has designed the Myrtle Creek HFRA project to be completed in the shortest time frame that is practicably possible. The IPNF designed the implementation of this project to: minimize the potential for displacement of grizzly bears from grizzly bear core habitat, especially spring grizzly bear habitat; and to occur in as compressed a timeframe as is practicably possible. Upon completion of the project, core habitat and OMRD levels will return to pre-project conditions. Therefore, no additional reasonable and prudent measures are identified to further reduce the potential for incidental take of grizzly bears. In order to be exempt from the prohibitions of section 9 of the Act, the IPNF must implement the project as described in the wildlife and fisheries BAs dated December 15, 2006, and the additional information dated February 26, 2007.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends that the IPNF:

1. Develop, in coordination with the Service and the IGBC, a strategy addressing point source disturbances (e.g., helicopter logging, mining, etc.).
2. Work cooperatively with the Service to identify linkage areas that may be important in providing landscape connectivity within and between geographic areas, across all land ownerships for grizzly bears, Canada lynx, and other listed and sensitive species.
3. Provide for landscape connectivity within linkage areas by participating in the development and implementation of a management plan to protect and restore habitat connectivity within these areas on federal lands.

4. Identify and prioritize roads for reclamation or seasonal restrictions within watersheds exceeding $> 2 \text{ mi/mi}^2$ of open road density to improve habitat quality and/or security for grizzly bears, Canada lynx, and bull trout, as well as other listed and non-listed fish and wildlife species.

REINITIATION NOTICE

This concludes formal consultation on the implementation of the IPNF's Myrtle Creek HFRA project. As provided in 50 CFR, Part 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

LITERATURE CITED

- Aune, K. and T. Stivers. 1985. Ecological Studies of the Grizzly Bear in the Pine Butte Preserve. Montana Dept. of Fish, Wildlife and Parks. 154pp.
- Aune, K. and W. Kasworm. 1989. Final Report East Front Grizzly Bear Study. Montana Department of Fish, Wildlife, and Parks. Helena, Montana. 332pp.
- Christensen, A.G., and M.J. Madel. 1982. Cumulative effects analysis process, grizzly bear habitat component mapping. Kootenai National Forest.
- Frederick, G. P. 1991. Effects of Forest Roads on Grizzly Bears, Elk, and Gray Wolves: A Literature Review. USDA, Forest Service. Kootenai National Forest. Libby, Montana. 53pp.
- Interagency Grizzly Bear Committee. 1987. Grizzly bear compendium. National Wildlife Federation. Washington, D.C. 540 pp.
- _____. 1994. Taskforce Report: Grizzly bear/motorized access management. Unpubl. Report. 6 pp.
- _____. 1998a. Revised taskforce report: Grizzly bear/motorized access management. Unpubl. Report. 6 pp.
- Kasworm, W.F. and T. Manley. 1988. Grizzly Bear and Black Bear Ecology in the Cabinet Mountains of Northwest Montana. Mont. Dept. of Fish, Wildlife, and Parks. Helena, MT 122pp.
- Kasworm, W.F., H. Carriles, T.G. Radandt, and C. Servheen. 2005. Cabinet-Yaak grizzly bear recovery area 2004 research and monitoring progress report. U.S. Fish and Wildlife Service Document, Missoula, Montana. 69pp.
- Mace, R.D. and T.L. Manley. 1993. South Fork Flathead River Grizzly Bear Project. Progress Report for 1992. Montana Department of Fish, Wildlife and Parks, Kalispell, Montana.
- Mace, R.D., J.S. Waller, T.L. Manley, L.J. Lyon, and H. Zuuring. 1996. Relationships Among Grizzly Bears, Roads, and Habitat in the Swan Mountains, Montana. *J. Applied Ecology*. 33:1395-1404.
- Mace, R.D., J.S. Waller, T.L. Manley, K. Ake, and W.T. Wittinger. 1999. Landscape Evaluation of Grizzly Bear Habitat in Western Montana. *Conserv. Bio.* 13: 367-377.
- McLellan, B.N., and R.D. Mace. 1985. Behavior of Grizzly Bears in Response to Roads, Seismic Activity, and People. Preliminary Rep., Can. Border Grizzly Proj., Cranbrook, British Columbia 53pp.

- McLellan, B.N., and D.M. Shackleton. 1988. Grizzly bears and resource-extraction industries: effects of roads on behavior, habitat use and demography. *J. Appl. Ecol.* 25:451-460.
- McLellan, B.N., F.W. Hovey, R.D. Mace, J.G. Woods, D.W. Carney, M.L. Gibeau, W.L. Wakkinen and W.F. Kasworm. 1999. Rates and causes of grizzly bear mortality in the interior mountains of British Columbia, Alberta, Montana, Washington, and Idaho. *Journal of Wildlife Management* 63(3):911-920.
- Metzgar, L.H. 1998. A Review of: Rationale and Choices Made in the Review and Development of an Access Direction Proposal for the NCDE Grizzly Bear Ecosystem. Missoula, MT 22pp.
- Ruediger, B., J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wenger, A. Williamson. 2000. Canada lynx conservation assessment and strategy. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI Park Service. Forest Service Publication #R1-00-53, Missoula, Montana. 199pp.
- U.S. Department of the Interior. 1975. Endangered and threatened wildlife and plants; determination of threatened status for the grizzly bear; final rule. *Federal Register* 40: 31736.
- _____. 1993. Endangered and threatened wildlife and plants; finding on petitions to change the status of grizzly bear populations in the Cabinet-Yaak area of Montana and the Selkirk Mountains of Idaho and Washington from threatened to Endangered. U.S. Fish and Wildlife Service. February 12, 1993. *Federal Register* 58(28): 8250-8251.
- _____. 1999. Endangered and threatened wildlife and plants; 12-month finding on petitions to change the status of grizzly bear populations in the Selkirk area in Idaho and Washington and the Cabinet-Yaak area of Montana and Idaho from threatened to endangered. U.S. Fish and Wildlife Service. *Federal Register* 64: 26725-26733.
- _____. 2005. Endangered and threatened wildlife and plants; designating the Greater Yellowstone Ecosystem population of grizzly bears as a distinct population segment; removing the Yellowstone distinct population segment of grizzly bears from the federal list of endangered and threatened wildlife; proposed rule. *Federal Register* 70:69854-69884.
- U.S. Fish and Wildlife Service. 1992. Finding on petitions to change the status of the grizzly bear populations in the Yellowstone and Northern Continental Divide Ecosystems. *Federal Register* 57:14372.
- _____. 1993. Grizzly bear recovery plan. Missoula, Montana. 181 pp.

- _____. 2000. Final environmental impact statement on grizzly bear recovery in the Bitterroot Ecosystem. Missoula, MT.
- _____. 2001. Biological opinion for the effects to the threatened bull trout (*Salvelinus confluentus*), the threatened grizzly bear (*Ursus arctos horribilis*), the threatened Canada lynx (*Lynx canadensis*), and the endangered gray wolf (*Canis lupus*) from the reconstruction of US Highway 93 from Evaro to Polson, in Missoula and Lake Counties, Montana (Project F 5-1(9)6). Helena Field Office, Helena, Montana. 87pp.
- _____. 2002. Biological opinion on the effects to grizzly bear, Canada lynx, and gray wolf from the Idaho Transportation Department, Junction State Highway-1, Northeast Boundary County Project. Spokane, Washington. 43pp.
- _____. 2004a. Biological opinion on the proposed Forest Plan amendments for motorized access management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones for the Kootenai, Idaho Panhandle, and Lolo National Forests; FWS Reference 1-9-02-F-148 (105.0000). Upper Columbia Fish and Wildlife Office, Spokane, Washington, and Montana Field Office, Kalispell, Montana. 163pp.
- _____. 2004b. Biological opinion on the effects of the Snow-Talon Fire Salvage Project on grizzly bears. Montana Field Office, Helena, Montana. 58pp.
- U.S. Forest Service. 1995. Inland Native Fish Strategy Environmental Assessment: Decision Notice and Finding of No Significant Impact. USDA Forest Service: Intermountain, Northern and Pacific Northwest Regions. 17pp.
- _____. 2003. Map of current grizzly bear distribution. Missoula, MT.
- _____. 2006a. Biological assessment, fisheries, Myrtle Healthy Forest Restoration Act Project. Bonners Ferry Ranger District, Idaho Panhandle National Forests, Bonners Ferry, Idaho. 17pp.
- _____. 2006b. Biological assessment, wildlife, Myrtle Healthy Forest Restoration Act Project. Bonners Ferry Ranger District, Idaho Panhandle National Forests, Bonners Ferry, Idaho. 17pp.
- Wakkinen, W.L., and B.K. Johnson. 2006. Selkirk Ecosystem Project. Idaho Department of Fish and Game. Unpubl. Report. 26pp.
- Wakkinen, W.L., and W.F. Kasworm. 1997. Grizzly bear and road density relationships in the Selkirk and Cabinet-Yaak Recovery Zones. Service and IDFG. Unpubl. Report. 31 pp.
- _____. 2004. Demographics and population trends of grizzly bears in the Cabinet-Yaak and Selkirk Ecosystems of British Columbia, Idaho, Montana, and Washington. *Ursus* 15: 65-74.