



United States
Department of
Agriculture

Forest
Service

October 2012



Environmental Assessment

Brundage Mountain Resort Cat-Ski Outfitter and Guide Permit Boundary Expansion

New Meadows Ranger District
Payette National Forest
Adams County, Idaho



For Information Contact: [Jane Cropp](mailto:jcropp@fs.fed.us)

800 West Lakeside Avenue, McCall, ID 83638

(208)634-0757

jcropp@fs.fed.us

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Table of Contents

Contents

Summary	i
1. Purpose and Needs for Action	1
1.1 Introduction	1
1.2 Document Structure	1
1.3 Background	1
1.4 Purpose and Need for Action	1
1.5 Proposed Action	2
1.6 Decision Framework	3
1.7 Public Involvement	3
1.8 Issues	3
1.9 Consistency with Laws, Regulation and Policy	4
1.9.2 Other Regulations and Policy	5
American Antiquities Act of 1906	5
Archaeological Resources Protection Act of 1979 (ARPA)	5
Clean Air Act, as amended in 1990	5
Clean Water Act, as amended in 1977 and 1982	5
Endangered Species Act of 1973, as amended	5
Executive Order 11990	6
Executive Order 11988	6
Executive Order 12875	6
Executive Order 12898 – Environmental Justice	6
Executive Order 13007	6
Executive Order 13186	6
Idaho Roadless Rule	7
Migratory Bird Treaty Act of 1918	7
National Environmental Policy Act of 1969, as amended	7
National Forest Management Act of 1976	7
National Historic Preservation Act of 1966, as Amended	8
2.0 Alternatives, including the Proposed Action	8
2.1 Alternative 1 - No Action	8
2.2 Alternative 2 - Proposed Action	8
2.3 Mitigation Measures	9
Monitoring	10
2.4 Comparison of Alternatives	11
3.0 Affected Environment and Environmental Consequences	12
3.1 Introduction	12
3.2 Scenic Environment, Recreation and the Recreation Opportunity Spectrum (ROS)	12
3.2.1 – Analysis Area	12
3.2.2 – Existing Condition and Affected Environment	12
3.2.3 – Environmental Consequences – Direct and Indirect Effects	14
3.2.4 - Cumulative Effects	17

3.3 - Inventoried Roadless Areas	17
Cumulative Effects.....	17
3.4 - Botany.....	18
Cumulative Effects.....	18
3.5 Watershed.....	18
3.5.3 Cumulative Effects.....	19
Forest Plan Consistency.....	20
3.6 Fisheries	20
3.6.1 – Analysis Area.....	20
3.6.2 – Existing Condition and Affected Environment.....	21
3.6.3 – Environmental Consequences – Direct and Indirect Effects	24
3.6.4 - Cumulative Effects	26
Forest Plan Consistency.....	26
3.7 Wildlife	26
3.7.1 – Background	26
Species Considered and Evaluated	28
3.7.2 – Existing Condition and Affected Environment.....	30
<i>Habitat Family 2 – Broad Elevation Old Forest</i>	<i>30</i>
3.7.3 – Environmental Consequences – Direct and Indirect Effects	35
<i>Habitat Family 2 – Broad Elevation Old Forest</i>	<i>35</i>
Forest Plan Consistency.....	40
3.8 Project Record.....	40
3.9 Consultation and Coordination	41
3.10 References	42

SUMMARY

The Payette National Forest proposes to amend the existing outfitter and guide Special Use Permit issued to Brundage Mountain Resort (BMR) to include an additional 227 acres of land between Six Mile Creek and Six Mile Ridge for Cat-Skiing opportunities. Included in the amendment would be authorizations of 2.6 miles of Sno-cat routes to access the new terrain. BMR would abandon 3.2 miles of existing Sno-cat route, so there would be a net reduction of 0.6 miles of Sno-cat routes with this proposal. The project area is located in the Granite Mountain area of the New Meadows Ranger District. The Special Use Permit for Cat-Skiing is administered by the McCall District Ranger, on the Payette National Forest, Idaho. This action is needed, to respond to a request from BMR to provide skiers using the Cat-Ski program north facing terrain that historically has not been utilized by snowmobilers.

The Forest is analyzing only the No Action and Proposed Action alternatives. No issues were generated from the scoping comment period that caused the development of any additional alternatives. The Proposed Action was modified slightly to take into account several comments received from the public. Those modifications are discussed in detail below.

Based upon the effects of the alternatives, the McCall District Ranger, the responsible official, will decide whether to approve adding additional acreage, and how much acreage, in the Six Mile Ridge area, along with the necessary Sno-cat over-snow routes to access the terrain, to the current outfitting and guiding permit for Cat-Skiing for BMR.

1. PURPOSE AND NEEDS FOR ACTION

1.1 INTRODUCTION

1.2 Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Payette National Forest Supervisor's Office in McCall, Idaho.

1.3 Background

In 1994 the PNF completed an EA and issued a Decision Notice and Finding of No significant Impact for the Cat-Ski proposal from BMR. In 2006, the Forest reauthorized the permit for an additional 10 years (until 4/2016) with a Decision Memo. The existing Special Use Permit (SUP) authorizes outfitting and guiding services on approximately 17,685 acres. Included in the permit is the authorization of Sno-cat routes to transport customers via Sno-Cats to the skiable terrain. These routes are constructed annually over-snow each snow season.

Over the past five years the Brundage Cat-Ski program has served between 400 – 625 clients per year. Numbers increase and decrease depending on the weather and trips have had to be cancelled in years where snow does not fall on a regular basis and snowmobiles out-compete the skiers for skiable terrain. The 17,685 acres included in the Cat-Ski permit are not exclusive use. The majority of the terrain under permit is shared with motorized and non-motorized over-snow users.

1.4 Purpose and Need for Action

The purpose of the proposed action is to authorize the expansion of the skiable terrain offered to skiers using the Cat-Ski program and provide them an opportunity to ski ungroomed terrain in areas well removed from the developed ski area. This action is needed to respond to a proposal from BMR to provide skiers using the Cat-Ski program north facing terrain that historically has not competed with snowmobile use.

The expansion would provide catskiers with significantly more north facing terrain. With the change in weather patterns over the past 6 to 10 years, and the competition for powder between the snowmobilers and catskiers in the permitted area open to both motorized and non-motorized recreationist, use has increased. The program relies heavily on the limited amount of north facing terrain that exists in the current permit to make it through until the next storm cycle hits bringing additional snow. The northern

aspects of the proposed Six Mile Ridge area turn to crust last and will add to the steeper terrain for expert skiers. This terrain is also in closer proximity to BMR, minimizing travel time. Access to similar terrain to the north is also used extensively by snowmobilers and is much further away from the resort.

The BMR Cat-Ski operation has been limited in the number and frequency of guest/trips primarily due to inadequate or adverse snow pack conditions for snow road construction, and/or quality and quantity of snow condition for skiing. While the existing permit area is large, not all of the 17,685 acres are useable on a regular basis due to snow depth, competition with snowmobile use, sun exposure, physical features such as slopes that are not steep enough, slopes that are too steep, wind and access problems. The acres gained under this proposal would greatly add to the useable acres for skiing for the Cat-Ski program. The greatest negative impact to the over-all program has been the loss of ski terrain to heavy snowmobile use on areas well suited for powder skiing.

The area proposed for the boundary expansion would continue to be open to both motorized and non-motorized use and is not set aside exclusively for BMR.

1.5 Proposed Action

The modified Proposed Action would amend the existing outfitter and guide SUP issued to BMR to include an additional 227 acres of land between Six Mile Creek and Six Mile Ridge (see Appendix A – Map #1) for Cat-Skiing opportunities. The new terrain to be added to the existing SUP would continue to be open to both motorized and non-motorized use. Included in the amendment would be authorization of 2.6 miles of Sno-cat route to access the Six Mile terrain. The Six Mile ridge area would be a “shared use” area, open to snowmobiling and to the BMR Cat-skiing Program. BMR has identified approximately 3.2 miles of Sno-cat routes to abandon within the existing authorized over-snow route system so there would be a net reduction of 0.6 miles of authorized Sno-cat routes.

The project area lies within Management Areas (MA) 5 (Middle Little Salmon River) and MA6 (Goose Creek/Hazard Creek), with the entire boundary expansion in MA 5, and the already permitted 17,685 acres in both MA 5 and MA 6. These MAs are discussed on pages III-152 to III-176 in the Forest Plan. The proposed area expansion falls within Management Prescription Category 4.1a (Undeveloped Recreation). The existing BMR Cat-Skiing Outfitter and Guide permitted area is within the Patrick Butte Inventoried Roadless Area (IRA). The 227 acres of expanded boundary request would also fall within the Patrick Butte IRA.

This proposal would amend the existing permit. No other changes are proposed to the existing authorization. The McCall District Ranger administers the existing BMR SUP and is the responsible official for this SUP amendment. The amendment would be added to the permit upon completion of this environmental analysis.

The Proposed Action was modified in response to comments during scoping. The boundary expansion request was made smaller and adjusted to the west to remove any use by BMR of the groomed snowmobile route that connects Wallace parking lot with the Goose Lake area. The proposed over-snow Sno-cat route to access the top of Six Mile Ridge would be constructed in open terrain with few trees to block the visibility of the

Sno-cat to snowmobilers. This was done to avert any safety concerns regarding visibility for snowmobilers with the Sno-cat. BMR will also relinquish 473 acres from their existing Cat-skiing Outfitter and Guide permit to minimize the increase of area permitted for this cat-skiing opportunity. The 473 acres of terrain located in the northeastern corner of the existing permit was seldom utilized for skiing by the BMR Cat-skiing program because it was difficult for the Sno-cat to access this terrain.

1.6 Decision Framework

Given the purpose and need, the deciding official (the McCall District Ranger) reviews the proposed action and the other alternatives in order to make the following decisions:

If able to make a Finding of No Significant Impact (FONSI) based upon the effects of the alternatives, the McCall District Ranger will decide:

- Whether to approve adding additional acreage, and how much acreage, in the Six Mile Ridge area, along with the necessary Sno-cat over-snow routes to access the terrain, to BMR, and if so,
- What mitigation measures, if any, may be necessary.

1.7 Public Involvement

The proposal was listed in the Schedule of Proposed Actions beginning in November 2011, and was posted to the Payette web page. On January 12, 2012 the Payette National Forest sent out a Project Proposed Action to over 160 individuals, organizations, tribes, local governments and state agencies. A legal notice requesting comments appeared in the *Idaho Statesman*, Boise, Idaho and in the *Star News*, McCall Idaho on January 12, 2012 requesting comments. The project information was shared with the Shoshone-Paiute Tribes of Duck Valley, the Nez Perce Tribes, and the Shoshone Bannock Tribes.

As a result of scoping the Forest received 17 comments from 17 individuals or organizations. The Proposed Action was modified to take into account several of the comments received.

Using the comments from the public, other agencies, and the Tribes, the interdisciplinary team modified the Proposed Action that is analyzed with this Environmental Assessment.

1.8 Issues

The Payette National Forest conducted scoping for this project from January 12 – February 13, 2012 and received 17 comment letters.

No major issues were identified. Several items of concern were raised in the comment letters. One comment stated that BMR had sufficient acres in their existing SUP, and that additional acres were not warranted. To address that concern BMR proposed to reduce acreage in their existing SUP boundary by 473 acres, which would result in a net gain of only 227 acres instead of the original request of 700 acres. Another comment revolved around the Sno-cat using the groomed snowmobile route that connects Wallace parking lot with the Goose Lake area. Use of this route was eliminated from the proposal to

address that comment. The environmental analysis will proceed to analyze the No Action and Proposed Action alternatives. No other alternatives were developed.

1.9 Consistency with Laws, Regulation and Policy

This action responds to a request from BMR and conforms to the goals and objectives outlined in the Payette National Forest Plan.

1.9.1 Payette National Forest LRMP Direction (2003):

The following section lists the pertinent goals, objectives, standards and guidelines in the 2003 Payette LRMP pertaining to this Proposed Action. This proposal conforms to the management strategy outlined in the PNF Forest LMP. The desired future condition for winter recreation as stated in the PNF plan is to provide diverse winter dispersed recreation opportunities while protecting resource values.

Goals:

REGO03: Address current and emerging recreation conflicts, while maintaining recreation opportunities when possible.

REOB06: Provide an array of winter recreation experiences, while mitigating conflicts between motorized and non-motorized use and wintering wildlife.

Objectives:

REOB16: Foster and strengthen partnerships between public and private sectors to effectively and efficiently manage recreation and tourism facilities.

REOB25: Provide opportunities for backcountry winter recreation in areas without wintering wildlife conflicts.

Standards:

TEST34: Allow no net increase in groomed or designed over-the-snow routes or play areas, outside of baseline areas of consistent snow compaction, by Lynx Analysis Units (LAU) or in combination with immediately adjacent LAUs unless the Biological Assessment demonstrates the grooming or designation serves to consolidate use and improve lynx habitat. This does not apply within permitted ski area boundaries, to winter logging, and access to private inholdings. Also, permits, authorizations or agreements could expand into baseline routes and baseline areas of existing snow compaction, and grooming could expand to routes of existing snow compaction and routes that have been designated but not groomed in the past and still comply with this standard.

SWST10: Trees or snags that are felled within RCAs must be left unless determined not to be necessary for achieving soil, water, riparian and aquatic desired conditions. Felled trees or snags left in RCAs shall be left intact unless resource protection (e.g., the risk of insect infestation is unacceptable) or public safety requires bucking them into smaller pieces.

Guidelines:

REGU27: Winter recreation opportunities should be managed to provide for user safety and to minimize user conflicts. Winter recreation management should recognize that

some activities are not compatible in the same locations and should be separated when needed to maintain user safety and quality recreation experiences.

REGU28: When resolving conflicts between winter recreation user groups, appropriate consideration and protection should be given to capital investments such as groomed and/or designated trails.

No Forest Plan amendments would be required to implement the proposed action.

1.9.2 Other Regulations and Policy

American Antiquities Act of 1906

This Act makes it illegal to “...appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated...”

Archaeological Resources Protection Act of 1979 (ARPA)

The purpose of ARPA is to protect irreplaceable archaeological resources on federal and Indian lands.

Cultural resource surveys have been completed for the project area. All cultural resources would be avoided during project implementation, and any new sites identified would be protected.

Clean Air Act, as amended in 1990

The purposes of this Act are “...to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population; to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; to provide technical and financial assistance to State and local governments in connection with the development and execution of their air pollution prevention and control programs; and to encourage and assist the development and operation of regional air pollution prevention and control programs.”

Clean Water Act, as amended in 1977 and 1982

The primary objective of this Act is to restore and maintain the integrity of the nation’s waters. This objective translates into two fundamental national goals: (1) eliminate the discharge of pollutants into the nation’s waters; and (2) achieve water quality levels that are fishable and swimmable. This Act establishes a non-degradation policy for all federally proposed projects.

Endangered Species Act of 1973, as amended

The purposes of this Act are to “...provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.” The Act also states “It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.” The Endangered Species Act (ESA) is addressed under the Botany, Fish, and Wildlife sections under Environmental Consequences.

Executive Order 11990

This order provides direction to federal agencies to protect the nation's wetlands when undertaking all activities.

Executive Order 11988

Executive Order 11988 requires that proposed activities must not increase flood hazards and must preserve the resource benefit of floodplains (the ability to dissipate flood flows and moderate flood peaks).

Executive Order 12875

Executive Order 12875 clarifies government-to-government relations with American Indian governments.

In accordance with this order, letters describing the proposed action and requesting comments and concerns were sent to the Tribal Chairmen of the Nez Perce, Shoshone-Bannock, and hand delivered to the Shoshone-Paiute tribes. Consultation with the Nez Perce tribe was initiated in January 2012. Representatives of the Forest Service also presented the proposed action to Shoshone-Paiute tribal leaders during Wings and Roots Program (government-to-government consultation) meetings on December 8, 2011 and on June 14, 2012.

Executive Order 12898 – Environmental Justice

Executive Order 12898 directs each federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The President also signed a memorandum emphasizing the need to consider these types of effects during NEPA analysis. On March 24, 1995, the Department of Agriculture completed an implementation strategy for the executive order. Where Forest Service proposals have the potential to adversely affect minority or low-income populations disproportionately, effects must be considered and disclosed (and mitigated to the degree possible) through NEPA analysis and documentation.

Executive Order 13007

Executive Order 13007 requires that Federal agencies must accommodate American Indian and Hawaiian access and ceremonial use of sacred sites, and must avoid adversely affecting the physical integrity of these sites.

The Forest Archeologist and the Tribes did not identify any sacred sites within the project area. If any sacred sites are identified during project implementation, they would be protected.

Executive Order 13186

Executive Order 13186 requires Federal Agencies to evaluate the effects of federal actions and agency plans on migratory birds, with emphasis on species of concern. There are no interagency determinations to be made for migratory birds as with federally listed species. This information is reviewed with the U.S. Fish and Wildlife Service but there is no mechanism in place for that agency to consult on project effects. This is addressed in the *Wildlife* section under Environmental Consequences.

Idaho Roadless Rule

In October 2008, the USDA adopted a state-specific, final rule establishing management direction for designating roadless areas in Idaho (36 CFR §294; 73 Federal Register 61456-61496). The final rule designates 250 Idaho Roadless Areas and establishes five management themes that provide prohibitions with exceptions or conditioned permissions governing road construction, timber cutting, and discretionary mineral development. Since the project area does not occur within or immediately adjacent to an IRA, no effects to any of the Idaho Roadless Areas would be anticipated with implementation of this project. This is addressed in the *Idaho Roadless* section under Environmental Consequences.

Migratory Bird Treaty Act of 1918

The purposes of this act are to establish an international framework for the protection and conservation of migratory birds (all wild species of ducks, geese, brants, coots, gallinules, rails, snipes, woodcocks, crows, and mourning and white-winged doves). The act makes it illegal, unless permitted by regulations to “pursue, hunt, take, capture, purchase, deliver for shipment, ship, cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in this Convention...for the protection of migratory birds...or any part, nest, or egg of any such bird” (16 USC 703). The original 1918 statute implemented the 1916 Convention between the United States and Great Britain (for Canada). Later amendments implemented treaties between the United States and Mexico, Japan, and the Soviet Union (now Russia). This is addressed in the *Wildlife* section under Environmental Consequences.

National Environmental Policy Act of 1969, as amended

The purposes of this act are “To declare a national policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality” (42 U.S.C. Sec. 4321). The law further states “...it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans” [42 U.S.C. Sec. 4331(a)]. The National Environmental Policy Act establishes the format and content requirements of environmental analysis and documentation, such as the BMR Cat-Ski Outfitter and Guide Permit Boundary Expansion Project.

National Forest Management Act of 1976

This act guides development and revision of National Forest Land Management Plans and has several sections ranging from required reporting the Secretary must submit annually to Congress to preparation requirements for timber sale contracts. There are several important sections within the act, including Section 1 (purpose and principles), Section 19 (fish and wildlife resource), Section 23 (water and soil resource), and Section 27 (management requirements).

National Historic Preservation Act of 1966, as Amended

This act requires federal agencies to consult with the State Historic Preservation Office (SHPO) and American Indian Tribes when non-renewable cultural resources, such as archaeological sites and historic structures, may be affected by a federal action. Section 106 of this act requires federal agencies to review the effects project proposals may have on cultural resources in the project area.

The Idaho SHPO has been consulted concerning proposed activities in the project area. The Payette National Forest has reached concurrence with SHPO, indicating a “No Effect” determination on cultural resources for this project.

Cultural resource surveys have been completed for the project area. All cultural resources would be avoided during project implementation. If any are identified, consultation would be re-initiated with the tribes, and any new sites identified would be protected.

2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This section describes and compares the alternatives considered for this project. It includes a description and map of each alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. The information used to compare the alternatives is based upon the environmental, social and economic effects of implementing each alternative.

2.1 Alternative 1 - No Action

Under the No Action alternative, current management plans would continue to guide management of the project area. The BMR boundary for the Cat-skiing Outfitter and Guide Special Use Permit would not be expanded to include the Six Mile Ridge area and no new Sno-cat routes would be built to accomplish project goals.

This alternative would not allow for expanded Cat-skiing opportunities to be approved at this time. Cat-skiing would continue in the 17,685 acres currently being used by BMR under terms of their existing permit. Snowmobile use and backcountry ski use would be allowed as shown on the existing PNF Winter Travel Map.

This alternative did not meet the Purpose and Need of providing additional north facing Cat-skiing desired by BMR for their backcountry skier clients. The increased demand for providing needed north facing terrain would not be met with this alternative.

A map displaying Alternative 1 can be found in Appendix A – Map 1.

2.2 Alternative 2 - Proposed Action

The Proposed Action was modified from scoping to the environmental assessment phase in response to comments during scoping. The proposed acreage requested by BMR in the Six Mile area is 700 acres, adjusted down from the original request of 931 acres. In addition, BMR would relinquish 473 acres of terrain in the upper northeast corner of their

permitted area from their existing Cat-skiing Outfitter and Guide Special Use Permit in response to comments from the public that their existing permit should contain enough acres to adequately serve their clientele.

There are 2.6 miles of proposed new over-snow Sno-cat routes. One route would access the Six Mile Ridge Area to drop off clients that would ski the north facing slopes down to Six Mile Creek. The second new over-snow Sno-cat route would be built adjacent to Six Mile Creek to enable the pick-up of clients coming off of Six Mile Ridge and to pick up clients coming off of the Blue Moon Bowl area (already a part of the existing SUP). The proposed Sno-cat access route to Six Mile Ridge was moved and adjusted to the west to remove any use of the groomed snowmobile route that connects Wallace parking lot with the Goose Lake area. The Sno-cat route to access the top of Six Mile Ridge would be constructed out in the open and be visible from a distance to avoid any safety concerns regarding visibility of the Sno-cat to snowmobilers and vice versus. BMR would abandon 3.2 miles of over-snow Sno-cat route within their existing boundaries to make up for the 2.6 mile of new route proposed. This would result in a net reduction of 0.6 miles of Sno-cat route authorized under their SUP.

This alternative would amend the existing outfitter and guide SUP issued to BMR to include the additional 227 acres of land between Six Mile Creek and Six Mile Ridge for Cat-Skiing opportunities. Included in the amendment would be authorization of 2.6 miles of Sno-cat route to access the added Six Mile terrain. A map displaying the Project Area and Proposed Action (Alternative 2) can be found in Appendix A – Map 1.

2.3 Mitigation Measures

In response to public comments on the proposal, mitigation measures were developed to ease some of the potential impacts the Proposed Action may cause.

In addition to Forest Plan standards and guidelines designed to mitigate impacts, the following measures would be used. These design features have been incorporated by the Forest Service to reduce or prevent undesirable effects resulting from proposed management activities.

Mitigation measures that would be applied to Alternative 2 include:

- The requirements for building new Cat-Ski routes will be managed the same as the existing Sno-cat routes specified in the BMR Cat-Ski Outfitter and Guide Special Use Permit's annual operating plan.
- Trees or snags that are felled within Six Mile Creek corridor must be left on the ground, unless they cross the existing Six Mile Creek Trail #172, where they would be cleared off the trail. Any trees cut to accommodate the new cat-routes along Trail 172 will be flush cut if cut prior to the winter season, or if cut in the winter, the summer following the first winter season of approval. Any flagging tied to mark the route along Six Mile Creek will be removed. Any bamboo used to mark any of the Sno-cat routes will be picked up at the end of the snow season.
- The Sno-cat will only cross Six Mile Creek at the two approved crossings (See Appendix B-Map 7).
- Avoid removal of white bark pine whenever possible.

Monitoring

The Outfitter and Guide Permit issued to BMR for Cat-Skiing will continue to be inspected annually as it is currently, and the proposed new Six Mile Ridge area expansion would be reviewed as a part of the Forest Service inspections conducted on this Special Use Permit.

In addition, actual use in the BMR Cat-Ski Outfitter and Guide operation will be reported yearly, by areas (for example: Granite, 76, Slab Butte, Six Mile) to track use of the various routes within the permitted area.

2.4 Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 1. Comparison of Alternatives by Resource.

	Alternative 1	Alternative 2
Recreation users - skiers	No improvement	Measurably improved
Recreation users - motorized	No effect	No measurable effect
Hydrology	No effect	No measurable effect
Fisheries	Maintain	Maintain
Cultural Resources	No effect	No effect
Botany	No effect	May impact individual plants of white bark pine
Wildlife		
Canada lynx	Maintain	May Affect, not likely to Adversely Affect
Wolverine	Maintain	May impact individuals or habitat but will not likely contribute to a trend toward Federal Listing or cause a loss of viability to the population or species
Northern Idaho Ground Squirrel	No effect	No effect
Pileated Woodpecker	Maintain	Maintain

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

The EA hereby incorporates by reference the entire Project Record (40 CFR 1502.21). This record contains detailed information that the specialists relied upon to reach their conclusions in the EA.

3.2 Scenic Environment, Recreation and the Recreation Opportunity Spectrum (ROS)

3.2.1 – Analysis Area

For direct, indirect, and cumulative effects, the affected area for recreation is the BMR Boundary Expansion Project Area and the immediate area surrounding the project area. Proposed activities such as boundary expansion, tree removal along the Six Mile Creek Sno-Cat route and Sno-Cat route construction could affect recreational opportunities within the watershed. These activities would have little to no effect on recreation outside of the project area or watershed.

3.2.2 – Existing Condition and Affected Environment

There is one non-motorized trail within the Project Area, Six Mile Creek/Goose Creek Trail #172. This trail is used during the non-snow months for hiking, mountain biking and horseback riding. The trail is 4.9 miles long, with approximately 2 miles being along Six Mile Creek. Since activities associated with the project proposal only occur during the winter months, that is the season the analysis will focus on.



Photo 1: View from the Six Mile Trail up the proposed Sno-Cat route to Six Mile Ridge

The customers of the BMR Cat-ski Program, snowmobilers, and back-country skiers are the predominant users of the project area during the winter months, when the Cat-ski Program is operating. Snowmobilers access the project area from two locations, from the groomed trail system from Wallace Lane parking lot in New Meadows, and via the Gordon Titus upper elevation parking lot off the Goose Lake road, just before you get to the Brundage Ski Resort.

The Project Area is within a 4.1a Management Prescription Category (MPC) – Undeveloped Recreation – Maintain Inventoried Roadless Areas (IRAs) (page III-85 Forest Plan). The MPC standard reads as follows: Management actions – including wildfire use, prescribed fire, and special use authorizations – must be designed and implemented in a manner that does not adversely compromise the area’s roadless and undeveloped character in the temporary, short term, and long term. “Adversely compromise” means an action that results in the reduction of roadless or undeveloped acres within any specific IRA. (See “Roadless Section” in this document).

BMR has held an outfitter and guide permit for Cat- skiing in the area since 1990. Changes were proposed several years later and an Environmental Assessment was completed and the permit boundary was changed with a Decision Notice signed in 1994, which enlarged the boundary to its current size of 17,685 acres. *Reference the 1994 DN and EA in the project record for additional information about the past permitting analysis.*

Adding an enticing and unique guest experience is the number one reason ski resorts offer backcountry Cat-ski tours. The main advantages of Cat-ski operations are

intangible benefits, such as guest satisfaction and public relations value. Equipment advances such as fat powder skies and the popularity of snowboards, coupled with lots of attention to backcountry experiences as portrayed in the skiing and snowboarding press, have enabled more recreationists to venture into the backcountry. Overall, a Cat-ski operation gives resorts the opportunity to greatly enhance the guest experience by offering a unique and exciting alternative to in-bounds skiing on trails.

Numbers of clients varies with the year's snow conditions, but has averaged between 400 – 600 clients per season. Fluctuations are apparent when snow conditions are down, and skiable terrain becomes less available.

In 2008 the PNF conducted a second round of Visitor Use Monitoring. The National Visitor Use Monitoring (NVUM) program provides reliable information about recreation visitors to national forest system managed lands at the national, regional and forest level. This NVUM data is useful for forest planning and decision making. Economic expenditure information can help forests show local communities the employment and income effects of tourism from forest visitors. In addition, the visitation estimates can be helpful in considering visitor capacity issues. The survey showed that downhill skiing was a primary activity for over 14% of the visits. The same survey showed that snowmobiling was a primary activity for 9% of the visits. (Reference - NVUM Monitoring Report, 2008).

Recreation Opportunity Spectrum (ROS)

The Forest Plan has identified Recreation Opportunity Spectrum (ROS) settings in the watershed that allow for many kinds of recreational activities and experiences. The identified recreation setting categories include Roded Modified (RM), Semi-Primitive Motorized (SPM), Roded Natural (RN) and Semi-Primitive Non Motorized (SPNM). ROS settings have been identified for both summer and winter recreation. *The ROS settings for the project area are entirely SPM for the Winter Inventory, and SPM and Roded Natural for the Summer Inventory. Maps for the ROS are located in the Recreation Project File.*

3.2.3 – Environmental Consequences – Direct and Indirect Effects

Alternative 1 – No Action

The No Action Alternative would have no known direct effects on scenic quality, snowmobile recreation use, back country ski use of the area or ROS within the watershed. Current management for recreation would continue as directed in the Forest Plan.

BMR Cat-ski clients would not be offered this north facing terrain in the Six Mile Ridge area for skiing, nor would they be able to fully utilize the Blue Moon Bowl, because there would not be an authorized Sno-cat route to pick clients up at the bottom of Six Mile slope.

Alternative 2 - Proposed Action

Effects to Scenic Quality: The only effect to scenic quality to address with the boundary expansion project is the 2.6 miles of Sno-Cat route that will be constructed each over-snow season, and the removal of approximately 28 trees to accommodate the Sno-Cat along the 2.6 miles of new proposed Sno-cat routes. The routes are not permanent, they are only constructed for several months each snow season, most commonly from January 1 – March 30th.

There will be no visible and/or noticeable effect to the area with the minimal tree cutting that would occur in a few areas to clear a path for the Sno-cat routes. Since the Sno-cat routes melt away in the spring, there would be no lasting change to the visuals in the area. The Visual Quality Objective (VQO) of Retention and Partial Retention from all sensitive roadways would be met. The visuals within the Project Area as viewed while driving along the Sno-cat routes and skiing and/or snowmobiling within the boundary expansion area will not be affected. Any trees cut or Sno-cat routes constructed are so minor and/or blend into the existing landscape so well that the area will continue to meet Retention VQO from anywhere within the Project Area.

Effects to recreational use of the area during the non-snow months: The Proposed Action could affect the summer use of the Six Mile Trail #172 if trees fallen to clear the route for the Sno-cat, fall on the trail tread. A mitigation measure has been added to address that concern. Other than that, there would be no effect to summer recreational use of the project area.

Effects to motorized users/snowmobilers: During scoping comments came in from snowmobilers' that suggested the BMR Sno-cat not utilize the groomed snowmobile route (That originates from the Wallace Trailhead), to access Six Mile Ridge for safety reasons. The groomed route passes through deeply treed and low visibility terrain, and it would be difficult for the Sno-cat to see snowmobilers, and for snowmobilers to get out of the groomed route track if the Sno-cat were coming down the route. Therefore, the Proposed Action was adjusted and the proposed Sno-cat route was moved as far west as the terrain allows to avoid the groomed snowmobile route. The western Sno-cat route would become the project area boundary. This adjustment decreased the Project Area from 931 acres to 700 acres. It also alleviated any foreseen competition between cat-skiers and snowmobilers in the flatter more open terrain immediately to the west of the groomed snowmobile route in question.

There is little to no snowmobile use in the skiable terrain on the north facing slopes off the Six Mile Ridge area. Therefore, there should be no conflict of use between snowmobilers and skiers in that area. There would be some shared use of the Six Mile ridge top. This ridge top is visited often by snowmobilers to see the views. Snowmobilers access the ridge top from the groomed route out of the Wallace snowmobile parking area and spread out to play and travel off trail in the flatter area just west of the groomed route as it nears the southern end of Goose Lake. The boundary for the BMR project area was adjusted to the west to avoid this play area. The Six Mile ridge top would be shared by both snowmobilers and the Sno-cat. The ridge top is wide open with no trees to block the view, so there should not be any safety issues related to skiers and snowmobilers not seeing each other. (Photos available in the project file).

Because of safety concerns with snowmobilers and the Sno-cat sharing the Sno-cat routes, snowmobilers would be able to cross the route up to Six Mile Ridge, but would not be allowed to ride up and down the route. Snowmobiles could continue to use the area and could ride adjacent to the Sno-cat route, and cross it at any time when it was safe to do so. The terrain offers many opportunities for the snowmobiler and Sno-cat drivers to see each other, so if snowmobiles do cross the Sno-cat route, they should be able to cross over and off the route to avoid the Sno-cat. Similarly, if the Sno-cat did see a snowmobiler using the route, they could slow down to allow for safe crossing by the snowmobiler. The proposed 700 acre expansion to the BMR Special Use Outfitter and Guide Permit would not be closed to snowmobiles. The area would be like the majority of the BMR permitted Outfitter and Guide SUP terrain – open to motorized use, non-motorized use, and Cat-ski outfitting and guiding.

Any known and/or perceived safety issues have been mitigated by altering the proposed action to remove use of the groomed route from the proposal, and bumping the requested terrain to the west, removing approximately 230 acres from the request.

Effects to Cat-Ski clients of BMR: Permitting the Six Mile Ridge area, and authorizing adding Sno-cat routes up to Six Mile Ridge and into Six Mile Creek drainage, would increase skiing opportunities for the clients of BMR Cat-Skiing program. This added north facing terrain in the Six Mile Ridge area would increase opportunities for skiing steep north facing terrain that is not likely to get used by snowmobilers because of the amount of rocks, cliffs and trees in the area. The Project Area has not historically been used by snowmobilers, so should remain snowmobile track-free for a long time. This would be of added benefit especially during low-snow periods when other portions of the permitted area are skied out, or tracked out by snowmobilers. The proposed Sno-cat route up Six Mile Creek is needed to pick up clients after they complete the runs off Ski Mile Ridge, the proposed new ski terrain.

Extending the Sno-cat route along the bottom of Six Mile Creek would allow for additional skiing terrain to be utilized in the Blue Moon Bowl area, already under permit to BMR, but inaccessible at the lower reaches because no “pick-up” Sno-Cat route for the clients skiing into the Six Mile Creek area is currently authorized.

Effects to Back-country skiers. Back-country skiers using the new portion of the project area could be affected with the introduction of BMR Sno-cats into the Six Mile Ridge area (The new 700 acres of project area). In the past, skiers have snowmobiled to the base of Six Mile Creek and skinned up to the ridge and skied down, or some may have snowmobiled up to the top of Six Mile Ridge, and skied down and had another rider pick them up and take them back up to retrieve their snowmobile. Back-country skiers will still be able to do that, but they will run across the possibility of being joined by up to 10 skiers per Cat-ski trip and one guide (11 people). This will increase competition for untracked powder snow for skiers in the Six Mile Ridge area. Past review of this area by BMR has found the area is seldom used by back-country skiers, so the effect would be small to negligible. The Sno-cat route that would be built up from Six Mile Creek may actually be used by back-country skiers to access the ridge by skinning up the Sno-cat route. This may actually increase use by back-country skiers in the Six Mile Ridge area because the access route up is made easier.

Effects to economics: Implementing the Proposed Action should have no effect to any revenue generated by the snowmobile community. Having this new terrain available should prove beneficial economically to BMR by making available additional terrain to provide to Cat-skiers, especially when other terrain becomes skied or tracked by snowmobiling. It may enable BMR to add trips, or at least not have to cancel scheduled trips due to inadequate snow conditions. This will also improve skier customer satisfaction by not having to cancel a scheduled and planned Cat-ski trip.

Effects to ROS: ROS classifications would remain unchanged with the proposed action.

3.2.4 - Cumulative Effects

The current outfitter and guide SUP authorizes the BMR Cat-skiing operation through 2016. BMR could potentially add a new ski lift in the Sargent's Area (within their existing resort Ski Area permit) in the next five years. This would expand use of the developed Ski Area portion of the mountain.

On January 15, 2012 thru March 31, 2012 a one-year special order went into effect that closed 4,730 acres to over-snow motorized use in the Granite Mountain area to provide a non-motorized area for back-country skiing. The area continued to be open to the BMR Cat-Ski program and all non-motorized winter recreationists.

The Payette National Forest Over-snow trail grooming Challenge Cost Share Agreement to Valley County and the Idaho Department of Parks and Recreation for Over-Snow trail grooming is currently under analysis for renewal for a period of five years.

Snowmobile use will likely continue to grow at a moderate pace so additional parking areas may be proposed within the next five years to accommodate use.

There are no known Cumulative effects to visuals with the Proposed Action for this project.

3.3 - Inventoried Roadless Areas

This Proposed action would have no effect on the roadless area character or roadless area attributes in the Patrick Butte IRA. The "Roadless Area" worksheet was completed to evaluate the effects of Project Activities on Roadless Area Characteristics. The worksheet is located in the recreation section of the Project File. Both the No Action and the Proposed Action are consistent with the Forest Plan's management direction for Roadless Areas.

No known irreversible commitments to Roadless Area Characteristics would result from any of the alternatives.

A detailed analysis on the effects to the Patrick Butte IRA is contained within the Recreation Special report in the Project File.

Cumulative Effects

On-going winter recreational activities, including permitted and un-permitted back-country skiing, BMR permitted Cat-Skiing, the snowmobile trail grooming program, and

snowmobiling cross country in designated open areas will continue to occur in the Patrick Butte IRA.

3.4 - Botany

No TE plant species occur within the project area. No effect should occur to any threatened or endangered plant species. The project may impact some individual plants of white bark pine, (*Pinus albicaulis*), a candidate and sensitive species, but will not trend the species toward Federal listing. No impact should occur to any other sensitive plants.

Rationale

The determination of may impact to white bark pine was made because photos within the project area and vegetation maps, show white bark pine trees and habitat within the project area and along the proposed Sno-cat route.

A detailed analysis is contained within the Botany and Plants Special report in the Project File.

Cumulative Effects

Activities considered for the cumulative effects analysis in this section include a variety of actions. They included: recreation activities, fire management, habitat improvement projects for wildlife and fish, and livestock grazing. These activities have occurred and will continue to occur within the project area that supports white bark pine.

These past and ongoing impacts to individual white bark pine in combination with potential direct impacts to individuals from proposed activities could further negatively impact individual trees within the project area. These impacts would be limited to those few individuals directly impacted by the project and may or may not overlap temporarily, and would likely not be measureable in intensity.

Cumulative effects would have minimal adverse effects to individual white bark pine and its habitat. The cumulative effects would not adversely affect the habitat or populations of sensitive species, and would not contribute to a trend toward Federal listing for any sensitive species.

3.5 Watershed

For direct and indirect effects the 7th level Hydrologic Unit of Six Mile Creek is used because this is the only place in the proposal that would construct stream snow crossings or remove vegetation. For cumulative effects the 5th level HU of Middle Little Salmon River subwatershed is used because Six Mile Creek is a tributary and any direct or indirect impacts upstream could cumulatively impact the larger drainage.

3.5.1 Alternative 1 - No Action

Under the no action alternative the BMR Cat-ski program would continue to operate under the direction of the 1994 Cat-Ski Proposal Environmental Analysis (EA) and the 2006 Categorical Exclusion, which reissued BMR's permit for Sno-cat skiing. Under the 1994 EA impacts to "Watershed Values" were evaluated to be minor (USDA, Payette National Forest. 1994). Existing Management requirements, mitigation and monitoring incorporated into the 1994 EA would continue.

3.5.2 Alternative 2 – Proposed Action

Chemical Contamination

The potential for chemical contamination to water quality through fuel or oil spills from the operation of Sno-cats for BMRs Cat-skiing operation was evaluated in the 1997 biological assessment of on-going and new actions (Olson, D. and D. C. Burns, 2007). The evaluation found that the potential for spills was negligible due to several factors. Fueling of Sno-cats takes place at the base area of the resort where there is fuel containment equipment on-site. In addition it is required mitigation for the Sno-cats to carry fuel containment equipment on board during operations in case there is a spill. The addition of Sno-cat routes and stream crossings would not increase the likelihood of spills because it would not change operational procedures or required mitigations.

Increase in stream temperature

Removal of vegetation near streams can have deleterious effects to stream temperature. If vegetation, such as trees, provides shading to the stream, removal can increase solar inputs to the stream thereby potentially raising the temperature of the water. (Poole, G. C. and C. H. Berman. 2000). It is unlikely that the removal of the trees identified by BMR would have any effect on stream temperature. Photos of the trees proposed for removal clearly shows that they are in areas that have thick tree cover and that their removal would only create a relatively narrow opening to allow passage of the snow cat, which should not alter the existing shading potential (See photographs in the project record). In addition it appears that the majority of shading to the creek is provided by local topographical relief. In this area Six Mile Creek runs from east to west swaying slightly to the north at the western most edge. The stream is contained in a relatively narrow canyon about 500 feet wide. Directly to the south and west the terrain rises steeply to an elevation about 1,200 feet above the stream.

3.5.3 Cumulative Effects

Chemical Contamination

Potential for chemical contamination to water quality through spills of fuel or oil would remain the same as the original analysis and is not thought to pose a threat due to operational practices and mitigation measures that currently are in effect in the snow cat program.

Stream Temperature

Because parts of the main stem of the Little Salmon River within the Middle Little Salmon River subwatershed have temperature regimes that do not meet state standards, increases to stream temperatures within the Six Mile drainage could have cumulative

impacts to stream temperatures with in the main channel. As analyzed in direct and indirect effects section the removal of selected trees do not pose a risk in elevating stream temperatures locally in the Six Mile drainage because: The trees proposed for removal are within areas that are densely vegetated and if the identified trees were removed it would not decrease the amount of shade provided by the remaining forest, and that the local topography likely plays a more important role in stream shading than the vegetation. Therefore there is no expected decrease in shade due to the proposed activity, nor are there any cumulative effect to the main stem of the Little Salmon.

Forest Plan Consistency

This project follows Forest Plan standards and guidelines designed to maintain or enhance Soil, Water, Riparian, and Aquatic (SWRA) resources. Since this project proposes to fall trees within a Riparian Conservation Area (RCA) forest plan standard SWST10 would be implemented. Felled trees would be left on the ground intact except where they crossed trail 172, where sections of the trees would be cut out to accommodate passage along the trail.

Irretrievable and Irreversible Commitments

This project will not result in an irreversible or irretrievable commitment of resources.

3.6 Fisheries

3.6.1 – Analysis Area

The fisheries effects analysis will be limited to the two proposed new Sno-cat routes (including the operation of Sno-cats on those routes) and the streams adjacent to those routes (Sixmile Creek and an unnamed tributary of Goose Lake). These routes are located in the Sixmile Creek-Little Salmon River and Upper Goose Creek 6th level Hydrologic Units (Hus). The proposed new northern route roughly follows Sixmile Creek and FS trail 172 down Sixmile Creek), including two stream crossings. The proposed new southern route follows an unnamed tributary of Goose Lake upslope to the ridgetop, then west, with at total length of approximately 1.5 miles. This proposed route does not cross any mapped stream channels.

ESA listed species are not present in or immediately downstream of the proposed boundary expansion area. Listed species and their designated critical habitat (DCH) are, however found over 15 miles further downstream in the Little Salmon River and its tributaries. Consistency with Forest Plan standards and guidelines requires that current fish habitat conditions be maintained or improved if not functioning appropriately.

Construction of Sno-cat routes and operation of Sno-cats on those routes are the primary mechanism for potential effects from this project that will be analyzed. No effects to any Watershed Condition Indicators (WCIs) from skiers in the additional 700 acres in the expansion area are expected and therefore not further analyzed. Likewise abandonment of 3.2 miles of Sno-cat routes within the current permitted area will result in an overall decrease in Sno-cat routes, but the overall reduction in mileage is not expected to have

more than negligible effect to area streams or fish habitat. Any improvement to streams or fish habitat by abandoning these routes (such as the decrease in risk of fuel spill or number of stream crossings) is expected to be negligible because the Cat-skiing operation will still occur within those watersheds and the risk of fuel spill is inherently small.

3.6.2 – Existing Condition and Affected Environment

Fish Populations

Chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*O. mykiss*), bull trout (*Salvelinus confluentus*) and westslope cutthroat trout (*O. clarkii lewisi*) do not occur in the project area or anywhere within the 6th Level HUs that encompass the project area (Upper Goose Creek and Sixmile Creek-Little Salmon River). A barrier that falls on the Little Salmon River at river mile 21 (downstream of the analysis area) precludes access of anadromous species into the upper Little Salmon River watershed. This falls is over 15 miles downstream of the project area in the Sixmile Creek drainage and over 30 miles downstream of the project area in the Goose Creek drainage.

Redband and/or rainbow trout (*O. mykiss*, spp.)¹ and introduced brook trout (*Salvelinus fontinalis*) are found either within or downstream of the analysis area in both the Upper Goose Creek and Sixmile Creek 6th level HUs (Unpublished data on file Payette National Forest Supervisor’s Office).

Two streams lie within or adjacent to the expansion area; an unnamed tributary of Goose Lake and a portion of Sixmile Creek . A map displaying this area is contained within the Project file. These streams may be directly affected by project activities. Sixmile Creek has been surveyed for habitat conditions using R1/R4 (Overton *et al.* 1997) or modified R1/R4 (Nelson *et al.* 2007) fish and fish habitat survey protocol. Habitat data and fish distribution data is not available for the unnamed tributary of Goose Lake.

Threatened and Endangered, and Sensitive Species

Snake River spring/summer chinook salmon were listed as threatened under the Endangered Species Act (ESA) in 1992 (57 FR 14653). Chinook critical habitat was designated in 1993 (58 FR 68543). Snake River steelhead were listed as threatened under the ESA in 1997 (62 FR 43937) and critical habitat was designated in 2000 (65 FR 7764). Bull trout, the Forest’s Management Indicator Species (MIS) was listed as threatened in 1998 (63 FR 31647). Critical habitat was designated in 2010 (75 FR 63898). Westslope cutthroat trout have been designated as “sensitive” by the Intermountain Regional Forester.

No threatened or endangered fish species occur within the expansion area. Listed fish species and their respective critical habitats are only present in the Little Salmon River and tributaries from its mouth to a barrier falls over 15 miles downstream of the expansion area. Little Salmon River Falls, which is a natural migration barrier, occurs on the mainstem Little Salmon River at river mile 21. Although anecdotal evidence suggests

¹ Native redband trout are *O.m. gairdneri*, whereas rainbow trout of hatchery origin are more likely derived from coastal *O.m. irideus*.

that a few fish may have been able to navigate the falls under certain flow conditions or when the fish ladder was operating, there is no recent or historic documentation in support of that (USDA 2003b). An attempt was made in the 1930s to provide fish passage at the falls but it is believed that it was not effective and populations above the falls were not established (personal communication Rodger Nelson, Forest Fisheries Biologist, 2011). Effects of this project on threatened and endangered species and their designated critical habitats are expected to be none to negligible. Westslope cutthroat trout are present in the lower part of the Little Salmon River and some of its tributaries (USDA 2003a). Critical habitat for westslope cutthroat is not applicable at this time because they are not listed under the ESA. No effects to westslope cutthroat are expected.

Management Indicator Species

The Forest's Management Indicator Species (MIS) for fish is bull trout, a species that is also listed as "Threatened" under the ESA. Bull trout in the Little Salmon River are not widely distributed due to many migration barriers that exist, including the Little Salmon River Falls located at river mile 21 (Nelson and James 2010). Critical habitat occurs in the mainstem Little Salmon River downstream of the falls and in tributaries of the Little Salmon River (75 FR 63898). Bull trout are not present in the expansion area or anywhere within the Little Salmon River watershed upstream of the falls. With implementation of project design features and mitigation measures and the distance from bull trout or Designated Critical Habitat (DCH) within the Little Salmon River Section 7 Watershed, no effects to bull trout and bull trout designated critical habitat are expected.

Watershed Condition Indicators (WCI)

The WCIs and the associated matrices in Appendix B of the Forest Plan were developed to assist managers in identifying how management actions may influence the condition and trend of Soil, Water, riparian and aquatic (SWRA) resources and native and desired non-native fish species (USDA 2003a). WCIs relevant to fish habitat that may be affected by implementation of this project were identified below. Chemical contamination/nutrients, riparian conservation areas (RCAs), large woody debris (LWD) and streambank condition were chosen to provide baseline conditions and to assess any effects that this project may have on these WCIs. Fish habitat data was collected in the expansion area (Sixmile Creek) in 2003 (Data on file, Payette National Forest Supervisor's Office, McCall, Idaho). A baseline matrix of current conditions has been completed and is located in the fisheries specialist report located in the project file.

Chemical Contamination/Nutrients

The use of Sno-cats near and across streams creates the risk of fuel (and other petroleum products such as lubricants and hydraulic fluid) contaminating project area waterways and, potentially, affecting stream reaches downstream. Should fuel or other petroleum products enter live water, they would affect water quality and invertebrates, and would directly affect the listed fish, should petroleum products come in contact with them. Fuels and other petroleum products can directly poison salmonids and their aquatic invertebrate food source. Fuels and petroleum products are moderately to highly toxic to salmonids, depending on concentrations and exposure time (Gutsell 1921, and Allen and

Dawson 1961). Free oil and emulsions can adhere to gills and interfere with respiration, and heavy concentrations of oil can suffocate fish (McKee and Wolf 1963). Evaporation, sedimentation, microbial degradation, and hydrology act to determine the fate of fuels entering fresh water (Saha and Konar 1986). Sources of mortality to fishes from the types of effects described above can be density independent.

The Forest Plan desired condition for the Chemical Contamination/Nutrients is: “Low levels of chemical contamination from agricultural, industrial, and other sources; no 303(d) water quality limited water bodies” (LRMP pB-19). Based on professional judgment, this WCI is likely “Functioning Appropriately” (FA) in the expansion area. This WCI is further discussed in the Water Quality Specialist Report (located in the Project Record).

Riparian Conservation Areas (RCA)

The Forest Plan Desired Condition Functioning Appropriately (FA) for RCAs states that: “The riparian conservation areas within the subwatershed(s) have historic and occupied refugia for listed, sensitive or native/desired nonnative fish species which are present and provide: adequate shade, large woody debris recruitment, sediment buffering, connectivity and habitat protection and connectivity to adequately minimize adverse effects from land management activities (>80% intact). All vegetative components are within desired condition identified in Appendix A of the Forest Plan. RCA function and processes are intact, providing resiliency from adverse affects associated with land management activities. Conditions fully support habitat for aquatic species.” (USDA 2003a, p B-19).

The RCA along Sixmile Creek contains FS trail 172, but roads are not located within the Sixmile Creek RCA in the project area. A section of one closed road is located within the RCA on the unnamed tributary of Goose Lake within the expansion area, but it does not cross the stream channel. Based on professional judgment, the RCAs are likely FA within the proposed expansion area.

Large Woody Debris (LWD)

LWD is an important biological and physical component in forested stream ecosystems (McDade *et al.* 1989). LWD is an important source of cover and habitat for fish in streams and influences stream channel formation, pool formation, and sediment transport and deposition (Sullivan *et al.* 1987, MacDonald *et al.* 1991). McDade *et al.* (1991) found that most large woody debris originates in areas immediately adjacent to the stream channel. This indicates that management in RCAs has the potential to directly affect this WCI.

The Forest Plan describes Functioning Appropriately condition for LWD as “> than 20 pieces per mile, >12inches in diameter and > 35 feet in length and adequate sources of LWD for both long and short term recruitment in RCAs” (USDA 2003a, p B-15). LWD data was collected as part of fish habitat inventories in 2003 within the expansion area (Data on file, Payette National Forest Supervisor’s Office, McCall, Idaho). Only one piece of LWD meeting the size criteria for LWD was documented within the 100m

reach surveyed, although smaller pieces of woody debris were counted throughout the surveyed reach. Downstream of the project area numerous pieces of LWD were documented and exceeded 20 pieces per mile in all of the reaches surveyed (Data on file, Payette National Forest Supervisor's Office, McCall, Idaho). Within the analysis area, based on data collected (both inside and outside the project area) and professional judgment, LWD levels are likely collectively "FA" in the upper portion of Sixmile Creek and in the unnamed tributary of Goose Lake where conditions similar to those in Sixmile Creek are expected.

Streambank Condition

The condition of streambanks can have many effects to streams and fish habitat. Unstable banks can contribute sediment, decrease the quantity and quality of fish habitat and can negatively affect streamside vegetation. Cancienne *et al.* (2008) considered sediment a primary cause of degraded water quality in many areas, with most of the sediment originating from streambanks.

Streambank stability data was collected as part of fish habitat inventories conducted in 2003 within the expansion area (Data on file, Payette National Forest Supervisor's Office, McCall, Idaho). Within the 100m site surveyed, the average streambank stability was 82.7 percent. Bank stability values collected throughout Sixmile Creek (downstream of the project area) in 2003 ranged from 80-99.4 percent. The cause of unstable banks was not recorded. This WCI is considered "Functioning at Risk (FR)" in Sixmile Creek based on those data collected in 2003. Habitat data for the unnamed tributary of Goose Lake has not been collected. Similar stream conditions are expected to be present in the unnamed tributary of Goose Lake and based on professional judgment, is likely also "FR."

3.6.3 – Environmental Consequences – Direct and Indirect Effects

Alternative 1 - No Action

Under this alternative, current fish habitat conditions will be maintained. The two new proposed Sno-cat routes would not be used and any effects of these routes would not occur. Sno-cat skiing would continue in the current Brundage Cat-Skiing permitted area. Chinook salmon, steelhead, bull trout (including their respective critical habitat) and westslope cutthroat trout (designated sensitive by the Regional Forester) are not present in the expansion area, but are located downstream in the Little Salmon River and some of its tributaries. Potential effects to Listed species would continue as described in Olson and Burns 2007 (See references).

Alternative 2 - Proposed Action

No effects to fish habitat or any Forest Plan WCIs is expected from use of the expansion area by skiers. Effects discussed here are related to the construction and use of Sno-cat routes in the Boundary Expansion Area.

Chemical Contamination/Nutrients

Operation of Sno-cats near and across streams creates the risk that fuel may spill in the event of an accident or mechanical malfunction. This risk of fuel (or other petroleum

products) spill with Sno-cat operations is low. Sno-cat operating procedures such as fueling at the maintenance facility (Sno-cats can generally complete a round trip without refueling) and no large-scale storage of fuel outside the Brundage Mountain facilities (10 gallons of extra fuel is carried on the Sno-cat for emergencies) reduce the risk that fuel may be spilled and enter streams. Mitigations that require spill containment to be carried (and used if needed) on the Sno-cat and at the maintenance facility further reduce the risk of fuel contamination of streams. Construction of snow bridges over streams also reduces the chance of Sno-cat tipping or damage to the Sno-cat (an associated fuel or fluid spill) when crossing stream channels. Implementation of this alternative is not expected to result in more than small risk of fuel contamination and is not expected to affect the current condition or retard the attainment of the desired condition.

RCA

The northern Sno-cat route follows Sixmile Creek and is located in or near the RCA for the majority of its length. The southern route follows an unnamed tributary of Goose Lake to the ridgetop to the south of the boundary expansion area. Because Sno-cats will be operated on 5 or more feet of snow, no ground disturbance or effects to vegetation are expected, maintaining the sediment buffering capacity, organic matter input, riparian vegetation, ground cover and RCA function. Only negligible effects to LWD are expected because the stream and surrounding forest area is forested with abundant recruitable LWD. Effects to stream shading are discussed on the Watershed Specialist Report (Project Record). Effects to shading and Large Woody Debris (LWD) input are not expected on the unnamed tributary of Goose Lake because trees will not be cut along that route. Implementation of this alternative is not expected to degrade the current RCA conditions or retard the attainment of the desired condition.

LWD

Construction of the new Sno-cat route along Sixmile Creek involves cutting approximately 7 live trees (7-9 inches in diameter), 28 saplings (approximately 4 inches in diameter or less) and 8 dead trees. Cutting these trees is not expected to substantially affect the LWD WCI in Sixmile Creek, which is currently “Functioning Appropriately (FA).” Since trees will not be cut to construct the Sno-cat route along the unnamed tributary of Goose Lake, no effects to LWD will occur there. No effects to current LWD levels in either stream are expected. The sizes of the live trees proposed to be cut do not meet the size criteria for LWD in the Forest Plan (Appendix B) and the trees that are cut will be left intact in the RCA. Cutting these trees will have a negligible effect on the amount of recruitable LWD within the RCA. Although this alternative may result in a very small decrease in the number of trees that may contribute to LWD to Sixmile Creek, the decrease will not degrade the current condition or retard attainment of the desired condition.

Streambank Condition

Stream crossings are not proposed on the southern Sno-cat route and consequently no effects to streambank stability along that route are expected. Two stream crossings are proposed along the northern snowcat route that follows Sixmile Creek. Stream crossings have the potential to damage stream banks, creating an area of degraded fish habitat and

sediment input. Mitigation measures such as building snow bridges and operation of Sno-cats on a minimum of 5 feet of snow minimizes the risk of streambank damage at the two crossings. Effects to streambank stability in Sixmile Creek are expected to be none to negligible because of the mitigation measures and presence of snow. If any effects do occur, they would not be expected to degrade the overall current condition within the project area or retard the attainment of the desired condition.

Threatened and Endangered Species, Sensitive Species and MIS

Chinook salmon, steelhead, bull trout and westslope cutthroat trout (designated sensitive by the Regional Forester) are not present in the expansion area. Listed species, (including bull trout, the Payette National Forest fish MIS) and designated critical habitat are however, present downstream of the project area. Fuel contamination was analyzed for Sno-cat Skiing in the current permitted area in Olson and Burns (2007) and it was determined that it posed a negligible risk to Listed and Sensitive species due to the location of the proposed actions to those species and their respective critical habitat (Olson and Burns 2007). The currently permitted Brundage Snow Cat Skiing is included in the Biological Assessment for Ongoing Actions, Little Salmon River Volume 21 (Olson and Burns 2007). Documentation of ESA consultation for the boundary expansion is located in the project record.

3.6.4 - Cumulative Effects

This project is not expected to have any measureable cumulative effect on fish and fish habitat when combined with other activities and current conditions in the cumulative effects area.

Forest Plan Consistency

This project follows the Payette National Forest (PAF) Land and Resource Management Plan (LRMP or Forest Plan) standards and guidelines designed to maintain or enhance Soil, Water, Riparian, and Aquatic (SWRA) resources.

Irretrievable and Irreversible Commitments

This project will not result in an irreversible or irretrievable commitment of resources.

Recreational Fishing

Executive Order 12962 mandates disclosure of effects to recreational fishing. Fish habitat conditions will be maintained with this project and no effects to recreational fishing are expected with the implementation of this project.

3.7 Wildlife

3.7.1 – Background

This section provides a summary of the complete analysis of effects from Brundage Mountain Resort (BMR) Cat-Ski Outfitter and Guide Permit Boundary Expansion on wildlife species of concern including threatened, endangered, proposed, candidate (TEPC) and sensitive wildlife species, management indicator species, and other species

identified at the project level. The complete analysis of effects to wildlife is provided in the Wildlife Specialist Report in the project files.

Forest Plan Direction

Forest-wide goals, objectives, standards, and guidelines for wildlife resources are found on pages III-8 through III-15 and III-25 through III-28 of the Forest Plan (USDA Forest Service 2003b). Forest Plan direction specifically applicable to the project for wildlife resources is listed below (USDA Forest Service 2003b). Applicable standards and guidelines are included in Table 2.

Table 2. Pertinent Forest-Wide Standards for Threatened, Endangered, Proposed and Candidate Species and General Wildlife Species.

Number	Direction Description
Standard TEST01	The Forest shall consult with the NMFS and Fish and Wildlife Service as needed, and appropriate, to comply with consultation requirements under the Endangered Species Act and Magnuson-Stevens Act.
Standard TEST04	Management actions that have adverse effects on Proposed or Candidate species or their habitat shall not be allowed if the effects of those actions would contribute to listing of the species as Threatened or Endangered under the ESA.
Standard TEST06	Management actions shall be designed to avoid or minimize adverse effects to listed species and their habitats. For listed fish species, use Appendix B for determining compliance with this standard.
Standard TEST12/ TEST13	Mitigate, through avoidance or minimization, management actions within known nest, denning, or winter roosting sites of TEPC species if those actions would disrupt reproductive success during the nesting or denning period. During project planning, determine sites, periods, and appropriate mitigation measures to avoid or minimize effects.
Standard TEST34	Allow no net increase in groomed or designed over-the-snow routes or play areas, outside of baseline areas of consistent snow compaction, by LAU or in combination with immediately adjacent LAUs unless the Biological Assessment demonstrates the grooming or designation serves to consolidate use and improve lynx habitat. This does not apply within permitted ski area boundaries, to winter logging, and access to private inholdings. Also, permits, authorizations or agreements could expand into baseline routes and baseline areas of existing snow compaction, and grooming could expand to routes of existing snow compaction and routes that have been designated but not groomed in the past and still comply with this standard.
Guideline TEGU1	Discretionary actions should avoid take of listed species, and actions where the Forest’s discretion is limited should minimize adverse effects that could lead to a take.
Guideline TEGU2	For proposed actions that may affect potential habitat of TEPC species, identify potential habitat and determine species presence within or near the project area. Document the rationale for not identifying potential habitat and determining species presence for TEPC species in the project record.
Guideline TEGU3	Management actions in occupied Proposed or Candidate species habitat should be modified or relocated if the effects of the actions would contribute to a trend toward ESA listing for these species.
Guideline TEGU6	Coordinate with Forest resource specialists to consider TEPC habitat needs when designing and implementing management activities that may affect TEPC species and their habitats.

Table 2. Pertinent Forest-Wide Standards for Threatened, Endangered, Proposed and Candidate Species and General Wildlife Species.

Number	Direction Description
Standard WIST2	Design and implement projects within occupied habitats of Sensitive species to help prevent them from becoming listed. Use Forest Service-approved portions of Conservation Strategies and Agreements, as appropriate, in the management of Sensitive species habitat to keep management actions from contributing to a trend toward listing for these species.
Standard WIST3	Mitigate management actions within known nesting or denning sites of MIS or Sensitive species if those actions would disrupt the reproductive success of those sites during the nesting or denning period. Sites, periods, and mitigation measures shall be determined during project planning.
Standard WIST4	Mitigate management actions within known winter roosting sites or hibernacula (bats) of Sensitive species if those actions would measurably reduce the survival of wintering or roosting populations. Sites, periods, and mitigation measures will be determined during project planning.
Guideline WIGU5	During site/project-scale analysis, habitat should be determined for MIS or Sensitive wildlife species within or near the project area. Surveys to determine presence should be conducted for those species with suitable habitat. Document the rationale for not conducting surveys for MIS or Sensitive species in the project record.
Guideline WIGU6	Management actions in occupied Sensitive species habitat should be modified or relocated if the effects of the actions would contribute to a trend toward ESA listing for these species.

Analysis Area

The analysis area for most wildlife species was the BMR permitted Cat-ski area of 17,685 acres with the proposed addition of 700 acres. Effects to lynx were evaluated based on Lynx Analysis Units (LAUs) that encompass this area (Appendix A-Map 2).

Species Considered and Evaluated

The Wildlife Conservation Strategy (WCS) for the Payette National Forest (USDA Forest Service 2011) identifies 290 species of wildlife (amphibians, birds, mammals, and reptiles) that occur or potentially could occur on the forest. Source habitat for all species fit within a hierarchical system that groups source habitats into **suites** and **families** based on similarity of habitat needs (WCS DEIS Appendix E). Four source habitat **suites** have been identified: Forest Only, Combination of Forest and Rangeland, Rangeland Only, and Riverine and Non-riverine Riparian and Wetland. Each suite is further broken into source habitat **families** (see Table 3).

Focal species are those species selected during this analysis to represent other species within a source habitat family and best evaluate the effects of a proposed activity. The species were selected by evaluating the key environmental correlates and ecological functions associated with species in the family and on their variations to responses from disturbance in winter.

Proposed activities within the analysis area have the potential to affect habitat of species in Family 2 (Broad Elevation, Old Forest) and Family 3 (Forest Mosaic). Species with no habitat in the project area or with migratory habits that removed them from the analysis area during the time activities were occurring were not evaluated further with the rationale and effects determination provided in Table 1 of the Wildlife Specialist Report.

Three focal species: the pileated woodpecker, Canada lynx, and wolverine were identified for this project (Table 2). The pileated woodpecker also serves as a management indicator species for forested wildlife habitats on the Forest. The wolverine is a candidate species for ESA listing. The Canada lynx is a listed species that may occur in the project area. The northern Idaho ground squirrel, another ESA listed species, does not occur in the project area. Consultation on the effects to listed and candidate species is also included in the *Biological Assessment of the Effects of the Brundage Mountain Resort Cat-Ski Outfitter and Guide Permit Boundary Expansion on listed and Candidate Wildlife Species* (Egnew 2012).

The effects to identified focal species and listed wildlife species are fully disclosed in this EA. Individual species discussions are organized by source habitat family. A summary of effects to Region 4 sensitive species is provided in Table 3. The complete Biological Evaluation for effects to sensitive species is included in the Wildlife Specialist Report in response to requirements associated with these species (per FSM 2672.4 and FSM 2672.43).

Scope of the Analysis

Issue Statement:

Project activities may affect wildlife species of concern, such as wolverine, Canada lynx and pileated woodpecker through disturbance and habitat fragmentation.

Indicator:

Evaluation of potential effects to focal species resulting from disturbance and snow compaction.

Table 3 - Wildlife Species Considered and Effects Determination or Rationale for Not, Status, by Source Habitat Suite and Family.

Suite	Family #	Family Name	Species Considered	Analyzed in depth or rationale for not analyzing in depth	Species Status ²	Focal Species	Effects Determination ³
Suite 1: Forest Only	1	Low Elevation, Old Forest	White-headed Woodpecker	No habitat in project area.	S/MIS		NE
	2	Broad Elevation,	American Three-toed Woodpecker	Yes	S		NLCFL

²Species Status: C = candidate (USDI FWS 2009); E = endangered (USDI FWS 2009); MIS = Forest Plan management indicator species (Forest Plan Appendix E); P = proposed (USDI FWS 2009); S = sensitive (USDA FS R4 2009); and T = threatened (USDI FWS 2009).

³ Determination language for T&C species: NE = No Effect; NI = No Impact; for Candidate species. Determination language for S species: NI = No Impact; BI = Beneficial Impact; NLCFL = May impact individuals, but not likely to cause a trend to federal listing or loss of viability; NLAA = Not Likely to Adversely Affect.

Suite	Family #	Family Name	Species Considered	Analyzed in depth or rationale for not analyzing in depth	Species Status ²	Focal Species	Effects Determination ³
		Old Forest	Boreal Owl	Yes	S		NLCFL
			Fisher	Yes	S		NLCFL
			Flammulated Owl	No effects to habitat or disturbance of individuals due to period of activity	S		NI
			Great Gray Owl	No effects to habitat or disturbance of individuals due to period of activity	S		NI
			Northern Goshawk	No effects to habitat or disturbance of individuals due to period of activity	S		NI
			Pileated Woodpecker	Yes	MIS	X	
	3	Forest Mosaic	Mountain Quail	No effects to habitat or disturbance of individuals due to period of activity	S		NI
			Wolverine	Yes	S/C	X	NLCFL
			Canada Lynx	Yes	T	X	NLAA
4	Early-seral & Lower Montane	Lazuli Bunting	No habitat in project area.	--		NA	
Suite 2: Combination of Forest and Rangeland	5	Forest & Range Mosaic	Peregrine Falcon	No effects to habitat or disturbance of individuals due to period of activity.	S		NI
			Rocky Mountain Bighorn Sheep	No effects to habitat or disturbance of individuals due to period of activity.	S		NI
			Rocky Mountain Elk	No effects to habitat or disturbance of individuals due to period of activity.	--		NA
			Gray Wolf	No effects to habitat or disturbance of individuals due to period of activity.	S		NLCFL
	7	Forests, Woodlands, Sagebrush	Spotted Bat	No effects to habitat or disturbance of individuals due to period of activity.	S		NI
Townsend's Big-eared Bat			No effects to habitat or disturbance of individuals due to period of activity.	S		NI	
Suite 3: Rangeland Only	11	Sagebrush	Greater Sage grouse	No habitat in project area	S/C		NI
	12	Grassland Sagebrush	Columbian sharp-tailed grouse	No habitat in project area	S		NI
	12	Grassland Sagebrush	Northern Idaho ground squirrel	No habitat in project area	T		NE
Suite 4: Riverine and Non-riverine Riparian and Wetland	13	Riverine Riparian & Wetland	Yellow-billed Cuckoo	No habitat in project area	C		NI
			Bald Eagle	No effects to habitat or disturbance of individuals due to period of activity.	S		NI
			Columbia Spotted Frog	No effects to habitat or disturbance of individuals due to period of activity.	S		NI
			Harlequin Duck	No effects to habitat or disturbance of individuals due to period of activity.	S		NI

3.7.2 – Existing Condition and Affected Environment

Habitat Family 2 – Broad Elevation Old Forest

Species in Habitat Family 2 use late-seral, multi- and single-storied montane forests as source habitat (Wisdom et al. 2000). Special features of Family 2 source habitats include snags and logs. Some species that use these habitats depend on juxtaposition of certain seral stages, while others rarely or infrequently use younger structural stages. Many species are able to take advantage of departed vegetative conditions, benefitting as structural stages develop larger tree size classes and denser conditions.

Pileated Woodpecker

The pileated woodpecker was selected as a focal species and MIS because it is believed to be functionally linked to a suite of other wildlife species that use source habitats tied to large trees, snags and logs, and old-forest habitat in mixed-conifer forests that occur across broad elevations and developed under mixed fire regimes (Aubry and Raley 2003). The pileated woodpecker is *not* a Region 4 Sensitive Species. This woodpecker is considered a resident, non-migratory, nongame species. Pileated woodpeckers occupy dense deciduous, coniferous, or mixed-species forests; open woodlands; second-growth forests; and parks and wooded residential areas (NatureServe 2008). The species prefers habitats with tall, closed canopies and high basal areas. Their preferred habitat includes large-diameter trees and snags; multiple canopy layers; decaying wood on the forest floor; and a somewhat moist environment that promotes fungal decay and ant, termite, and beetle foraging (NatureServe 2008).

Pileated woodpeckers perform Key ecological functions (KEFs) as secondary consumers of terrestrial invertebrates (e.g., carpenter ants) and primary cavity excavators of snags and live trees. Key ecological correlates (KECs) for this species include snags and living trees >20 inches dbh, logs, hollow living trees, and dead portions of live trees (Bull et al. 1992). This species typically uses portions of dying trees and snags in the hard and moderate decay classes (early-to-mid stages of decomposition).

Source habitats for pileated woodpeckers are typically multi-layer, late-seral stage montane and subalpine forests in Potential Vegetative Groups (PVGs) as defined in the PNF Forest Plan, 2, 3, 5, 6, 8, and 9, with large tree size class and moderate-to-high canopy closure class.

The WCS DEIS suggested an average home range size of about 1,000 acres (USDA Forest Service 2011). Smaller home ranges have been documented, likely due to higher quality habitat. Pileated woodpecker home ranges in northeastern Oregon ranged from 316 to 593 acres (mean = 455 acres) (Bull and Meslow 1977). Pileated woodpeckers inhabit the forest types found in the analysis area.

Habitat Family 3 - Forest Mosaic

Source habitats for Habitat Family 3 include the full spectrum of forest communities and structural stages. Wildlife species within Family 3 tend to be habitat generalists, but 3 of the 4 species have low or isolated populations, implying that other factors are inhibiting them. Because of potentially differing responsiveness to human influences in a forest landscape, the focal species for Habitat Family 3 in this analysis are the wolverine and Canada lynx (USDA Forest Service 2011).

As disclosed in the DEIS for the WCS (USDA Forest Service 2011), Family 3 source habitats have exhibited some decline in the large tree size class, but overall no major changes were noted from historic to current times, and modeling indicates that the amount of habitat available to Family 3 wildlife species is currently within the Historical Range of Vulnerability (HRV), largely because species in this family tend to be habitat generalists (USDA Forest Service 2011b). While source habitat quantity does not appear to be a concern, source habitat quality changes in the source environment may be a

limiting factor for this family. The source environment is composed of vegetative and non-vegetative factors (e.g., human-caused disturbance) that can influence wildlife species' relative abundance and distribution throughout available source habitat (USDA Forest Service 2011).

Canada Lynx

The Canada lynx is listed as a Threatened species under the ESA. The Canada Lynx Conservation Assessment and Strategy (LCAS), (Ruediger et al. 2000) guides lynx management in the contiguous United States within Lynx Analysis Units (LAUs). LAUs are defined as units that approximate an area of source habitat sufficient to provide a home range for a female. LAUs and a lynx habitat model were identified through consultation with the FWS and are used to evaluate lynx habitat and the effects on lynx of agency activities. The analysis spans 3 LAUs: Goose Creek, Hazard Creek, and Upper North Fork Payette (Appendix A – Map 2).

The KEF for lynx is as a primary predator of herbivorous vertebrates (Marcot 1997, O'Neil et al. 2001). Key components of lynx habitat include denning habitat, foraging habitat, and travel corridors, provided by a mosaic of forest structures (Ruggiero et al. 1994). Lynx primarily forage in early seral forests comprised of seedlings and saplings (Marcot 1997, Wisdom et al. 2000, O'Neil et al. 2001). Small patches of old-forest with down wood provide denning habitat (Wisdom et al. 2000). Roads and/or over-the-snow trails increase the potential for human interactions, disturbance, and vulnerability to trapping (Wisdom et al. 2000, O'Neil et al. 2001). In winter, lynx are associated with persistent, deep-snow conditions (O'Neil et al. 2001).

In Idaho, lynx typically use montane and subalpine coniferous forests above 4,000 feet; primary habitat includes lodgepole pine, subalpine fir, and Engelmann spruce forests, and cool, moist Douglas-fir interspersed with subalpine forest (Ruediger et al. 2000). Most coniferous forest structural stages provide lynx source habitats with the exception of old-forest, single-storied stands. Riparian woodlands and shrublands are also source habitats. Vegetative communities capable of providing source habitat conditions include PVGs 3, 7, 8, 9, 10, and 11 (USDA Forest Service 2011).

Lynx use late-seral forests for denning, rearing their young, and hunting alternative sources of prey (Ruggiero et al. 1999). The common component of denning habitat appears to be large amounts of logs or root wads, which provide escape and thermal cover for kittens. These forest stands may also provide refuge from inclement winter weather and summer drought. See "Map 7" in Appendix B for a display of the location of the analysis area within the Hazard Goose Creek, Goose Creek, and Upper North Fork Payette LAUs.

Lynx primarily forage in early seral forests and in some mid-seral forests that support high numbers of its primary prey, the snowshoe hare and alternate prey—particularly red squirrels, but also mice and grouse (especially summer) (Ruggiero et al. 1994). Quality snowshoe hare habitats support a high density of young trees or shrubs, especially with branches that protrude above the snow. These conditions may occur in early successional stands, following some type of disturbance, or in older forests with a substantial

understory of shrubs and young conifers. Red squirrel densities tend to be highest in mature cone-bearing forests with high quantities of logs (Ruediger et al. 2000).

Lynx are known to move long distances, but open areas are avoided (Ruggiero et al. 1994). In general, suitable travel cover consists of coniferous or deciduous vegetation, 2.0 feet taller than the average snowfall, with a closed canopy adjacent to foraging habitat. Travel cover facilitates lynx movements within their home ranges and when dispersing.

Lynx are rare in central Idaho. On the Forest, there was one verified lynx sighting in 1957 (Lewis and Wenger 1998) and 5 records through 2002 (ICDC 2002). A lynx was reported in 2003 along Highway 55 about 5 miles west of the project area, but the accuracy is unknown. In 1999, as part of a national effort to collect lynx hair samples for DNA analysis, surveys were conducted on the Forest, but no lynx were detected.

The analysis area spans the Goose Creek, Hazard Creek, and Upper North Fork Payette LAUs. Previous analyses for the effects of the BMR have found that both Canada lynx and snowshoe hare habitat is very limited in area due to deep snow in winter (average from 5.9 to 9.7 feet, with depths of up to 19.8 feet recorded (Schlegel et al. 2003). Surveys found little evidence of snowshoe hare forage or sign. Natural fragmentation of vegetation in the area limits lynx habitat in the southern part of the Goose Creek LAU (Schlegel et al. 2003), but lynx habitat is more contiguous in the northern portions of the Goose Creek LAU into the Hazard Creek LAU and N. Fork Payette LAU. Lynx habitat is declining to the south and west of the analysis area (Map 8 – Appendix B).

Current potential lynx habitat ranges from nearly 11,000 acres in the Goose Creek LAU to 20,744 acres in the Hazard Creek LAU and 37,684 acres in the Upper North Fork Payette LAU (Table 4, based on analyses described in the *Biological Assessment for the Potential Effects of Wolverine Live-trapping and Travel Plan – Changes to Winter Season Motorized Travel* (Egnew 2010). Approximately 13,000 acres of lynx habitat occur within the 17,685- acre permit boundary and proposed 700-acre addition.

Table 4. Potential and suitable lynx habitat in the 3 LAUs that encompass the BMR Cat-ski Permit area shown by Forest Plan Protocol in 2003 (Chantel et al. 2003) and 2010 (Egnew 2010).

LAU	Total Acres 2003	Potential Habitat Acres 2003	Suitable Habitat Acres 2003	% Suitable Habitat 2003	Total NFS Acres 2010	Potential Habitat Acres 2010	Suitable Habitat Acres 2010	% Suitable Habitat NFS 2010
Goose Creek	54,163	11,259	10,708	95%	36,957	10,942	10,396	95%
Hazard Creek	51,901	20,267	8,387	41%	49,267	20,744	8,633	42%
Upper N.F. Payette Rvr.	92,218	43,317	11,717	27%	69,941	37,684	9,726	26%

Wolverine

The wolverine is circumboreal in distribution, occurring in Europe, Asia, and North America. In western North America, the wolverine historically occurred in Alaska, Canada, Washington, Oregon, California, Nevada, Colorado, Utah, Montana, Wyoming,

and Idaho. Wolverines occur in the higher elevations of Idaho, including the Forest and the surrounding areas of west-central Idaho.

Habitats used by wolverines include alpine tundra and all subalpine and montane forests (Wisdom et al. 2000, Vol. 3). Within the forest types, all structural stages (except the closed canopy stem exclusion stage) provide source habitat. In a central Idaho study elevation explained wolverine habitat use better than any other variable in both summer and winter (Copeland et al. 1998). A persistent snow pack from late winter through late spring is thought to be critical for the reproductive denning success of the wolverine, both because of the insulating warmth it provides to the newborn kits and for the protection afforded against predators. It also has been recognized that wolverines are not found in regions where maximum summer temperatures occur above a threshold value of 22 °C (roughly 72 °F; Copeland et al. 2010).

Recent studies have provided a strong correlation between wolverine habitat and a persistent snowpack (Copeland et al. 2010). The authors developed a spatial data layer of spring snow cover in the Northern Hemisphere for a 7-year period from 2000 to 2006 using moderate-resolution imaging spectroradiometer (MODIS) classified daily snow data (500 m spatial resolution) from the Terra satellite (Hall et al. 2006 in Copeland et al, 2010). Areas that exhibited snow cover in years 6-7 showed the strongest correlation with wolverine locations.

Wolverines use large home ranges. Females average 98 square miles (63,000 acres) and males 588 square miles (376,000 acres) per home range in central Idaho (Copeland et al. 1996). Denning usually occurs in February, typically on north to east facing slopes of talus or mixtures of forest and talus.

Wolverines are predominantly scavengers, especially in winter, when their diets consist primarily of ungulate carcasses (Banci 1994). In summer, they use a wider variety of foods, including small mammals, birds, carrion, and berries (Weaver et al. 1996). Copeland (1996) found that carrion-related food supplied 46% of wolverine diets in Idaho during both summer and winter. Banci (1994) suggested that diversity of habitats and foods is important to wolverines.

The Payette, Boise, and Sawtooth National Forests are collaborating with the Rocky Mountain Research Station, Round River Conservation Studies, IDFG, and other government and non-government organizations to investigate wolverine populations and potential impacts from winter recreation (Heinemeyer et al. 2010). Research efforts include using a unique combination of approaches to simultaneously and intensively monitor both wolverines and winter recreation, including GPS monitoring of wolverines and winter recreationists. The entire project area falls within the wolverine-recreation study area. During winter 2010 and 2011, investigators captured 11 individual wolverines on the east side of the Forest. Two of these individuals' home ranges (M1 and F1) include the project area (Heinemeyer et al. 2010). Appendix A – Map 4 displays the location of the radio-collared wolverines in 2010 and 2011 in and near the project area (Heinemeyer et al. 2010).

3.7.3 – Environmental Consequences – Direct and Indirect Effects

Changes in areas of recreation use associated with new Sno-cat routes and operation of Sno-cats on those routes are the primary mechanism for potential effects. The Proposed Action would amend the existing permit issued to BMR to include an additional 227 acres of land between Six Mile Creek and Six Mile Ridge. BMR requested 700 additional acres on the southern edge of the permit area, but would relinquish 473 acres in the northeast corner of the permit area. Included in the amendment would be authorization of 2.6 miles of Sno-cat routes to access the Six Mile terrain. BMR would abandon approximately 3.2 miles of route within the existing authorized system so there would be a net reduction of 0.6 miles of authorized Sno-cat routes.

The two proposed new routes are located in the western edge of the current permit area. One route roughly follows Six mile Creek and FS trail 172 down Six Mile Creek. This area currently gets little use by snowmobiles, but is in an open area and on the edge of the current permit boundary. The proposed southernmost route follows an unnamed tributary of Goose Lake upslope to the ridgetop, then west, with a total length of approximately 1.5 miles. This ridge is used relatively frequently by snowmobiles.

Habitat Family 2 – Broad Elevation Old Forest

Pileated Woodpecker

Alternative 1—No Action

Habitat Family 2 species, as represented by the pileated woodpecker, are associated with large trees and moderate-to-dense canopy closures. Under the No Action alternative, the boundaries of Sno-cat operations would not change. There is no indication that the current use within the analysis area (variations of open and closed areas to over-snow vehicles and Sno-cats) is causing detrimental effects to the pileated woodpecker. It is reasonable to assume that where and/or when areas are limited solely to Sno-cat use, there would be fewer disturbances to pileated woodpeckers and other associated species in Family 2. Where Sno-cat use is one aspect of over-snow vehicle use in an area, it is likely to make no additive difference in effects (if any) than any effects caused by all over-snow vehicles.

Alternative 2 – The Proposed Action

The amount of area permitted to the BMR Cat-Ski operations would increase slightly (by 227 acres), but this increase would occur in an area currently open to over-snow vehicle use (primarily snowmobiles) and the amount of Sno-cat routes would decrease in the permit area. The increase in area is less than ¼ of an average pileated woodpecker home range. Pileated woodpeckers may occur in the project area when operations are occurring, but no habitat would be removed. Observations of pileated woodpeckers along groomed Nordic trails in the Brundage Bear Basin area have found no evidence they are substantially disturbed by Cat-Ski or Nordic activities. They have been observed to move away from Nordic skiers, but distances moved are small (less than 50 meters) (Egnew pers. observ. 2009, 2010, 2011). Overall this project would decrease any disturbance that may occur to this species from Sno-cat operations due to the net reduction of 0.6 miles of authorized routes.

Habitat Family 3 - Forest Mosaic Canada Lynx

Alternative 1—No Action

Under the “No Action” Alternative, the BMR Permit area would not change. Sno-cat grooming and associated activities would continue on the permitted routes within the existing permit area.

The effects of the BMR and the Cat-Ski Permit on Canada lynx have been analyzed previously. In 2000, in response to the listing of the Canada lynx, the project was analyzed as an ongoing action. The Biological Assessment (BA) made the determination the activity “*may affect but is not likely to adversely affect.*” The rationale for this was based on analysis in the LCAS (Ruediger et al. 2000) that suggested that winter activity that produces packed snow conditions may allow travel routes for potential competitors and predators of lynx. Lynx have evolved a competitive advantage in deep soft snow environments due to their large paws that allow them to hunt prey where other predators cannot. However, snow trails compacted by human activity may allow other predators to access prey in deep snow conditions where historically they were excluded.

The BA addressed this concern, as well as LCAS direction for no net increase in groomed or designated over-the-snow routes, by stating that “*no changes in the plan of operation are anticipated...This ongoing action will be reevaluated upon expiration of the current permit.*” Concurrence on these determinations was received from the FWS on September 12, 2000.

In the past, the permit area was open to over-snow motorized vehicle use. For 2012, a one-year closure was placed on snowmobile use in portions of the permit area for most of the winter. There is no indication that the current use within the analysis area (variations of open and closed areas to over-snow vehicles and Sno-Cats) is causing detrimental effects to Canada lynx. Canada lynx are very rare on the Payette NF.

Alternative 2 – Proposed Action

The ongoing action of the BMR Cat-Ski Permit on Canada lynx were previously determined to be: “*may affect but is not likely to adversely affect.*” This determination was reached, in part, because “*no changes in the plan of operation are anticipated...*”

The BA for the current Forest Plan (Chatel et al. 2003) reiterated the previously discussed LCAS direction and the Forest Plan adopted a standard (TEST34) that states:

Allow no net increase in groomed or designated over-the-snow routes or play areas, outside of baseline areas of consistent snow compaction, by LAU⁴ or in combination with immediately adjacent LAUs unless the Biological Assessment demonstrates the grooming or designation serves to consolidate use and improve lynx habitat. This does not apply within permitted ski area boundaries, to winter logging, and access to private inholdings. Also, permits, authorizations or agreements could expand into baseline routes and baseline areas of existing snow

⁴ Note the LCAS language actually specifies “by lynx habitat by LAU,” which is the metric used.

compaction, and grooming could expand to routes of existing snow compaction and routes that have been designated but not groomed in the past and still comply with this standard.

This analysis of potential effects to Canada lynx from the proposed expansion in the Cat-ski permit area focused on change in the amount of *groomed or designated over-the-snow routes or play areas, outside of baseline areas of consistent snow compaction*, in lynx habitat⁵ in a LAU resulting in potential changes in disturbance to lynx, habitat connectivity for lynx and/or changes in the number of routes that could provide predator access into lynx habitat.

Effects to Habitat Connectivity

Habitat connectivity is an important component of habitat conservation for lynx, as well as many other wildlife species, to promote wildlife movement and genetic interaction. Areas with high road densities and/or human use patterns can interrupt habitat connectivity and fragment lynx habitat (Ruediger et al. 2000). Because the area proposed to be added to the BMR Cat-ski permit is currently open to over-snow motorized vehicle use, the project would result in essentially no change in habitat connectivity from over-snow vehicle use. In addition, the Goose Creek LAU is not considered an important link to habitat connectivity to the south and west because little habitat occurs there (Schlegal et al. 2003).

Effects to Snow Compaction

Some researchers maintain winter activities, (e.g., cross-county skiing, snowmobiling) can compact snow allowing other predators that compete with lynx to access lynx habitat (Claar et al. 1999; Bunnell et al. 2006). Lynx appear to have evolved a competitive advantage in deep snow that tends to exclude other predators during winter, a time when prey is most limiting (Buskirk et al. 2000; Ruediger et al. 2000). Other researchers note there is no solid data on the role of snow compaction and changes in competitive advantage between lynx and other species (Kolbe et al. 2007).

In a review of potential threats to lynx (USDI 2003), the Fish and Wildlife Service concluded: “*There is no evidence that any competition that may exist between lynx and other species exerts a population-level impact on lynx.*” and “*No evidence has been provided that packed snow trails facilitate competition to a level that negatively affects lynx.*” Research in western Montana appears to support this contention, finding that: “The overall influence of snowmobile trails on coyote movements and foraging success during winter appeared to be minimal on our study area (Kolbe et al. 2007). Other research in Utah arrived at differing conclusions (using different methodology) stating: “Our results suggest that restrictions placed on snowmobiles in lynx conservation areas by land management agencies because of potential impacts of coyotes may be appropriate” (Bunnell et al. 2006).

The Forest Plan (2003) adopted the LCAS standard for snow compaction (TEST34) described above. Due to the recent conflicting evidence on the need for this standard, the

⁵ See footnote #4

analysis for the Payette NF Travel Plan analysis (2007) considered whether the standard should be modified or dropped. After discussions with FWS, it was determined that the PNF lacks the data to support any substantial changes to Forest Plan direction for lynx, at this time. The analysis for the Northern Rockies Lynx Amendment also considered this issue and retained this standard as a guideline in the selected alternative (T. Bertram pers. comm. 2007).

The additional acreage in the Cat-Ski permit occurs in an area currently open to over-snow vehicle use. By permitting new groomed routes in that area while removing groomed routes in the existing permit boundaries there would be a net reduction of 0.6 miles of ‘groomed... over-the-snow routes by lynx habitat’ and no change in ‘designated... play areas’ Hence, this portion of the action is expected to have negligible, if any, effects to Canada lynx.

Acres Open and Closed to Over-snow Vehicle Use in Lynx Habitat

The PNF has no designated over-snow routes other than groomed snowmobile trails and the Sno-cat routes. The PNF has no designated “play areas.” For analysis purposes, all areas open to over-snow vehicle use could become play areas. Hence potential effects to lynx are tracked by the change in areas open to over-snow vehicle use in lynx habitat by LAU. This proposed action would result in no change in areas open to over-snow vehicle use in lynx habitat by LAU and no change in ‘designated... play areas.’ The northeast corner of the permit area that would be dropped contains about 335 acres of lynx habitat while the area to be added contains about 550 acres for a net increase of 215 acres of lynx habitat to the BMR Cat-ski permit area, but this area is currently open to over-snow motorized vehicles, resulting in no effective change to this evaluation factor and no effects to lynx.

Forest Plan Compliance

The proposed action complies with the Forest Plan standards and guidelines for lynx. The effects to lynx habitat has been analyzed using the recommended conservation measures described in the Lynx Conservation Assessment strategy. Consistent with Forest Plan direction (TEST34), the selected alternative would result in a slight decrease in miles of groomed routes in lynx habitat by LAU in the Goose Creek LAU and no change in areas designated to over-the-snow motorized uses in the Goose Creek, Hazard Creek, and North Fork Payette River LAUs.

Determination:

The proposed change in the BMR Cat-ski permit boundary: “*may affect but is not likely to adversely affect*” the Canada lynx. There would be a net reduction of 0.6 miles of ‘groomed... over-the-snow routes by lynx habitat’ and no change in ‘designated... play areas’ No measurable changes in disturbance levels or habitat connectivity are expected because this action would not measurably change the current level of allowed over-snow activities.

Wolverine

Alternative 1—No Action

Under the “No Action” Alternative, the BMR Permit area would not change. Sno-cat grooming and associated activities would continue on the permitted routes within the existing permit area.

In the past, the permit area was open to over-snow motorized vehicle use. For 2012, a one-year closure was placed on snowmobile use in portions of the permit area for most of the winter. There is little information in the literature on the possible effects to wolverines from winter recreation activities, so the Forest is collaborating with a number of groups to investigate wolverine populations and potential impacts from winter recreation (Heinemeyer et al. 2010). The permit area is part of the study area on the Payette NF and two adult wolverines are known to range over the permit area (Heinemeyer et al. 2010).

The current activities within the analysis area (variations of open and closed areas to over-snow vehicles and Sno-cats) would not change under the “No Action” alternative. Following the completion of the wolverine-winter recreation study, the need for changes in areas open to winter recreation use would be evaluated.

Alternative 2 – Proposed Action

As described above in the lynx analysis section, the proposed changes to the BMR permit area would result in a slight increase of 227 acres in the permit area, but this area is currently open to over-snow motorized vehicles, resulting in no effective change in potential effects (if any) to wolverine. The proposed changes would also decrease permitted Sno-cat routes by 0.6 miles. There is no evidence if this would be beneficial to wolverine. Track surveys in the study area infrequently find tracks crossing or moving along groomed routes (D. Evans-Mack pers. commun., A. Egnew pers. observ.).

The proposed action is expected to have negligible, if any, impact on wolverines. The action alternative “*May Impact Individuals or Habitat but will not likely contribute to a Trend toward Federal Listing or Cause a Loss of Viability to the Population or Species*”.

3.7.5 Cumulative Effects

The Council on Environmental Quality (CEQ) defines cumulative effects for NEPA analyses as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions (40 CFR 1508.7)”

The cumulative effects area is the Little Salmon River Watershed which includes the Goose Creek drainage. Many 1,000s of acres of timber harvest have occurred in the watershed. Most of this activity has been concentrated in mixed conifer forests, so little change has occurred in the higher-elevation spruce-fir types preferred by Canada lynx and wolverine. Cumulatively, these harvest activities likely have reduced mature tree

source habitats for pileated woodpeckers. Harvest activities have led to a higher density of roads throughout the watershed.

Within the BMR ski area permit boundary, habitat impacts and high levels of human activity have occurred for nearly 50 years. Habitat alteration has consisted primarily of clearing in forest for ski runs, lifts, and base-area facilities. Ski area operations and recreational use have maintained high levels of human activity, particularly in the winter. The area is used for mountain biking and hiking in the summer.

Effects of winter travel were analyzed in the travel Plan EIS (2007), but no decisions on changes to winter travel and recreation were made at that time. As described above in the wolverine section, any potential changes would occur following the results of the wolverine-winter recreation study.

Several Forest-wide regulatory mechanisms are in place to protect particular species and keep cumulative impacts on these species to a minimum. These mechanisms also benefit other wildlife species with similar habitat requirements. Compliance with Canada Lynx Conservation Assessment and Strategy (LCAS; Ruediger et al. 2000), Forest Plan standards for listed and sensitive species, and requirements for consultation on effects to ESA-listed species are just a few of the mechanisms that help to minimize project level and, overall, cumulative effects to wildlife.

Activities on adjacent private and other lands are unlikely to contribute to cumulative effects on lynx and wolverine, since most private land occurs at low elevations that are not considered habitat for these species.

As described above, proposed modifications to the BMR Cat-ski permit would result in negligible, if any, effects to the pileated woodpecker, Canada lynx and wolverine, and these effects are considered negligible when considered with the other past, present, and future activities in and around the project area.

No effects would occur to all other wildlife species of concern (other ESA-listed species, sensitive species, and species of special interest or concern).

Forest Plan Consistency

This project follows the Payette National Forest Land and Resource Management Plan (LRMP or Forest Plan) standards and guidelines designed to maintain or enhance wildlife resources as described above and in the Wildlife Specialist report.

Irretrievable and Irreversible Commitments

This project will not result in an irreversible or irretrievable commitment of resources because little to no effects from the permit modification were expected and the permit can be modified in the future if unforeseen impacts are discovered.

3.8 Project Record

The EA hereby incorporates by reference all the Project Record (40 CFR 1502.21). This record contains detailed information that the specialists relied upon to reach their conclusions in the EA.

In addition to Forest Plan standards and guidelines designed to mitigate impacts, the following measures would be used. These design features have been incorporated by the Forest Service to reduce or prevent undesirable effects resulting from proposed management activities.

Mitigation measures for the BMR Cat-Ski O&G proposal project that have been identified include:

- The requirements for building new Cat-Ski routes will be managed the same as the traditional Cat-Ski routes specified in the BMR Cat-Ski Outfitter and Guide Special Use Permit's annual operating plan.
- Trees cut along Six Mile Creek will be flush cut (visuals). Any trees that cross the Six Mile Trail #172 will be cleared from the trail to pack and saddle stock standard for trail clearing width (8 foot wide clearing). Trees not crossing the trail will be left on the ground.
- Avoid removal of white bark pine whenever possible.

3.9 Consultation and Coordination

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

ID TEAM MEMBERS:

Jane Cropp – ID Team Leader and Recreation Specialist

Sue Dixon - NEPA

Ana Egnew – Wildlife Biologist

Jim Fitzgerald – Hydrologist and Soils

Jason Greenway – Fisheries

Alma Hanson – Botanist

Larry Kingsbury – Cultural Resources

Lisa Klinger – McCall District Ranger

FEDERAL, STATE, AND LOCAL AGENCIES:

Adams, Valley, Idaho County Commissioners

Idaho Department of Parks and Recreation

TRIBES:

Shoshone Bannock Tribes

Shoshone Pauite Tribes of Duck Valley

Nez Perce Tribes

OTHERS:

Brundage Mountain Resort

McCall Winter Recreation Forum

3.10 REFERENCES**Botany:**

Idaho Department of Fish and Game. Conservation Data Center. 2012. Internet site. <http://fishandgame.idaho.gov/cms/tech/CDC/plants/>.

USDA. Forest Service. 2003. Southwest Idaho Ecogroup Boise, Payette, and Sawtooth National Forests Revised Land and Resource Management Plans and EIS. Payette National Forest Revised Forest Plan: USDA, Intermountain Region. Chapters 1-4, plus appendices and maps.

USDI . Fish and Wildlife Service. 2002. 90-Day Species List Update (Sept). File #113.0000 1-4-02-SP-911. United States Department of the Interior, Fish and Wildlife Service, Snake River Basin Office, Columbia River Basin Ecoregion, Boise, ID. 5 pages.

USDI. Fish and Wildlife Service. 2011. U.S. Fish & Wildlife Service- Idaho Fish & Wildlife Office. <http://www.fws.gov/mountain-prairie/species/plants/whitebarkpine/>.

USDI. Fish and Wildlife Service. 2012. <http://www.fws.gov/endangered/>

Fish:

Allen, D. 2007. Regional fishery manager IDFG, McCall Idaho. Personal communication to Rodger. L. Nelson, Forest Fisheries Biologist, Payette National Forest Supervisor's Office, McCall Idaho.

Allen, M.B. and E.Y. Dawson. 1961. Production of antibacterial substances by benthic tropical marine algae. *Journal of Bacteriology*. 79.459.

Cancienne, R. M., Fox, G. A., Simon, A. 2008. Influence of seepage undercutting on the stability of root-reinforced streambanks. Department of Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater, OK. 18p.

Gutsell, J.S. 1921. Danger to fisheries from oil and tar pollution of water. Bureau of Fisheries, Doc. 910, Appendix to Report of U.S. Commission of Fisheries.

McDade, M.H.; Swanson, F.J.; McKee, W.A.; Franklin, J.F.; Van Sickle, J. 1989. Source distances for coarse woody debris entering small streams in western Oregon and Washington. *Canadian Journal of Forest Research*. 20.326-330. PAF Fisheries Program Library Reference F.05.0058.

- MacDonald, L. H.; Smart, A.W.; Wissmar, R.C.** 1991. Monitoring Guidelines to Evaluate Effects of Forestry Activities on Stream in the Pacific Northwest and Alaska. United States Environmental Protection Agency. EPA/910/9-91-001. pp. 127 and 128. PAF Program Library Reference H.03.0002.
- McKee, J.E., and H.W. Wolf.** 1963. Water Quality Criteria. Publication No. 3-A. The Resources Agency of California. State Water Resources Control Board. Sacramento, California. 548p.
- Nelson, R.L.** 2011. Forest Fisheries Biologist, Payette National Forest. Personal Communication.
- Nelson, R.L.; James, C.J.** 2010 Evaluation of Critical habitat Proposed for bull Trout (*Salvelinus Confluentus*) by the U.S. Fish and Wildlife Service, 14 January 2010 (75 FR2270), with specific Reference to Bull Trout Populations, Potential Habitat, and Viability on the Payette National Forest. Unpublished Report. McCall, ID: USDA Forest Service, Payette National Forest. 57p. PAF Fisheries Program Library Reference EF.01.0031.
- Nelson, R.L.; Zurstadt, C.F.; Bonaminio, G.** 2007. PAF Fish and Fish Habitat Inventory Procedures Unpublished protocol. McCall, ID: U.S. Department of Agriculture, Forest Service, Payette, National Forest. 6p.
- Olson, D., and D. C. Burns.** 2007. Biological Assessment for the Potential Effects of Managing the Payette National Forest in the Little Salmon River Section 7 Watershed on Snake River Spring/Summer and Fall Chinook salmon, Snake River Steelhead, and Columbia River bull trout and Biological Evaluation for Westslope Cutthroat Trout: Volume 21: Ongoing and New Actions
- Overton, C.K.; Wollrab, S.P.; Roberts, B.C.; Radko, M.A.** 1997. R1/R4 (Northern and Intermountain Regions) fish and fish habitat standard inventory procedures handbook. Gen. Tech. Rep. INT-GR-346. Odgen UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station 142p. PNF Fisheries Program Library Reference F.10.0079.
- Saha, M.K., and S.K. Konar.** 1986. Chronic effects of Crude Petroleum on Aquatic Ecosystems. *Environmental Ecology*, 4: 506 510.
- Sullivan, K.; Lisle, T.E.; Dolloff, C.A.; Grant, G.E.; Reid, L.M.** 1987. Stream Channels: the link between forests and fishes. Pages 39-97 In: *Streamside management: forestry and fishery interactions*. E.O. Salo and T.W. Cundy (eds.) University of Washington Institute of Forest Resources. Contribution No. 57. pp. 49, 55, 57. PAF Fisheries Program Library Reference F.08.0074.
- USFS.** 2003a. Payette National Forest. Land and Resource Management Plan. McCall, ID: U.S. Department of Agriculture, Forest Service, Payette National Forest.

USFS. 2003b. Payette National Forest. Little Salmon River Subbasin Review. New Meadows ID. U.S. Department of Agriculture, Forest Service, Payette National Forest.

Hydrology:

Department of Environmental Quality 2006. Little Salmon River Subbasin Assessment and TMDL.

Olson, D., and D. C. Burns. 2007. Biological Assessment for the Potential Effects of Managing the Payette National Forest in the Little Salmon River Section 7 Watershed on Snake River Spring/Summer and Fall Chinook salmon, Snake River Steelhead, and Columbia River bull trout and Biological Evaluation for Westslope Cutthroat Trout: Volume 21: Ongoing and New Actions.

Poole, G.C., and C.H. Berman. Submitted. Pathways of human influence on water temperature dynamics in stream channels. Environmental Management.

USDA. Payette National Forest. McCall and New Meadows Ranger Districts 1994. Decision Notice and Finding of No Significant Impact. Snowcat Skiing Proposal.

Recreation:

Cook, Philip and Laughlin, Jay. Off-Highway Vehicle and Snowmobile Management in Idaho. Report 27 October 2008. University of Idaho.

USDA. Visitor Use Report Payette, Region 4, National Visitor Use Monitoring Data Collected FY 2008.

USDA. 1986 ROS Book, Forest Service.

USDA. National Forest Landscape Management Volume 2 – Chapter 1: The Visual Management System. Forest Service USDA Agriculture Handbook #462.

USDA. Draft EIS Roadless Area Conservation, National Forest System Lands in Idaho. December 2007.

USFS. 2003. Payette National Forest Land and Resource Management Plan (Forest Plan). USDA Forest Service: Payette National Forest: McCall ID

USFS. Payette National Forest 2012 Winter Travel Map.

Wildlife:

Apps, C.D. 1999. *Space-use, diet, demographics, and topographic associations of lynx in the southern Canadian Rocky Mountains: a study.* Pp. 351-371. In: *Ecology and Conservation of Lynx in the United States.* Ruggiero et al. Rocky Mountain Research Station. Technical Report RMRS-GTR-30WWW.
<http://www.fs.fed.us/rm/pubs/rmrs-gtr030.pdf> 485 pp.

- Aubry, K.B.**, G.M. Koehler and J.R. Squires. 1999. *Ecology of Canada Lynx in Southern Boreal Forests*. In: *Ecology and Conservation of Lynx in the United States*. Ruggiero et al. Rocky Mountain Research Station. Technical Report RMRS-GTR-30WWW. <http://www.fs.fed.us/rm/pubs/rmrs-gtr030.pdf> 485 pp.
- Bailey, T.N.**, E.E. Bangs, M.F. Portner, J.C. Malioy, and R.J. McAvinchey. 1986. *An apparent over-exploited lynx population on the Kenai Peninsula, Alaska*. Journal of Wildlife Management. 50. Pp. 279-290.
- Banci, V.A.** 1994a. *Fisher* (Pp. 44 and 47). In: L.F. Ruggiero, K.B. Aubry, S.W. Buskirk, L.J. Lyon, and W.J. Zielinski, eds. *The scientific basis for conserving forest carnivores, American marten, fisher, lynx and wolverine in the western United States*. USDA For. Serv. Rocky Mt. For. and Range Exp. Stn., Gen. Tech. Rep. RM-254. Fort Collins: CO.
- Brittall, J. D.**, R. J. Poelker, S. J. Sweeney, and G. M. Koehler. 1989. *Native cats of Washington*. Washington Department of Wildlife, Olympia. 3pp. www.predatorconservation.org
- Bunnell, K. D.**, J. T. Flinders, M. L. Wolfe, and J. A. Bissonette. 2006. *Potential impacts of coyotes and snowmobiles on lynx conservation in the intermountain west*. Wildlife Society Bulletin 34(3):2006. 11 pp.
- Buskirk, S.W.**, L.F. Ruggiero, and C.J. Krebs. 1999. *Habitat Fragmentation and Interspecific Competition: Implications for Lynx Conservation*. Rocky Mountain Research Station. Technical Report RMRS-GTR-30. 9 pp. <http://www.fs.fed.us/rm/pubs/rmrs-gtr030.pdf>
- Chatel, J, H.** Hudak, K. Pierson, J. Thorton. 2003. Biological Assessment for the Revision of Land and Resource Management Plans for the Boise, Payette, and Sawtooth National Forests. USDA Forest Service, Boise, Payette and Sawtooth National Forests.
- Federal Register**, July 3, 2003. Vol. 68. No. 128, pp. 40075-40101. *Final Rule: Notice of Remanded Determination of Status for the Contiguous United States Distinct Population Segment of the Canada Lynx; Clarification of Findings*.
- Gruell, G.** 1983. Fire and vegetation trends in the Northern Rockies: interpretations from 1871-1982 photographs. USDA Forest Service, Intermountain Forest and Range Experiment Station. INT-158. 117 pp.
- Hescock, C.** and B. Gould. 2000. The Biological Assessment Effects of Ongoing/Existing Projects on Canada Lynx on the Payette National Forest. USDA Forest Service, Payette National Forest. 29p (plus attachments).

- Hescock, C.**, and A.E. Egnew. 2008. Biological Assessment of the Potential Effects of Managing the Payette National Forest on the Canada Lynx (threatened). South Fork Salmon River and North Fork Payette River Section 7 Watersheds. Volume 2. Ongoing and New Actions. USDA Forest Service, Payette National Forest. 27p.
- Hodges, K. E.** 2000. The ecology of snowshoe hares in southern boreal and montane forests. Chapter 7 In Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, and J.R. Squires. (Tech. Eds.) Ecology and conservation of lynx in the United States. Univ. Press of Colorado. Boulder, CO. 480 pp.
- Koehler, G. M.** 1990. *Population and habitat characteristics of lynx and snowshoe hares in north-central Washington*. Canadian Journal of Zoology 68. Pp. 845-851.
- Koehler, G.M.** and J.D. Brittell. 1990. *Managing spruce-fir habitat for lynx and snowshoe hares*. Journal of Forestry. 10. Pp. 10-14.
- Koehler, G.M.** and K. B. Aubry. 1994. *Lynx*. Pp. 74-98 In: L.F. Ruggiero, K.B. Aubry, S.W. Buskirk, L.J. Lyon, and W.J. Zielinski. 1994. *The scientific basis for conserving forest carnivores, American marten, fisher, lynx and wolverine in the western United States*. USDA For. Serv. Rocky Mt. For. and Range Exp. Stn., Gen. Tech. Rep. RM-254, Fort Collins, CO. 184 pp.
- Kolbe, J. A.**, J. R. Squires, D. Pletscher, and L. F. Ruggiero. 2007. The effect of snowmobile trails on coyote movements within lynx home ranges. Journal of Wildlife Management. 71 (5):1409-1418.
- Lewis, L.** and C.R. Wenger. 1998. Idaho's Canada lynx: pieces of the puzzle. Idaho Bureau of Land Management, Technical Bulletin No. 98-11. 21 pp.
- McCannon, M;** and A. Egnew. 2001. Biological Assessment of the Effects to Threatened, Endangered, and Proposed Fish, Wildlife, and Plant Species From the Snowmobile Trail Grooming Cost Share Agreement with the State of Idaho Parks and Recreation Department and Valley County: USDA Forest Service, Boise National Forest. 85p.
- McKelvey, K.S.**, K.B. Aubry, J.K. Agee, S.W. Buskirk, L.F. Ruggiero, and G.M. Koehler. 2000. Lynx conservation in an ecosystem management context. In: Ecology and Conservation of Lynx in the United States. Ruggiero et al. Rocky Mountain Research Station. Technical Report RMRS-GTR-30WWW. <http://www.fs.fed.us/rm/pubs/rmrs-gtr030.pdf> 485 pp.
- Mowat, G.**, K. G. Poole, and M. O'Donoghue. 1999. Ecology of Lynx in Northern Canada and Alaska. Pp. 265-306. In: L. F. Ruggiero, K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires. In: Ecology and conservation of lynx in the United States. Ruggiero et al. 1999. USDA Forest Service. Rocky Mountain Research Station. Technical Report RMRS-GTR-

30WWW. <http://www.fs.fed.us/rm/pubs/rmrs-gtr030.pdf> 485 pp.

- Nordstom, L.,** A. Hecht, M. McCollough, B. Naney, J. Trick, N. Warren, and M. Zwartjes. 2007. Recovery Outline: Contiguous United States Distinct Population Segment of the Canada Lynx. US Fish and Wildlife Service, Denver, Colorado. 25 pp.
- Quigley, T.M.,** R.W. Haynes, and R.T. Graham. Tech. Eds. 1996. Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin and Portions of the Klamath and Great Basins. Gen. Tech. Rep. PNW-GTR-382. Portland, OR. USDA, Forest Service, Pacific Northwest Research Station. 303 pp. See abstract.
- Quigley, T.M.,** and S.J. Arbelbide. Tech Eds., 1997. An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins. Gen. Tech. Rep. PNW-GTR-405. Portland, OR. USDA, Forest Service, Pacific Northwest Research Station. 4 volumes. See abstract.
- Richards, R.,** and A.E. Egnew. 2008. Biological Assessment of the Potential Effects of Managing the Payette National Forest on the Northern Idaho Ground Squirrel (threatened) and Canada Lynx (threatened). Little Salmon River Section 7 Watershed. Volume 2. Ongoing and New Actions. USDA Forest Service, Payette National Forest. 64p.
- Ruediger, R.,** J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, R. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wegner, and A. Williamson. 2000. Canada lynx conservation assessment and strategy. Amended 2003 and 3004. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication #R1-00-53, Missoula MT. 142 p.
- Ruggiero, L.F.,** K.B. Aubry, S.W. Buskirk, L.J. Lyon, and W.J. Zielinski. 1994. The scientific basis for conserving forest carnivores, American marten, fisher, lynx and wolverine in the western United States. USDA Forest Service. Rocky Mtn. Forest and Range Exp. Stn: Gen. Tech. Rep. RM-254: Fort Collins CO.
- Ruggiero, L.F.,** K.B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKelvey, and J.R. Squires. 1999. The scientific basis for lynx conservation: qualified insights. Pp 443-454. In: Ecology and conservation of lynx in the United States. Ruggiero et al. 1999 USDA Forest Service. Rocky Mountain Research Station. Technical Report RMRS-GTR-30WWW. <http://www.fs.fed.us/rm/pubs/rmrs-gtr030.pdf> 485 pp.
- Todd, A. 1985.** The Canada lynx: ecology and management. Canadian Trapper 3. Pp. 15-20. Abstract In: T. W. Butts, editor. Lynx (Felis lynx) biology and management: a literature review and annotated bibliography. 1992. USDA Forest Service: Missoula MT.

- USFS.** 2003. Payette National Forest Land and Resource Management Plan (Forest Plan). USDA Forest Service: Payette National Forest: McCall ID
- USFS.** 2007a. Travel Management Plan. Final Environmental Impact Statement. Volume I – Summary and Chapters 1 to 3. McCall, ID: U.S. Department of Agriculture, Forest Service, Payette National Forest. Pages variously numbered. PAF Fisheries Program Library Reference EM.11.0009.
- USFS.** 2007b. Travel Management Plan. Final Environmental Impact Statement. Volume II – Chapters 4 to 6 and Appendices. McCall, ID: U.S. Department of Agriculture, Forest Service, Payette National Forest. Pages variously numbered. PAF Fisheries Program Library Reference EM.11.00010.
- USFS.** 2005a. Motor Vehicle Route and Area Designation Guide. Washington, DC: U.S. Department of Agriculture, Forest Service, National OHV Implementation Team. 82p. PAF Fisheries Program Library Reference EM.08.0014.
- USDA Forest Service and USDI Fish and Wildlife Service.** 2005. Canada Lynx Conservation Agreement. Second Edition. R1-00-53. Missoula MT.142 pp.
- USDI Fish and Wildlife Service.** 2003. Biological Opinion for Revision of Land and Resource Management Plans for the Boise, Payette, and Sawtooth National Forests Snake River Fish and Wildlife Office, Boise, ID, 155 pp. plus appendices.
- USDI Fish and Wildlife Service.** 2006. Occupied Mapped Lynx Habitat Amendment to the Canada Lynx Conservation Assessment and Strategy. Missoula Mt. 5 pp. Attached to USDI Fish and Wildlife Service Canada Lynx Conservation Agreement with the USDA Forest Service, 2006 correspondence. Fish and Wildlife Service, Portland, Oregon. 2 pp.
- Weaver, J.L.** 1999. Results of 1998 lynx hair snagging survey and DNA analysis for northern Idaho. Unpubl. Report. 1p..
- Wirsing, A.J., T.D. Steury, and D.L Murray.** 2002. A demographic analysis of a southern snowshoe hare population in a fragmented habitat: evaluating the refugium model. *Can. J. Zool.* 80:169-177.
- Wisdom, M.J., R.S. Holthausen, B.C. Wales, C.D. Hargis, V.A. Saab, D.C. Lee, W.J. Hann, T.D. Rich, M.M. Rowland, W.J. Murphy and M.R. Earnes.** 2000. Source habitats for terrestrial vertebrates of focus in the Interior Columbia Basin: Broad-scale trends and management implications, Volume 2 – Group level results. Gen. Tech. Rep. Threatened and Endangered Species, Sensitive Species and Management Indicator Species and the level of analysis required. PNW-GTR-485. Pp. 181-190; 199-208; 219-223; 237-241; 242-248; 258-265; 293-297.
www.fs.fed.us/pnw/pubs/gtr485/485v1 and [485v2a](http://www.fs.fed.us/pnw/pubs/gtr485/485v2a) and [885v2b.pdf](http://www.fs.fed.us/pnw/pubs/gtr485/485v2b)