

United States  
Department of  
Agriculture

Forest  
Service

**Northern  
Region**

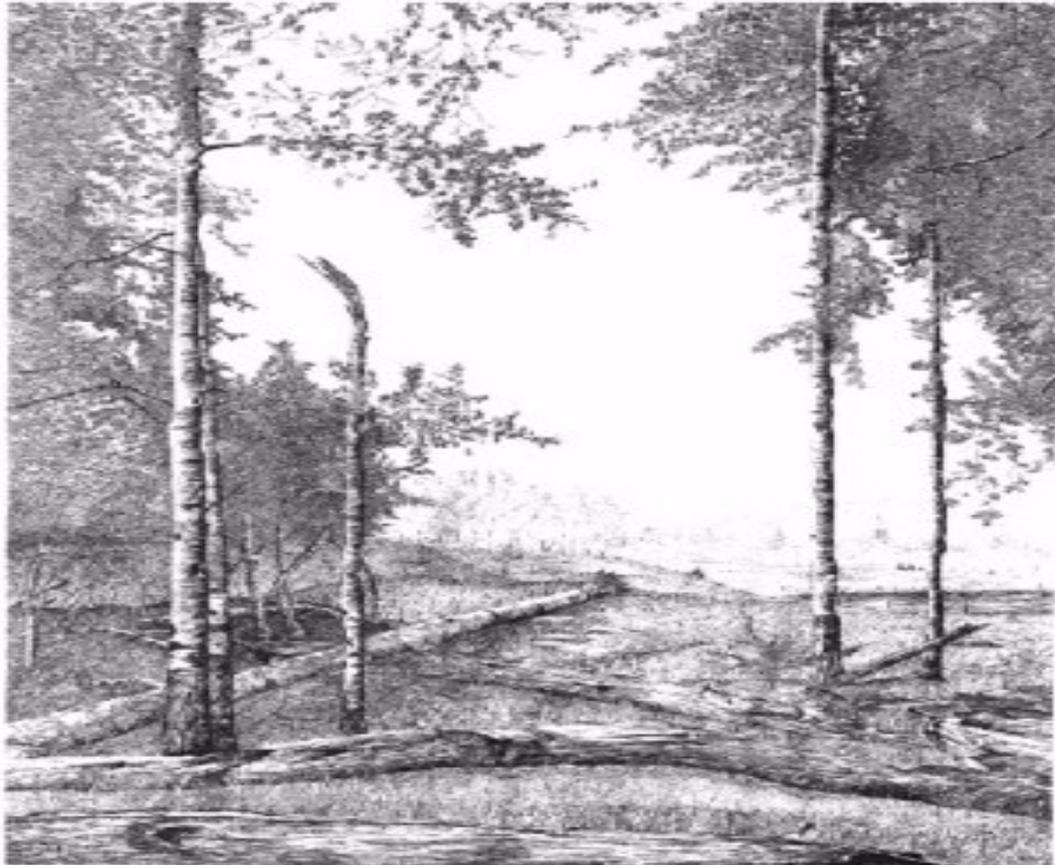
March 2007



# Grandmother Mountain Land Exchange

## Environmental Assessment

### Idaho Panhandle National Forests



The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (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 TTY).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TTY). USDA is an equal opportunity provider and employer.

[March 2007]

# Environmental Assessment Grandmother Mountain Land Exchange

## Idaho Panhandle National Forests

**Lead Agency:** US Department of Agriculture, Forest Service

**Responsible Official:** Ranotta K. McNair, Forest Supervisor  
Idaho Panhandle National Forests  
3815 Schreiber Way  
Coeur d'Alene, Idaho 83851

**For Information Contact:** Tom Ball, Lands Program Manager  
Idaho Panhandle National Forests  
3815 Schreiber Way  
Coeur d'Alene, Idaho 83851  
Phone (208) 765-7289

Reviewers should provide the Forest Service with their comments during the review period of the Environmental Assessment. This will enable the Forest Service to analyze and respond to the comments at one time and to use information acquired in the preparation of the Final Environmental Assessment, thus avoiding undue delay in the decision making process. Reviewers have an obligation to structure their participation in the National Environmental Policy Act process so that it is meaningful and alerts the agency to the reviewers' position and contentions. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553 (1978). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of this Final Environmental Assessment. City of Angoon v. Hodel (9<sup>th</sup> Circuit, 1986) and Wisconsin Heritages, Inc. v. Harris, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Comments on this Environmental Assessment should be specific and should address the adequacy of the assessment and the merits of the alternatives discussed (40 CFR 1503.3).

**Send Comments to:** Tom Ball, Lands Program Manager  
Idaho Panhandle National Forests  
3815 Schreiber Way  
Coeur d'Alene, Idaho 83851

**Date Comments Must Be Received:** [April 30, 2007]

# Content

<b>Chapter 1. Purpose of and Need for Action .....</b>	<b>1</b>
Introduction.....	1
Background.....	1
Purpose of and Need for Action.....	2
Proposed Action.....	3
Scope of the EA .....	3
Decisions to Be Made .....	6
<b>Chapter 2. Alternatives, Including the Proposed Action.....</b>	<b>7</b>
Introduction.....	7
Public Involvement (Scoping) .....	7
Identification of Significant Issues .....	8
Alternatives Considered in Detail.....	10
Alternatives Considered but Eliminated from Detailed Study.....	12
Comparison of Alternatives .....	15
<b>Chapter 3. Affected Environment and Environmental Consequences .....</b>	<b>17</b>
Geology and Minerals.....	17
Vegetation; Threatened, Endangered, Sensitive and Forest Species of Concern Plant Species .....	19
Commercial Timber .....	24
Fire and Fuels.....	25
Water Quality .....	26
Wetlands and Floodplains .....	37
Fisheries .....	38
Recreation Including Roadless Areas .....	51
Wildlife: Threatened, Endangered, Sensitive and Management Indicator Species (MIS).....	64
American Indian .....	79
Social and Economic Environment.....	80
<b>References .....</b>	<b>91</b>
<b>Acronyms .....</b>	<b>103</b>
<b>Glossary.....</b>	<b>105</b>
<b>Appendix .....</b>	<b>125</b>
A – Legal Descriptions.....	125
B – Maps.....	127
C – Land Exchange Process.....	133
D – Biological Assessments/Biological Evaluations (BAs/BEs).....	135
<b>List of Tables</b>	
Table 1. Affected Acres by County .....	11
Table 2. Alternative 1- MA Acre Allocation for All Parcels to Convey and Acquire .....	12
Table 3. Comparison of Significant Issues by Alternative.....	16
Table 4. Sawtimber Cruise Information on Conveyed and Acquired parcels .....	25
Table 5. Alternative 1 Road Work and Sediment Yield from Stream Crossings by Watershed .....	32
Table 6. Alternative 1 Sediment Yield from Encroaching Roads by Watershed.....	32
Table 7. Alternative 1 Sediment Yield from Non-Stocked Acreage by Watershed .....	32
Table 8. Alternative 1 Long and Short Term Total Sediment Yield by Watershed.....	33

Table 9. Alternative 2 Road Work and Sediment Yield from Stream Crossings by Watershed .....	34
Table 10. Alternative 2 Sediment Yield from Encroaching Roads by Watershed .....	35
Table 11. Alternative 2 Sediment Yield from Non-Stocked Acreage by Watershed .....	35
Table 12. Alternative 2 Long and Short Term Total Sediment Yield by Watershed.....	36
Table 13. Summary of Wetlands and Floodplains.....	38
Table 14. Fish Species not Analyzed in Detail.....	41
Table 15. Alternative 1 Conveyed Stream Miles by Watershed and Parcel Name.....	49
Table 16. Alternative 1 Acquired Stream Miles by Watershed and Parcel Name .....	49
Table 17. Alternative 1 Conveyance and Acquisition of Bull Trout Stream Miles Found within Parcels by Watershed .....	50
Table 18. Alternative 1 Stream Baring Fishery Effects Characterization .....	50
Table 19. Alternative 2 Stream Baring Fishery Effects Characterization on Lands Not to Exchange.....	51
Table 20. Sensitive Species and Habitat .....	71
Table 21. Summary of Conclusion of Effects .....	74
Table 22. Listed Wildlife Species .....	75
Table 23. Proposed Exchange Lynx Analysis of LAU's and Associated Habitat by Parcel ...	76
Table 24. Federal Parcel Land Use Considerations for the Proposed Exchange .....	82
Table 25. Non-Federal Parcel Land Use Considerations for the Proposed Exchange .....	84
Table 26. One-Time Administrative Costs and Savings to United States for Exchange Alternative .....	88
Table 27. Acres of Federal Land Conveyed and Non-Federal lands Acquired 1981-2006.....	89
Table D-1. Sensitive Species Conclusion of Effects .....	135

**List of Figures**

Figure 1. Grandmother Mountain Land Exchange Vicinity Map .....	128
Figure 2. Grandmother Mountain Land Exchange Federal Lands to Convey Map .....	129
Figure 3. Grandmother Mountain Land Exchange Federal Lands to Convey Map .....	130
Figure 4. Grandmother Mountain Land Exchange Non-Federal Lands to Acquire Map .....	131
Figure 5. Grandmother Mountain Land Exchange Non-Federal Lands to Acquire Map .....	132

# Chapter 1. Purpose of and Need for Action

## Introduction

The Forest Service (FS) has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed Grandmother Mountain Land Exchange between Forest Capital, LLC and the Forest Service, U.S. Department of Agriculture. The Proposed Exchange involves lands within the Idaho Panhandle National Forests (IPNF) boundary; except for the Myrtle Creek parcel which is adjacent to the boundary. The Federal lands are located in Shoshone County, Idaho. The non-Federal lands are located in Shoshone and Bonner Counties, Idaho.

This document is organized into three chapters:

- *Chapter 1. Purpose and Need for Action:* This chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. It explains the overall scope of the EA discloses other pertinent information and describes the decisions to be made by the Responsible Official.
- *Chapter 2. Alternatives, including the Proposed Action:* This chapter describes the scoping and public involvement process, identifies the significant issues, provides a more detailed description of the agency's Proposed Exchange and discusses alternatives to the Proposed Exchange. Finally, this section provides a comparison summary of the environmental effects associated with each alternative evaluated in detail.
- *Chapter 3. Affected Environment and Environmental Consequences:* This chapter describes the existing physical, biological, economic, and social environment potentially affected by the Proposed Exchange and the alternative to the Proposed Exchange described in Chapter 2. It also discloses the anticipated environmental consequences of implementing the alternatives evaluated in detail. Unavoidable adverse impacts, irreversible and irretrievable commitments of resources are identified where applicable.
- *Acronyms:* The acronyms assist the reader in understanding abbreviations.
- *Glossary:* The glossary provides definitions of words or phrases used in the text.
- *Appendices:* The appendices provide additional detailed information to support the analyses presented in the environmental assessment.

Additional documentation, including more detailed analyses of project-area resources, may be found in the Project Record (PR) located at the IPNF Supervisors Office, 3815 Schreiber Way, Coeur d'Alene, Idaho 83851.

## Background

The proposed Grandmother Mountain Land Exchange evolved from two land exchanges proposed in 1997; the Little North Fork of the Clearwater River Land Exchange and the Grandmother Mountain Land Exchange. In both of these proposed exchanges, the non-Federal party was Plum Creek Timber Company.

The parties executed an Agreement to Initiate (ATI) for each land exchange in January 1997. At that time, the Little North Fork Exchange contained nine non-Federal parcels totaling

approximately 5,000 acres and two Federal parcels totaling approximately 2,400 acres. The Grandmother Mountain Exchange contained five non-Federal parcels totaling approximately 1,500 acres and five Federal parcels totaling approximately 1,200 acres. Following a field review in the fall of 1998, the IPNF determined acquisition of five of the Little North Fork non-Federal parcels (Jungle Creek, Spotted Louis Creek, Montana Creek, Montana Peak, and Round top) would not be in the public's best interest. Initial public scoping on the Little North Fork Exchange occurred in 1998.

The remaining non-Federal parcels (Adair Creek, Daveggio Creek, Two Dot Peak, and Fishhook Peak) were added to the Grandmother Mountain Exchange in a 1999 amendment to the ATI. That amendment also added the Whistling Creek Federal parcel to the exchange proposal.

In 2000, Plum Creek sold its timberlands in the St. Joe area to Crown Pacific. In 2002, Crown Pacific timberlands were purchased by Forest Capital Partners, LLC. At that time, the Falls Creek and Marble Creek Federal parcels were deleted and the non-Federal Myrtle Creek parcel was added to the proposal. In 2003, the Myrtle Creek parcel burned in a wildfire and was subsequently salvage logged by Forest Capital.

The final Proposed Exchange configuration is documented in an ATI executed by Forest Capital and the IPNF in 2005 (PR).

## **Purpose of and Need for Action**

**Purpose** – The purpose of this Proposed Land Exchange is to provide for more effective management of National Forest System (NFS) lands and private timberlands through consolidation of existing Federal and private ownership.

**Need** - Currently there are isolated Federal parcels adjacent to or surrounded by Forest Capital parcels as well as isolated Forest Capital parcels adjacent to or surrounded by NFS lands. Isolated land parcels are difficult and more expensive to access and manage. There is a need to consolidate ownership to improve access, reduce management costs, and provide improved opportunities to meet FS and private management objectives for these lands.

Several Forest Capital parcels are in and adjacent to the Grandmother Mountain Roadless Area. One Forest Capital parcel adjacent to the Kootenai Wildlife Refuge includes the falls near the mouth of Myrtle Creek. This parcel is also within the Bonners Ferry Municipal watershed and the Myrtle Creek Grizzly Bear Management Unit. There is a need to protect aquatic, wildlife and other resource values in and adjacent to the Grandmother Mountain Roadless Area, as well as the Myrtle Creek Watershed. By exchanging land parcels with Forest Capital, there is an opportunity to achieve the need to protect roadless values and unique areas, increase Federal ownership within a municipal watershed and contribute towards the protection of aquatic resources and wildlife habitat.

This proposed action responds to the goals and objectives outlined in the FP (Chapters I & II) and helps to move towards desired management described under Management Area Direction (Chapter III).

## Proposed Action

The Forest Service, U.S. Department of Agriculture and Forest Capital, LLC, acting through their authorized representatives, are jointly proposing to exchange fee title to approximately 1,325.38 acres of Federal land and 2,399.50 acres of non-Federal land (Appendix B - maps) located within the boundaries of the IPNF. The legal descriptions are in Appendix A. The Proposed Exchange would occur pursuant to:

- The General Exchange Act of March 20, 1922, as amended, (42 Stat. 465, as amended; 16 U.S.C. 485, 486)
- The Weeks Law Act of March 1911, as amended, (36 Stat 961; 16 U.S.C. 515-516)
- The Federal Land Policy Management Act (FLPMA) of October 21, 1976, as amended, (90 Stat 2743; 43 U.S.C. 1715-1717)
- The Federal Land Exchange Facilitation Act (FLEFA) of August 20, 1988, (102 Stat. 1086; 43 U.S.C. 1716(note), 751(note))

The General Exchange Act and the Weeks Act are the principle exchange authorities while FLPMA and FLEFA are supplemental to the principle authorities and provide operational guidelines in completing land exchanges.

## Scope of the EA

The physical bounds of this EA are the parcels identified for exchange under the Proposed Exchange Alternative (Appendix A and B). Based on specific resources, however, the bounds of analysis may include larger areas that could potentially be affected by foreseeable future management actions (i.e. watersheds).

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act of 1969 (NEPA) requires that the Federal Agencies consider the three following types of actions to determine the scope of an EA:

1. Connected Actions are those actions that are closely related. Actions are connected if they automatically trigger other actions that may require NEPA analysis; if they cannot or will not proceed unless other actions are taken previously or simultaneously; and if they are interdependent parts of a larger action and depend on the larger action for justification.
2. Cumulative Actions are those actions that contribute to a cumulative effect. Cumulative effects are effects on the environment that result when the incremental effect of the proposal is added to other past, present, and reasonably foreseeable future actions.
3. Similar Actions include other management activities with similarities such as a common timing or geography that provide a basis for evaluating environmental sequences with the Proposed Exchange. No other similar actions such as other pending land exchanges were identified.

This EA considers connected and cumulative actions resulting from Forest Capital's anticipated management plans under the Proposed Exchange and the No Action alternatives (PR). All planned activities disclosed under Reasonably Foreseeable Actions are within a 10 year planning period.

## Reasonably Foreseeable Actions

### Proposed Exchange Alternative

*Public Access* – The public would be allowed non-motorized access for recreational purposes to FS parcels to convey with no additional restrictions.

*Planned Road Management Strategies within or immediately adjacent to FS parcels to convey* – Planned activities include 9.2 miles of new road construction and 11.3 miles of heavy road construction.

*Access Requirements* – Forest Capital would need to go through private property to access Lots 1-3, NE1/4NW1/4, S30, T.47N.,R.2E. (Lemonade Peak Parcel)

### *Summary of Planned Forest Capital Harvest Strategies*

#### *T44N, R.7E - Whistling Creek Parcel*

Approximately 50% of area would be regeneration harvested and 50% intermediate harvested; 50% tractor and 50% line skid.

#### *T47N, R1E - Pine Creek Parcels*

Approximately 40% of the area would be regeneration harvested and 60% intermediate harvested; 40% tractor and 60% line skid.

#### *T47N, R2E - Lemonade Peak Parcels*

Approximately 40% of the area would be regeneration harvested and 60% intermediate harvested; 30% tractor and 70% line skid.

#### Notes:

1. Clearcut, Shelterwood and Seed Tree Cuts were categorized as Regeneration harvests.
2. Dead, Diseased, and/or Dying removal, and Overstory removal were categorized as Intermediate harvests.
3. Harvest percent categories were weighted by area within each parcel and rounded to the nearest 5%.
4. Specific information related to each parcel is available from the individual Anticipated Management Action Questionnaires submitted by Forest Capital, as amended by ‘Miles of road constructed/reconstructed estimates’.

### No Action Alternative

*Public Access to not acquired parcels* – The public would be allowed non-motorized access for recreational purposes to the following parcels with no additional restrictions: Sec. 1 & 11, Lost Lake Creek Parcel; Sec. 5,7,17, Duplex Creek Parcel; Sec. 9, Adair Creek parcel; Sec. 7, Daveggio parcel; and Sec. 17, Twodot Peak parcel.

The public would be allowed access with no restrictions for recreational purposes to the following parcels: Sec. 3, Lost Lake Creek Parcel; Sec. 31, Freezeout parcel; Sec. 33, Twin Springs Creek parcel; Sec. 33, Lines Creek parcel; and Sec. 21, Fishhook Peak parcel.

The Myrtle Creek parcel in Sec. 23 would continue to have public access control at the bottom of the drainage.

*Planned Road Management Strategies within or immediately adjacent to Forest Capital parcels not acquired* – Planned activities include 9.8 miles of new road construction. It would require 7.5 miles to access the Twin Springs parcel (to be sold for highest and best use). Also, this alternative includes 16.8 miles of heavy road construction.

*Access Requirements to not acquired parcels* – Forest Capital would need a road use permit or easement across NFS lands to access all parcels except Myrtle Creek, Fishhook Peak and Lines Creek parcels.

***Summary of Planned Forest Capital Harvest Strategies in not acquired parcels***

*T43N, R4E-Lost Lake Creek, Duplex Creek, Freeze Out, and Twin Springs Creek parcels*  
Approximately 45% of area would be regeneration harvested and 55% intermediate harvested; 70% tractor and 30% line skid.

*T43N, R4E-Adair Creek parcel*  
Approximately 60% of the area would be regeneration harvested and 40% intermediate harvested; 90% tractor and 10% line skid.

*T44N, R2E-Lines Creek parcel*  
Approximately 15% of the area would be intermediate harvested with tractor skidding. All of the area would be precommercial thinned.

*T44N, R4E-Daveggio, Two Dot Peak and Fishhook Peak parcels*  
Approximately 40% of the area would be regeneration harvested and 60% intermediate harvested; 60% tractor, 5% helicopter, and 35% line skid.

*T62N, R1W-Myrtle Creek parcel*  
Approximately 25% of area would be immediately regeneration harvested with helicopter. 75% of area would be precommercial thinned.

Notes:

1. Clearcut, Shelterwood and Seed Tree Cuts were categorized as Regeneration harvests.
2. Dead, Diseased, and/or Dying removal, and Overstory removal were categorized as Intermediate harvests.
3. Harvest percent categories were weighted by area within each parcel and rounded to the nearest 5%.
4. Specific information related to each parcel is available from the individual Anticipated Management Action Questionnaires submitted by Forest Capital, as amended by “Miles of road construction/reconstruction estimates”.

## **Decisions to Be Made**

The responsible official is the Idaho Panhandle Forest Supervisor, whose authority is delegated by the Director of Recreation, Minerals, Lands, Heritage and Wilderness. The Forest Supervisor's decision to implement an alternative will be documented in a Decision Notice. Specifically, the Forest Supervisor will decide on one or more of the following decisions:

1. Whether or not to exchange Federal parcels for Forest Capital parcels of equal value.
2. To grant access to Forest Capital parcels and if granted what actions would be required by Forest Capital and the FS prior to granting easements.
3. To protect affected existing land use and authorizations on Federal lands to convey within the decision area, and if so how.
4. To identify specific proposed mitigation measures, if any, necessary to implement the FP and achieve FP management direction for specific resources.
5. To refine a preferred equal value alternative in light of the analysis.

# Chapter 2. Alternatives, Including the Proposed Action

## Introduction

When identifying lands available for exchange, certain limiting criteria are applied to assure compliance with existing laws, regulations and policy. Also, a successful exchange is dependant upon agreement of the parties involved. The following information is pertinent to identifying lands available for exchange.

- Lands are limited to those parcels both parties are willing to exchange and accept.
- Exchanges must be made on an equal value for equal value basis as required under the Federal Land Policy and Management Act (FLPMA). See Appendix C.
- Federal lands considered for conveyance and acquisition are in compliance with Landownership Planning Criteria listed in Appendix E of the Forest Plan (FP).
- Federal lands considered for conveyance have no cultural resources which are eligible for the Natural Register of Historic Places (NRHP).
- Acquired private parcels should improve administrative efficiency, including cost effectiveness.
- Acquired private parcels should minimize future management conflicts with adjacent landowners.
- The land exchange alternative development process considered each party's anticipated 10 year management plans, land stewardship, and compliance with existing Idaho and Federal laws and regulations.

This chapter describes and compares the Proposed Grandmother Mountain Land Exchange with the No Action Alternative. It also identifies other potential alternatives to the Proposed Action and explains why these alternatives are not evaluated in detail.

The alternatives evaluated in detail are compared with one another by sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Some of the information used to compare the alternatives is based upon the design of the alternative and other information is based upon the environmental, social and economic effects of implementing each alternative.

## Public Involvement (Scoping)

The purpose of scoping is to determine the scope of the issues to be addressed and to identify significant issues relative to the Proposed Action. Scoping also helps to identify other alternatives to evaluate in detail, assists in determining data needs, provides input to formulate analysis/decision criteria and helps suggest feedback to those providing input. The IPNF Land Exchange Public Involvement and Collaboration Plan is located in the PR.

Notices inviting scoping comments were published in the Shoshone News-Press, the Spokesman Review, and the Bonners Ferry Herald for four consecutive weeks during November and December 2005. Notices were also published in the St. Maries Gazette Record for three consecutive weeks in November 2005, and again on March 15, 2006. These notices asked for public comment on the Proposed Exchange from November 9, 2005 through April 29, 2006. In addition, as part of the public involvement process, the IPNF mailed in October 2005 written

notices describing the Proposed Exchange to the county commissioners, and Federal congressional delegations.

Meetings occurred in June and July between the FS and Boundary and Shoshone County Commissioners. The history of the Proposed Exchange was outlined, the purpose and need for the proposal was explained and maps were handed out. The commissioners expressed concern about the Proposed Exchange adding acreage to Federal management. Ways to mitigate this concern were discussed PR.

Commensurate with FS authority and responsibility to manage NFS lands is the obligation to consult, cooperate, and coordinate with federally recognized American Indian tribes in developing and planning management decisions regarding resources that may affect tribal rights established by treaty or Executive Order. The FS complied with this shared responsibility by working with the Tribes on a government-to-government basis and in a manner that attempts a reasonable accommodation of their needs, without compromising the legal positions of the Tribes or the Federal government.

In June, 2005, Bonners Ferry District Ranger Mike Herrin met with representatives of the Kootenai Tribe of Idaho. The Proposed Exchange was described and discussion focused on the Myrtle Creek non-Federal parcel proposed for acquisition in Boundary County. The purpose and need for the Proposed Exchange was explained to Tribal representatives (PR).

The proposed exchange has been discussed with representatives for the Coeur d'Alene Tribe on several occasions, including meetings at tribal offices in May 2005 and January 2006. Individual parcels in the Proposed Exchange were discussed and the purpose and need for the proposal was explained. Tribal representatives indicated that it appeared the Tribe would be favorable to the proposal because of the Federal acquisitions in the vicinity of Grandmother Mountain (PR).

The Grandmother Mountain Land Exchange Scoping Content Analysis (January 2006) evaluated six written responses (PR). Respondents were from two states, the majority being from Idaho. Respondents included business, County agency, State agency, and groups or organizations. The scoping comments were separated into fourteen (14) categories. Individual substantive comments and categories are documented in the Content Analysis filed in the PR. Public comments received after the completion of the Content Analysis continues to be considered. All American Indian government-to-government consultation/relations throughout this NEPA process will be incorporated into the decision making process.

## **Identification of Significant Issues**

The definition of a significant issue is a clear disagreement with the Proposed Action Alternative based on some anticipated effect. Issues are identified through the scoping process with the public, other agencies, and internal FS reviews. Also, issues are identified through government-to-government consultation/relations with affected Indian Tribes.

The scoping process is used not only to identify significant environmental issues deserving of analysis, but also to de-emphasize insignificant issues, thereby narrowing the scope of the environmental assessment process accordingly. Therefore, impacts are discussed in proportion to their significance. An important component of the significant issue identification process is to describe cause-and-effect relationships between actions and effects.

Some issues were considered, but dropped from further analysis because they are outside the scope of the Proposed Exchange Alternative and its purpose and need; have already been decided by law; are irrelevant to the decision to be made; or are limited in extent, duration and intensity.

Based upon interdisciplinary (ID) team recommendations on scoping comments and consultation with American Indian tribes, the Responsible Official identified three significant issues. They include: 1) water quality/fisheries 2) threatened, endangered and sensitive species/special habitats and 3) social and economics. These significant issues were used to develop the alternatives to the Proposed Exchange, as well as to evaluate and compare the alternatives.

### **1) Water quality/fisheries**

Indicator measures: 1) Net change of intermediate and perennial stream miles to Federal estate; 2) analysis area increase of long-term sediment yield per year; 3) analysis area increase of short-term sediment yield per year; 4) number of new road construction stream crossings; 5) net change of perennial fish stream miles to Federal estate; 6) Net change of bull trout stream habitat miles to Federal estate and, 7) an assessment of the potential for decreasing trends in fish habitat quality.

The Proposed Exchange and the subsequent planned road construction, maintenance and logging have a potential to increase water temperatures and introduce sediment into streams. Affected streams have a potential to cumulatively degrade the quality of fish habitat for spawning, foraging, migration and rearing and may result in a decrease of fish populations.

Western Lands Project stated the EA should analyze the full extent of environmental impacts that would likely result from the Proposed Exchange Alternative. Anticipated management plans such as road construction, logging, grazing, mining and development that are likely to occur on parcels acquired need to be identified and resulting indirect and cumulative effects need to be disclosed. Friends of the Clearwater, the Ecology Center, the Lands Council, Kootenai Environmental Alliance and Alliance for the Wild Rockies requested the analysis disclose what kind of development, the effects on fish and water quality, and compliance with laws and regulations related to these resources.

### **2) Threatened, endangered and sensitive species/special habitats**

Indicator measures: 1) Old growth acres affected by alternative; 2) compliance with FP old growth standards and guidelines; 3) affected mature and immature habitat acres for management indicator species (MIS); 4) potential for adverse impacts to big game MIS; 5) effect on lynx population viability and habitat and, 6) effect on non-game MIS population viability and habitat.

The Proposed Exchange and the subsequent planned road construction, maintenance and logging may result in an increase or decrease of threatened, endangered and sensitive species habitats. In addition, the Proposed Exchange may result in the net loss of old growth and recruitment old growth.

The Idaho Conservation League requested inventories for Threatened, Endangered or Sensitive species be disclosed and effects analysis included in the Environmental Assessment. Western Lands Project stated the analysis must identify whether the Proposed Exchange would result in an increase or decrease in important habitats under FS management. Friends of the Clearwater, the Ecology Center, the Lands Council, Kootenai Environmental Alliance and Alliance for the Wild

Rockies along with the Idaho Conservation League and Western Lands Project expressed concern about the loss of old growth and recruitment old growth.

### **3) Social and Economic**

Indicator Measures: 1) Net change Pinchot Butte Roadless Area acres to Federal estate; 2) Net change Grandmother Mountain Roadless Area acres to Federal estate; 3) Change in roadless area attributes for Big Creek Roadless Area; 4) Change in roadless area attributes for Grandmother Mountain Roadless Area; 5) Change in roadless area attributes for Pinchot Butte Roadless Area; 6) One time administrative savings; 7) Change in annual administrative costs, and 8) Change in Shoshone and Boundary County tax revenues.

The Proposed Exchange has the potential to affect traditional land uses and lifestyles. The Proposed Exchange may have the potential to affect NFS land management and administrative costs.

The Idaho Conservation League requests the EA disclose the effects to the Grandmother Mountain roadless area, including potential impacts of motorized use within the roadless area. Friends of the Clearwater, the Ecology Center, the Lands Council, Kootenai Environmental Alliance and Alliance for the Wild Rockies expressed a concern about the Proposed Exchange resulting in a decrease in public values or the ability to meet National Forest System management objectives. When discussing appraisal values, these organizations stated the costs of restoration of acquired parcels must be factored into the environmental assessment. Western Lands Project expressed concern about the condition of proposed acquired parcels. This organization stated the EA should describe the effort necessary to remove invasive species and re-establish native species on acquired parcels.

## **Alternatives Considered in Detail**

The process used in developing alternatives to evaluate in detail involved bringing together a considerable amount of information. First, the ID team and lands staff considered the history of land acquisition and land exchanges along with land ownership adjustment direction in the Forest's Land and Resource Management Plan, as amended (August 1987). Second, the lands staff in cooperation with Forest Capital, the non-Federal party, evaluated all opportunities to achieve the identified purpose and need statements listed in Chapter one. After a conceptual Proposed Action Alternative was developed, the lands staff reviewed the existing information on each parcel to convey in determining if the proposal would comply with the Forest wide management direction. The FS then confirmed that Forest Capital could achieve their objectives and was willing to participate in the Proposed Exchange.

The Responsible Official has selected the Proposed Action and No Action Alternatives to evaluate in detail based on ID team input, Tribal input and public involvement.

### **Alternative 1: Proposed Exchange**

The Forest Service, U.S. Department of Agriculture and Forest Capital, LLC, acting through their authorized representatives, are jointly proposing to exchange approximately 1,325.38 acres of Federal land and 2,399.50 acres of non-Federal land (Appendix B - maps) located within the boundaries of the IPNF. The minerals estate of the Federal and non-Federal parcels would be conveyed along with the surface estate. Trail easements for trails 8 and 555 would be reserved to

the United States. Refer to “Land Uses” starting on page 82 for more specific information on outstanding rights and reservations. The legal descriptions are located in Appendix A. The Proposed Exchange would occur pursuant to:

- The General Exchange Act of March 20, 1922, (42 Stat. 465, as amended; 16 U.S.C. 485, 486)
- The Weeks Law Act of March 1911, as amended, (36 Stat 961; 16 U.S.C. 515-516)
- The Federal Land Policy Management Act of October 21, 1976, as amended, (90 Stat 2743; 43 U.S.C. 1715-1717)
- The Federal Land Exchange Facilitation Act of August 20, 1988, (102 Stat. 1086; 43 U.S.C. 1716(note), 751(note))

The land exchange process includes some procedures that are open for public review and others that are confidential. See Appendix C for a brief summary on the land exchange process.

The St Joe, Coeur d’Alene and Bonners Ferry Ranger Districts are the affected management units. Affected areas by county are shown in Table 1.

**Table 1. Affected Acres by County**

<b>County</b>	<b>FS Acres to Convey</b>	<b>Private Acres to Acquire</b>
Shoshone County	1325	2119
Boundary County	0	280
<b>Totals</b>	<b>1325</b>	<b>2399</b>

Parcels proposed for exchange (Federal and non-Federal) are within the geographic area of ceded lands and/or area of interest of the Coeur d’Alene Tribe and the Kootenai Tribe of Idaho.

The Proposed Exchange would authorize the transfer of land ownership and management authority between the parties. The FS would manage the acquired parcels in accordance with the IPNF Forest Plan, August 1987. Forest Capital would manage the acquired parcels similar to the anticipated management plans located in the PR.

Rights previously conveyed or permitted by the United States on National Forest parcels to convey would be protected. These rights include easements, water rights and cost share agreements and/or memorandums of understandings.

Existing management area (MA) acre allocation of all parcels proposed for conveyance and proposed MA acre allocation of all parcels proposed for acquisition are displayed in Table 2 on page 12. Land exchange regulations (36 CFR 254.3(f) state: “Lands acquired by exchange that are located within areas having an administrative designation established through the land management planning process shall automatically become part of the area within which they are located without further action by the FS, and shall be managed in accordance with the laws, rules, and regulations and land and resource management plan applicable to such area.”

**Table 2. Alternative 1- MA Acre Allocation for All Parcels to Convey and Acquire**

<b>MA</b>	<b>Management Area Descriptions</b>	<b>FS Acres to Convey</b>	<b>Private Acres to Acquire</b>	<b>Acres Net Change</b>
<b>Idaho Panhandle National Forests</b>				
1	Timber production distributed throughout the Forest	400	280	-120
3	Timber production within grizzly bear and big game winter habitat	0	280	+280
6	Timber production and within important elk summer range habitats	320	320	0
9	Areas of non-forest lands; not capable of producing industrial products; physically unsuited for timber production; capable of timber production but isolated by the above landtypes or nonpublic ownership	605	120	-485
10	Areas that have high value for semi-primitive recreation that are in blocks of 2,500 acres or more and are part of the roadless resource	0	1,399	+1,399
<b>Totals</b>		<b>1,325</b>	<b>2,399</b>	<b>1,074</b>

**Alternative 2: No Action**

The Proposed Land Exchange between the FS and Forest Capital would not occur. The current landownership pattern within the analysis area would remain the same.

**Alternatives Considered but Eliminated from Detailed Study**

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for a reasonable range of alternatives designed to achieve the purpose and need. The suggested alternative to examine the impacts caused by loss of private lands in Shoshone County resulting from land exchanges was outside the scope of this analysis. An alternative that would purchase the non-Federal parcels and another alternative that would place deed restrictions or conservation easements on conveyed Federal parcels were eliminated from detailed study for reasons summarized below.

**Exchange Selected Federal Parcels and Maximize Cash Payment to Forest Capital (up to 25% of the Appraised Value of the Federal Parcels) to Achieve Equal Value**

This alternative was dropped from further consideration for several reasons. First, it is the policy of the FS to minimize, to the greatest extent possible, equalization payments. Inclusion or exclusion of lands is the preferred methods to equalize. When comparing to other regional and national priorities, it is unlikely that the FS could get the funding needed for such an equalization payment. Additionally, it is possible that the FS would not achieve its purpose and need goals to the greatest extent. Isolated Federal parcels that could have been exchanged, if lands rather than cash were used to equalize values, would remain in Federal ownership under this scenario. Lastly,

this alternative would not be responsive to county commissioner scoping concerns related to the net reduction in private lands. Further, private land reduction would likely result in a greater loss of property tax revenues in the two county study area. Compared to the Proposed Action Alternative, less Federal lands would enter private ownership to offset revenues being lost by the counties.

### **Purchase the non-Federal Parcels Identified in the Proposed Action Alternative**

This alternative was not acceptable to Forest Capital because the company does not want to sell their timber producing lands (PR). Selling lands at fair market value which are managed for sawlogs would not meet company long term goals and objectives. This alternative would also not achieve the FS need to convey isolated land parcels that are difficult and more expensive to access and manage. Also, when comparing to other regional and national purchase priorities, it is unlikely that the FS could get the funding needed for purchase. Finally, this alternative would significantly reduce private land ownership; therefore not address the county commissioners' concern related to increased loss of property tax revenues in the two county study area.

### **Require Deed Restrictions or Conservation Easements on Conveyed Federal Parcels**

Completing the Proposed Exchange with the addition of a deed restriction or conservation easement on Federal parcels to convey was considered and discussed by the FS with Forest Capital.

The FS reviewed the need for a deed restriction or conservation easement though the process of evaluating effects in the environmental analysis. In Chapter 3, the existing condition of the affected environment and the possible effects of Forest Capital's foreseeable management actions were disclosed. Deed restrictions or conservation easements on conveyed parcels would not significantly address issues related to Threatened and Endangered species, sensitive species, old growth, wetlands/floodplains, and heritage resources.

The net effects of the Proposed Exchange would be a benefit to fish including the listed bull trout. The long-term effects of Alternative 1 would result in some beneficial effects to fish habitat as well. Alternative 1 would only convey .45 miles of fish bearing stream that would likely have decreasing trends in fish habitat quality. Most of this would occur in the Whistling Creek Drainage, a non bull trout stream, which has already been degraded; therefore deed restrictions or conservation easements on the Whistling Creek parcel would not benefit the threatened bull trout. The activities associated with Alternative 1 may impact westslope cutthroat trout individuals or their habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species as described in the Environmental Consequences narrative; therefore deed restrictions or conservation easements would not significantly benefit westslope cutthroat trout.

Chapter 3 reveals the habitat values for threatened, sensitive and management indicator wildlife species on conveyed parcels in the Proposed Exchange do not warrant protection under this alternative. The Proposed Exchange would convey 12 acres of allocated old growth located on a Federal parcel. The Proposed Exchange would have a reasonable expectation that there would be a net increase in the amount of old growth on the Federal estate; both initially and in the future. Regardless, because of current old growth allocations on the IPNF (i.e. allocation exceeds the

10% standard) the conveyance of 12 acres of allocated old growth would be in compliance with FP standards (IPNF, 2004) therefore deed restrictions or conservation easements would not significantly improve old growth habitat on the IPNF.

Executive Orders 11988 and 11990 direct the FS to take special care when undertaking actions that may affect wetlands or floodplains, directly or indirectly. Agencies are required to avoid disturbing these unique areas whenever there is a practical alternative that would minimize environmental harm. The Proposed Exchange would result in a small increase of floodplains and wetlands under Federal management. A review of existing wetland and floodplain acreage on conveyed parcels revealed deed restrictions or conservation easements would not significantly contribute towards protection of unique wetland and floodplain resources.

There are no sites eligible for the National Register of Historic Places on the Federal parcels to convey. This alternative would not contribute towards the protection of heritage resources or other areas considered as being of interest to the affected American Indian tribes.

Based upon information disclosed in Chapter 3, it was determined that deed restrictions or conservation easements on conveyed parcels is not warranted to comply with legal, regulatory requirements, executive orders, policy, or to meet Forest Plan management requirements. In addition, Forest Capital by letter dated September 7, 2006 stated “Deed restrictions and/or conservation easements encumbering land received by Forest Capital are also unacceptable. Forest Capital does participate in large and small scale conservation easements with various organizations but is compensated for the property rights lost. The Forest Capital lands received by the USFS are not encumbered and Forest Capital expects the USFS lands it receives are unencumbered as well.”(PR) Since this alternative would not be acceptable to the non-Federal party, it would have the same consequence as the No Action Alternative. If the FS were to insist on this alternative, the Proposed Exchange alternative would no longer be viable. Therefore, deed restrictions or conservation easements were not fully developed or analyzed, except as the No Action alternative.

### **Donation of Forest Capital Parcels in the Proposed Action Alternative to the FS**

This alternative was not acceptable to Forest Capital. Donating lands managed for timber production to the FS would not meet company long term goals and objectives. Also, this alternative would significantly reduce private land ownership; therefore not address the county commissioners’ concern related to increased loss of property tax revenues in the two county study area.

### **Acquire Non-Federal Parcels from Forest Capital in Exchange for National Forest Timber or Receipts for National Forest Timber**

This alternative is similar to the Purchase Alternative except funds for payment of private parcels would come from receipts for National Forest timber rather than Land and Water Conservation Fund (LWCF) land purchase money. It is the policy (FSM 5430) to use land-for-timber authority only in high-priority cases that cannot be postponed, and/or meet the following criteria: 1) acquisition of inholdings, valued at 250,000 dollars, or less when public benefits are clearly evident; 2) if unsuccessful attempts to complete land-for-land exchanges are documented in the case file; and 3) if the public has been notified and there are no objections to the exchange. This alternative would not meet criteria 1 and 2. Land-for-timber exchanges always reduce receipts to

counties because of the potential future loss of the 25% share of timber receipts that goes to counties, in addition to the loss of tax base. The FS is not agreeable to this alternative because it would prevent loggers and other sawmills from competing for Federal timber volume that is in high demand. The acquisition of private inholdings without conveying Federal parcels would not achieve the purpose and need for the FS or Forest Capital.

## **Comparison of Alternatives**

This section provides a summary of the effects of implementing each alternative. Information in table 3 is focused on activities and effects where different levels of effects or outputs among alternatives can be distinguished quantitatively or qualitatively.

**Table 3. Comparison of Significant Issues by Alternative**

Significant Issue	Alternative	
	1 Proposed Action	2 No Action
<b>Water Quality/Fisheries</b>		
Net change of intermediate and perennial stream (miles) to Federal estate	6.4	0
Analysis area increase of long-term sediment yield (Tons/Year)	9.0	15.9
Analysis area increase of short-term sediment yield (Tons/Year)	11.3	20.0
Number of new road construction stream crossings	14	25
Net change of perennial fish stream (miles) to Federal estate	6.15	0
Net change of bull trout stream habitat (miles) to Federal estate	1.8	0
Analysis area would likely have a decreasing trend in fish habitat quality	No	Yes
<b>Threatened, Endangered and Sensitive Species/Special Habitats</b>		
Old growth affected by alternative	Likely more than 12 acres acquired	12 allocated acres not conveyed
Forest Plan old growth standards and guidelines met	Yes	Yes
Affected mature and immature habitat for MIS species	1,475 acres acquired	1,100 acres not conveyed
Potential for adverse impacts to big game MIS	Less than Alternative 2	Greater than Alternative 1
Effect on lynx population viability and habitat	No adverse effect	No adverse effect
Effect on non-game MIS population viability and habitat	No appreciable effect	No appreciable affect
<b>Social and Economic</b>		
Net change Pinchot Roadless Area (acres) to Federal estate	+80	0
Net change Grandmother Mountain Roadless Area (acres) to Federal estate	+1,279	0
Change in Roadless Area attributes for Big Creek Roadless Area	Would degrade	No Change
Change in Roadless Area attributes for Grandmother Mountain Roadless Area	Protected and/or improved	Would degrade
Change in Roadless Area attributes for Pinchot Butte Roadless Area	Protected and/or improved	Would degrade
One time administrative savings to IPNF	\$388,000	0
Change in annual administrative costs to IPNF	minor decrease	No change
Change in Shoshone and Boundary County tax revenues	Minimal decrease	No change

# Chapter 3. Affected Environment and Environmental Consequences

This Chapter summarizes the physical, biological, social, and economic environments of the project area and the effects of implementing each alternative on that environment. It also presents the scientific and analytical basis for the comparison of alternatives presented in Chapter 2.

## Geology and Minerals

The objective of this section is to disclose the potential for occurrence of and the potential for development of valuable minerals within the proposed Grandmother Mountain Land Exchange parcels. All Federal and non-Federal parcels proposed for exchange were evaluated in the Minerals Specialist Report dated 11/15/99 and addendum dated 9/27/06. The report and addendum are located in the PR.

Non-Federal and Federal lands were analyzed for their land status and mineral potential. These lands were also reviewed for the presence of potentially hazardous mining-related substances and public safety issues. This review revealed that no mining related substances and public safety issues are present in the Federal and non-Federal parcels. Field examination of lands involved was completed in September and October 1998 and September 2006. Mineral potential was rated according to the Bureau of Land Management classification system. The mineral potential categories include No Potential, High, Moderate, Low and Potential not determined.

All parcels in the Proposed Exchange would be conveyed and acquired with the mineral and surface estate.

## Regional Geology

All exchange parcels except the Myrtle Creek parcel, which is located in Boundary County, lie to the north west of the Idaho Batholith in a zone of metamorphosed Precambrian sedimentary rocks that are correlative with the formations of the belt Supergroup to the north. These meta-sedimentary rocks are Staurolite-Kyanite metamorphic grade and are underlain by the Boehls Butte Formation which is uplifted and exposed several miles to the east of the parcels. The parcels range from 20 to 50 miles south of the complexly faulted and mineralized zone near Kellogg, Osburn, and Wallace, Idaho. This mineralized zone has produced huge quantities of lead, zinc, and silver. The Round Top Pluton to the northeast of the parcels and related satellitic bodies in the area of the parcels are made up of plutonic rocks of cretaceous age that are related to the Idaho Batholith, ranging in composition from quartz diorite to granite. The study area is near the west end of the Precambrian continent where two arcuate segments of Cordilleran trends meet, one consisting of northeast trending fold axes and the other of northwest trending fold axes and lineations.

The Myrtle Creek parcel is located approximately six miles west and slightly north of Bonners Ferry, Idaho. This parcel is underlain by rocks of varying metamorphic grade (siltites, quartzites, and mica schists) correlating to the Pre-Cambrian Prichard Formation of the Belt Supergroup (Harrison, 1998). The parcel is located just east of the mapped contact with a large intrusive body that makes up the granitic Selkirk Mountain Range. Most of this parcel is covered by a thin deposit of Quaternary glacial silt.

Geologic references concurrent with field observations in the parcel study areas include: 1) Geologic Map of the Southeast ¼ of the Spokane 1X2 Quadrangle, Idaho (Griggs, 1968); 2)

Geologic Map of the Spokane Quadrangle (Griggs, 1974); and 3) Geology along the Northwest Border Zone of the Idaho Batholith, Northern Idaho (Hietanen, 1984) (PR).

## **Mining History**

The IPNF has a significant mining history and mineral potential, especially in the vicinity of Kellogg, Osburn, and Wallace, Idaho. Tabular replacement veins containing galena, sphalerite, and tetrahedrite are found along fractures and shear zones in the Belt Series. These rich veins formed as a result of movement along the Lewis and Clark fault system about 70 million years ago. Silver ore was also found along the southeastern shore of Lake Pend Oreille in Precambrian Belt formations where fractures were filled from hydrothermal emanations resulting from the intrusion of the Kaniksu Batholith.

Nonmetallic products other than sand and gravel known to occur in the Idaho Panhandle include a significant garnet resource located in the vicinity of Emerald Creek, limestone mined near Lakeview on Lake Pend Oreille, and beryl bearing pegmatites associated with the Kaniksu Batholith in the vicinity of Priest Lake.

The Myrtle Creek parcel is not located in an organized mining district or in an area of historic or current mining activity.

## **Locatable Mineral Potential**

### **Federal Parcels**

The Pine Creek and Lemonade Peak parcels are located several miles upstream from several historically active hardrock lead, zinc and silver mines along Pine Creek to the north. These parcels are similar lithologically and structurally to the historically mined areas to the north, although a literature review revealed little historic mining and prospecting activity on these parcels. The Idaho Geological Survey's mines and prospects database had no historical records of production for these parcels. Due to the acquired status of these parcels, there are no mining claims. A Bureau of Land Management (BLM) letter confirms the absence of current mining claims (PR). A "Moderate potential" for locatable mineral development was assigned to the Pine Creek and Lemonade Peak parcels.

The Whistling Creek parcel is located in an unorganized mining district primarily underlain by the metamorphic rocks that correlate to the Prichard, Burke, Revett, St. Regis, and Wallace formations of the Belt Supergroup. Unlike the Silver Valley area to the north, this parcel has very little mineralization. The geologic favorability for the occurrence of locatable minerals of economic value is low. A literature review revealed little historic mining and prospecting activity in and around the parcel. The Idaho Geological Survey's mines and prospects database had no historical records of production for this parcel. BLM letters dated March 19, 1998 and April 13, 1999 confirm the absence of current mining claims. A "Low potential" for locatable mineral development was assigned to the Whistling Creek Parcel.

### **Non-Federal Parcels**

All ten non-Federal parcels are located in an unorganized mining district primarily underlain by metamorphic rocks that correlated to the Prichard, Burke, Revett, St. Regis, and Wallace formations of the Belt Supergroup. The geologic favorability for the occurrence of locatable

minerals of economic value is low. A literature review revealed little historic mining and prospecting activity in the areas in and around the parcels. The Idaho Geological Survey's mines and prospects database had no historical records of production for these parcels. Field examination of several non-Federal parcels confirmed the absence of mineralization and the absence of historical mining activity. A "Low potential" for locatable mineral development was assigned to all non-Federal parcels.

## **Salable Mineral Potential**

### **Federal Parcels**

A "Low potential" for salable mineral development was assigned to all Federal parcels. Deposits of sand and gravel and sources for building stone and quarry aggregate either do not exist or are too inaccessible or remote for profitable removal.

### **Non-Federal Parcels**

A "Low potential" for salable mineral development was assigned to all non-Federal parcels. Deposits of sand and gravel and sources for building stone and quarry aggregate either do not exist or are too inaccessible or remote for profitable removal.

## **Leasable Mineral Potential**

### **Federal Parcels**

There are no hardrock leasable mineral occurrences on Federal parcels. The potential for leasable mineral development is "Low".

### **Non-Federal Parcels**

There are no hardrock leasable mineral occurrences on non-Federal parcels. The potential for leasable mineral development is "Low".

## **Leasable Hydrocarbon Potential**

### **Federal and non-Federal Parcels**

No occurrences of leasable hydrocarbons are known to exist in the vicinity of Proposed Exchange parcels. The Belt formation and metamorphosed equivalent are not known as a source for oil and gas in the project area. The potential for leasable hydrocarbon development is "Low" on all Proposed Exchange parcels. The BLM has not classified the Proposed Exchange parcels as prospectively valuable for leasable minerals (PR).

## **Vegetation; Threatened, Endangered, Sensitive and Forest Species of Concern Plant Species**

The objective of this section is to disclose the effects analysis on Threatened, Endangered and Sensitive (TES) and Forest Species of Concern (FSOC) plants. The predicted effects of anticipated management activities were analyzed to ensure that the Proposed Exchange would not jeopardize the continued existence or cause adverse modification of habitat for TES and FSOC species.

The geographic scope of analysis for rare plant species was those parcels to be conveyed in the Proposed Exchange. The analysis considered short and long-term management as it may affect known or suspected populations of TES plant species and FSOC plants and their potential habitat.

### **Laws and Regulations Applying to the Analysis**

Protection of plant species deemed Threatened, Endangered, or rare (Forest Service "Sensitive" or "Species of Concern") and protection for population viability are determined by Federal legislation, regulations, policy, and direction. Sensitive species are those species for which population viability is a concern such that additional impacts to the species may diminish species diversity goals of the FS or cause a trend toward Federal listing. There are 30 Sensitive plant species listed for the Coeur d'Alene and St. Joe Ranger Districts. Refer to the Project Record for a complete list of Sensitive species on the St. Joe and Coeur d'Alene River Ranger Districts (October 2004).

The St. Joe and Coeur d'Alene River Ranger Districts also track 23 Forest Species of Concern (FSOC) (PR). These species are considered to be secure at the global, regional, and state levels, but may be at risk at the Forest level. While Biological Evaluations are not required to address (FSOC), they are addressed in effects analysis (National Forest Management Act) when viability within the planning unit is an issue.

There are two Threatened plants, water howellia (*Howellia aquatilis*) and Spalding's catchfly (*Silene spaldingii*), listed by the US Fish and Wildlife Service for the Coeur d'Alene River and St. Joe Ranger Districts. There are no listed Endangered plants for the Idaho Panhandle National Forests. Threatened and Endangered plant species are managed under the authority of the Endangered Species Act (1973, as amended). The National Forest Management Act directs the FS to review programs and activities to ensure that species do not become Threatened or Endangered as a result of FS actions. FS direction (FSM 2672.1-2672.43) requires that programs or activities be reviewed for potential effects on "rare species" and outlines policy, objectives and procedures. The IPNF is directed by the FP to manage plant populations so as not to contribute to the need for listing under the Endangered Species Act.

### **Affected Environment**

Vegetative conditions across the St. Joe Sub-basin are characterized by smaller patch sizes created by more uniform disturbances than would be found historically due to the predominance of human-caused disturbance regimes (USDA 1997). As a result, vegetative diversity and specialized habitats have declined over historic conditions. Riparian areas also suffered more severe and common disturbances resulting in major declines in natural plant communities and habitat complexity (USDA 1997). Nearly 60% of riparian communities have experienced intensive habitat modification. Riparian communities that contained habitat for rare plant elements are estimated to have declined by approximately 68% across the sub-basin, resulting in decreased geographic connectivity and isolation of rare plants.

Habitat types on the St. Joe Ranger District that have been heavily modified and/or are in short supply (dry forest w/ large trees, riparian, and wet and moist forest habitats) compared to historical conditions are the same habitats where most rare plant species can be found. However, the majority of the remaining riparian and cedar wet and moist forest habitats to be found across the district are expected to remain stable due to protection requirements (USDA 1997).

Field inventories on the Whistling Creek, Pine Creek West, Pine Creek East and Lemonade Peak Federal parcels were conducted on high potential suitable rare plant habitat that was present in the analysis area. Species presence was assumed for all highly suitable habitats and field surveys either validated or negated their presence.

Rare plant species guilds were used to assist in identifying potential rare plant habitat (PR). District Timber Stand Management Record System (TSMRS) databases assisted in identifying suitable habitat types in each parcel proposed to convey. In addition, site-specific information from timber stand examination records, aerial photographs, topographic position, survey information, personal knowledge and professional judgment were used to identify the potential rare plant habitat. Known sites of TES and FSOC plants in the vicinity of the analysis area were also identified and incorporated in the overall analysis. Known plant information came from District Sensitive plant records and the Idaho Department of Fish and Game Conservation Data Center (ICDC) Element Occurrence records (ICDC 2006).

Field reconnaissance was commensurate with the risk associated with the project, species involved and with the level of knowledge previously described. Field surveys were conducted in all areas that would have anticipated management activities that contained high potential suitable habitat. Surveyors walked through the areas with the potential to contain TES and FSOC plants during the growing season of those species likely to be found there. When rare plant individuals were found, intensive searches were conducted within the area.

Field surveys occurred in 1998 and again on August 25th, August 30th and September 6th 2006. The Pine Creek West parcel was not surveyed because conditions were determined to be very similar to the Pine Creek East parcel, which was low in habitat suitability and lacked TES or FSOC occurrences.

No suitable habitat for the Threatened plant water howellia (*Howellia aquatilis*) was located during field surveys. Potential habitat for the Threatened species Spalding's catchfly (*Silene spaldingii*) in the Whistling Creek parcel was found to be of very low suitability, and no occurrences of the species were found during surveys.

Green-bug-on-a-stick moss (*Buxbaumia viridis*), a Forest Species of Concern, was located during field surveys in the Whistling Creek parcel in the creek bottom, and in the Lemonade Creek parcel. A Sensitive species, naked Mnium moss (*Rhizomnium nudum*) was located during field surveys in the Whistling Creek parcel. Suitable wet and moist forest habitat for this sensitive species is limited to Whistling Creek. Field survey documentation is located in the PR.

## **Environmental Consequences**

### **Alternative 1: Proposed Exchange**

Under the Proposed Exchange, Forest Capital anticipated harvesting within conveyed parcels would mostly occur in low potential habitat for rare plants. The application of Idaho's BMP's and required stream protection zones would likely protect the viability of naked Mnium moss, a Sensitive species. There are numerous populations of naked Mnium moss within 10 air miles of the Whistling Creek parcel.

Green-on-a-stick moss, a Forest Species of Concern, occurs in wet riparian areas and moist forest upland sites. Habitat and individuals of this species in the Lemonade Peak and Whistling Creek

Federal parcels to convey would likely be impacted by timber harvesting in these areas. The St. Joe and Coeur d’Alene River Ranger Districts track Forest FSOC.

The direct effect to the Mniun moss and green-on-a-stick moss would be a change of ownership on lands where they are present.

There would be no effect on water howellia since the parcels to convey have no habitat for this Threatened species (PR). Potential habitat for Spalding’s catchfly in the Whistling Creek parcel was found to be of very low suitability, and no occurrences of this Threatened species were found during surveys. The Proposed Exchange may affect, but is not likely to adversely affect Spalding’s catchfly (PR).

This alternative would allow for increased connectivity and reduced fragmentation of lands in and around roadless areas. Many of the parcels the FS would acquire are in or adjacent to roadless areas and would be managed for roadless characteristics. There are no reasonably foreseeable FS planned activities on the acquired parcels that would have an effect on rare plants and their habitats.

Past activities in the analysis area including fire, road construction, and timber harvests have likely affected populations and habitat of rare plants. While timber harvest and road construction on conveyed parcels would result in landscape habitat fragmentation, the conveyed parcels have generally poor or marginal habitat quality for rare plants (PR). Under the Proposed Exchange, fewer acres would be available for harvest activities by Forest Capital than with the No Action Alternative. In addition, the conveyed acres would be isolated from other NFS lands and would not greatly contribute to connectivity across the landscape.

This alternative would meet the intent of the Endangered Species Act and the National Forest Management Act.

### **Alternative 2: No Exchange**

Under this alternative, there would be no reasonably foreseeable impacts to rare plant populations or suitable habitat on NFS lands, since ownership and management practices within the parcels to exchange would not change from the current situation. Habitat capability on NFS lands within the analysis area would also not be changed from its current level. Rare plant species are afforded direct protection under existing policy (FSM 2670) and Law (NFMA 1976) which requires maintenance of viable populations of all existing native plant species.

Cumulatively the No Action Alternative has the potential for more adverse effects to rare plants or their habitats than does the Proposed Exchange. Forest Capital would manage parcels for timber production which would eventually require road use permits across NFS lands for all but two parcels (PF). If Forest Capital retains their 2400 acres, these lands would be subject to harvest at some time in the future, leading to loss of habitat (if those stands possess habitat) and further fragmentation of the landscape in and around the Grandmother Mountain roadless area.

This alternative would meet the intent of the Endangered Species Act and the National Forest Management Act.

## **Noxious Weeds**

The objective of this section is to disclose whether Proposed Exchange would increase IPNF weed management costs in the next decade. The analysis area includes Federal and non-Federal exchange parcels. The assessment was based upon field observations by Suzanne DiGiacomo, biologist, St. Joe Ranger District; Tim Seeley, weeds specialist, IPNF North Zone; and Tom Ball, Lands Program Manager, IPNF. The analysis included estimates of likely habitat for noxious weeds based upon site conditions such as elevation, past management practices, and existing roads.

## **Affected Environment**

### **Federal Parcels**

Pine Creek West – Weeds are light due to lack of open roads or recent harvest activity. This parcel is a low treatment priority for the IPNF.

Pine Creek East – Weeds are present on road at bottom of this parcel. The weeds are a moderate priority for the IPNF.

Lemonade Peak – Weeds are prevalent along the road located near the bottom of this parcel. The weeds are a moderate priority for the IPNF.

Whistling Creek – Some weeds are present within the parcel along closed roads. Since the roads are closed and large areas of surrounding private land is not treated, this situation represents a low treatment priority for the IPNF.

### **Non- Federal Parcels**

Lines Creek – Weeds are present and would be a moderate treatment priority if acquired.

Daveggio Creek – Some weeds are present but not prevalent due to high elevation and increasing canopy closure of regeneration in harvested areas. This parcel would be a low priority for treatment if acquired.

Duplex – The northern portion of Section 5 has been heavily roaded and harvested. Some weeds are present but not widespread due to the high elevation. This portion of the parcel would be a low priority for treatment if acquired. Weeds are not prevalent in the southern portions of Section 7 and 17 because of the lack of roads and timber harvest. This portion of the parcel would not need treatment if acquired.

Lost Lake Creek – Some weeds are present but they are not widespread due to high elevations and increasing canopy closure in previously harvested areas. This parcel would be a low priority for treatment if acquired.

Twin Springs Creek – No weeds are present due to lack of roads and timber harvest. No weed treatment would be needed if acquired.

Adair Creek – Weeds are present and would be a moderate treatment priority if acquired.

Myrtle Creek – Weeds are prevalent in this parcel. The FS has treated adjacent NFS lands and roads with chemical and biological agents within the past three years. This parcel would be a high treatment priority if acquired.

Two Dot Peak, Fishhook Peak, and Freezeout - No weeds are present due to high elevation, lack of roads and timber harvest. No weed treatment would be needed if acquired.

### **Summary**

Under the Proposed Exchange, weed treatment would likely occur on or adjacent to approximately 480 acres of acquired Lines Creek, Adair Creek and Myrtle Creek parcels. The parcels conveyed to Forest Capital would not be treated.

Under the No Action Alternative, some weed treatment would likely occur on or adjacent to approximately 658 acres of Pine Creek East and Lemonade Peak parcels that would not be conveyed.

Based upon the weed analysis, the FS would not incur additional costs for weed treatment and may realize some savings under the Proposed Exchange.

### **Commercial Timber**

Table 4 discloses Federal and non-Federal sawtimber summary cruise information. The cruise design of the proposed Grandmother Mountain land exchange was completed using Region One and Plum Creek cruising standards (PR). Check cruising was completed in an unbiased manner during the summer and fall of 1998. Check cruising was a joint effort between the IPNF and Plum Creek Timber Company. In the fall of 2002, representatives from the IPNF and Forest Capital revisited the exchange parcels to determine volume changes due to growth and mortality. The parties agreed to volume adjustments on exchange parcels (PR).

After cruise volumes were determined on the Myrtle Creek parcel, a 2003 wildfire burned a portion of this parcel. In May of 2004, representatives from the IPNF and Forest Capital revisited this parcel to determine merchantable volume remaining after the wildfire and subsequent salvage harvest. Both parties agreed to the adjustment of previously cruised volume in this parcel (PR). All parcels were revisited in October 2006. No conditions were observed that would significantly alter the timber volumes. The cruise standards and timber volumes displayed in Table 4 are acceptable to the IPNF and Forest Capital

**Table 4. Sawtimber Cruise Information on Conveyed and Acquired parcels**

	Proposed Exchange	
	Federal Parcels to Convey	Non-Federal Parcels to Acquire
Total Acres	1,325	2,399
Cruised Forested Acres	1,228	1,303
Non Forest or Total Harvested Removal Acres	97	816
Total Adjusted Volume (MBF)	23,098	22,264
Average Board Feet per Cruised Acre (MBF)	18.8	17.1

\*Volume figures are total net harvestable volume.

On non-Federal parcels, sawlog volume is represented primarily in mountain hemlock, Engelmann spruce and alpine fir (highest % volume in this order). The remaining species volumes are less than 5% of the 22,264 MBF to acquire.

On Federal parcels, sawlog volume is represented primarily in grand fir and mountain hemlock, with western red cedar and Engelmann having equal volume (highest % volume in this order). The remaining species volumes are less than 4% of the 23,098 MBF to convey.

Timber productivity (site index) is generally highest on Federal parcels to convey.

## Fire and Fuels

The objective of this section is to assess each alternative from fire suppression and fuels management perspectives. Specific data was not collected for this assessment. The analysis area includes all of the land within Proposed Exchange parcels and the lands adjacent to these parcels.

### Affected Environment

Fire protection began in the project area in the early 1900's but did not become efficient until the 1940s. Fire was one of the major disturbances that shaped the analysis area prior to suppression activity. With continual occurrence of fire, large forested areas were maintained in early to mid-seral stages. Fuel accumulations from stand development and insect and disease were burned frequently enough to avoid heavy fuel loadings that would cause broad scale stand replacing wildland fires (except in very extreme conditions). This ever-changing mosaic of fire effects was interrupted by the advent of effective fire suppression. Recently, burned stands have acted as natural fuel breaks and tended to check the spread of subsequent fires.

All Federal parcels to convey are either isolated individual parcels or extensions of Federal lands that make up irregular shaped boundaries. The Whistling Creek Federal parcel has had harvesting and is roaded but the remaining Federal parcels to convey have not had harvesting or fuels treatment. These Federal Parcels have been protected from wildfire for fifty plus years resulting in heavier than desirable fuel loadings with intolerant species serving as ladder fuels.

The parcels to acquire are either surrounded by NF lands or are immediately adjacent to NF lands. Freezeout, Twin Springs Creek, Twodot Peak, and Fishhook Peak non-Federal parcels have not had previous harvesting. No timber harvest has occurred in the southern two units of the

Duplex parcel (sections 7 and 17). The remaining non-Federal parcels, including the northern Duplex unit, have had harvest entries. The amount of area harvested ranges from 30% of the parcel to 100%. The degree of logging ranges from light partial harvests (removal of the larger trees) to regeneration harvest (removal of nearly all trees). Private harvested areas have complied with State BMPs slash disposal requirements. It is not standard practice to follow harvest on private land with felling or removal of ladder fuels or to underburn. Harvested stands on private land are not necessarily less of a wildfire hazard than unharvested stands.

All exchange parcels are under Federal wildland fire suppression responsibilities although dispatch of initial attack resources is based on the closest resource regardless of agency.

## **Environmental Consequences**

The following is a general discussion related to the advantages and disadvantages of each alternative. It is intended to provide an overview that will allow for comparison of alternatives.

### **Alternative 1: Proposed Exchange**

This alternative would consolidate Federal ownership by reducing the number of inholdings and by reducing ownership that extends into adjacent private land. This would allow for fuel reduction work on public lands to be applied on larger scales with fewer boundary issues. Alternative 1 would result in a net reduction of 32.75 miles of National Forest boundary. The result would be less costly fuel treatments where NFS land would be consolidated.

### **Alternative 2: No Action**

No significant change in fire suppression and fuel conditions within the analysis area would be anticipated during the 10-year analysis period. However, vegetative succession on all stands not harvested or treated for fuels would increase fuel loading since the majority of lands in the project area have biomass accumulating faster than natural decomposition. Increased fuel loading over long periods without fuel reduction work sets the stage for an increasing likelihood that fires, when they do occur, would be at stand replacing intensity.

## **Water Quality**

The objective of this section is to document relevant information on water quality and disclose the effects assessment for the Proposed Exchange and No Action alternatives. The Grandmother Mountain Land Exchange proposes to convey Federal land located in Pine Creek (a tributary of the South Fork Coeur d'Alene River), in Whistling Creek (a tributary of Bluff Creek, a tributary of the St. Joe River), and in Trout Creek (a tributary of the St. Joe River). The non-Federal parcels to acquire are located in Myrtle Creek (a tributary of the Kootenai River), Floodwood (a tributary of Twin Springs), Lost Lake, Little Lost Lake and Adair Creeks (tributaries of the Little North Fork Clearwater River) and Marble Creek [tributaries are Duplex, Swing, Daveggio, Bussel (Norton) and Boulder (Malamute) Creeks]. The analysis areas included individual exchange parcels and the above listed watersheds. The analysis was designed to address the issues identified in public scoping. A review of aerial photographs along with channel length determination from topographic quadrangle maps and professional knowledge was used in compiling needed data.

Forest Capital's anticipated ten year management plans for the Proposed Exchange and No Action alternatives were used to identify stream crossings for new construction (PR). These alternatives

were evaluated in relation to existing Total Maximum Daily Loads (TMDLs) and 303(d) listing for known pollutants. Sediment estimates were calculated using Idaho Department of Environmental Qualities (DEQ's) subbasin assessment and TMDL spreadsheet models.

## **Laws and Regulations Applying to the Analysis**

### **Forest Plan**

The IPNF Forest Plan (USDA FS, 1987) defines the following management goals for the water resources on NFS lands:

- Maintain water quality protective of fisheries habitat, water-based recreation, public water supplies, and to meet or exceed State Water Quality Standards: To help accomplish this objective, Best Management Practices (BMPs) must be applied to management activities. Monitoring efforts must focus on the implementation of BMPs and their effectiveness in protecting water quality. Water quality that is below Forest standards must be improved through restoration projects and through scheduling of timber harvest and road building activities.
- Protect stream channel integrity: Manage riparian areas to meet objectives for dependent resources (fish and wildlife habitat, water quality, stream channel integrity, and vegetation) while producing other resource outputs.

Forest-wide standards direct the following on NFS lands with respect to the water resource:

- Management activities on NFS lands would not significantly impair the long-term productivity of the water resource and would ensure that state water quality standards are met or exceeded.
- Maintain concentrations of total sediment or chemical constituents within State standards.
- Implement project-level standards and guidelines for water quality contained in the BMP (FS Handbook 2509.22, available upon request), including those defined by State regulation or agreement between the State and FS such as:
  - o Idaho Forest Practices Rules (IDAPA 20.02.01)
  - o Stream Channel Alterations Rules (IDAPA 37.03.07)
  - o Best Management Practices (Applicable BMPs & Soil and Water Conservation Practices, SSW-2)
- Cooperate with the states to determine necessary instream flows for various uses. Instream flows should be maintained by acquiring water rights or reservations.
- Manage public water system plans for multiple-use by balancing present and future resources with public water supply needs. Project plans for activities in public water systems would be reviewed by the water users and the State. Streams not defined as public water systems, but used by individuals for such purposes would be managed to the standards stated below or to the fisheries standards whichever is applicable.
- Activities within non-fishery drainages, including first and second order streams, will be planned and executed to maintain existing biota. Maintenance of existing biota will be defined as maintaining the physical integrity of these streams. BMPs (FS Handbook 2509.22, SSW-2), Appendix O, and riparian guidelines will be used to accomplish this objective.

- It is the intent of the FP that models be used as a tool to approximate the effects of National Forest activities on water quality values. The models will be used in conjunction with field data, monitoring results, continuing research, and professional judgment, to further refine estimated effects and to make recommendations.

### **Inland Native Fish Strategy (INFISH) Forest Plan Amendment**

Standards for managing riparian areas were established as FP amendments based on the Inland Native Fish Strategy (1995), commonly referred to as INFISH. Riparian Habitat Conservation Areas (RHCAs) are determined for watersheds. RHCAs essentially promote water quality benefits through stream shading, vegetative buffers for sediment control, and channel stabilizing features of woody debris and stream bank vegetation.

### **Clean Water Act**

A declared objective of the Clean Water Act (CWA) of 1977 (33 U.S.C. 1323) is to "...restore and maintain the chemical, physical, and biological integrity..." of streams (U.S., 1988). The CWA directs the FS to meet state substantive and procedural requirements respecting control and abatement of pollution. Through a Memorandum of Understanding (MOU) with the State of Idaho (IDWR, 1993), the FS is responsible for implementing nonpoint source pollution control and the Idaho Water Quality Standards (IDAPA 58.01.02) on NFS lands. FS water quality policy is to: Promote the improvement, protection, restoration and maintenance of water quality to support beneficial uses, promote and apply approved BMPs to control non-point source pollution, comply with state and national water quality goals, and design monitoring programs for specific activities and practices that might affect in-stream beneficial uses (IDWR, 1993).

### **State Water Quality Laws & Regulations**

The State of Idaho established the Idaho Water Quality Law (§39-3601 et. seq.) and Water Quality Standards (IDAPA, 58.01.02) designed to protect beneficial uses. The State's Antidegradation Policy (IDAPA 58.01.02.051) directs that existing uses and the level of water quality necessary to protect those uses must be maintained and protected. In order to meet the intent of the CWA, the FS is responsible for implementing non-point source pollution control and the Idaho Water Quality Standards on NFS lands through a MOU with the State of Idaho (IDWR, 1993).

Designated beneficial uses for Bluff Creek are Cold Water Aquatic Life, Salmonid Spawning and Secondary Contact Recreation (Idaho DEQ, 2003, p.18). Designated beneficial uses for Pine Creek are Cold Water Aquatic Life, Salmonid Spawning, Primary and Secondary Contact Recreation and Drinking Water Supply (IDAPA 58.01.02.110.09). Designated beneficial uses for Myrtle Creek are Cold Water Aquatic Life, Salmonid Spawning and Primary Contact Recreation (IDAPA 58.01.02.110.02). Many tributaries to the above streams and the Little North Fork of the Clearwater (IDAPA 58.01.02.120.10) are Undesignated Surface Waters (IDAPA 58.01.02.101.01); existing beneficial uses are Cold Water Aquatic Life, and Primary or Secondary Contact Recreation (IDAPA 58.01.02.101.01.a).

### **Water Quality Limited Segments**

Pine Creek, Myrtle Creek, Bluff Creek, and Marble Creek are included in Idaho's 2002 303(d) list of Water Quality Limited Water Bodies (PR). The pollutants of concern are temperature and sediment for Bluff Creek, sediment for East Fork Pine Creek and Pine Creek from the East Fork to the mouth, and temperature for Myrtle Creek and for Marble Creek below Hobo Creek.

### **Total Maximum Daily Loads**

TMDLs were developed for Pine Creek for sediment and in Bluff Creek for temperature (PR). The Pine Creek sediment TMDL calls for reducing sediment by 887 tons/year from all lands within the basin (PR). For Bluff Creek, the temperature TMDL calls for increasing shade canopy over the Whistling Creek stream channel from the current 60% to 83-89% (Idaho DEQ, 2003, p.119, 126).

### **Private Landowners Responsibilities**

All lands managed by private landowners need to meet State water quality standards, applicable TMDLs, and the Idaho Forest Practices Act if engaged in silvicultural operations.

### **Affected Environment**

The geographic setting is northern Idaho where annual precipitation ranges from 30-60 inches. Approximately 50% of the precipitation occurs as snow. Much of the project area may be susceptible to climatically driven winter rain-on-snow events that cause the largest peakflows on record (MacDonald and Hoffman, 1995, p. 94).

### **Watersheds with Federal Parcels**

*Pine Creek* - The unmanaged Federal Pine Creek East and West parcels are located in the headwaters of this watershed at approximately 5,000 feet. Pine Creek is a watershed of 50,560 acres, tributary of the South Fork Coeur d' Alene River whose confluence is in the town of Pinehurst, Idaho. Elevation ranges from about 6,400 feet to 2,160 feet at its mouth. Kondolf and others (2002) describe conditions within this watershed and attribute land use activities for causing aggradations and widening of the stream channel due to increased sediment loads; mostly from mine waste rock, but also from roading, grazing and harvesting activities. Restoration activities were initiated within Pine Creek to stabilize, narrow the stream channel and to isolate or control erosion on mine waste rock sites (Kondolf et al. 2002, personal comm. Mike Stevenson, BLM hydrologist).

Pine Creek was determined to not fully support assigned beneficial uses because of pollutant sediment (Project File – DEQ Integrated Report 2005).

*Trout Creek* - The Lemonade Peak Federal parcel is mostly surrounded by private land and located near the top of the 13,000 acre Trout Creek Watershed. Small headwater streams flowing through the unmanaged parcel are tributaries to Trout Creek, which flows south into the St. Joe River. This drainage is located a few miles west-northwest of Calder, Idaho. The annual precipitation ranges from 30-60 inches with approximately 50% as winter snow.

*Whistling Creek* - The managed Whistling Creek Federal parcel is surrounded by Forest Capital land. Whistling Creek which flows through the middle of this parcel is a small 1,650 acre tributary of the West Fork of Bluff Creek (a tributary of Bluff Creek, a tributary of the St. Joe River). Due to past land use activities, which included extensive road building and logging there is currently a decreased abundance and lack of recruitment of Large Woody Debris (LWD) within Whistling Creek (PR). Shade has been reduced throughout the watershed which can cause increased stream temperatures. The Bluff Creek temperature TMDL calls for increasing stream shade canopy from the existing 60% to 83-89% on Whistling Creek (DEQ, 2003, pp. 119, 126).

*Bluff Creek* - This watershed is approximately 22,000 acres in size and is a tributary to the upper St. Joe River. Elevations range from about 3,200 at the mouth to 6,200 feet in the headwaters. Annual precipitation ranges from around 40-60 inches with a majority of that as winter snow.

The Idaho DEQ St. Joe River Subbasin Assessment and TMDLs (DEQ, 2003) includes a temperature TMDL for Bluff Creek (DEQ, 2003, p. 119, 126). The assessment also identifies the East Fork of Bluff Creek as 303(d) listed for sediment (DEQ, 2003, p. 16). DEQ (2003) apparently did not develop sediment TMDL for the East Fork Bluff Creek in this document (DEQ, 2003, Table of Contents).

### **Watersheds with non-Federal Parcels**

*Little North Fork of the Clearwater (LNFKC)* - The managed Lost Lake Creek non-Federal parcel is near the headwaters of the LNFKC. Lost Lake Creek flows through the large portion in Section 11 and the small portion in section 1; then into the LNFKC. The managed Adair non-Federal parcel is drained by Adair Creek which flows to the LNFKC. Elevations in the LNFKC watershed range from 1,445 feet to over 7,000 feet. Most of the topography in the basin is steep terrain with slope gradients greater than 50%. The drainage pattern is generally dendritic with steep, V-shaped profiles of A-type stream channels (Rosgen).

The LNFKC is not identified as a 303(d) listed water body in Idaho DEQ's Subbasin Assessment (2002, pp. 5,155) nor included on their list of impaired water bodies (2005). There are no tributaries of the LNFKC that are on the 303(d) list (PR). Three 303(d) listed streams – Floodwood, Stony and Breakfast Creeks flow into the Dworshak Reservoir (DEQ, 2002, p. 5). These listed tributaries are miles downstream from the Adair Creek, Little Lost Lake Creek and Lost Lake Creek land parcels proposed for exchange. The LNFKC is fully supporting beneficial uses (DEQ, 2002, p. 17).

*Floodwood Creek* - The unmanaged Twin Springs Creek parcel is mostly surrounded by BLM lands. It is located at the confluence of Twin Springs Creek and Floodwood Creek. Although Floodwood Creek is listed as impaired, no TMDLs were developed for this creek (DEQ, 2002, p. xxi, xxiii); and Floodwood Creek is only listed for temperature on the most current, 303(d) list (Project File).

*Marble Creek* - The unmanaged Freezeout non-Federal parcel is drained by the upper headwaters of Marble Creek. The Duplex non-Federal parcel is located at about 4700 ft in elevation on the eastern valley walls of Marble Creek. Duplex Creek is a small, higher gradient tributary stream flowing through the managed Duplex parcel and then down to Marble Creek. Swing Creek and an unnamed Marble Creek tributary are small, higher gradient streams that flow through the unmanaged portion of the Duplex parcel and then down to Marble Creek. The managed Daveggio Creek non-Federal parcel is drained by Daveggio Creek, which is a larger tributary stream to Marble Creek. The Marble Cr. watershed drains northward from a divide with the Clearwater River and is a tributary to the St Joe River. It is a large drainage, covering about 91,160 acres with mixed ownership in the basin. Federal lands make up approximately 61,300 acres within this watershed. There are about 23,100 “roadless” acres within the Marble Creek watershed; 6,000 acres of private and 17,100 of NFS and BLM land. Elevations range from 2,400 feet at the mouth to about 6,800 feet. Precipitation ranges from about 40-80 inches annually with a dominant snowpack that may reach depths of 10-12 feet. Approximately 49% of the Marble Creek watershed is within the “rain-on-snow” elevation band of 3,000-4,500 feet.

The DEQ 2002 Integrated Report (2005) places Bussel Creek (a tributary of Marble Creek) as impaired from source to mouth from sediment and temperature and Marble Creek below Hobo Creek from temperature. The Marble Creek watershed has non-Federal parcels within in the tributaries of Duplex, Swing, Daveggio, Malamute, Boulder and on upper Marble Creek itself.

*Boulder Creek* - The Fishhook Peak non-Federal parcel is essentially surrounded by NFS lands. The parcel is located at about 5,800 ft in elevation and near the headwaters of Boulder Creek. Small headwater tributary streams and the main stem of Boulder Creek flow through the parcel. The Twodot Peak parcel is near the headwaters of Malamute Creek. Small headwater tributary streams flow through the parcel and enter Malamute Creek below. Malamute Creek flows into Boulder Creek.

*Myrtle Creek* - The managed non-Federal Myrtle Creek parcel is crossed by Myrtle Creek just before it enters the Kootenai National Wildlife Refuge. The Myrtle Creek Watershed on the east slopes of the Selkirk Mountains is approximately 21,760 acres. Myrtle Creek flows generally eastward from the Selkirk Crest into the Kootenai River. The stream channels in this watershed range from low to high gradient, with higher gradient channels in headwater areas. Elevation in the Myrtle Creek watershed ranges from approximately 5,375 feet at the headwaters to approximately 1,800 feet at its mouth. Precipitation averages 36 inches per year. A long, steep, high-energy, higher-order stream with frequent low-order streams draining the valley walls characterizes this glaciated drainage. This watershed is described further in the 2006 Myrtle Creek HFRA Draft EIS (PF – Myrtle HFRA DEIS p. 3-1 to 3-80).

The Myrtle Creek Watershed Summary documents that the watershed is “not highly degraded” and that it is functioning-at-risk (Project File – Myrtle HFRA DEIS p. 3-19). Myrtle Creek was determined to not fully support assigned beneficial uses because of pollutant temperature (Project File DEQ Integrated Report).

*Lines and Norton Creeks* - The managed non-Federal Lines Creek parcel has no intermittent or perennial streams within this parcel.

## **Environmental Consequences**

The indirect and cumulative effects associated with Forest Capital’s anticipated ten year management plans are disclosed by alternative (PR). The IPNF has no ten year management plans within the parcels considered for exchange.

### **Alternative 1: Proposed Exchange**

Table 5 identifies new road construction mileage, heavy reconstruction mileage and discloses long term annual sediment yield due to stream crossings by watershed (PR).

**Table 5. Alternative 1 Road Work and Sediment Yield from Stream Crossings by Watershed**

<b>Watershed</b>	<b>*New Construction Miles</b>	<b>Heavy Reconstruction Miles</b>	<b>Number of New Stream Crossings</b>	<b>Sediment Yield Tons/Year</b>
Whistling Creek	0.4	7.6	1	0.4
Pine Creek	5.6	3.7	7	2.7
Trout Creek	3.2	0.0	6	2.3
<b>Total</b>	<b>9.2</b>	<b>11.3</b>	<b>14</b>	<b>5.4</b>

\*Includes 2.5 miles of Forest Capital roads crossing private/non-FS land

Table 6 identifies estimated long-term annual sediment yield from encroaching roads. Each new crossing was assumed to cause encroachment on 50-feet of either side of the stream crossing; resulting in 100 feet of encroachment per crossing (PR).

**Table 6. Alternative 1 Sediment Yield from Encroaching Roads by Watershed**

<b>Watershed</b>	<b>Number of New Stream Crossings</b>	<b>Feet of Encroachment</b>	<b>Sediment Yield Tons/Year</b>
Whistling Creek	1	100	0.3
Pine Creek	7	700	1.8
Trout Creek	6	600	1.5
<b>Total</b>	<b>14</b>	<b>1,400</b>	<b>3.6</b>

Table 7 identifies non-stocked acreage (regeneration harvests) anticipated from Forest Capital's management plans by watershed. These acreages were used to calculate short-term sediment increases (DEQ TMDL spreadsheet model).

**Table 7. Alternative 1 Sediment Yield from Non-Stocked Acreage by Watershed**

<b>Watershed</b>	<b>Non-Stocked Acres from Regeneration Harvests</b>	<b>Sediment Yield Tons/Year</b>
Whistling Creek	200	0.8
Pine Creek	224	0.9
Trout Creek	124	0.6
<b>Total</b>	<b>548</b>	<b>2.3</b>

Forest Capital's management of the conveyed parcels would require approximately 9.2 miles of new road construction and 11.3 miles of heavy reconstruction (Table 5). The 9.2 miles of new road construction are considered new sources of sediment at stream crossings and where located within 50 feet of a stream (DEQ, 2002, 2003, spreadsheet models). There would be an estimated 14 new stream crossings with the proposed new construction.

One of these new crossings would be located in Whistling Creek, seven would be in Pine Creek, and six would be in Trout Creek (Table 5).

Table 8 discloses the Proposed Action estimated long-term and short-term sediment yield by watershed. Short-term sediment yield is calculated by adding Sediment Yield from Non-Stocked Acreage (table 7) to long-term sediment yield (Table 8).

**Table 8. Alternative 1 Long and Short Term Total Sediment Yield by Watershed**

<b>Watershed</b>	<b>*Long Term Sediment Yield Tons/Year</b>	<b>*Short Term Sediment Yield Tons/Year</b>
Whistling Creek	0.7	1.5
Pine Creek	4.5	5.4
Trout Creek	3.8	4.4
Total	9.0	11.3

\* Includes encroaching roads in both long and short term sediment yield estimates

### **Alternative 1 Cumulative Effects**

The subbasin assessments and TMDLs identify the cumulative effects from past activity within Whistling Creek (a tributary of Bluff Creek), Pine Creek and Trout Creek watersheds. These watersheds would have Forest Capital’s anticipated management activities on conveyed parcels. The amount of harvesting and roading expected to continue on existing Forest Capital lands (non-exchanged) within these drainages is expected to proceed similar to the recent past. These activities were accounted for in the TMDL process, especially those TMDL Implementation Plans that are completed. There are no reasonably foreseeable activities on FS managed lands in Bluff, Pine or Trout Creek watersheds to address cumulatively. The only foreseeable activity on Federal land in the LNFKC is the culmination of prescribed burning identified in a Decision Memo in 2002. There were no identified soil or watershed effects from the prescribed burn (Project File – LNFKC Burn watershed report).

Pine Creek has a sedimentary TMDL therefore; landowners are required to reduce sediment from their activities. The total estimate for sediment increase in Pine Creek would be approximately 5.4 tons/yr until the regeneration harvested areas become stocked (1-2 years), and then it would be 4.5 tons/yr (Table 8) long-term. Forest Capital would need to show an equal sediment reduction to off-set any increased sediment to be consistent with the Pine Creek Sedimentary TMDL.

The total estimate for sediment increase in Trout Creek would be approximately 4.4 tons/yr until the regeneration harvested areas become stocked (1-2 years), and then it would be 3.8 tons/yr (Table 8) long-term. Because there is no TMDL identified for Trout Creek, it is assumed that beneficial uses are supported. The State of Idaho’s Beneficial Use Reconnaissance Protocol would need to be implemented to make a final determination.

The total estimate for sediment increase in Whistling Creek would be approximately 1.5 tons/yr until the regeneration harvested areas become stocked (1-2 years), and then it would be .7 tons/yr (Table 8) long-term. Because there is no TMDL identified for Whistling Creek, it is assumed that beneficial uses are supported. The State of Idaho’s Beneficial Use Reconnaissance Protocol would need to be implemented to make a final determination.

Sediment yield (tons/acre) by watershed for road construction, reconstruction and harvesting are identified in tables 5 and 7. Total estimated sediment yield for the Proposed Exchange would be 9.0 tons/yr long-term and 11.3 tons/year short-term.

Because the TMDLs call for reducing sediment or improving stream-shade levels and private landowners are assigned a portion of the sediment reduction and increased shade; the landowners activities (in implementing the TMDL) should reduce cumulative effects and move toward support of assigned beneficial uses.

### Alternative 2: No Action

In the No Action alternative there would be no exchange of land parcels. There would be resource development of Forest Capital's land parcels (PR). The IPNF has no management plans on Federal land parcels considered for conveyance in Alternative 1.

Table 9 identifies new road construction mileage, heavy reconstruction mileage and discloses long-term annual sediment yield due to stream crossings by watershed (PR).

**Table 9. Alternative 2 Road Work and Sediment Yield from Stream Crossings by Watershed**

<b>Watershed</b>	<b>New Construction Miles</b>	<b>Heavy Reconstruction Miles</b>	<b>Number of New Stream Crossings</b>	<b>Sediment Yield Tons/Year</b>
Lost Lake Creek	1.5	1.8	3	1.1
Adair Creek	0.0	1.8	2	0.8
Floodwood Creek (Twin Springs parcel planned for sale)	0.0	0.0	0	0.0
Marble Creek (Freezeout Parcel)	3.2	5.2	8	3.0
Duplex Creek & Swing Creek	2.8	3.9	10	3.8
Daveggio Creek	0.0	2.8	1	0.4
Boulder Creek (Fishhook Parcel)	1.5	0.5	1	0.4
Malamute (Twodot Peak)	0.8	0.8	0	0.0
Myrtle	0.0	0.0	0	0.0
Lines Creek & Norton Creek	0.0	0.0	0	0.0
<b>Total</b>	<b>9.8</b>	<b>16.8</b>	<b>25</b>	<b>9.5</b>

The following table 10 identifies long-term estimated sediment yield from encroaching roads. Each new crossing was assumed to cause encroachment on 50-feet of either side of the stream crossing; resulting in 100 feet of encroachment per crossing (PR).

**Table 10. Alternative 2 Sediment Yield from Encroaching Roads by Watershed**

<b>Watershed</b>	<b>Number of New Stream Crossings</b>	<b>Feet of Encroachment</b>	<b>Sediment Yield Tons/Year</b>
Lost Lake Creek	3	300	0.8
Adair Creek	2	200	0.5
Floodwood Creek (Twin Springs parcel planned for sale)	0	0	0
Marble Creek (Freezeout Parcel)	8	800	2.0
Duplex Creek & Swing Creek	10	1000	2.5
Daveggio Creek	1	100	0.3
Boulder Creek (Fishhook Parcel)	1	100	0.3
Malamute (Twodot Peak)	0	0	0.0
Myrtle	0	0	0.0
Lines Creek & Norton Creek	0	0	0.0
<b>Total</b>	<b>25</b>	<b>2,500</b>	<b>6.4</b>

Table 11 identifies non-stocked acreage anticipated from Forest Capital’s management plans by watershed. These acreages were used to calculate short-term sediment increases (DEQ TMDL spreadsheet model).

**Table 11. Alternative 2 Sediment Yield from Non-Stocked Acreage by Watershed**

<b>Watershed</b>	<b>Non-Stocked Acres from Regeneration Harvests</b>	<b>Sediment Yield Tons/Year</b>
LNFKC	216	0.9
Adair Creek	96	0.4
Marble Creek	626	2.5
Myrtle Creek	70	0.3
<b>Total</b>	<b>1,008</b>	<b>4.1</b>

The management of Forest Capital parcels is expected to include approximately 9.8 miles of new construction and about 16.8 miles of “heavy reconstruction” (Table 10). These 9.8 miles of new road construction are considered new sources of sediment at stream crossings and where located within 50 feet of a stream (DEQ, 2002, 2003, spreadsheet models). There would be an estimated increase of 25 new stream crossings with the proposed road construction and management of this

private land. Twenty of these new crossings would be located in Marble Creek or its tributaries, two would be in Adair Creek, and three would be in the LNFKC tributaries of Lost Lake and Little Lost Lake Creeks (Table 10). There are no new crossings proposed within water quality limited stream segments (303(d)) or in drainages with a sedimentary TMDL.

Non-stocked stands are considered as contributing sediment. The landowners are required by TMDLs to increase stream shade in Bluff Creek, in Myrtle Creek and in Marble Creek below Hobo Creek.

Table 12 discloses the No Action Alternative estimated long-term and short-term sediment yield by watershed with Forest Capital parcels that would not be acquired. Short-term sediment yield is calculated by adding short-term sediment yield (Table 11) to long-term sediment yield (Table 12).

**Table 12. Alternative 2 Long and Short Term Total Sediment Yield by Watershed**

<b>Watershed</b>	<b>*Long Term Sediment Yield Tons/Year</b>	<b>*Short Term Sediment Yield Tons/Year</b>
LNFKC	3.2	4.5
Marble Creek	12.7	15.2
Myrtle Creek	0.0	0.3
<b>Total</b>	<b>15.9</b>	<b>20.0</b>

\* Includes encroaching roads in both long and short term sediment yield estimates

**Alternative 2 Cumulative Effects**

The subbasin assessments and TMDLs identify the cumulative effects from past activity within LNFKC, Marble Creek and Myrtle Creek watersheds. These watersheds would have Forest Capital anticipated management activities on parcels that would not be acquired.

The amount of harvesting and roading expected to continue on existing Forest Capital lands (not exchanged) within these watersheds is expected to proceed similar to the recent past. These activities were accounted for in the TMDL process. The only foreseeable activity on Federal land in the LNFKC is the culmination of prescribed burning identified in a Decision Memo in 2002. There were no identified soil or watershed effects from the prescribed burn (Project File – LNFKC Burn watershed report). In Bussel Creek, a tributary of Marble Creek, there is a reasonably foreseeable FS project proposal (Bussel 484), but the proposed on-the-ground activities are currently being developed through the NEPA process. The proposed activities in the Bussel Creek watershed (tributary of Marble Creek) include vegetation management and riparian plantings for increasing shade and for providing future LWD on Bear and Little Bear Creeks (Bussel tributaries).

The LNFKC is not identified as a 303(d) listed water body in Idaho DEQ’s Subbasin Assessment nor included on their list of impaired water bodies (2005). The LNFKC is fully supporting beneficial uses. The total estimate for sediment increase in LNFKC would be approximately 4.5 tons/yr until the regeneration harvested areas become stocked (1-2 years), and then it would be 3.2 tons/yr (Table 12) long-term.

The total estimate for sediment increase in Marble Creek would be approximately 15.2 tons/yr until the regeneration harvested areas become stocked (1-2 years), and then it would be 12.7 tons/yr (Table 12) long-term. In Bussel Creek, a tributary of Marble Creek, there are TMDLs for

two tributaries but not in the tributary where the non-Federal Lines Creek parcel is located. Also, the Lines Creek parcel has no intermittent or perennial streams. Landowners are required by TMDLs to increase stream shade in Marble Creek below Hobo Creek.

The total estimate for sediment increase in Myrtle Creek would be approximately .3 tons/yr until the regeneration harvested areas become stocked (1-2 years), and then it would be 0 tons/yr (Table 12) long-term. Landowners are required by TMDLs to increase stream shade in Myrtle Creek.

Sediment yield by watershed (tons/acre) for road construction, reconstruction and harvesting are shown in tables 9 and 11. Total estimated sediment yield for the No Action Alternative would be 15.9 tons/yr long-term and 20.0 tons/year short-term (table 12). Unless there is some off-set or sediment reduction value to apply as a trade off, the 25 increased stream crossings would likely show an increase in sediment. Beneficial use support is achieved by reducing sediment and stream temperatures equal to or less than what was caused by the management activity.

### **Summary**

The No Action Alternative would result in 6.9 more tons of sediment per year in the long-term and 8.7 more tons of sediment per year in the short-term than the Proposed Exchange. The No Action Alternative would result in greater water quality impacts than the Proposed Action Alternative primarily because of the anticipated 25 stream crossings.

## **Wetlands and Floodplains**

The objective of this section is to disclose wetland and floodplain acreage acquired and conveyed for each alternative and to determine compliance with Executive Orders.

The analysis area was the Federal and non-Federal parcels. The analysis included a review of existing floodplain-wetland determination (Hallisey, 1998), aerial photograph review, channel-length determination from topographic quadrangle maps, and wetland and floodplain acre determinations based on sampling and professional knowledge. Floodplains and wetlands were estimated visually on the ground, measured, and extrapolated from knowledge of channel types (PR).

### **Laws and Regulations Applying to the Analysis**

Executive Orders 11988, Floodplain Management and 11990, Protection of Wetlands, direct Federal agencies to preserve, restore, and enhance the natural and beneficial values of floodplains and wetlands in carrying out agency responsibilities for, among other activities, acquiring and conveying of Federal lands.

FSM 2527, Floodplain Management and Wetland Protection directs the agency to protect wetland values and prevent increased flood hazards. FS Handbook (FSH) 5409.13, Land Acquisition Handbook directs the agency to identify and document any loss of wetland values and any anticipated increases in flood hazard.

### **Affected Environment**

In the Proposed Exchange, the acres of floodplain and wetlands on parcels to convey would be approximately 5.3 and 2.5, respectively. The acres of floodplain and wetlands on parcels to

acquire would be approximately 6.4 and 3.2, respectively. This represents a net gain of approximately 1.1 acres of floodplains and .7 acres of wetlands (Table 13).

The Proposed Exchange would result in a small increase of floodplains and wetlands under Federal management.

**Table 13. Summary of Wetlands and Floodplains**

	Proposed Exchange		No Action	
	Convey (Acres)	Acquire (Acres)	Convey (Acres)	Acquire (Acres)
Wetland Acres	2.5	3.2	0	0
Floodplain acres	5.3	6.4	0	0

### Environmental Consequences

The Proposed Exchange would be in compliance with Executive Orders 11990 and 11988. The No Action Alternative would result in no change in wetlands and floodplains acreage on the IPNF.

### Fisheries

The objective of this section is to disclose the environmental consequences for the fisheries resource in the Grandmother Mountain Land Exchange analysis area. A comparison of potential direct, indirect and cumulative effects to Threatened, Endangered, sensitive and selected MIS is disclosed for the Proposed Exchange and No Action alternatives.

The analysis area includes the watersheds that contain exchange parcels, the stream channels within parcels, and the lands and streams immediately adjacent to these parcels. The geographic scope of potential effects was determined by a combination of factors including: the geographic location of the project, the scope of the Proposed Exchange, the resources and species which may be present, the ability to measure effects, and the information needed to determine effects.

### Laws and Regulations Applying to the Analysis

Principal regulatory direction applicable to the management of fisheries resources on the IPNF includes:

- The Endangered Species Act of 1973 (ESA), as amended
- National Forest Management Act of 1976 (NFMA)
- Idaho Panhandle National Forests Forest Plan (USDA 1987)
- Rules Pertaining to the Idaho Forest Practices Act (Title 38, Chapter 13, Idaho Code, 2000)
- Executive Order 12962 (Recreational Fishing)
- State of Idaho Governor’s Bull Trout Plan

Five standards are listed in the Idaho Panhandle National Forests (IPNF) Forest Plan (USDA Forest Service 1987) for fisheries and additional standards are described in the Inland Native Fish

Strategy (USDA 1995 Inland Native Fish Strategy DN and FONSI) which, are applicable to the fisheries resource. The Inland Native Fish Strategy (INFS) specified Riparian Goals and Riparian Management Objectives. To achieve these goals and objectives, standards and guidelines were developed.

The National Forest Management Act (NFMA) (1976) requires that the FS manage for a diversity of fish habitat to support viable fish populations. Regulations of NFMA (219.12g) state, "Fish and wildlife habitats will be managed... to maintain and improve habitat of management indicator species."

Section 7 of the 1973 Endangered Species Act (ESA) includes direction that Federal agencies will not authorize, fund, or conduct actions that are likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitat. (Joint Counterpart Endangered Species Act (ESA) Section 7 Consultation Regulations issued on December 8, 2003; Federal Register, pages 68254-68265).

Executive Order 12962 (June 7, 1995) states objectives "to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities by: (h) evaluating the effects of Federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of this order."

Additional regulatory requirements related to fisheries resources (e.g. Clean Water Act and Idaho Water Quality Standards, Idaho 303(d) list) are addressed in the Water Quality section.

## **Affected Environment**

Field reviews were conducted by FS specialists in 1998, 2005 and 2006. Existing conditions of the fisheries resources relating to cumulative effects were established by utilizing professional interpretation of available information from stream inventories, field reviews, historical records, aerial photographs, maps, GIS analysis and published scientific literature. Stream miles are approximations based on GIS, aerial photographs and map analysis. Also, comprehensive knowledge of the fisheries resources in the Coeur d'Alene River, St. Joe River, LNFKC and the Kootenai River basins along with discussions with Fisheries Biologists from the Idaho Department of Fish and Game (IDFG) and the United States Fish and Wildlife Service (USFWS) were utilized.

## **Aquatic Habitat and Requirements**

The water quality section describes watersheds, general stream characteristics and effects on water quality in the analysis area. Refer to that section for this information. Specific fisheries information relating to the effects analysis is described under the environmental consequences subsection below.

Westslope cutthroat trout and bull trout inhabit stream segments contained within several Proposed Exchange parcels. Westslope cutthroat trout are known to occur in all fish bearing stream segments associated with this Proposed Exchange parcels (approximately 7.05 miles).

Of the Proposed Exchange parcels containing fish bearing stream segments, bull trout are only known to be utilizing aquatic habitat within the non-Federal Lost Lake Creek parcel (approximately 0.9 miles of habitat) and the non-Federal Adair Creek parcel (approximately 0.9

miles of habitat). The non-Federal Myrtle Creek and Floodwood Creek parcels have habitat directly downstream from these parcels that are currently used by bull trout. Bull trout also occur in the upper LNFKC and the Little Lost Lake Creek watersheds where small non-Federal parcels having no fish bearing streams are included in the Proposed Exchange. According to the Forest Service 1998 biological assessment for the St. Joe River Basin/ NF Clearwater, habitat downstream of the Federal Trout Creek and Whistling Creek parcels, and the non-Federal Marble Creek parcels, may occasionally be used by bull trout.

### **Threatened, Sensitive and Management Indicator Fish Species**

*Bull Trout* - Bull trout exhibit resident, fluvial and adfluvial life histories (Averett and MacPhee 1971, Bjornn and Liknes 1986, and Goetz 1989). Resident populations remain in their natal streams throughout their life. Migratory populations (fluvial and adfluvial) use tributary streams for spawning and may remain in these areas throughout the summer. In the fall, migratory fish that have not previously returned to rivers (fluvial) and lakes (adfluvial) migrate to deeper water where they congregate and over-winter (Bjornn 1975). These life history strategies allow bull trout populations to maintain a degree of resiliency to disturbance regimes that are inherent to geographic areas defined by their native distribution.

Rieman and McIntyre (1993) state “Fragmentation and disruption of bull trout habitat will increasingly isolate populations and isolate or eliminate life-history forms”. This fragmentation and disruption of habitat will lead to problems for populations and ultimately increase the risk of extinction (Rieman and McIntyre 1993).

Bull trout are native to the St. Joe River system (Maclay 1940, Fields 1935) and may also be resident, fluvial or adfluvial. They spawn in gravel areas of headwater streams during the fall. Juvenile bull trout rear in small tributary streams for 3-5 years before migrating downstream to seek more suitable habitat. Requirements for good rearing habitat include cold water (less than 15oC) and abundant cover (Fraley et al. 1989).

Bull trout population status reviews have found considerable reductions in the distribution and abundance throughout their historic range (USDA Forest Service 1996a, An assessment of the conservation needs of Bull Trout; Rieman and McIntyre 1993). The IPNF bull trout monitoring indicates bull trout populations appear to be stable throughout most of northern Idaho (USDA Idaho Panhandle Forest Plan Monitoring and Evaluation Reports 1998, 2000 and 2002). Earlier reviews stated that bull trout stocks on the IPNF Coeur d'Alene River basin are considered to be at a high risk of extinction and stocks in the St. Joe River system and the Little LNFKC system are considered to be at moderate risk of extinction (Cross 1992). Bull trout are known to reside in the Kootenai River Basin, which includes Myrtle Creek. All three life history forms (resident, fluvial, adfluvial) are present in the Kootenai River Basin (Kootenai River Bull Trout Problem Assessment, PBTTAT 1998 working Draft).

*Westslope Cutthroat Trout* - Westslope cutthroat trout are native to each river system within the analysis area (Maclay 1940, Fields 1935). Their preferred habitat is cold, clear streams that possess rocky, silt-free riffles for spawning and slow, deep pools for feeding, resting, and over-wintering (Reel 1989). Pools are a particularly important habitat component as cutthroat trout occupy pool habitat more than 70% of the time (Mesa 1991). Other key features of cutthroat habitat are LWD for persistent cover, habitat diversity and small headwater streams for spawning and early rearing.

Resident, fluvial, and adfluvial life history strategies of westslope cutthroat trout are reported in Averett & MacPhee (1971) and Bjornn (1986). Resident populations remain in river tributaries throughout their life. Migratory populations (fluvial and adfluvial fish) use river tributaries for early rearing and spring spawning as adults but typically out-migrate to river (fluvial) or lake (adfluvial) habitat as they mature. In the fall, fish that have not previously returned to river and lake areas migrate to deeper water where they congregate and over-winter (Bjornn 1975). Fish bearing streams within the analysis area watersheds are likely utilized by westslope cutthroat trout representing migratory and resident life history strategies.

Population status reviews of the westslope cutthroat trout (WCT) within the United States determined that currently westslope cutthroat occupy an estimated 59% of the historically occupied habitat and in Idaho populations occupy almost 96% of the historical range (Shepard et al 2003). IPNF Forest Plan monitoring reports (1998, 2000 and 2002) indicate westslope cutthroat trout populations appear to be stable throughout most of northern Idaho.

*Management Indicator Species* - Westslope cutthroat trout (*Oncorhynchus clarki lewisi*) and bull trout (*Salvelinus confluentus*) have been selected as appropriate fish MIS for the analysis area. These fish species are listed as "sensitive" by Region 1 of the USDA FS and as "species of special concern" by the State of Idaho. The USFWS lists bull trout as a fish species that occur, potentially occur, and/or habitat exists within the St Joe River, the LNFKC and the Kootenai River portions of the IPNF. The Columbia River Distinct Population Segment of bull trout (*Salvelinus confluentus*) is listed as "threatened" (Federal Register, Volume 63, No. 111, June 10, 1998).

Other native species known to be found in the analysis area but were not selected as a MIS or further analyzed in detail within this document are listed in Table 14 below.

**Table 14. Fish Species not Analyzed in Detail**

Species	Rationale for Eliminating from Detailed Analysis	Preferred Habitat
<b>Threatened and Endangered</b>		
Kootenai River White Sturgeon ( <i>Acipenser transmontanus</i> )	No suitable habitat is present within the analysis area. The project area is out side recognized sturgeon habitat	Large lakes and rivers. In Idaho, found only in the Kootenai River System.
<b>Sensitive Species</b>		
Burbot ( <i>Lota Lota</i> )	Historically present, but are not currently occupying habitat within the cumulative effects area.	Large lakes and rivers. In Idaho, found only in the Kootenai River System.
Interior Redband Trout ( <i>Oncorhynchus mykiss gairdneri</i> )	Only hybridized individuals possibly present within the analysis area. Effects to this species and its habitat are analyzed using westslope cutthroat and bull trout as MIS.	Cool, clean, and relatively low gradient streams. On the IPNF, pure interior redband trout found only in isolated tributaries of the Kootenai River outside of the cumulative effects analysis area.

Exotic fish species are known to occur or potentially occur in several watersheds within the Proposed Exchange analysis area. Rainbow trout potentially inhabit portions of Trout Creek and lower Marble Creek due to their close proximity to past fish stocking efforts by IDFG.

## **Environmental Consequences**

The indirect and cumulative effects associated with Forest Capital’s anticipated ten year management plans are disclosed by alternative (PR). The IPNF has no ten year management plans within the parcels considered for exchange.

The effects analysis will be divided into two sections. The first section will describe the possible effects to MIS from the Proposed Exchange and the No Action alternatives. The effects on MIS will be based on Forest Capital’s and the IPNF’s reasonably foreseeable management plans (PR). The characterization effects to the fisheries resource will be categorized into five different rating groups. A number “2” rating will indicate an increasing trend in habitat quality of a major stream segment or watershed area, “1” will indicate an increasing trend in habitat quality of a minor stream segment or watershed area, “0” will indicate no significant change in fish habitat condition, “-1” will indicate a decreasing trend in habitat quality of a minor stream segment or watershed area, “-2” will indicate an decreasing trend in habitat quality of major a stream segment or watershed area.

The second section evaluates the net effect of the Proposed Exchange when compared to the No Action Alternative. Comparisons will be based on net gain of acres and net gain of fish bearing stream miles. Also, the net potential effect by alternative on bull trout habitat will be addressed. The rationale for increases in these indicators (acres and fish bearing stream miles) being considered as improvement in an alternative is that Federal lands are subject to more stringent management standards designed to protect and conserve natural resources than privately owned lands (refer to Laws and Regulations Applying to Analysis above). A review of how more strict management can be used to benefit fish can be found in Meehan 1991, American Fisheries Society Special Publication 19. Also, a significant amount of oversight exists for public land agencies. This oversight helps ensure the legally mandated management standards are applied. State and private land management entities are governed by the rules pertaining to the Idaho Forest Practices Act, Title 38, Chapter 13, Idaho Code. In general, Idaho Forest Practices Act requirements result in narrower riparian buffers and higher road densities than are permitted for the same management action on Federal land. Wider buffers can maintain shade, increase LWD recruitment and prevent an increase in stream temperatures there by maintaining fish habitat as well as the numbers of cold water biota in the area (Hicks et al. 1991

### **Alternative 1: Proposed Exchange**

The indirect and cumulative effects associated with Forest Capital’s anticipated ten year management plans are disclosed by alternative (PR). The IPNF has no management plans within the parcels considered for acquisition or conveyance.

### **Watersheds with Federal Parcels to Convey**

*Pine Creek* - Pine Creek flows into the Coeur d’Alene River basin. There is .15 miles of cutthroat trout habitat flowing through the Pine Creek East and West parcels in T.47N., R.1E., Sections 25.

Within these parcels, there are 1.2 miles of non-fish bearing perennial stream, 1.9 miles of non-fish bearing intermittent stream for a total of 3.25 miles of stream. Currently there is not a recognized or documented population of bull trout using the Coeur d'Alene River basin (Personal Communication, USFW). The Pine Creek Watershed is only known to contain Cutthroat (communication with BLM).

The Proposed Exchange would result in Forest Capital reconstructing 3.7 miles of road, building 5.6 miles of new road (Table 5) and harvesting timber in 100 % of the parcels. As a whole, conveying 565 acres would likely have an effect on fish habitat within the 50,560 acre Pine Creek watershed. Although there is only .15 miles of cutthroat trout habitat within the two parcels, an increase in sediment may affect fish habitat in segments directly down stream. The determination of effect would be “-1”.

*Trout Creek* - Within the Lemonade Peak parcel there is .10 miles of non-fish bearing perennial stream and 2.0 miles of non-fish bearing intermittent stream for a total of 2.10 miles of stream. Although there is no recent survey data, fish habitat is presumed to not exist within this parcel due to high stream gradients. Cutthroat trout populations are found in lower Trout Creek stream segments. Bull trout status is unknown but it is presumed that occasionally bull trout use the lower portions of Trout Creek (St. Joe River/NF Clearwater Basins B.A.). Existing conditions within the Trout Creek watershed have been attributed to land use activities. Logging and road building has occurred throughout this watershed. Sediment loading has aggraded stream channels. Shading and woody debris recruitment appears to be limited.

The Proposed Exchange would result in Forest Capital building 3.2 miles of new road and harvesting timber in 100% of the parcel. Although there is no fish habitat, conveying this 360 acre parcel may have a minimal effect on fish habitat within the 13,000 acre Trout Creek watershed. Sedimentation from road building in the upper Trout Creek watershed could affect minor fish habitat segments directly down stream. The amount of sediment produced by the foreseeable management would be minimal (Table 8). The determination of effect would be “-1”.

*Whistling Creek* - Whistling Creek is tributary to the west fork of Bluff Creek, which is a tributary to Bluff Creek. There is .30 miles of cutthroat trout fish habitat flowing through the Whistling Creek parcel plus 1.7 miles of non-fish bearing perennial stream and .25 miles of non-fish bearing intermittent stream for a total of 2.25 miles of stream. The Whistling Creek Watershed is only known to contain cutthroat trout.. Currently there is not a recognized or documented population of bull trout population using the Bluff Creek Watershed however occasional fish presents is probable (St. Joe River/NF Clearwater Basins B.A.).

The Proposed Exchange would result in Forest Capital reconstructing 7.6 miles of road, building .4 miles of new road (Table 5) and harvesting timber in 100% of the parcel. Conveying this 400 acre parcel may have an effect on fish habitat within the 1,650 acre Whistling Creek watershed because the highest quality cutthroat trout habitat existing within the watershed is found down stream of this parcel. Future management of this parcel by Forest Capital could cause further reduction in shade, large woody debris recruitment and cause an increase in sedimentation from road building. Road building and increased sedimentation could have some down stream effects on fish habitat within the minor stream segments in the lower portions of Whistling Creek and the Bluff Creek Drainage. The determination of effect would be “-1”.

### **Watersheds with non-Federal Parcels to acquire**

The FS has no current plans for future management of these parcels to be acquired. If future management activities occur, more protection would be given to fish habitat through stricter Federal laws and regulations than would occur under the Idaho Forest Practices Act.

*Marble Creek Watershed (Freezeout parcel)* - There is .70 miles of cutthroat trout fish habitat flowing through this parcel plus 1.0 miles of non-fish bearing perennial stream and .55 miles of non-fish bearing intermittent stream for a total of 2.25 miles of stream. Marble creek has populations of cutthroat trout throughout the entire drainage. The majority of the cutthroat population and habitat are found in the lower portions of Marble Creek where the channel is larger and the stream gradients are lower. Smaller populations of cutthroat trout are found in the headwater streams of Marble Creek. Bull trout historically utilized habitat in the Marble Creek drainage (Maclay 1940, and Fields 1935). Occasional bull trout utilization is probable within this drainage (St. Joe River/NF Clearwater Basins B.A.). Fish habitat within Marble Creek has been influenced by natural events such as fire and floods, as well as human activities such as mining, timber harvest, grazing, road construction, splash dams, log drives and the removal of in-stream LWD. Splash dams and surface erosion has played a major role in changing Marble creek from a transport system to a depositional system (Lower Marble EA). A review of past stream survey information indicates a lack of pools and LWD throughout the main stem. However, fish habitat conditions improve further up in Marble creek.

Land directly downstream of the parcel is managed by the USFS, which would enable more consistent management and protection at a basin scale. However within the large Marble Creek watershed the positive trend for fish habitat would likely be realized at the minor stream segment scale. The determination of effect would be “+1”.

*Marble Creek Watershed (Duplex Creek parcel)* - Within T.43N., R.4E., S5, flows Duplex Creek, which drains .30 miles of fish bearing stream, .60 miles of non-fish bearing perennial stream and 1.0 miles of non-fish bearing intermittent stream for a total of 1.90 miles of stream. Within T.43N., R.4E., S7, flows an unnamed creek, which drains .25 miles of fish bearing stream, .15 miles of non-fish bearing perennial stream and .85 miles of non-fish bearing intermittent stream for a total of 1.25 miles of stream. Within T.43N., R.4E., S 17, flows Swing Creek, which drains .45 miles of fish bearing stream, .35 miles of non-fish bearing perennial stream and .15 miles of non-fish bearing intermittent stream for a total of .95 miles of stream. No recent stream surveys have been done in this area; however, these streams are considered to contain cutthroat trout. A review of these streams (tributaries to Marble Creek) indicates that the fish habitat is limited due to high stream gradients, lack of pools and LWD. Occasional bull trout utilization is probable in Lower Marble Creek (St. Joe River/NF Clearwater Basins B.A.).

More consistent management and protection at a basin scale would occur because NFS lands are directly downstream of this parcel. The determination of effect would be “+1”.

*Marble Creek Watershed (Daveggio Creek parcel)* - No recent surveys have been done. A review of this stream indicates the fish habitat is poor due to high stream gradients, lack of pools and LWD and complexity. Fish observed in Daveggio Creek were assumed to be cutthroat trout (Lower Marble EA 1997). Bull trout status is unknown but it is presumed that occasionally bull trout use portions of Marble Creek (St. Joe River/NF Clearwater Basins B.A.). Within the parcel there is 1.00 miles of fish bearing stream, .40 miles of non-fish bearing perennial stream and .10 miles of non-fish bearing intermittent stream for a total of 1.50 miles of stream. Forest Capital

owns the majority of the land down stream of this parcel. Fish habitat within Daveggio Creek has been influenced by natural events such as fire as well as human activities such as timber harvest, road construction and splash dams. Splash dams and surface erosion have played a major role in straightening the stream channel (Lower Marble EA).

It would be difficult to consistently manage and protect fish habitat at a basin scale because land downstream from this parcel is managed by Forest Capital. There would likely be no significant change to fish habitat within this area. The determination of effect would be “0”.

*Marble Creek Watershed (Lines Creek parcel)* - There are no streams within this parcel. The closest stream is Lines Creek, which is about .3 miles to the East.

There would be no significant change to fish habitat within this area. The determination of effect would be “0”.

*LNFKC Watershed (Lost Lake Creek Parcel)* - The LNFKC is a large watershed containing good spawning and rearing habitat for both cutthroat trout and bull trout fish species. Within T.43N., R.4E., S11 are .65 miles of cutthroat and bull trout habitat, .10 miles of non-fish bearing perennial stream and .10 miles of non-fish bearing intermittent stream for a total of .85 miles of stream. Within T.43N., R.4E., S1 are .25 miles of cutthroat and bull trout habitat, no miles of non-fish bearing perennial stream and no miles of non-fish bearing intermittent stream for a total of .25 miles of stream. Within T.43N., R.4E., S3 are no miles of cutthroat and bull trout habitat, no miles of non-fish bearing perennial stream and .10 miles of non-fish bearing intermittent stream for a total of .10 miles of stream. The most recent surveys for Lost Lake Creek and Little Lost Lake Creek were done in the early 90’s. A review of the stream survey data indicates that the fish habitat for both cutthroat and bull trout is good in both drainages. Past surveys noted evidence of land use activity such as riparian harvest and roading in both drainages (PR).

It would be difficult to consistently manage and protect fish habitat at a basin scale because land upstream and downstream of the parcel would continue to be managed by mixed ownership. However drainages within these partials are important areas for spawning and rearing cutthroat and bull trout. Proper management of the stream segments within the parcels is important in maintaining protected refugia (An area that has escaped ecological changes occurring elsewhere and so provides a suitable habitat for a species) for fish within a major watershed area with mixed ownership and could enable the continued existence of bull trout within the watershed. The determination of effect would be “2”.

*LNFKC Watershed (Adair Creek Parcel)* - The Adair Creek parcel has .90 miles of cutthroat and bull trout habitat, .20 miles of non-fish bearing perennial stream and .15 miles of non-fish bearing intermittent stream for a total 1.25 miles of stream. In 1998, an electrofishing survey confirmed the presence of bull trout in Adair Creek (PR). A review of the stream survey data from 1991 indicates that the fish habitat for both cutthroat and bull trout is good in this drainage. Earlier surveys described the conditions in Adair creek as impaired due to clearcutting near the stream banks and roads washing into the stream.

Land upstream and downstream of this parcel is managed by the USFS, which would enable more consistent management and protection of cutthroat and bull trout fish habitat at a basin scale. The determination of effect would be “2”.

*Marble Creek Watershed (Twodot Peak Parcel)* - The Twodot parcel has .10 miles of non-fish bearing intermittent stream for a total .10 miles of stream. There is no documented bull trout in Malamute and Boulder Creek, tributaries of Marble Creek. Occasional bull trout utilization is probable in Lower Marble Creek (St. Joe River/NF Clearwater Basins B.A.). There would be no significant change to fish habitat within this area. There would be no significant change to fish habitat within this area. The determination of effect would be “0”.

*Marble Creek Watershed (Fishhook Peak Parcel)* - This parcel has .10 miles of fish bearing stream (Cutthroat trout only), .50 miles of non-fish bearing perennial stream, .10 miles intermittent stream for a total .70 miles of stream. There is no documented bull trout in Boulder Creek. There is no recent stream survey data. Occasional bull trout utilization is probable in Lower Marble Creek (St. Joe River/NF Clearwater Basins B.A.). A review of the area indicates fish habitat within the Boulder Creek watershed has been influenced by natural events such as fire and floods; as well as human activities such as mining, timber harvest, grazing, road construction, splash dams, log drives and the removal of in-stream LWD.

It would be difficult to consistently manage and protect fish habitat at a basin scale because land downstream from this parcel is managed by Forest Capital. There would be no significant change to fish habitat within this area. The determination of effect would be “0”.

*LNFKC Watershed (Twin Springs Creek Parcel)* - Twin Creek contains .50 miles of fish bearing stream (cutthroat trout only), .35 miles of non-fish bearing perennial stream, .15 miles intermittent stream for a total 1.00 miles of stream. There is no recent stream survey data available. A review of the area indicates that fish habitat within the Floodwood Creek watershed may have been influenced by natural events such as fire and floods, as well as human activities such as mining, timber harvest and road construction. The Lower portions of Floodwood Creek have documented populations of bull trout and cutthroat trout (PR).

Land upstream of the parcel is managed by the BLM and down stream by the USFS and the State of Idaho, which would enable more consistent management and protection at a basin scale. However within the large Floodwood Creek watershed the positive trend for fish habitat quality would likely be realized at the minor stream segment scale. The determination of effect would be “1”.

*Myrtle Creek Watershed* - Bull trout occur in lower Myrtle Creek up to the falls located approximately 2 miles upstream from the confluence with the Kootenai River. Populations of cutthroat trout persist upstream and downstream of the falls.

The Myrtle Creek parcel contains 1.50 miles of fish bearing stream (cutthroat trout only), .20 miles of non-fish bearing perennial stream, .20 miles intermittent stream for a total 1.90 miles of stream. Review of the 2006 Myrtle HFRA DEIS Appendix B-35 Fisheries Report indicates that fish habitat within the Myrtle Creek watershed may have been influenced by natural events such as fire and floods, as well as human activities such as mining, timber harvest and road construction. Fish Habitat in the lower reach of Myrtle Creek (below the falls) was impacted when large amounts of sediment were delivered to the system. Land upstream of this parcel is managed by the FS and downstream by the Kootenai National Wildlife Refuge. Bull trout occur below the parcel in lower Myrtle Creek up to the falls, which are, located approximately 2 miles upstream from the confluence with the Kootenai River in the Kootenai National Wildlife Refuge. Populations of cutthroat trout persist upstream and downstream of the falls. Acquiring this parcel

enables more consistent management and protection of fish habitat through coordination by the agencies at a basin scale. The determination of effect would be “2”.

## **Alternative 2: No Action**

### **Watersheds with Federal Parcels**

*Pine Creek, Trout Creek and Whistling Creek* - These alternatives would result in no significant change to the existing condition of the fisheries resource. The determination of effect would be “0”.

### **Watersheds with non-Federal Parcels**

Forest Capital has ten year management plans for its parcels if no exchange of lands occurs. Timber management activities would be in compliance with the Idaho Forest Practices Act.

*Marble Creek Watershed (Freezeout parcel)* - Forest Capital plans to build 3.2 miles of new road, reconstruct 5.22 mile of road and harvest timber in 90% of this parcel. Although there is only .70 miles of fish habitat within this 319 acre parcel, land use activities may have an effect on fish habitat within the parcel and downstream in Marble Creek. Sedimentation from road building in the upper Marble Creek watershed could affect fish habitat by further contributing material to the already aggrading system. Logging near the riparian areas could reduce shade and limit LWD recruitment. The determination of effect would be “-1”.

*Marble Creek Watershed (Duplex Creek parcel)* - Forest Capital plans to build 2.78 miles of new road and harvest timber in 100% of this parcel. Land use activities may have an effect on fish habitat. Sedimentation from road building in the tributary streams could have an effect on fish habitat downstream by further contributing future material to the already aggraded system. Logging near the riparian areas could reduce shade and limit LWD recruitment. The determination of effect would be “-1”.

*Marble Creek Watershed (Daveggio Creek parcel)* - Forest Capital plans 2.75 miles of road reconstruction and timber harvest in 100% of this parcel. Land use activities may have an effect on cutthroat trout habitat within the parcel and downstream in lower portions of Daveggio Creek. Logging near the riparian areas could reduce shade and limit LWD recruitment. The determination of effect would be “-1”.

*Marble Creek Watershed (Lines Creek parcel)* - There are no streams within this parcel. The determination of effect would be “0”.

*LNFKC Watershed (Lost Lake Creek Parcel)* - Forest Capital plans 1.83 miles of road reconstruction, 1.5 miles of new road construction and timber harvest in 100% of this parcel. Land use activities may have an effect on cutthroat and bull trout fish habitat within the parcel and downstream in the LNFKC. Logging and road building near the riparian areas could reduce shade, increase sediment input to streams, and limit LWD recruitment. Planned management would likely have some negative impacts to fish habitat within the parcel’s minor stream segments but would not change existing conditions at the major watershed scale. The determination of effect would be “-1”.

*LNFKC Watershed (Adair Creek Parcel)* - Forest Capital plans 1.80 miles of road reconstruction and timber harvest in 100% of this parcel. Land use activities planned by Forest Capital may have

an effect on cutthroat and bull trout fish habitat within the parcels and downstream into the Little North Fork of the Clearwater. Logging and road construction near the riparian areas could reduce shade, limit large woody debris recruitment and increase sediment inputs to minor stream segments. The determination of effect would be “-1”.

*Marble Creek Watershed (Twodot Parcel)* - Forest Capital plans .75 miles of road reconstruction, .75 miles of new road construction and timber harvest in 100% of this parcel. There is no fish habitat within the parcel. The determination of effect would be “0”.

*Marble Creek Watershed (Fishhook Peak Parcel)* - Forest Capital plans .5 miles of road reconstruction, 1.5 miles of new road construction and timber harvest in 100% of this parcel. Land use activities may have an effect on cutthroat trout fish habitat within the parcel and downstream in the main stem of Boulder Creek. Logging and road building near the riparian areas could reduce shade, increase sediment and limit LWD recruitment. The determination of effect would be “-1”.

*LNFKC Watershed (Twin Springs Parcel)* - Forest Capital plans to sell this parcel. If management occurred, there would be a need to construct 7.8 miles of new road and harvest of timber in 100% of this parcel would be likely. Land uses may have an effect on cutthroat trout habitat within the parcel and may have an effect downstream on bull trout and cutthroat habitat. Logging and road building near the riparian areas could reduce shade, increase sediment into streams, and limit LWD recruitment. The determination of effect would be “-1”.

*Myrtle Creek Watershed* - Forest Capital plans to harvest timber in 100% of the area (mainly by helicopter logging). Land use may have an effect on cutthroat trout habitat within the parcel and may have an effect downstream on bull trout and cutthroat trout habitat. Logging near the riparian areas could reduce shade, increase sediment input to the streams and limit LWC recruitment to a minor stream segment within the larger Myrtle Creek Watershed. The determination of effect would be “-1”.

## Summary

The Proposed Exchange would have a net gain of 1,074 acres. Fish habitat would likely be better protected under Alternative 1 due to more restrictive laws and regulations on Federal lands.

Table 15 shows the approximate length of perennial fish bearing, perennial non-fish bearing, and intermittent streams on NFS land that Alternative 1 conveys. Approximately 0.45 miles of perennial fish streams would be conveyed. Approximately 7.6 miles of perennial and intermittent stream miles would be conveyed. Approximately 6.60 miles of perennial fish streams would be acquired (Table 16). Approximately 14.0 miles of perennial and intermittent stream miles would be acquired. Alternative 1 would result in a net gain of 6.15 miles of perennial fish streams and 6.4 miles of total stream on the IPNF.

**Table 15. Alternative 1 Conveyed Stream Miles by Watershed and Parcel Name**

Watershed (Parcel Name)	Approximate Miles of Stream			
	Perennial		Intermittent	Total
	Fish	Non-fish		
Pine Creek (Pine Creek East and West)	0.15	1.20	1.90	3.25
Trout Creek (Lemonade Peak)	0.00	0.10	2.00	2.10
Whistling Creek (Whistling Creek)	0.30	1.70	0.25	2.25
Total	0.45	3.00	4.15	7.60

**Table 16. Alternative 1 Acquired Stream Miles by Watershed and Parcel Name**

Watershed (Parcel Name)	Approximate Miles of Stream			
	Perennial		Intermittent	Total
	Fish	Non-fish		
Marble Creek (Freezeout)	0.70	1.00	0.55	2.25
Marble Creek (Duplex)	1.00	1.10	2.00	4.10
Marble Creek (Daveggio Creek)	1.00	0.40	0.10	1.50
Marble Creek (Lines Creek)	0.00	0.00	0.00	0.00
LNFKC (Lost Lake Creek)	0.90	0.10	0.20	1.20
LNFKC (Adair Creek)	0.90	0.20	0.15	1.25
Marble Creek (Twodot peak)	0.00	0.00	0.10	0.10
Marble Creek (Fishhook Peak)	0.10	0.50	0.10	0.70
LNFKC (Twin Springs Creek)	0.50	0.35	0.15	1.0
Myrtle Creek (Myrtle Creek)	1.50	0.20	0.20	1.90
Total	6.60	3.85	3.55	14.00

**Table 17. Alternative 1 Conveyance and Acquisition of Bull Trout Stream Miles Found within Parcels by Watershed**

Watershed (Tributary)	Bull Trout Present - Miles	
	Parcels to Acquire	Parcels to Convey
LNFKC (Lost Lake Creek)	0.90	0.00
LNFKC (Adair Creek)	0.90	0.00
Total	1.80	0.00

Forest Capital’s primary business model is long term forest management for the production of timber to support local forest product businesses and communities (Letter 9/7/06). Timber management will occur on Forest Capital lands under both the Proposed Exchange and the No Action Alternatives. Table 18 identifies the Proposed Exchange anticipated trends in habitat quality resulting from Forest Capital’s management of conveyed parcels and IPNF’s management of acquired parcels.

Alternative 1 would convey .45 miles of fish bearing stream that would likely have decreasing trends in fish habitat quality. Most of this would occur in the Whistling Creek Drainage, a non bull trout stream, which has already been degraded. The Whistling Creek parcel is surrounded by Forest Capital land. Alternative 1 would acquire 6.6 miles of important fish bearing stream which includes 1.8 miles of currently important bull trout habitat (Table 17). The acquired streams would trend towards recovery on Federal lands (Table 18).

**Table 18. Alternative 1 Stream Baring Fishery Effects Characterization**

Effects Characterization	Fish Bearing Stream Miles	
	Parcels to Acquire	Parcels to Convey
2	3.30	0.00
1	2.20	0.00
0	1.10	0.00
-1	0.00	.45
Total	6.60	.45

2 - Indicates an increasing trend in habitat quality of a major stream segment or watershed area  
 1 - Indicates an increasing trend in habitat quality of a minor stream segment or watershed area  
 0 - Indicates no significant change in fish habitat condition  
 -1 - Indicates a decreasing trend in habitat quality of a minor stream segment or watershed area

The No Action Alternative would result in Forest Capital managing their lands that were proposed for exchange. Table 19 shows Alternative 2 would result in approximately 6.6 miles of fish bearing stream likely having decreasing trends in fish habitat quality; based on Forest Capital’s future land management plans (PR). Bull Trout use 1.8 miles of stream on Forest Capital non-exchanged lands. Since the IPNF has no plans for non-exchanged Federal parcels under Alternative 2, these lands would have no effect on the .45 miles of fish bearing stream (Table 19).

**Table 19. Alternative 2 Stream Baring Fishery Effects Characterization on Lands Not to Exchange**

Effects Characterization	Fish Bearing Stream Miles	
	NFS Lands	Forest Capital Lands
0	.45	0.00
-1	0.00	6.60
Total	.45	6.60

0 - Indicates no significant change in fish habitat condition

-1 - Indicates a decreasing trend in habitat quality of a minor stream segment or watershed area

The net effects of the Proposed Exchange would be a benefit to fish including the listed bull trout. The long-term effects of Alternative 1 would result in some beneficial effects to fish habitat as well. The FS is consulting with the USFWS and will complete a Biological Assessment (BA) to document effects to “threatened” bull trout from the proposed action. The activities associated with Alternative 1 may impact westslope cutthroat trout individuals or their habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species as described in the Environmental Consequences narrative. Consolidating ownership and management within watersheds increases the probability that land management objectives can be met more effectively.

Under the No Action Alternative, mixed ownership would persist at the existing proportion in the various watersheds. Disparity between the land management laws and regulations governing the various land owners would continue to complicate the efforts to effectively manage land in a way that best meets independent land management goals and objectives.

## Recreation Including Roadless Areas

The objective of this section is to address the effects of the Proposed Exchange and No Action alternatives on the existing social character and recreational setting. It discusses recreational opportunities and experiences affected by these alternatives.

The total project area includes land parcels to convey and acquire that are scattered over a large area on the IPNF. The analysis area is individual parcels and access points to these parcels. Parcels are evaluated in relation to recreation opportunities and experiences.

The analysis method used Anticipated Management Plans by Forest Capital (2005) and predictions for NFS lands to assess both alternatives evaluated in detail.

The Recreation Opportunity Spectrum (ROS) was reviewed to determine classification of the land parcels. The ROS setting indicators demonstrate access, remoteness, size, visual characteristics, site management, visitor management, social encounters and visitor impacts. ROS setting indicators have the potential to change with changes in land ownership. ROS settings on Federal parcels to convey vary from Roaded Modified to Semi-Primitive Non-motorized. ROS settings for parcels to acquire were assumed using designations for adjacent land. ROS Settings used in the analysis include (IPNF Forest Plan FEIS Glossary; 1987, ROS Users Guide, FS):

**Roaded Natural:** This is an area characterized by an environment ranging from natural appearing to substantially modified. Evidence of man usually harmonizes with the natural environment. This is a roaded area where roads and areas are both open and closed to recreation use.

**Roaded Modified:** This is a sub-class of Roaded Natural that is located along less used forest roads where the user will likely encounter large clear cuts and areas with management activities present. Chances to get away from other recreation users are increased but logging activities will be present. A few low standard recreation facilities may be provided.

**Semi-primitive:** An area characterized by a predominately natural-appearing environment, an essentially unroaded area where motorized use may or may not be permitted.

An overview of recreational use was developed through first-hand knowledge from recreation personnel and public input. The analysis for the recreation resource is qualitative only with emphasis on anticipated changes in recreation opportunities and uses. The analysis for the roadless resource is quantitative showing potential changes to roadless area acres and qualitative using anticipated changes in roadless area attributes. Roadless attributes reviewed are natural integrity & apparent naturalness, solitude, semi-primitive recreation opportunities, unique features & special features and manageability. (FSH 1909.12)

### **Forest Plan Regulations Applying to the Analysis**

In addition to FP goals (FP II-1&2), Recreation Objectives and Standards identified in the FP pages II-3 and 24 indicate, in part, that the IPNF will continue to provide a share of outdoor recreation needs in relation to other public and private entities. The Forest will provide for the projected use of developed recreation areas with development of new sites as budget becomes available, provide for a variety of dispersed recreation opportunities, pursue opportunities to increase and improve the recreation trail system, and continue and increase cooperative trail programs with organizations, clubs, and other public agencies. FS recreation programs will strive to be complementary with other public and private programs. Off-site interpretation and environmental education will be encouraged. Recreation planning and operations will be coordinated with other Federal, state, local, and private recreation managers.

FP Management Areas (MA's) for the parcels are the following: MA 1, 3, 6, 9 and 10. An adjacent roadless area (Big Creek) designated MA20 is also evaluated. MA direction by parcel for recreation is as follows:

**MA1:** Manage primarily for roaded modified and roaded natural ROS experience. Maintain a diversity of recreation opportunities.

**MA3:** Manage for a roaded modified and roaded natural ROS experience. Restrictions may be necessary to reduce bear/human conflicts.

**MA6:** Manage for a roaded natural and semi-primitive ROS experience. The area is open to motorized use. Within critical habitat components motorized recreation use may be restricted to enhance wildlife use.

**MA9:** Manage for a roaded natural or semi-primitive ROS experience. Maintain existing improvements. Trail construction in this area is only to access adjacent areas. Existing trails will generally be open.

**MA10:** Manage the individual area to provide a semi-primitive recreation experience and manage the roads to provide access and dispersal of recreation use. A variety of trail uses will be provided.

MA20: Manage the semi-primitive recreation setting in a near-natural appearing condition and manage existing roads to provide access and dispersal of recreation use. Motorized uses will be allowed where they do not conflict with wildlife and other resource needs.

## **Affected Environment Recreation and Roadless Areas**

### **Federal Parcels**

*Lemonade Peak* - This parcel is adjacent to private land and the Big Creek Roadless Area (FS 1-143). The only legal access to this unit is via trails. Two FS trails traverse a corner of this parcel. The Lemonade Peak Trail 555 and Coeur d'Alene Divide Trail 8 junction is at the northeast corner of Section 28, T47N, R2E. Trail 555 is the boundary of the Big Creek Roadless Area at that point. These mainline trails are frequented by people on foot, horses and motorcycles. The western portion of Trail 8 has been abandoned since the 1970s due to private land activities on adjacent parcels. ROS setting is Roded Natural. This parcel has 320 acres designated MA6 and 40 acres designated MA9.

*East Pine Creek* - This parcel is adjacent to private land and primarily managed by the BLM. Trail 8 at one time crossed one corner of this parcel but has since been abandoned. An old road accesses the eastern portion of this parcel but it is not in a condition to accommodate full-size vehicle access. Off-highway vehicle (OHV) use is common in the surrounding area. ROS setting is Roded Natural. This parcel is designated MA9.

*West Pine Creek* - This parcel is adjacent to private land and Federal land managed by the BLM. Trail 8 at one time crossed just south of this parcel but has since been abandoned. Old roads access the ridgeline in the south end of the parcel but it is likely too steep to allow off-road use. OHV use is common in the surrounding area. ROS setting is Roded Natural. This parcel is designated MA9.

*Whistling Creek* - This parcel is well-roped and within what is referred to as the checkerboard ownership of National Forest and private lands. It can be accessed by several gated roads off of Bluff Creek Road 509. All terrain vehicle (ATV) use is accepted on these gated roads. It is presumed this parcel is primarily of interest to hunters. It is not within or adjacent to a roadless area. ROS setting is Roded Modified. This parcel is designated MA1.

### **Non-Federal Parcels**

*Adair Creek* - This is a roped parcel accessed from Roads 1268 and 301 which are well-traveled gravel roads used by recreationists and loggers. The roads are used by snowmobilers in winter. The parcel is within 2 miles of the trailhead for Trail 50 and is not within a Roadless Area. ROS setting is Roded Modified. This parcel would be assigned MA1 since surrounding NFS lands are this designation.

*Daveggio Creek* - This is a well-roped parcel that is within a mixed ownership area. It is accessed by Road 1936. The parcel has no particular value for recreation and is not within a roadless area. ROS setting is Roded Modified. This parcel would be assigned MA6. Surrounding NFS lands are designated MA6 and 9.

*Duplex Creek* - There are 3 land areas within this parcel. The northernmost area is well-roped and the other two are not. All three areas are located within the Grandmother Mountain Roadless

Area and within close proximity of mainline trails, including Marble Creek Trail 261 and Lookout Mountain Trail 52. ROS settings range from Roded Modified to Semi-primitive Non-motorized. This parcel would be assigned MA10 since surrounding NFS lands are within this designation.

*Fishhook Peak* - This parcel is not roaded and is at the headwaters of Boulder Creek. It is in a mixed ownership area. It has no particular value for recreation and is not within a roadless area. ROS setting is Roded Natural. This parcel would be assigned MA1. Surrounding NFS lands are designated MA1 and 9.

*Freezeout* - This parcel itself is not roaded but Road 301 comes close to the southeastern corner. The parcel can be seen from Road 301. There are no trails through the parcel and the terrain is very steep. It is possible that an occasional hunter or ambitious hiker may traverse it. The parcel is located at the headwaters of Marble Creek and is within the Grandmother Mountain Roadless Area. ROS setting is primarily Semi-primitive Non-Motorized. This parcel would be assigned MA10 since surrounding NFS lands are within this designation.

*Lines Creek* - This is a well-roaded parcel adjacent to Road 3591 and near an electronic site. It is within 2 miles of the Lines Creek Historic trail but has no particular value for recreation and is not within a roadless area. The ROS setting is both Roded Modified and Roded Natural. This parcel would be assigned MA1 since surrounding NFS lands are within this designation.

*Lost Lake Creek* - There are 3 land areas within this parcel. Three trails are within or adjacent to the vicinity of this parcel. The IPNF and BLM co-managed the trails. Two trails (Lost Lake Trail 34 and Little Lost Lake Trail 36) cross one area and all 3 land areas are within ½ mile of Fish Lake Trail 35. This parcel is adjacent to both the Grandmother Mountain Roadless Area (FS) and the BLM Grandmother Mountain (WSA). Nearby Lund Creek was recommended by BLM as a Research Natural Area for its diversity of vegetation in 1980 (BLM, 1980). This parcel is considered Roded Natural or Roded Modified. It would be designated MA10. Surrounding NFS lands are designated MA10 to the west and MA6 and MA9 to the east of this parcel.

*Myrtle Creek* - This parcel is adjacent to the Kootenai National Wildlife Bird Refuge near Bonners Ferry. Two FS roads (Roads 633 and 2411) traverse the parcel. Another closed road crosses this parcel to access the Bonners Ferry municipal water intake located to the west on NFS land. It also includes a waterfall on Myrtle Creek with a short access trail from Road 18 through the National Wildlife Refuge and the private land. The Refuge trail is well-developed and maintained; the trail on private land has been created by users and is not maintained. This area is frequented by visitors to the wildlife refuge. ROS settings are Roded Natural (winter) and Roded Modified (summer). This parcel would be designated MA3. Adjacent NFS lands are designated MA 3, 4 and 9.

*Twin Springs Creek* - This parcel is within the Pinchot Roadless Area and also within 2 miles of Orphan Point and Road 301 bordering the Grandmother Mountain Roadless Area. There are no National Forest or BLM trails in the area. Recreationists likely do not frequent the area but hunters may occasionally pass through. ROS setting is Roded Natural. Surrounding lands are primarily managed by BLM with an emphasis on semi-primitive recreation (pers. comm., Kincaid, April 25, 2006). This parcel would be designated MA6. The nearest NFS land to the south is designated MA6 and MA9 and NFS land to the west is designated MA10.

*Twodot Peak* - This parcel is not roaded and is on top of Two Dot Peak. There are roads and viewpoints on surrounding land within the St. Joe Ranger District where this area can be clearly viewed. It is a landmark but likely is not frequented by recreationists other than an occasional hunter. ROS settings are Roded Modified and Roded Natural. This parcel would be designated MA9. Adjacent NFS land is designated MA6 and MA9.

### **Roadless Areas**

*Big Creek Roadless Area (FS 1-143)* - This roadless area has 76,347 NFS acres and 4,995 other ownership acres for a total of 81,342 gross acres. Elevations vary from 5,960 feet near Elsie Lake to 2,400 feet near the mouth of Big Creek. The two major drainages generally flowing from north to south are Big Creek and Slate Creek. Prominent peaks include Bad Tom Mountain, Lemonade Peak, Spooky Butte, Mastodon Mountain, Foolhen Mountain and Elsie Peak. The area has an extensive fire history with nearly 100 percent burned in 1910 with reburns in 1919 and 1929. The present vegetative pattern reflects the wildland fire history with extensive brush fields on south aspects and trees on the cooler north aspects. Numerous rock outcrops are visible along the higher ridges and stream bottoms. Improvements include historic cabins, trails and roads. Recreational activities in the area include sight seeing, camping, hiking, motorcycling, horseback riding, berry picking, hunting and fishing. Both Big Creek and Slate Creek support important recreational fisheries.

#### **Natural Integrity and Apparent Naturalness**

Developments include remnants of early day logging, mining, lookouts, approximately 68 miles of trail and the Cemetery Ridge Road which bisects the roadless area. Except for remnants of cabins, the early day logging is essentially unnoticeable. Timber harvest areas and associated roads outside of this roadless area are visible from most of the prominent peaks and ridgeline trails.

#### **Solitude**

The Big Creek Roadless Area is approximately 10.4 miles long and 16 miles across. Most of the area is predominately NFS Land with small parcels of land managed by the Bureau of Land Management on the northwestern boundary and some small private land inholdings. Topography and vegetation provide screening which separates visitors from one another. There are points of relatively concentrated use in the vicinity of the Cemetery Ridge Road and in the bottoms of major drainages. Sounds from logging activities adjacent to the area can, at times, be heard from within the northwest, south and west boundaries.

#### **Semi-primitive Recreation Opportunities**

There are no developed recreation facilities within the area except for the Cemetery Ridge Road and system trails. The area provides opportunities for hiking, motorcycling, horseback riding, camping, viewing scenery, hunting and berry picking. In recent years, there has been an increase in 4-wheeled all terrain vehicle use in the area.

#### **Unique Features and Special Places**

Several of the trails within the area are on the National Recreational Trail system. During the 1910 fires, 18 people perished on the West Fork of Big Creek in Deadman Gulch. Another 10

died on the Middle Fork of Big Creek near Bronson Meadows. Cultural resource sites related to early day logging, mining and lookouts are within the area. The area is considered to be important elk habitat.

### **Manageability**

The north and east boundaries follow a ridgeline or roads. The remaining boundary would be difficult to locate on the ground because it does not follow identifiable topographic features. These lines are generally located to avoid development or follow land ownership lines.

*Grandmother Mountain Roadless Area (FS 1-148)* - This roadless area has 22,347 NFS acres and 16,543 other ownership acres for a total of 38,890 gross acres. Elevations range from 6,800 feet at Widow Mountain to 3,400 feet at Marble Creek. The amoeba-shaped unit includes a u-shaped ridge as its center, consisting of Grandfather Mountain, Grandmother Mountain, Marks Butte, Crater Peak, Widow Mountain and Lookout Mountain. Several cirques, cirque lakes and moraines along the ridgeline remain as evidence of past glacial activity, especially in the area of Lookout Mountain. The headwaters of Marble Creek, a major tributary of the St. Joe River, flow northward from the ridgeline. Flowing to the east are the headwaters of the LNFKC. The southwest corner is drained by Placer Creek into the St. Maries River system. Vegetation patterns reflect the high elevation, glacial activity and past fire history of the area. Nearly half of the unit was burned in the 1910 and 1919 forest fires. The remaining forested area consists of mature or overmature stands of mountain hemlock, Engelmann spruce and subalpine fir. Much of the high alpine areas support sparse subalpine vegetation and contain numerous rockland or talus slopes. Several roads surround the area and a series of trails access the interior. Recreational activities in the area include sight seeing, camping, hiking, berry picking, hunting and fishing.

### **Natural Integrity and Apparent Naturalness**

Developments include remnants of early day logging, grazing, lookouts and approximately 44 miles of trail. Except for remnants of cabins, splash dams, and a sawmill, early day logging is essentially unnoticeable. Timber harvest areas and associated roads outside of the roadless area are visible from most of the prominent peaks and ridgeline trails.

### **Solitude**

The Grandmother Mountain Roadless Area is approximately 7.5 miles long and 12.3 miles across. Most of the area is either NFS Land or land managed by BLM. Topography and vegetation provide screening which separates visitors from one another. There are points of relatively concentrated use in the vicinity of Freezeout Saddle on the southern boundary and in the Lost Lake area near the eastern boundary. Sounds from logging activities adjacent to the area can, at times, be heard from within the area.

### **Semi-primitive Recreation Opportunities**

There are no developed recreation facilities within the area except for trails. The area provides opportunities for hiking, motorcycling, horseback riding, camping, viewing scenery, hunting and berry picking. In recent years, there has been an increase in ATV use in the area.

### **Unique Features and Special Places**

Several of the trails within the area are on the National Recreational Trail system. Cultural resource sites related to early day logging, grazing and lookouts are within the area. Many people consider Grandmother Mountain and the u-shaped ridgeline described above to be special places. The cirque lakes are also considered special.

### **Manageability**

The southern boundary is well defined by a road following a major ridgeline. The remaining boundary would be difficult to locate on the ground because it does not follow any identifiable topographic features. These lines are generally located to avoid development or follow land ownership lines.

Grandmother Mountain (WSA) This area is 17,129 acres and is managed by BLM. The narrative above for the Grandmother Mountain Roadless Area covers this area.

*Pinchot Butte Roadless Area (FS 1-149)* - This roadless area has 8,509 NFS acres and 4,351 other ownership acres for a total of 12,860 gross acres. The area is just south of the Grandmother Mountain Roadless Area. Pinchot Butte is the highest point in the area with an elevation of 5,995 feet and the lowest point in the area is approximately 3,400 feet in Floodwood Creek on the southern boundary. The entire area drains into the Little LNFKC. Topography is characterized by narrow ridges which drop off into steep draws named Hemlock Springs, Twin Springs and Pinchot Springs Creeks. Vegetation in the area has been influenced by the 1910 and 1923 forest fires. The vegetation is composed of over mature, scattered hemlock and alpine fir interspersed with brush fields. Pinchot Marsh, a high elevation wetland, is a unique area. The area receives very little recreational use because of lack of access routes into the interior. Some fall big game hunters, sightseers, hikers and berry pickers utilize the fringe areas from roads on the north and west boundaries.

### **Natural Integrity and Apparent Naturalness**

Developments in the area are few. However at one time there was a road (301UP) constructed from Crater Peak toward Pinchot Butte and another road from the south toward Pinchot Butte. There were plans to connect these roads but that never was implemented. The upper road has been closed for years. Timber harvest areas and associated roads outside of the roadless area are visible from the northern boundary and Pinchot Butte.

### **Solitude**

The Pinchot Butte Roadless Area is approximately 4.5 miles long and 5.5 miles across. It is also adjacent to the Grandmother Mountain Roadless area and is separated by a road. Most of the area is either NFS Land or land managed by the BLM. Topography and vegetation provide screening which separates visitors from one another. Opportunities for solitude are enhanced because of the light use the area receives. Sounds from logging activities adjacent to the roadless area can, at times, be heard from within the area.

### **Semi-primitive Recreation Opportunities**

There are no developed recreation facilities within the area. The area still provides opportunities for cross-country hiking, horseback riding, camping, viewing scenery, hunting and berry picking.

In recent years, there has been an increase in ATV use adjacent to the area along the northern boundary.

### **Unique Features and Special Places**

The area contains a large wet area on BLM land known as Pinchot Marsh. The marsh is an outstanding high elevation wet meadow/sedge marsh/sphagnum bog area with a number of interesting plant species.

### **Manageability**

The northern and eastern boundaries are well defined by a road following a major ridgeline. The remaining boundary would be difficult to locate on the ground because it does not follow identifiable topographic features. These lines are generally located to avoid development or follow land ownership lines.

## **Environmental Consequences Recreation and Roadless Areas**

### **Alternative 1: Proposed Exchange**

#### **Federal Parcels**

*Lemonade Peak* - Forest Capital plans are to build road and to harvest timber (PR). Fifty percent of the area is proposed for clearcutting or seed tree cuts. Some kind of timber harvesting would be expected every 15 years. Public access would be restricted to non-motorized travel only. A portion of FS Trail 555 and Trail 8 are present in a corner of this parcel. Trail right-of-ways would be reserved to assure FS trail protection from planned road construction and timber harvesting. From the nearby Big Creek Roadless Area, the sounds and sights of road construction and timber harvesting would be closer and more frequent than is presently. The ROS setting of Roaded Natural would most likely become more like Roaded Modified after timber harvesting.

*East Pine Creek* - Forest Capital plans are to build road and to harvest timber. Harvest methods include everything from clearcutting to salvage. Some kind of timber harvesting would be expected every 15 years. Public access would be restricted to non-motorized travel only. From Trail 555 (a ridge trail) and prominent peaks in the nearby Big Creek Roadless Area, the sounds and sights of road construction and timber harvesting would be closer and more frequent than is presently. The ROS setting of Roaded Natural would most likely become more like Roaded Modified after harvesting.

*West Pine Creek* - Forest Capital plans are to build road, improve existing road and to harvest timber. FS would grant access to Forest Capital on existing road in Sec. 28, T.47N.,R1E. Fifty percent of the area is proposed for clearcutting or seed tree cuts. Some kind of timber harvesting would be expected every 15-40 years (PR). Public access would be restricted to non-motorized travel only. From Trail 555 and prominent peaks in the nearby Big Creek Roadless Area, the sounds and sights of road construction and timber harvesting would be closer and more frequent than is presently. The ROS setting of Roaded Natural would most likely become more like Roaded Modified after harvesting.

*Whistling Creek* - Forest Capital plans are to construct new road, reconstruct existing road, and harvest timber. Fifty percent of the area is proposed for clearcutting, overstory removal or seed

tree cuts. Some kind of timber harvesting would be expected every 15 years (PR). Public access would be restricted to non-motorized travel only. Currently ATV access is allowed in the area on gated roads; thus this is a reduction in this type of recreation opportunity. The area is already well-roaded and timber harvesting is evident. The ROS setting of Roaded Modified would not change.

### **Non-Federal parcels**

*Adair Creek* - This parcel would be designated MA1. This MA's goal is to manage suitable lands for timber production consistent with FP standards. There would be no change to the ROS setting. There are no anticipated effects to the recreation/ roadless resource.

*Daveggio Creek* - This parcel would be designated MA6. This MA's goal is to manage for timber production while providing sufficient summer range habitat for elk to support projected elk populations. There would be no change to the ROS setting. There are no anticipated effects to the recreation/ roadless resource.

*Duplex Creek* - There are 3 areas in this parcel; all within the Grandmother Mountain Roadless Area. This parcel would be designated M10. This MA's goal is to manage individual areas to provide a semi-primitive recreation experience. The northernmost area may have roads obliterated. The other areas would be left undeveloped as they are presently. Once roads are removed from the northernmost area, its ROS setting would change to Semi-Primitive.

*Fishhook Peak* - This parcel would be designated MA1. This MA's goal is to manage suitable lands for timber production consistent with FP standards. There would be no change to the ROS setting. There are no anticipated effects to the recreation/ roadless resource.

*Freezeout* - This parcel is within the Grandmother Mountain Roadless Area and would be designated MA10. The parcel would be left in its undeveloped state. The ROS setting would remain the same.

*Lines Creek* - This parcel would be designated MA1. This MA's goal is to manage suitable lands for timber production consistent with FP standards. There would be no change to the ROS setting. There are no anticipated effects to the recreation/ roadless resource.

*Lost Lake Creek* - There are 3 areas in this parcel; all within or adjacent to the Grandmother Mountain Roadless Area and the BLM Grandmother WSA. This parcel would be designated MA10. This MA's goal is to manage individual areas to provide a semi-primitive recreation experience. Management of the trails would be facilitated. There would be no change to the ROS setting. Currently, BLM makes attempts to maintain wilderness characteristics. One way is to prohibit ATV traffic along trails. This restriction is much more difficult to enforce with Forest Capital land at the beginning of the trails.

*Myrtle Creek* - This parcel would be designated MA3. The trail to Myrtle Falls could be improved and incorporated into the trail system for the public to enjoy. The adjacent area is already roaded and developed, therefore the ROS setting would likely remain the same.

*Twin Springs Creek* - This parcel would be designated MA6. This MA's goal is to manage for timber production while providing sufficient summer range habitat for elk to support projected

elk populations. This parcel is in the middle of Pinchot Butte Roadless Area and is surrounded by BLM land. The ROS setting would likely remain the same or become semi-primitive.

*Twodot Peak* - This parcel would be designated MA6. This MA's goal is to manage for timber production while providing sufficient summer range habitat for elk to support projected elk populations. There would be no change to the ROS setting. There are no anticipated effects to the recreation/ roadless resource.

## **Roadless Areas**

*Big Creek Roadless Area* - The Lemonade Peak, East Pine Creek and West Pine Creek Federal parcels are adjacent to this roadless area. Under the proposed action, acres of the roadless area would remain the same. Roadless area attributes, natural integrity, apparent naturalness and solitude, would continue to be degraded with additional road construction, timber harvesting and development adjacent to the roadless area. With right-of way reserved for Trails 555 and 8, these trails would continue to be protected and semi-primitive recreation opportunities would remain the same. However, unauthorized OHV use would likely become more prevalent. Unique features and special places would remain the same. Manageability of the roadless boundary would remain the same.

*Grandmother Mountain Roadless Area* - The Freezeout and Duplex non-Federal parcels contain four inholding Forest Capital areas within the Grandmother Mountain Roadless Area. In addition, the Lost Lake Creek non-Federal parcel contains three Forest Capital land areas adjacent to both the Grandmother Mountain Roadless Area and the BLM Wilderness Study Area. The roadless area acreage would increase from 38,890 gross acres to 40,169 (additional 1,279 acres, Roadless Area Calculations, 2006). The roadless area attributes would be protected and/or improved. Natural integrity, apparent naturalness, solitude, semi-primitive recreation opportunities, unique features and special places would all be maintained. The manageability of the eastern boundary could actually be improved by incorporating two of the Lost Lake parcels into the roadless area and thus being able to use a road as the boundary instead of property lines that cannot be discerned on the ground.

*Pinchot Butte Roadless Area* - There is one parcel, Twin Springs, in the center of this roadless area. It is surrounded by BLM land that is managed for semi-primitive recreation. With this alternative, the roadless area acreage would increase by 80 acres to 12,940 acres and roadless area attributes would be maintained. No other changes are anticipated.

## **Summary**

The Proposed Exchange would be a favorable action for the recreation resource when considering the anticipated land management that would occur if the non-Federal parcels remain in Forest Capital's ownership.

Trail right-of-ways on #555 and #8 would be reserved to assure FS trail protection from planned road construction and timber harvesting. The trail to Myrtle Falls could be improved and incorporated into the trail system.

Public access would be restricted to non-motorized travel only on the conveyed Whistling Creek, Pine Creek East and Pine Creek West parcels. Under the Proposed Exchange, the sounds and sights of road construction and timber harvesting from Trail 555 and prominent peaks would be

closer and more frequent on NFS land near conveyed Pine Creek West, Pine Creek East and the Lemonade Peak parcels. These conveyed parcels are adjacent to the Big Creek Roadless area. Roadless area attributes, natural integrity, apparent naturalness and solitude, would continue to be degraded from adjacent Forest Capital planned management activities. The ROS setting of Roadless Natural would most likely become more like Roadless Modified after harvesting on these conveyed parcels. If motorized access to the Lemonade Peak parcel is not controlled by Forest Capital, unauthorized OHV use in the Big Creek roadless area could increase. An increase in illegal use would potentially increase Big Creek Roadless management costs.

Under the Proposed Exchange there would be no change to the ROS setting in acquired parcels except the roads in the northernmost area of the Duplex parcel may be obliterated. In the event this occurs, the ROS setting would change from Roadless Modified to Semi-Primitive Non Motorized. Four of the parcels to acquire are within or contiguous to inventoried roadless areas (Grandmother Mountain and Pinchot Butte). These parcels total 1,479 acres. Duplex Creek and Lost Lake Creek parcels are on the northern boundary of the Grandmother Mountain roadless area. Acquisition of the Lost Lake Creek parcel, at the beginning of the trails entering the roadless area and potential access road closures would improve FS roadless area management. With the acquisition of the Lost Lake Creek parcel, the eastern boundary of the roadless area would be Road 1925, which is easier to manage on the ground than an indiscernible property boundary. Management of trails would be facilitated by restricting ATV use of designated trails in the acquired Lost Lake Parcel. When considering all roadless area management factors, the Proposed Exchange would result in overall roadless area management cost saving to the IPNF.

The Grandmother Mountain Roadless Area acreage would increase by 1,279 acres. The roadless area attributes would be protected and/or improved. The Pinchot Butte Roadless Area acreage would be increased by 80 acres and its roadless area attributes would be maintained.

## **Alternative 2: No Action**

### **Federal Parcels**

*Lemonade Peak* - The MA's include non-forest lands (not capable, physically limited or isolated) and land within elk summer range that could be managed for timber production. Currently there is only trail access. In the reasonably foreseeable future trails would continue to be maintained. The parcel would continue to be managed for a semi-primitive recreation experience. OHV use from adjacent land would likely continue. The ROS setting would remain the same.

*East and West Pine Creek* - These two parcels are considered non-forest lands (not capable, physically limited or isolated) and would continue to be managed for a semi-primitive recreation experience. OHV use coming from adjacent land would likely continue. The ROS setting would remain the same.

*Whistling Creek* - This parcel would continue to be managed for timber production. Currently there are no timber management plans for this parcel within the next ten years. ATV use on the gated roads would likely continue. The ROS setting would remain the same.

### **Non-Federal Parcels**

*Adair Creek & Daveggio Creek* - The plans provided by Forest Capital indicate timber harvesting would continue. Heavy road reconstruction is also planned. There would be no impacts to forest

recreationists as the management in this area would remain the same. The Roded Modified ROS setting would also remain the same. Adjacent NFS MAs are compatible with timber harvesting.

*Duplex Creek* - The plans provided by Forest Capital indicate timber from the three land areas would be harvested, new road construction would occur and access from the FS would be requested (PR). For the northernmost area (previously developed) in this group, Forest Capital management and the FS ROS setting would remain the same. The other 2 areas are currently undeveloped. These land areas are within a half mile of Trail 261 in the Grandmother Mountain Roadless Area. Timber harvesting and road building would impact the recreation/roadless experience. With new road construction, experience shows that incursions by unauthorized cross-country OHV traffic would also likely occur. The ROS setting would become Semi-primitive Motorized or Roded Natural /Modified depending on the extent of the harvesting. Adjacent NFS MAs are not compatible with timber harvesting and road construction.

*Fishhook Peak* - The plans provided by Forest Capital indicate timber in this parcel would be harvested. Depending on the feasibility of road construction, there would either be 2 miles of road with ground logging systems or one half mile with helicopter logging. This parcel is not frequented by recreationists. There would be no impacts to forest recreationists. Since salvage or shelterwood harvesting is planned, the Roded Natural ROS setting would also remain the same. Adjacent NFS MAs are compatible with timber harvesting.

*Freezeout* - The plans provided by Forest Capital indicate timber from this parcel would be shelterwood harvested using either extensive road construction that would require access through the Grandmother Mountain Roadless Area or helicopter logging from Road 301. This planned management action would be a major incursion into this roadless area. This parcel is clearly viewed from roads, trail and peaks in the roadless area. The ROS setting would change to Roded Natural or Semi-primitive Motorized. The adjacent NFS MA is not compatible with timber harvesting.

*Lines Creek* - Most of the parcel has already been harvested. Forest Capital plans indicate precommercial thinning would be implemented. There would be no impacts to forest recreationists as the management in this area would remain the same. The Roded Modified and Roded Natural ROS settings would also remain the same. Adjacent NFS MAs are compatible with timber harvesting.

*Lost Lake Creek* - The plans provided by Forest Capital indicate timber from this parcel would be shelterwood harvested using extensive road construction and reconstruction. Access through the Grandmother Mountain Roadless Area and/or the BLM Wilderness Study Area would be needed. This planned management action would be an incursion into the roadless area. Parts of Trails 34 and 36 are old jeep roads now used as trails; these would likely be impacted by road reconstruction. With new road construction, experience shows that incursions by unauthorized cross-country OHV traffic would also likely occur. Sights and sounds of man would be more plentiful and dominant. The ROS setting may not change since it has already been designated as Roded Natural or Modified. The adjacent NFS MA10 to the west is not compatible with timber harvesting and road construction.

*Myrtle Creek* - The plans provided by Forest Capital indicate timber from this parcel would be harvested by helicopter or other methods using existing roads. Access through NFS land would be required. It is not likely that the trail to Myrtle Creek falls would be affected. However, the

opportunity to improve and incorporate the trail for the public's enjoyment would be diminished. The USDI Fish and Wildlife managers for the Wildlife Refuge have indicated an interest in improving and managing the trail if the land ownership should change to National Forest. Sights and sounds of logging would be more evident. The Roded Modified and Roded Natural ROS settings would remain the same. The adjacent NFS MAs (3, 4 & 9) are compatible with timber harvesting.

*Twin Springs Creek* - Forest Capital's anticipated plans indicate this parcel would be sold for its highest and best use. If it is not sold, new road construction and timber harvesting are planned by Forest Capital. This parcel is within the Pinchot Butte Roadless Area and has no road access at this time. Any management would require road construction or possibly removal of logs by helicopter. A new road across National Forest and/or BLM land would be an incursion into the roadless area. The ROS setting may not change since it has been designated as Roded Natural. The adjacent BLM land is managed with an emphasis on semi-primitive recreation (pers. conv., Kincaid, BLM, April 25, 2006).

*Twodot Peak* - The plans provided by Forest Capital indicate timber from this parcel would be harvested. Road construction and heavy road reconstruction requiring access through NFS lands would be required. There would be no direct impacts to forest recreationists. However, this area is viewed from many places. Roads and harvest units would be a dominant feature. The Roded Natural and Roded Modified ROS setting would likely remain the same. Adjacent NFS MAs are compatible with road construction and timber harvesting.

## **Roadless Areas**

*Big Creek Roadless Area* - This roadless area is adjacent to several parcels that would remain National Forest land with the No Action Alternative. Roadless attributes described would not change for this roadless area.

*Grandmother Mountain Roadless Area* - Under the No Action Alternative, Freezeout and Duplex non-Federal parcels would contain four inholding Forest Capital areas within the Grandmother Mountain Roadless Area. In addition, the Lost Lake Creek non-Federal parcel would contain three Forest Capital land areas adjacent to both the Grandmother Mountain Roadless Area and the BLM Wilderness Study Area. The Lost Lake parcel contains 2 system trails that access the Roadless Area. Forest Capital road construction and timber harvesting would have detrimental effects to roadless area attributes: natural integrity, apparent naturalness, solitude and manageability. Unique features and special places would not be affected. Similar effects would be expected to the BLM Wilderness Study Area.

*Pinchot Butte Roadless Area* - Under the No Action Alternative, there is one parcel within this roadless area which is planned to be sold for its highest and best use or, if not sold it is planned for timber harvesting. Whatever may happen to this parcel, some kind of access road is likely to be built. This parcel is located nearly in the center of this roadless area and development would represent an incursion. Natural integrity, apparent naturalness, solitude and manageability would be detrimentally affected. Unique features and special places would likely not be affected.

## **Summary**

With the No Action Alternative, access requests by Forest Capital would have to be considered and analyzed in accordance with the Alaska National Interest Lands Conservation Act

(ANILCA). Forest Capital management plans on Adair Creek, Daveggio Creek, Fishhook Peak, Lines Creek and Twodot Peak parcels would not impact forest recreationists. Forest Capital management plans on Duplex, Freezeout Peak and Lost Lake Creek parcels are not compatible with adjacent NFS MA goals and standards. Roadless area acres would decrease when Forest Capital receives access easements for harvesting their inholdings. The complexity of Roadless area boundary management would increase, resulting in increased costs for roadless area management. Road access to the Twin Springs Creek parcel would be an incursion into the Pinchot Butte Roadless Area.

The Lemonade Peak parcel would not be conveyed. The FS would maintain the same control of unauthorized OHV use in the Big Creek roadless area resulting in no change in Big Creek roadless area management costs.

There would be no opportunity to improve and incorporate into the FS trail system the Myrtle Creek Falls access trail.

### **Wildlife: Threatened, Endangered, Sensitive and Management Indicator Species (MIS)**

The objective of this section is to document relevant information on the existing wildlife habitat condition and disclose the effects assessment for each alternative evaluated in detail. The wildlife evaluated includes Mature/old Growth MIS, Big Game Species Habitat, Threatened and Endangered Species and the Regional Forester's Sensitive Species. These species will be addressed in the order listed in the heading.

### **Laws and Regulations Applying to the Analysis**

The regulatory framework providing direction for the management of wildlife habitat comes from the following main sources:

- The Endangered Species Act of 1973 as amended (ESA)
- The National Forest Management Act of 1976 (NFMA)
- The Forest Plan for the Idaho Panhandle National Forests (FP)

Section 7 of the ESA directs Federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered (T&E) species or result in the destruction or adverse modification of their critical habitat.

NFMA provides for balanced consideration of all resources. It requires the FS to plan for diversity of plant and animal communities. Under its regulations, the FS is to maintain viable populations of existing and desired species, and to maintain and improve habitat of management indicator species.

The FP, in compliance with NFMA, establishes Forest-wide and Management Area direction, goals, objectives, standards, and guidelines for the management and protection of wildlife habitat and species. Forest-wide standards that to one degree or another are most pertinent to this project level analysis include:

- T&E species – Management of habitat and security for T&E species will be given priority in identified habitat.
- MIS - Maintain viable populations distributed throughout the Forest.
- Sensitive Species - Manage habitat to prevent further declines in populations that could lead to federal listing.
- Old Growth Habitat – (to provide for viable populations of old-growth dependent and management indicator species) maintain at least 10 percent of the forested portion of the IPNF as old growth and maintain at least 5% of the forested portion of Old Growth Management Units that have 5% or more existing old growth.

Management Area direction is described in Chapter 2. Direction concerning implementation of the ESA and NFMA are found in Forest Service Manuals (FSM) and various letters/memos from the Forest Service's Washington Office, Regional Office, and the IPNF Supervisor's Office.

### **Affected Environment and Environmental Consequences Applicable to All Species**

The TSMRS/FSVeg/FACTS databases and/or field cruise data were used to assess habitat on NFS lands. This data includes information on forest structure and composition; and provides stand data of sufficient quality to adequately assess existing habitat conditions and to analyze potential impacts from the alternatives evaluated in detail. The capability/suitability of habitat on some Federal and non-Federal parcels was based on interpretation of aerial photos and extrapolation of data from similar stands in the vicinity. For this analysis, immature habitat is equivalent to immature sawtimber size class stands. Mature habitat is equivalent to sawtimber size class stands. The generic definition of old growth states: "Old growth forests are ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulations of large dead woody material, number of canopy layers, species composition, and ecosystem function." Old growth was defined within the framework of this generic definition in accordance with Region One's definition of ecological old growth for specific forest types, habitat type groups, and plant associations on the IPNF (Green et. al.). Immature and mature wildlife habitats in this analysis are grouped together because of:

- The overlap in use of immature and mature wildlife habitats by many species.
- The difficulty in differentiating between the two habitats based on available information (e.g. photo interpretation of wildlife habitat on non-Federal parcels).
- The relative low significance of difference between the two wildlife habitats (e.g. due to succession and long term effects).
- The low risk to species based on the scope of the project relative to available wildlife habitat on the IPNF (i.e. 3,725 acres involved in the Proposed Exchange on a Forest of over 2.5 million acres of public lands, 13 parcels scattered across 8 townships, and a net change in ownership of 1,075 acres).

This analysis evaluates the potential for effects on wildlife from changes in the quantity and quality of forest structure, microhabitat, and disturbance levels that would occur because of the alternatives evaluated in detail. It considers changes that are anticipated to occur based on land management objectives of the parties involved in the exchange. Forest Capital's anticipated ten year management plans for their non-Federal parcels and for the Federal parcels to convey in the event of an exchange were considered in the analysis of effects. Anticipated IPNF management

plans were also considered in the effects analysis. This analysis meets the intensity appropriate to address the risks and concerns for the relevant species.

Assumptions have been made in order to discuss potential effects. The following assumptions are based on existing law, Forest Capital's management objectives and observed practices.

Forest Capital would access and manage, within the next 10 years, their timber lands evaluated in the No Action and the Proposed Exchange alternatives. Neither alternative evaluated in detail would provide within the foreseeable future additional mature/late seral wildlife habitat on Forest Capital's timbered parcels. Forest Capital would comply with existing State and Federal laws. IPNF management is guided by Federal and State laws and regulations.

The descriptions of habitat in this section are intended to be general and qualitative. This provides a course scale filter of the affected environment. When necessary for the analysis of effects, more quantitative information is provided.

Wildlife habitat on Federal and non-Federal parcels consists of mixed conifer stands at different successional stages. Elevations of parcels range from approximately 2,000 feet to greater than 6,500 feet. Stand compositions vary. The predominate tree species are determined by aspect, elevation, soils, disturbance, and other variables. Forest cover types on the lands considered for exchange include: grand fir, Douglas-fir, cedar, spruce-subalpine fir and mountain hemlock-subalpine fir. Species that occur less frequently include: ponderosa pine, white pine, larch and lodgepole pine. Seral stages of stands range from open/seedling to mature/late seral.

Past management actions have influenced existing wildlife habitat on some parcels considered in the analysis. These management actions include road construction and timber harvest on parcels and on adjacent lands in the cumulative effects area. Inherent bio-physical conditions (e.g. elevation), natural disturbance, and succession also affect the existing and potential capability and suitability of wildlife habitat.

The FS's only anticipated proposed project (Bussel 484) is located in the vicinity of the Lines Creek non-Federal parcel (40 acres). This Marble Creek drainage parcel would be designated MA1. All but a small portion of the 40 acres has been harvested and is in a seedling to sapling size class. A road accessing an existing electronic site transects the parcel. The existing condition of this parcel (and its' value as habitat) would not change under the Proposed Exchange and the No Action alternatives.

The Proposed Exchange would transfer 12 acres of allocated old growth on a Federal parcel to Forest Capital ownership. Based on photo interpretation, and a comparison with adjacent known old growth on NFS land, there appears to be approximately 150 acres on non-Federal parcels that have a high probability of meeting old growth definitions. Based upon this observation, the Proposed Exchange would have a reasonable expectation that there would be a net increase in the amount of old growth on NFS lands; both initially and in the future. Regardless, because of current old growth allocations on the IPNF (i.e. allocation exceeds the 10% standard) the conveyance of 12 acres of allocated old growth would be in compliance with FP standards (IPNF, 2004).

The Proposed Exchange would result in an increase in the amount of dry site habitat on NFS lands (e.g. the Myrtle Creek non-Federal parcel). Due to the burn and follow-up salvage harvesting, the existing condition of much of the parcel would not result in initial improvement of

conditions for species associated with mature and late seral dry habitat. However, there would likely be a long term (i.e. 100+ years) increase in suitable habitat for those species.

The following description of Federal and non-Federal parcel locations provides context and perspective at a landscape scale. The nine non-NFS parcels are scattered within 5 townships (36 mi<sup>2</sup> areas) - 4 on the St. Joe district and 1 on the Bonners Ferry district). Likewise, the four NFS parcels are in 3 different townships, although 3 parcels are all within 5 miles of each other.

### **Federal Parcels**

The Pine Creek East & West and Lemonade Peak parcels (totaling 925 acres) lie within the lower portions of the St. Joe and Coeur d'Alene River Drainages. These parcels are located in a landscape of mixed landownership with the FS being a minority landowner in the area. The parcels have immature and mature sawtimber size classes of grand fir, Douglas-fir, western redcedar, mountain hemlock, and spruce forest types. Canopy cover and tree density varies from sparse to closed. One 12 acre stand has been allocated as potential old growth. These parcels do not have recent roads but there are relatively high road densities on adjacent lands. Road densities on adjacent non-Federal lands and the surrounding landscape are greater than four miles per square mile.

The Whistling Creek parcel (400 acres) lies in the middle portion of the St. Joe River Drainage in MA 1 and is surrounded by Forest Capital land. Most of the parcel has been impacted by past partial harvest. This parcel has a mix of Douglas-fir and cedar forest types with approximately 173 acres of immature and mature sawtimber and 153 acres of pole size class. Size class data on the remaining 74 acres is not available.

### **Non-Federal Parcels**

The Duplex, Freezeout and Lost Lake Creek parcels on the St. Joe District total 1,399 acres. These Forest Capital parcels (or portions thereof) lay within a matrix of NFS and BLM lands that would be designated MA10 (e.g. Grandmother Mountain Roadless Area). The Lines Creek, Fishhook Peak and Adair Creek parcels totaling 280 acres would be designated MA 1. The Daveggio Creek and Twin Springs Creek parcels totaling 320 acres would be designated MA6. The Twodot Peak parcel (120 acres) would be designated MA9. These non-Federal parcels are a mix of seedling to sawtimber size stands. Subalpine fir forest types are on most of the parcels. Existing road access to these parcels varies from unroaded (greater than 0.5 miles from any existing road) to roaded. Based on aerial photo interpretation, these parcels are comprised of approximately 1,360 acres of immature/mature size class stands, 480 acres of seed/sap size class, and 280 acres of seed/sap with a scattered overstory of immature and mature size trees.

The 280 acre Myrtle Creek parcel on the Bonners Ferry District is adjacent to the Kootenai National Wildlife Refuge. This parcel lies above the Kootenai River valley floor and is primarily in the Myrtle Creek drainage, which is a public water supply. The intake for the domestic water diversion is located above the parcel on NFS land. The road going through the parcel to the diversion is not open to the public. The open roads in this parcel are the main Myrtle Creek Road #633 and the Burton Creek Road #2411. This parcel is adjacent to MA 9 lands with MAs 2, 3, and 4 in the surrounding NF landscape. The MA designation for this parcel would be MA3. A large part of the parcel was burned in 2003 and subsequently salvage logged. There are approximately 165 acres of open/seedling size class (the burned portion) and approximately 115 acres of

immature sawtimber and sawtimber size classes. Prior to the fire, the parcel contained ponderosa pine and Douglas-fir cover types.

### **Affected Environment Management Indicator Species (MIS)**

*Mature/old-growth MIS* - The IPNF Forest Plan identified the goshawk, pine marten, and pileated woodpecker as indicators of one or more components of mature and old-growth habitat. While each of these species have habitat requirements associated with components of late successional or mature forest habitat they also use other forest age classes. For example goshawks can use small patches of mature habitat within a mosaic of different age classes to meet their nesting requirements (Kennedy, 2003), pileated woodpeckers also use younger forests that have scattered, large, dead trees (Samson, 2005), and research has shown that marten prefer mature forests but use a variety of habitats (Coffin et. al., 2002).

In Idaho the marten is managed as a furbearer with an open trapping season. Habitat for the goshawk and pileated woodpecker has been shown to be abundant and well distributed on the IPNF and in Region 1 (Samson, 2005).

The Federal parcels contain approximately 1,100 acres of immature and mature habitat for these MIS. The non-Federal parcels contain approximately 1,475 acres of immature and mature habitat for these indicator species.

Immature and mature/old growth forests will be grouped together for the purposes of assessing potential effects on these MIS and other species associated with these types of habitat. The assessment takes this approach because of the literature citations listed above. Also, because of the difficulty in distinguishing between immature and mature seral stages/size classes on the non-Federal parcels, the distribution of parcels, the negligible difference when assessing long term effects and the scope of the exchange related to existing NFS lands.

### **Environmental Consequences Management Indicator Species**

*Mature/old-growth MIS* - The Proposed Exchange would increase the amount of NFS suitable habitat available for MIS associated with mature and old forest structure. This initial gain would be approximately 375 acres of immature and mature size classes of forest vegetation. Approximately 40% of these acres have a high probability of meeting old growth criteria. The 375 acres scattered across 5 townships would constitute a relatively small beneficial effect when considered in the context of 1,000 to 6,000 acre home ranges, the St. Joe River drainage, the Forest, and Region 1. For these same reasons, the potential foreseeable future and long term impact on suitable habitat would be relatively small. Because of the area of Federal parcels (1,325 acres) verses non-Federal parcels (2,399 acres) and anticipated foreseeable land management plans, the Proposed Exchange would result in an increase in the potential for mature/late seral forest structure on NFS lands in the future.

The cumulative effects of the Proposed Exchange when added to past, present, and reasonably foreseeable actions would have no appreciable affect on habitat or populations of old-growth associated MIS.

Under the No Action Alternative, there would be little effect on mature and old growth associated MIS at any scale. The increased likelihood of road construction and higher road densities with the

No Action Alternative would tend to increase adverse impacts due to roads/disturbance (e.g. trapping vulnerability of marten).

### **Summary Mature/old-growth MIS**

Based on the existing availability of habitat (Samson, 2005), the cumulative effects of the Proposed Exchange and the No Action alternatives would not adversely affect populations of goshawks, pileated woodpeckers or any MIS associated with mature and old forest habitat within the St. Joe River drainage, the Forest or the Region. FP standards and guidelines would continue to be met under each of these alternatives.

### **Affected Environment Big Game Habitat**

The FP identified elk, moose, and white-tailed deer as commonly hunted MIS for different parts of the Forest. They were selected as indicators of various habitat conditions. Elk are a general forest seral species (FP Appendix L). Management for elk habitat needs emphasizes road management to maintain adequate security and habitat potential on summer range along with forage production on winter range (FP II-5). Moose on the St. Joe were selected because of their dependence on mature timber and they are also affected by road management. White-tailed deer replace elk as indicator species on the northern portion of the Forest. They were selected as indicators of mature stands and good interspersion of cover and forage

The Proposed Exchange involves approximately 220 acres of Federal parcels and 320 acres of non-Federal parcels in MA6 (i.e. important elk summer range). There are also 1,360 acres of non-Federal parcels in MA10 (semi-primitive recreation).

### **Environmental Consequences Big Game Habitat**

Because of the location of the parcels involved in the Proposed Exchange and the ownership patterns surrounding the parcels there is little value in using the North Idaho Elk Guidelines to determine existing elk habitat potential (EHP) and effects on potential elk use. The potential effects related to roads and wildlife security is assessed in more general terms. The effects were based on land management objectives (PR), Forest Capital's anticipated foreseeable land management plans (PR), MA goals and standards (FP), professional judgment and experience. The Proposed Exchange would result in no significant change in cover/forage for big game although there would be a gain of mature timber. Based on anticipated foreseeable land management plans and the acquisition of parcels in MA10, it is likely the Proposed Exchange would result in more security acres for big game over the long term (e.g. 10+ years) than would occur under the No Action Alternative. The Proposed Exchange would result in a net increase of 100 acres of MA6 lands under FS management.

### **Summary Big Game**

The Proposed Exchange would result in a greater likelihood of maintaining existing conditions for big game MIS than the No Action Alternative. Fewer and less potential for adverse impacts on big game habitat values or potential elk use would occur under the Proposed Exchange than the No Action Alternative. FP standards and guidelines would continue to be met under each of these alternatives.

### **Affected Environment and Environmental Consequences Sensitive Species**

Table 20 provides a synopsis of habitat and qualitative comments regarding existing conditions for sensitive species in the analysis area. This table also serves as a screen to identify those species that do not require additional analysis to determine potential effects.

**Table 20. Sensitive Species and Habitat**

<b>Common Name</b>	<b>Habitat</b>	<b>Comment</b>
Black-backed woodpecker	Older conifer forests, lodgepole, dead/dying trees from fire and/or insect/disease	Mature forest habitat on NFS and non-NFS lands provide source habitat.
Black swift	Moist cliff environments for nesting.	The only potential habitat is the Myrtle Creek non-Federal parcel which contains waterfalls.
Coeur d'Alene salamander	Seeps, waterfall spray zones and streamsides below 5,000 feet; associated with fractured rocks.	The species is not known or suspected on the lands considered for exchange. Myrtle Creek non-Federal parcel has highest potential; the other exchange parcels have no higher potential for habitat than any other parcel.
Common loon	Lakes over 8-10 acres, below 5000 feet elevation.	There is no suitable or capable habitat involved in the Proposed Exchange parcels; and the species doesn't occur on lands considered for exchange.
Fisher	Mature/old forests (riparian linkages).	Mature and immature sawtimber size class forest habitat on Federal and non-Federal parcels provide suitable habitat.
Flammulated owl	Relatively open mature to old growth ponderosa pine and Douglas-fir forests.	No suitable habitat on exchange parcels, the Myrtle Creek non-Federal parcel contains the only capable habitat.
Fringed myotis	Prefers dry coniferous forests, use caves, buildings, large cavities for roosting.	Based on vegetation, there is no suitable habitat on exchange parcels. The Myrtle Creek non-Federal parcel contains the only potentially capable habitat.
Harlequin duck	Swift mountain streams removed from human disturbance.	No suitable streams; species not known or suspected on the parcels considered for exchange.
Northern bog lemming	Bog (esp. sphagnum moss) or marsh habitat on the Kaniksu Forest.	No known habitat on Myrtle Creek non-Federal parcel; other exchange parcels are outside the range in Idaho.
Northern goshawk	Associated with late seral forests but use other seral stages.	Mature and immature sawtimber forest habitat on Federal and non-Federal parcels provide suitable habitat.
Peregrine falcon	Nest on high cliffs with overhanging ledges and a vertical surface.	No cliffs/suitable nesting habitat involved in the Proposed Exchange parcels.
Pygmy nuthatch	Mature to late seral dry sites (esp. ponderosa pine) that are fairly open.	No suitable mature dry site habitat on exchange parcels. The Myrtle Creek non-Federal parcel contains the only potentially capable habitat.
Townsend's big-eared bat	Caves and cave-like structures used for roosting and hibernacula.	There are no known caves or tunnels on lands involved in the Proposed Exchange. The species is not known or suspected on the exchange parcels.
Western toad	Breeding habitat – shallow, quiet, persistent water sources; adults can travel and reside in moist forests.	The Mesic nature of much of the Forest indicates upland habitat for adults may be present on many of the exchange parcels.
Wolverine	Areas of adequate food supply in large remote areas with a wide range of habitats.	Known occurrences are associated with some exchange parcels and possible with others.

Based on review of the FS Veg/TSMRS data bases, analysis of aerial photographs, topographic maps, and field reviews, the project area does not contain suitable habitat for the common loon, harlequin duck, northern bog lemming, peregrine falcon, or Townsend's big-eared bat. There would be no impact on these species under the Proposed Exchange and the No Action Alternative therefore there is no reason for further analysis.

The remaining species listed in Table 21 may occur in the analysis area or capable/suitable habitat may be present in the analysis area. The potential for effects are analyzed further.

### **Affected Sensitive Species**

*Black-backed woodpecker* – Under the Proposed Exchange, the initial increase of 375 acres in immature and mature forest structure (source habitat for black-backed woodpeckers) and the potential for maintaining source habitat associated with the increase in NFS lands would have a small beneficial effect on black-backed woodpeckers. Under the No Action Alternative, there would be no direct impact on black-backed woodpeckers and a higher likelihood of a small indirect adverse impact.

*Black swift* – The Myrtle Creek non-Federal parcel contains the only potentially suitable habitat. The conveyance of this parcel to FS administration may increase the potential for management of habitat for this species. The No Action Alternative would likely not change the existing situation due to Forest Capital's implementation of BMPs. The BMPs would likely result in no further impacts to black swift potential suitable habitat in this parcel. It is unlikely there would be any impact on black swifts under the Proposed Exchange and No Action alternatives.

*Coeur d'Alene salamander* – There are no known Coeur d'Alene salamander sites involved in the Proposed Exchange. The Myrtle Creek non-Federal parcel has the highest potential for suitable habitat. There is no difference in the existing low potential for the presence of suitable habitat on the other exchange parcels. BMPs would apply to any habitat regardless of ownership; therefore the transfer of the Myrtle Creek parcel to FS administration would have an inconsiderably minor increase in the potential for management of habitat for this species. There would be no adverse impact on the species or its habitat under the Proposed Exchange and No Action alternatives.

*Fisher* – Under the Proposed Exchange, the initial increase of 375 acres of immature and mature size habitat spread across 5 townships would have a small but beneficial effect on the availability of habitat for the fisher. The Proposed Exchange would increase the amount of land under FS management and thereby increase the potential for maintaining source habitat associated with the increase in NFS lands. Under the No Action Alternative there would be a higher potential for a small reduction in habitat.

*Flammulated owls* – The non-Federal Myrtle Creek parcel contains the only capable habitat in the Proposed Exchange parcels. Due to the existing condition of the dry site habitat on this parcel (e.g. aggressively salvaged after the fire) there is no suitable habitat. Any potential for a long term (i.e. 100+ years) increase in suitable habitat associated with FS management is too speculative to be considered in this analysis. Under the Proposed Exchange and No Exchange alternatives, there would be no effect on existing habitat or populations.

*Fringed myotis* – There are no caves or cave like structures involved in the Proposed Exchange. The Myrtle Creek non-Federal parcel contains the only potentially capable associated vegetation type. Any potential for a long term (i.e. 100+ years) increase in suitable habitat associated with

FS management is too speculative to be considered in this analysis. Under the Proposed Exchange and No Exchange alternatives, there would be no adverse impact on the species.

*Northern goshawk* – Under the Proposed Exchange, the initial increase of 375 acres of immature and mature size class habitat spread across 5 townships would have a small beneficial effect on the availability of habitat for goshawks. The Proposed Exchange would increase the amount of land under FS management and thereby increase the potential for maintaining source habitat associated with the increase in NFS lands. Under the No Action Alternative there would be a higher potential for a small reduction in habitat.

*Pygmy nuthatch* – The non-Federal Myrtle Creek parcel contains the only potentially capable habitat in the Proposed Exchange. Due to the existing condition of the dry site habitat on the parcel (e.g. aggressively salvaged after the fire) there is no suitable habitat. There would be no initial impact on pygmy nuthatches or their habitat. Any potential for a long term (i.e. 100+ years) increase in suitable habitat associated with FS management is too speculative to be considered in this analysis. Under the Proposed Exchange and No Exchange alternatives, there would be no effect on existing habitat or populations.

*Western toad* – There is little if any difference between the Proposed Exchange parcels when considering the probability that this species may occur. When considering the FS is less likely to access parcels by road construction, the increase of 1,075 acres under FS administration, and the location of some parcels that would be conveyed; (e.g. in MA10) there would be less likelihood of impacting western toads under the Proposed Exchange. Under the No Action Alternative, there would be a higher potential for direct mortality that is associated primarily with roads. However, none of the potential impacts discussed would affect populations.

*Wolverine* – There have been reports of wolverine presence along the divide between the St. Joe and Coeur d’Alene drainages in the general vicinity of Pine Creek and Lemonade Peak Federal parcels. An assessment of potential suitable wolverine denning habitat on the St. Joe district identified potential denning habitat in the vicinity of a number of parcels involved in the Proposed Exchange. Potential denning habitat was identified at Lemonade Peak in the vicinity of Pine Creek and Lemonade Peak Federal parcels. Potential denning habitat was also identified near Twodot Peak, Lookout Mountain, Crater Peak, and Fishhook Peak in the vicinity of the following non-Federal parcels: Daveggio Creek, Twodot Peak, Fishhook Peak, Duplex, Lost Lake Creek, Freezeout, and Twin Springs Creek. Based on descriptions of wolverine habitat (i.e. large remote areas), the non-Federal parcels provide more and better habitat than the Federal parcels. When considering anticipated management plans by the Proposed Exchange parties (i.e. road access to non-Federal parcels) and the greater occurrence of potential denning habitat on non-Federal parcels, the Proposed Exchange would decrease the likelihood of potential disturbance of denning habitat and adverse impacts to wolverine. Under the No Action Alternative, there would be a higher potential for adverse impacts. These impacts would not be expected to occur during denning and would not be expected to affect populations.

### **Summary Sensitive Species**

Refer to Table 21 for the summary of effects on sensitive species. The determinations of effects consider both potential beneficial and adverse impacts. The potential beneficial impacts are considered negligible, therefore the Proposed Exchange would not significantly improve habitat for any sensitive species.

**Table 21. Summary of Conclusion of Effects**

Species	No Action	Proposed Action
Black-backed Woodpecker	MIIH	MIIH
Black Swift	NI	MIIH
Coeur d'Alene Salamander	NI	NI
Common Loon	NI	NI
Fisher	MIIH	MIIH
Flammulated Owl	NI	NI
Fringed Myotis	NI	NI
Harlequin Duck	NI	NI
Northern Bog Lemming	NI	NI
Northern Goshawk	MIIH	MIIH
Peregrine Falcon	NI	NI
Pygmy Nuthatch	NI	NI
Townsend's Big-Eared Bat	NI	NI
Western Toad	MIIH	MIIH
Wolverine	MIIH	MIIH

NI = No Impact

MIIH = May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species

WIFV\* = Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species

BI = Beneficial Impact

\* Considered a trigger for a significant action in NEPA

The Proposed Exchange and the No Action Alternatives effect when added to past, present, and reasonably foreseeable actions would not appreciably affect sensitive species habitat. Also, cumulative effects are not likely to adversely affect population viability of any sensitive species at a landscape or river drainage level (e.g. the St. Joe ecosystem). Refer to the sensitive species BE in Appendix D.

The FS would continue management standards designed to protect and conserve habitat for sensitive species on NFS lands. FP standards for old-growth would continue to be met. Impacts resulting from the Proposed Exchange or the No Action Alternative would be considered in future FS management. Forest Capital would continue to comply with existing laws and regulations when implementing management plans.

### **Affected Environment and Environmental Consequences Threatened and Endangered Species**

The USFWS Species Lists for Northern Idaho counties ([www.fws.gov/easternwashington/county%20species%list](http://www.fws.gov/easternwashington/county%20species%list), 2006) identified five listed wildlife species that may occur in the affected counties on the IPNF. They include:

- Bald eagle (*Haliaeetus leucocephalus*)
- Canada lynx (*Lynx canadensis*)
- Gray wolf (*Canis lupus*)
- Grizzly bear (*Ursus arctos*)
- Woodland caribou (*Rangifer tarandus caribou*)

Table 22 provides a short synopsis of listed species habitat and information regarding their relevancy to the analysis.

**Table 22. Listed Wildlife Species**

Common Name	Habitat	Existing Condition in the Wildlife Analysis Area
Bald Eagle	Nest near large bodies of water ( $\geq 80$ acres) or major rivers in areas relatively free from disturbance. Winter habitat is mostly associated with areas of open water.	One parcel (Myrtle Cr.) is near ( $\approx 1.2$ miles) a large body of water or major river and has a potential for species presence. Species is not present on any other parcel.
Canada Lynx	Forests that provide a prey base of snowshoe hare (generally above 4,000'). Forage habitat is late and early successional stages with high stem/branch density; dens are associated with down logs and overhead cover in/adjacent to forage habitat.	A number of parcels – both NFS and non-NFS - are in LAUs and provide potential habitat for the species.
Gray Wolf	Large areas with high prey densities and isolation from human activities. Availability of den and rendezvous sites.	One parcel (Myrtle Cr.) is north of I-90 where wolves are listed as endangered, all other parcels are south of I-90 within the Central Idaho wolf reintroduction area where wolves are considered a nonessential experimental population. There is known wolf activity in the landscape surrounding a number of parcels south of I-90.
Grizzly Bear	Determined by food availability and security. Typically low elevation snow free areas in the spring; higher elevation meadows, shrubfields, and open ridges during the summer & fall	One parcel (Myrtle Cr.) is partially in a Bear Management Unit and is in an area of known bear use. All other parcels are well outside of the recovery area and the species is considered not present on the landscape.
Woodland Caribou	Mature to old growth forests with dense canopies over a large elevation gradient. High elevation timbered ridges with abundant lichens.	The project area is outside of the woodland caribou recovery area. The species does not occur on the parcels involved in the exchange.

Based on the geographic location of the parcels, the lack of capable/suitable habitat, and species absence no further analysis is needed to determine that there would be no effect on woodland caribou. The remaining T&E species listed in Table 22 may occur in the analysis area or capable/suitable habitat may be present in the analysis area. The potential for effects on the remaining four are analyzed further.

*Bald Eagle* - Approximately 3,445 acres of the 3,725 acres involved in the Proposed Exchange are well over 1 mile from any large body of water or major river. Parcels well over 1 mile from any large body of water or major river do not provide nesting habitat or any other habitat of

significance for bald eagles. The Myrtle Creek non-Federal parcel is approximately 1.2 miles from the Kootenai River; and is within 1 mile of a known bald eagle nest. However, the parcel is above the valley floor and provides no extraordinary habitat (e.g. roosting habitat) for bald eagles (Lyndacker, pers. comm.). Portions of the Myrtle Creek parcel are potentially within the Home Range (Zone 3) of the known nest. The acquisition of this parcel to FS management would likely decrease the already low potential of adverse effects due to subsequent management.

Based on the lack of noteworthy habitat and the increased protection afforded bald eagles under FS management, the Proposed Exchange would have discountable effects and/or beneficial effects on bald eagles. Under the No Action Alternative there would be no significant change in existing conditions. When considering Forest Capital’s anticipated foreseeable management plans for the Myrtle Creek parcel, the potential for impacts are small and discountable.

*Canada Lynx* - The following table displays existing LAU sizes/ownership, existing percent of unsuitable habitat, percent unsuitable in the last decade, existing percent of primary vegetation, changes in ownership associated with the Proposed Exchange, and changes in primary vegetation due to the Proposed Exchange. The displayed values for FS managed habitat in LAUs represent only Federal lands in the LAU.

**Table 23. Proposed Exchange Lynx Analysis of LAU’s and Associated Habitat by Parcel**

LAU	LAU acres (% NFS or BLM)	% Unsuitable Habitat	% Unsuitable Habitat Last Decade	% Primary Vegetation	Change in Acres under Federal Management	Change in Acres of Primary Vegetation
Pine Creek (BLM)	18,895 (≈ 72%)*	15	-	Unavailable	- 565	≈190-210
Bussel Creek**	18,602 (87%)	12	3	11-15	+ 40	0
Marble Mt.**	22,811 (83%)	4	1	65-67	+ 400	+ ≤400
Grandmother Mt.**	28,392 (≈90+%)*	5	1	62-66	+1,040	+ ≤1,400
Freezeout**	38,279 (88%)	9	3	54-60	+ 80	+ ≤80
Lost Rocket**	20,619 (98%)	3	2	81-83	+ 400	+ ≤400
Montana Peak**	30,212 (≈60%)*	***	***	43-47	+ 160	+ ≤160
Bluff Creek**	25,365 (≈42%)	10	7	22-26	- 400	0

\* Calculations for % NFS or BLM in these LAUs are based on rough approximations from maps. Those without this designation are based on data from past assessments.

\*\* Data on unsuitable and forage habitat in FS managed LAUs is from past assessments. Changes in the data would be due to succession and would not significantly affect the analysis.

\*\*\*Data not readily available; however, due to the scope of the Proposed Exchange and the gain in NFS land in these LAUs, data on the existing condition has no bearing on the potential for effects and was not calculated.

The Canada Lynx Conservation Assessment and Strategy (LCAS) identifies conservation measures to reduce or eliminate adverse effects from management on Federal lands (Ruediger, et. al., 2000). The objectives, standards and guidelines from the LCAS associated with land ownership all address the retention, and protection/enhancement of key linkages. Since none of the parcels being considered in the Proposed Exchange are in or near identified lynx linkage zones, there would be no effect on linkages. The Proposed Exchange would be consistent with the LCAS as it pertains to land ownership.

The following indicators will form the basis for identifying potential effects to lynx or lynx habitat:

- Direct effect of an increase or decrease in lands under Federal management by LAU and in total.
- Change in the potential for direct or indirect effects on habitat (i.e. increase in unsuitable habitat).
- Direct or indirect effect on increase or decrease in primary vegetation by LAU and in total.

Approximately 3,085 acres involved in the Proposed Exchange are in LAUs. The Proposed Exchange would convey approximately 965 acres of NFS land in 2 LAUs (the BLM is responsible for managing/monitoring 1 LAU; the FS is responsible for the other). The Proposed Exchange would acquire 2,120 acres in 5 LAUs (all of which the FS is responsible for managing/monitoring). The Proposed Exchange would result in an increase of 1,155 LAU acres under Federal management.

In LAUs where there would be a decrease in the number of acres under FS management, there would be a potential for adverse indirect and/or cumulative effects due to anticipated changes in existing vegetation/habitat.

Based on recent inventory data by the BLM in the Pine Creek LAU, the NFS lands proposed for conveyance are currently either unsuitable, low quality forage, or high quality forage. There is no potential denning habitat or known denning sites on these Federal parcels. The existing unsuitable lynx habitat in the Pine Creek LAU represents 15% of the LAU (Table 23). The conveyance of 565 acres of NFS land would reduce federally administered lands from approximately 72% of the LAU to 69%. This percent reduction may affect future management options on the remaining federally administered lands but would not have a significant adverse impact on lynx.

Based on FSVeg/TSMRS data, the Federal parcels to convey in the Bluff Creek LAU are high quality forage habitat or low quality forage with no high potential denning habitat. The Bluff Creek LAU is currently 45% NFS land and 55% private timber corporation land. This existing ownership/management situation affects the capability of the LAU to be effective in providing lynx habitat in sufficient amounts to maintain or increase lynx numbers. The Proposed Exchange would convey approximately 400 acres in this LAU, resulting in a 43% NFS and 57% private land management make up in the LAU. Because of the existing ownership pattern, this change in ownership percentage would not have a significant affect on the capability/effectiveness of the LAU to maintain or increase lynx numbers.

Since conservation measures from the LCAS apply to Federal lands and not private lands it could be assumed there would be less likelihood of adverse effects to lynx on lands under Federal management. When considering vegetation/habitat, the potential benefit to lynx resulting from a

change to Federal management would be lessened because of the distribution and location of some parcels to acquire in the Proposed Exchange. Many parcels to acquire are in MA10 and in LAUs where unsuitable habitat is well below the maximum levels identified as a standard in the LCAS. If the parcels to acquire remain under Forest Capital management it is more likely management would create unsuitable habitat (e.g. as a result of harvest) but the amount of unsuitable habitat would continue to meet standards (i.e. <30 of the LAU and <15% in the last decade). Roads constructed/reconstructed for access to private parcels could impact lynx primarily by creating potential over the snow routes through previously inaccessible terrain. This would lead to a potential increase in competition and disturbance of denning lynx. The increase of NFS land (1400 acres in or adjacent to the Grandmother Mountain Roadless Area) would decrease the potential for increased over the snow use in presently unroaded and relatively inaccessible landscapes and constitute a beneficial effect on lynx.

Primary vegetation that may provide lynx habitat in the Coeur d'Alene and St. Joe Sub basins is subalpine fir and spruce fir habitat types. Cedar/hemlock habitat types are considered lynx habitat only when in association with subalpine fir and spruce habitat types (Ruediger, et. al. 2000). A change in the amount of primary vegetation under Federal management could affect lynx by changing the amount of primary habitat subject to LCAS standards and guidelines at a landscape scale and LAU scale. In 5 LAUs, the Proposed Exchange would result in an NFS land increase of approximately 2,080 acres of existing primary vegetation. In one LAU (i.e. Bluff Creek) there would be no change in NFS land acres of existing primary vegetation; however, there would be a decrease of 79 acres of cool/moist habitat types capable of supporting primary vegetation. In the Pine Creek LAU there is no information on the existing amount of primary vegetation or on the habitat type/composition of the parcels proposed for exchange. However, existing cruise data indicates (by the presence of spruce and subalpine fir in the cruise volumes) that primary vegetation is present on portions of the parcels. Based on interpretation of cruise volume information as much as 50% of the acreage ( $\approx$ 190-210 acres) could be primary vegetation. Therefore the exchange would result in a reduction of  $\leq$ 190-210 acres of primary vegetation under Federal management in the Pine Creek LAU (Table 23). This represents 2% of the Federal land in the LAU. Approximately 70% of the LAU would remain under Federal management. This relatively small reduction in primary vegetation under Federal management would not appreciably affect the ability of the BLM or FS to conserve the lynx or reduce the effects from management on Federal lands.

### **Summary Canada Lynx**

Effects on lynx populations, denning sites and habitat would be minimal/insignificant, discountable, or positive. The Proposed Exchange may affect but would be not likely to adversely affect the Canada lynx. Under the Proposed Exchange and the No Action Alternatives there would be minor and inconsequential positive and negative indirect and cumulative effects on lynx. There would be no net adverse effect on lynx or lynx habitat.

*Gray Wolf* - Quality wolf habitat is characterized by high prey densities (particularly big game) and isolation from human disturbance. Other important habitat features for wolves include den and rendezvous sites (Hansen, 1986).

The majority of the lands (3,445 acres) in the Proposed Exchange are within the Central Idaho reintroduction area, where gray wolves are classified as nonessential experimental populations. This classification treats wolves as proposed for listing under the Endangered Species Act (ESA).

Changes (other than the possibility of temporary restrictions near den sites) are not required in land use restrictions because of the reintroduction. The 280 acre non-Federal Myrtle Creek parcel is north of I-90 where wolves are listed as endangered. In this area, wolves receive full protection in accordance with the ESA.

The exchange parcels considered in the Proposed Exchange and the surrounding landscape do not provide habitat of extraordinary value for the conservation of the gray wolf (e.g. no den sites, rendezvous sites, or exceptional big game habitat).

Under the Proposed Exchange and No Action Alternatives there would be no direct or indirect impact on any known wolf den or rendezvous site. No interruption of any linkages or connections between habitats would occur. No appreciable increase in human activity above existing levels or increase in the likelihood of human wolf conflicts would occur.

The conveyance of Federal lands would have no effect on the gray wolf or its habitat. Acquisition of non-Federal lands would not significantly expand the FS's authority to seek the conservation of the gray wolf.

*Grizzly Bear* - Approximately 3,445 acres of the 3,725 acres involved in the Proposed Exchange are outside of Bear Management Unit (BMU) or area of known bear use. These lands do not provide habitat of significance for grizzly bears. The 280 acre Non-Federal Myrtle Creek parcel is partially in a BMU and in an area of known bear use. However, the parcel provides no extraordinary habitat and is transected by two open forest roads with very little potential to improve security regardless of who owns/manages the parcel. The acquisition of this parcel would have little, if any, effect on the ability of the FS to manage grizzly bear habitat.

Under the Proposed Exchange and No Action Alternatives, there would be No Effect on grizzly bears or their habitat. There are no cumulative effects which would cause the Proposed Federal Action to contribute to the loss of key populations or adversely affect proposed critical habitat. The Proposed Exchange and the No Action Alternatives would not result in any irreversible or irretrievable commitment of resources which would violate Section 7(a) (2) of the ESA.

## **American Indian**

The FS, through the Secretary of Agriculture, is vested with statutory authority and responsibility for managing resources of the National Forests. No sharing of administrative or management decision-making power is held with any other entity. However, commensurate with authority and responsibility to manage is the obligation to consult, cooperate, and coordinate with Federally recognized Indian Tribes in developing and planning management decisions regarding resources on NFS lands that may affect tribal rights established by treaty or Executive Order. As a result of the treaties and Executive Orders, elements of Indian culture, such as tribal welfare, land, and resources were entrusted to the United States government.

The FS shares in the Federal government's overall trust responsibility where treaty, laws, Executive Orders, case law, or other legally defined rights apply to NFS lands. (Article 1, Section 8, Clause 3 of the United States Constitution authorized Congress to regulate "commerce ... with Indian tribes."). Trust responsibilities resulting from the Treaties or Executive Order dictate, in part, that the United States government facilitates the execution of treaty rights and traditional cultural practices of recognized tribes. The FS assists with this shared responsibility by working with the tribes on a government-to-government basis and in a manner that attempts a reasonable

accommodation of their needs, without compromising the legal positions of the Tribe or the Federal government.

In June 2005, FS representatives met with representatives of the Kootenai Tribe of Idaho. The Proposed Exchange was described and discussion focused on the Myrtle Creek non-Federal parcel proposed for acquisition in Boundary County. The purpose and need for the Proposed Exchange was explained to Tribal representatives (PR). In May 2005 and January 2006 FS representatives met with representatives of the Coeur d'Alene Tribe. The parcels in the Proposed Exchange were discussed and the purpose and need for the proposal was explained. Tribal representatives indicated that it appeared the Tribe would be favorable to the proposal because of the Federal acquisitions in the vicinity of Grandmother Mountain (PR).

FS representatives worked with tribal representatives on a government-to-government basis and made a reasonable effort to identify concerns related to the Proposed Exchange. The Coeur d'Alene Tribal representatives stated the Tribe would probably be favorable to the Proposed Exchange because of the Federal acquisitions in the vicinity of Grandmother Mountain (PR). FS representatives offered to provide additional information if requested by the tribes.

## **Social and Economic Environment**

### **Hazardous Materials**

The objective of this subsection is to address hazardous materials and solid waste such as trash and debris. The analysis area boundary is parcels to convey and acquire.

### **Laws and Regulations Applying to the Analysis**

Compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and FS Manual Direction (FSM 2160, Hazardous Materials Management) is required in any land transaction. CERCLA, as amended, requires that Federal agencies provide information and certain warranties concerning the presence of hazardous materials on conveyed parcels. The same procedures are used for inspection of private lands proposed for acquisition. The FS follows the required "Transaction Screening Process for Land Adjustments"; (LTSP) as outlined in EM-2160-2, dated September 1999. The goal of this process is to identify any actual or possible contamination from hazardous substances, petroleum products, or other contaminants so as to ensure that the FS does not unknowingly acquire or convey contaminated property. Documentation of all inspections is filed in the PR.

### **Affected Environment and Environmental Consequences**

All parcels to be acquired and conveyed by the IPNF have been inspected by FS personnel for the presence of hazardous substances.

All parcels in the Proposed Exchange have been certified in accordance with the Land Transaction Screening Process. There is no evidence of release, storage, or disposal of hazardous substances or petroleum products. The date of certification was June 8, 2006.

## **Heritage Resource**

The objective of this subsection is to identify heritage resources or properties on NF parcels to convey that may be adversely affected. The analysis area boundary is limited to the Federal parcels involved in the Proposed Land Exchange.

## **Laws and Regulations Applying to the Analysis**

The National Historic Preservation Act (NHPA) of 1966 established the Federal government’s policy on historic preservation and related programs, including the National Register of Historic places (NRHP), through which that policy is implemented. Under the NHPA, historic properties include “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places” (16 United States Code [USC] 470w (5)). The criteria used to evaluate the NRHP eligibility of properties affected by Federal agency undertakings are contained in 36 CFR 60.4 and are as follows: Section 106 (16 USC 470f) of the NHPA requires Federal agencies, prior to taking action to implement an undertaking, to take into account the effects of their undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment regarding the undertaking.

## **Affected Environment**

All Federal parcels proposed for exchange have completed heritage resource inventories that are filed at the IPNF Supervisor’s Office. The Forest Archaeologist has reviewed all Heritage Resource Inventory Reports for compliance with the NHPA of 1966, Protection of Historic Properties, and Programmatic Memorandums of Agreement. The Idaho State Historic Preservation Office (SHPO) has received copies of the Heritage Resource Inventory Reports.

## **Environmental Consequences**

There are no sites eligible for the National Register of Historic Places on the Federal parcels to convey. SHPO has concurred with the IPNF determination (PR).

## **Property Boundaries**

The FS is required by law to post, survey, and maintain all exterior boundaries of NFS land. The Resources Planning Act targeted all property boundaries to be posted by the year 2020. Estimated landline, corner location, and maintenance cost for the cadastral needs on lands considered in the Proposed Exchange were determined from the IPNF Cadastral Landline Status Inventory and Land Line MAR report (PR).

The total IPNF boundary length is greater in areas with fragmented ownership patterns than in comparable sized areas with consolidated ownership. The Federal parcels to convey include existing unmarked boundaries that would need to be surveyed and marked under the No Action Alternative. The Proposed Exchange would result in a net reduction of 67 corners and 32.75 miles of boundary on the IPNF (PR). The action alternative would realize an approximate overall net savings in boundary management of \$301,000 (PR).

## **Land Uses**

The objective of this subsection is to disclose specific parcel information on consequences and curative actions by the Proposed Exchange that would be related to “land uses”. Specific

categories addressed include: 1) Public Access Considerations; 2) Curative Action; 3) Land Uses; 4) Cost Share Roads. Identified curative actions that would occur are intended to protect land use rights, comply with existing laws, regulations, and policies and show benefits/liabilities to the FS and Forest Capital.

The analysis area boundary is parcels with land use considerations to acquire and convey.

**Affected Environment**

The Federal parcels in the Proposed Land Exchange and the specific land use considerations associated with these parcels are described in Table 24 and the following narrative. The non-Federal parcels in the Proposed Land Exchange and the specific land use considerations associated with these parcels are described in Table 25 and the following narrative. These tables identify the land use considerations that apply to the Proposed Exchange.

**Table 24. Federal Parcel Land Use Considerations for the Proposed Exchange**

Land Use	Specifics	Curative Action
<b>Whistling Creek</b>		
Legal and Physical Access.	<p>The following roads are included in the Bluff Creek Cooperative Agreement with NPRR, dated 7/1/64. (All in T.44N,R.7E)</p> <p>Bluff Cr. Rd 509G (2.3 mi/Sec. 21); Whistling Cr. Spur Rd 1299 (.4 mi/Sec. 29); Whistling Cr. Spur Rd 1299A (.1 mi/Sec. 29); West Sister Spur 3 Rd 509K (1.2 mi/Sec. 19); West Sister Spur 3 Rd 509K (1.1 mi/Sec 29); Whistling Peak Rd 1400 (.5 mi/Sec. 21); Whistling Peak Rd 1400 (.7 mi/Sec. 29).</p>	<p>Would eliminate need for 6.3 miles of R/W acquisitions.</p>
Legal and Physical Access.	<p>The following roads are included in the Bluff Creek Cooperative Agreement with NPRR, dated 7/1/64. (All in T.44N,R.7E)</p> <p>Bluff Cr. Rd 509G (.7 mi/Sec. 20); Whistling Cr. Spur 1 Rd 1299 (.1 mi/Sec. 20); Whistling Cr. Spur 2 Rd 1299A (.7 mi/Sec. 20); Whistling Peak Rd 1400 (2.4 mi/Sec. 20); West Sister Spur 3 Rd 509K (.5 mi/Sec. 20).</p>	<p>Would eliminate need for 4.4 miles of R/W grants.</p>

**Table 24. Federal Parcel Land Use Considerations for the Proposed Exchange (continued)**

Land Use	Specifics	Curative Action
<b>Pine Creek</b>		
Legal and Physical Access.		Would eliminate need for the USFS to acquire or grant access easements to Sections 23, 24, 25 and 26 in T.47N.,R.1E.
No Legal and Physical Access in Sec. 30, T.47N.,R.2E.		Would eliminate need for the USFS to acquire or grant an access easement in Sec. 30, T.47N.,R.2E.
<b>Lemonade Peak</b>		
No Legal and Physical Access in Sections 28 and 29, T.47N.,R.2E.		Would eliminate need for the USFS to acquire or grant access easements in Sections 28 and 29, T.47N.,R.2E.
Trail 8 and 555 are in this parcel		Trail easements for trail 8 and 555 would be reserved.

As shown in Table 24, the FS does not have legal access to a portion of the Pine Creek Parcel and the Lemonade Peak Parcel. FS policy is to acquire permanent exclusive easements that permit full multiple-use of NFS lands (FSM 5460). By conveying these parcels, the FS would save the cost of acquiring two permanent easements. The IPNF's average cost per easement acquisition is \$15,000. Estimated savings to the IPNF would be \$30,000 under the Proposed Exchange.

The IPNF would incur some costs to eliminate existing easements in the Whistling Creek Parcel. These costs would be offset by savings from not having to administer the easements under the Proposed Exchange.

**Table 25. Non-Federal Parcel Land Use Considerations for the Proposed Exchange**

<b>Land Use</b>	<b>Specifics</b>	<b>Curative Action</b>
<b>Myrtle Creek</b>		
Legal and Physical Access.	The Myrtle Creek Rd 633 has an existing easement on 1.2 miles that was acquired from Pack River Co. 9/15/75	Would eliminate this easement.
Legal and Physical Access.	The Myrtle Creek Rd 633 has an existing easement on .5 miles that was acquired from Long Lake Lumber Co. 8/29/58	Would eliminate this easement.
Special Use Permit	There is an existing Special Use authorization to the City of Bonners Ferry for a municipal water system on NFS land. This Special Use is due to be reauthorized.	The acquisition of the Myrtle Creek Parcel would require modification of this Special Use Permit.
<b>Lost Lake</b>		
No Legal and Physical Access.		Would eliminate need for the USFS to grant access easements for private inholdings in Sections 1 & 3, T.43N.,R.4E.
No Legal access but Physical Access in Sec. 10, T.43N.,R.4E.		Would eliminate need for the USFS to acquire an access easement to an isolated NFS parcel in Sec. 30, T.43N.,R.4E.
<b>Duplex Creek</b>		
No Legal access but Physical Access in Sec. 5, T.43N.,R.4E.	630 acres within the Grandmother Mountain Roadless Area.	Would eliminate need for the USFS to grant access easements across the NW corner and SW corner of Sec. 8, T.43N.,R.4E.
No Legal and Physical Access in Sec. 7, T.43N.,R.4E.		Would eliminate need for the USFS to grant an access easement across the NW corner & SW corner in Sec. 8, T.43N.,R.4E.
<b>Freezeout</b>		
No Legal and Physical Access.	319 acres within the Grandmother Mountain Roadless Area.	Would eliminate need for the USFS to grant an access easement for 2.0 miles of new construction in Sec. 1, T.42N.,R.3E.
<b>Twin Springs Creek</b>		
No Legal and Physical Access.	80 Acres within the Pinchot Roadless Area.	Would eliminate need for the USFS to grant an access easement for 7.5 miles of new construction.

**Table 25. Non-Federal Parcel Land Use Considerations for the Proposed Exchange (continued)**

<b>Land Use</b>	<b>Specifics</b>	<b>Curative Action</b>
<b>Adair Creek</b>		
No Legal access but there is Physical Access.	The Adair Ridge Road 1407 has been obliterated.	Would eliminate need for the USFS to grant an access easement for 1.8 miles on an existing right-of-way. Reconstruction of Rd 1407 would be required.
<b>Lines Creek</b>		
Legal and Physical Access.	Parcel is accessed by Lines Creek Road 1901. A USFS electronic site is located just South of this parcel.	
Existing Easement	Easement to access the electronic site was acquired from PCTC, LP on 7/19/95.	Would eliminate the existing easement.
<b>Daveggio Creek</b>		
No Legal access but there is Physical Access.	Daveggio Creek Road 1936 crosses the NE corner of this parcel.	Would eliminate need for the USFS to acquire an easement for .1 miles of Road 1936.
<b>Two Dot Peak</b>		
No Legal and Physical Access.		Would eliminate need for the USFS to grant an access easement for .75 miles of new construction and .75 miles of reconstruction.
<b>Fishhook Peak</b>		
Legal and Physical Access.	The Fishhook Basin Spur Road has an existing easement on .1 miles that was acquired from Burlington Northern on 3/8/82.	Would eliminate the existing easement.  Would also eliminate need for the USFS to grant an access easement for 1.5 miles of new construction or to reconstruct .5 miles of existing road.

### **Environmental Consequences**

The IPNF costs associated with granting access to parcels that apply to the Alaska National Lands Conservation Act (ANILCA) can range from \$100 to \$250,000. Regulations implementing ANILCA at 36 CFR 252, subpart D, provide that landowners shall be authorized such access as the authorized officer deems to be adequate to secure them the reasonable use and enjoyment of their land. Most of this cost involves the required environmental review, NEPA analysis and documentation. Under the cost-recovery regulations (2006), it is anticipated the IPNF would recover the majority of these costs. However, there would still be some administrative costs borne by the IPNF along with the costs associated with exchange of easements under the Forest Roads and Trails Act. It is estimated the IPNF would save approximately \$5,000 per easement not granted. Potentially 10 easement grants under the Proposed Exchange would be avoided therefore \$50,000 savings would be realized. In addition, the FS would need one right-of-way across the

Lost Lake Parcel under the No Action Alternative. The Proposed Action Alternative would realize a \$15,000 savings by not needing to acquire this right-of-way.

The IPNF would incur some costs to eliminate four existing easements across the Myrtle Creek and Lines Creek parcels. These costs would be offset by savings from not having to administer the easements under the Proposed Exchange.

The Proposed Exchange would require modification of an existing special use authorization to the City of Bonners Ferry. The existing use on NFS land is due to be re-authorized therefore the modification would not result in an additional cost.

The cost share roads in Whistling Creek (Buff Coop Agreement) do not need maintenance because all of these roads are kept closed. The cost of maintaining the closure berms and or gates is minimal in this area.

### **Land Title Transfer and Closing Phase**

Under the Proposed Exchange, the FS would incur some costs to process and close the land transaction. These costs include drafting, executing, and recording an Exchange Agreement. Final processing steps involve the transfer of land title by exchanging of deeds and patent, usually through a simultaneous escrow closing procedure and obtaining final title insurance to assure clear title. A final title opinion by the FS and it's Office of General Counsel is obtained and posting of land records is accomplished. Also related easements and permits would be required. Other miscellaneous duties and removing boundary markers would also be accomplished. This work would cost the FS approximately \$8,000.

### **Government Taxes and Revenues**

State and local governments in Idaho receive revenues from both privately owned and Federal lands through several types of payment mechanisms. These are the Federal 25 Percent Fund, Federal Payments In-Lieu of Taxes (PILT), property taxes paid on private lands and the Idaho Forest Product Yield Tax.

#### **Federal 25 Percent Fund**

In previous years, a portion of the returns to the U.S. Treasury from revenue producing FS activities, such as timber sales, were returned to each state containing national forestlands for distribution back to counties having acreage within a national forest. These revenue distributions, referred to as Federal 25 Percent Fund payments, were dedicated to schools and roads. In October 2000, the Secure Rural Schools and Community Self-Determination Act of 2000 was enacted to stabilize 25 percent fund payments to states for schools and roads. Under the new legislation, counties can elect for fiscal years 2001 through 2006 to take a full payment approach that is not linked to annual FS revenues. Full payment is based on the average of the highest three payments made to the state between 1986 and 1999. Shoshone and Boundary Counties both elected to take full payment. Projected changes in NFS land under the Proposed Exchange would, therefore, have no effect on amount of Federal 25 Percent Fund payments that these counties receive, at least through 2006. It is too speculative to estimate after 2006 how the Proposed Exchange would effect Federal 25 Percent Fund payments to Boundary and Shoshone County.

### **Federal Payments In-Lieu of Taxes (PILT)**

PILT payments are Federal payments to local governments that help counties offset losses in property taxes associated with nontaxable Federal land located within a county's boundary. PILT payments are distributed by the BLM and are made for tax-exempt Federal land administered by the BLM, the FS, the National Park Service, U.S. Fish and Wildlife Service, and for Federal water projects and some military installations.

These payments are designed to supplement other Federal land receipt-sharing payments that local governments may receive, including timber receipts from national forests, grazing fee receipts, mineral material sales receipts, and some receipts collected on wildlife refuges. PILT payments traditionally helped balance the uneven distribution of Federal 25 Percent Fund payments between counties with NFS land and counties with other types of Federal land that do not generate timber revenues. PILT has historically been a more stable and dependable revenue source than Federal 25 Percent Fund payments because it is a flat per-acre payment that is not tied to levels of revenue generated by NFS land. There are two formulas that may be used to calculate PILT payments, with authorized payments based on the highest resulting value.

Shoshone County would have a net gain of 794 acres and Boundary County would have a net gain of 289 acres of NFS land under the Proposed Exchange. This gain would result in an increase of PILT payments to these counties but the effect would be minimal when considering the total entitlement acres within each county and the annual revenues of these counties.

### **Idaho Property Tax**

Property tax revenues are one of the most important sources of revenue for the public sector in Idaho. Under the Proposed Exchange, the loss of 794 private timber acres in Shoshone County and 289 acres of private timber acres in Boundary County would result in a net loss of property tax revenue in these counties. Forest lands held in private ownership and designated by the owner to be subject to the provisions of Title 63, Revenue and Taxation, Chapter 17 shall be valued by the county assessor as real property at rates which reflect only bare forest land. The loss of taxed bare forest land would be somewhat offset by PILT payments. This loss of tax revenue in these counties would be minimal when considering the total private land within each county and the annual total property tax revenues of these counties.

### **Idaho Forest Products Yield Tax**

All harvested timber subject to the provisions of Title 63, Revenue and Taxation, Chapter 17 and delivered to a point of utilization as logs shall be subject to a forest products yield tax. The yield tax is 3 percent of stumpage value as determined by the state commission.

Under the Proposed Exchange, Forest Capital would acquire approximately 834 MBF of sawlog timber more than it would convey (Table 4). Forest Capital would gain 1,970 MBF of sawlog timber in Shoshone County and lose 1,136 MBF in Boundary County. This small ownership change in sawlog volume within the affected counties would have minimal effect on county receipts from the Idaho Forest Products Yield Tax.

### **Outstanding Rights and Reservations**

There are no recorded outstanding rights on Federal parcels to convey. There are no special use permits, grazing permits, unpatented claims, water rights or withdrawals on Federal parcels to

convey. Refer to the Geology and Minerals section for a detailed discussion on mineral potential. Refer to Tables 24 and 25 for information related to land use considerations on cost share and road easements.

The Lemonade Peak parcel has the Coeur d’Alene Divide Trail No. 8 across N1/2NE1/4 and N1/2NW1/4 of section 28, T.47N., R.2E. Also, Trail No. 555 crosses NE1/4NE1/4 of section 28. A Right-of-Way for these trails would be reserved to the United States and its assigns.

The Pine Creek parcel has no known rights to be reserved by the United States and its assigns.

The Whistling Creek parcel would have a Right-of-Way reserved for ditches and canals constructed by the authority of the United States pursuant to the Act of August 30, 1890 (43 U.S.C. 945).

The Federal Land Status Report identifies all outstanding rights and reservations on the Federal parcels to convey (PR).

### **Environmental Consequences Cost and Savings Proposed Exchange Summary**

As stated previously in this section, the Proposed Exchange would potentially affect IPNF projected land management administrative costs. The \$388,000 Proposed Exchange one time savings is shown in Table 26. Refer to the previous narratives for a discussion on the anticipated annual savings and costs associated with roadless area boundary management and noxious weed management. These narratives concluded there would be minor annual management savings under the Proposed Exchange Alternative.

**Table 26. One-Time Administrative Costs and Savings to United States for Exchange Alternative**

	<b>Cost/Savings</b>
Easement Acquisition/Grants	-\$95,000
Property Boundary Administration	-\$301,000
Land Title Transfer and Closing Phase	+\$8,000
<b>Total Savings less Cost</b>	<b>-\$388,000</b>

\*A plus represents an increase in FS costs and a negative change represents a reduction in FS costs

### **Appraisal**

The fee simple estate of the Federal and non-Federal parcels are being appraised, subject to existing easements and reservations of record. The appraisals will be completed and approved by a certified appraiser and review appraiser, respectively, in accordance with Federal standards. The appraisals will be completed and approved prior to issuing a decision of the proposed action. The land values will be disclosed by exchange authority, respectively, in the Decision Notice.

### Landownership Adjustment Cumulative Effects

Land exchanges over time can indicate trends in landownership adjustments and therefore provide information on cumulative impacts related to IPNF ownership adjustment decisions. Table 27 displays the IPNF conveyed and acquired acreage for the period 1981 – 2006. There has been a net gain during that period of 22,748 acres. Forest Plan Monitoring and Evaluation Reports show an overall net gain in timber growth potential, timber volume, recreation visitor days, roadless area acres, floodplain acres and wetland acres from these past exchanges.

**Table 27. Acres of Federal Land Conveyed and Non-Federal lands Acquired 1981-2006**

<b>Year</b>	<b>Federal Acres Conveyed</b>	<b>Non-Federal Acres Acquired</b>
1981	8,582	12,187
1982	2,960	5,728
1983	2,277	520
1984	3,718	3,126
1985	7,556	15,775
1986	8,044	9,815
1987	2,779	4,632
1988	3,097	3,164
1989	3,692	4,062
1990	2,376	3,281
1991	630	1,080
1992	0	10
1993	11,282	14,009
1994	294	370
1995	1,965	3,229
1996	35	40
1997	4,755	7,553
1998	3,728	2,077
1999	2,680	1,880
2000	1,350	1,920
2001	0	106
2002	0	0
2003	0	0
2004	0	40
2005	0	0
2006	0	0
<b>Total</b>	<b>71,800</b>	<b>94,584</b>

# References

## Geology and Minerals

Griggs, A.B., 1968. Geologic Map of the Southeast ¼ of Spokane 1X2 Quadrangle, Idaho. U.S. Geological Survey Open File Map.

Griggs, A.B., Geologic Map of the Spokane Quadrangle, Washington, Idaho, and Montana: U.S. Geological Survey Map I-768.

Hietanen, A., 1984. Geology Along the Northwest Border Zone of the Idaho Batholith, Northern Idaho, U.S. Geological Survey Bulletin 1608, 17 p.

## Vegetation; Threatened, Endangered, Sensitive and Species of Concern Plant Species

Old-Growth Forest Types of the Northern Region, P. Green, J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann, R-1 SES 4/92; USDA Forest Service, Northern Region, Missoula, MT

## Grandmother Mountain Land Exchange Botany Analysis, St. Joe Ranger District, 11/30/2006

Idaho Conservation Data Center. 2006. Element Occurrence Records. Idaho Department of Fish and Game, Boise, Idaho.

Idaho Forest Practices Act, 1996. Idaho Department of Lands. Title 38, Chapter 13, Idaho Code. Boise, Idaho.

Leonard, G. M. 1992. Memo dated May 15, 1992 from the Washington Office to Regional Foresters on Forest Health and Biological Evaluations, Washington Office Interpretation of FSM 2670. USDA Forest Service, Washington D.C.

Lesica, P. 1997. Demography of the Endangered Plant *Silene spaldingii* (Caryophyllaceae) in Northwest Montana. *Madrono*, 44: 347-358.

Lichthardt, J. 1997. Revised Report on the Conservation Status of *Silene spaldingii* in Idaho. Conservation Data Center. January, 1997.

Mosseaux, Mark. 1995. Unpublished document. TES Plant Habitat Queries by TES Plant Guilds for the Idaho Panhandle National Forests.

National Forest Management Act (NFMA). 1976. 36 code of Federal Regulations 219.19

USDA Forest Service. 1987. Idaho Panhandle National Forests Forest Plan. Forest Service. Northern Region. 203 pp.

USDA Forest Service. 1990. Forest Service Manual 2600 Wildlife Fish and Sensitive Plant Habitat Management. Section 2672.1 - 2672.43 (as amended).

USDA Forest Service. 1994. Conservation Strategy *Howellia aquatilis*. Flathead National Forest.

USDA Forest Service. 1997. Integration of Forest Planning into Ecosystem Management: Toward a Forest Ecosystem Approach: An Assessment for the St. Joe Area. Ecosystem Team Paper #3. Idaho Panhandle National Forests. p 40.

## References

- USDA Forest Service. 2004. Regional Foresters Sensitive Plant List. Region 1, Missoula, MT.
- USDI Fish and Wildlife Service. 2000. Silene Section 7 Guidelines (U.S. Fish and Wildlife Service, Snake River Basin Office) *Silene spaldingii*.
- USDI Fish and Wildlife Service. 2001. Service Extends Endangered Species Protection to Rare Western Plant. News Release #01-16.
- USDI Fish and Wildlife Service. 2006. Northern Idaho and Eastern Washington Endangered, Threatened, Proposed and Candidate Species by County. Online.  
<http://www.fws.gov/easternwashington/county%20species%20lists.htm> Jan 25, 2006.

### **Noxious Weeds**

- Grandmother Mountain Land Exchange Noxious Weeds Assessment Report, Tom Ball, 11/17/2006

### **Water Quality**

- Watershed Report: Grandmother Mountain Land Exchange, J.M.Macy, 11/29/2006

### **Wetlands and Floodplains**

- Watershed Report: Grandmother Mountain Land Exchange, J.M.Macy, 11/29/2006

### **Fisheries**

- Fisheries Report (Biological Assessment/Evaluation) for the Forest Capital/Grandmother Mountain Land Exchange, St. Joe Ranger District, 5/7/2006
- Averett, R. and Craig MacPhee. 1971. Distribution and Growth of Indigenous Fluvial and Adfluvial Cutthroat Trout (*Salmo clarki*), St. Joe River, Idaho. *Northwest Science*, 45(1):38-47.
- Baltz, D. M., B. Vondracek, L. R. Brown, and P. B. Moyle. 1991. Seasonal changes in microhabitat selection by rainbow trout in a small stream. *Trans. Amer. Fish. Soc.* 120(2):166-176.
- Bilby, R. E. and G. E. Likens. 1980. Importance of organic debris dams in the structure and function of stream ecosystems. *Ecology* 61(5):1107-1113.
- Bilby, R. E., and J. W. Ward. 1991. Large woody debris characteristics in streams draining old growth, clearcut, and second-growth forests in southwestern Washington. *Canadian Journal of Fisheries and Aquatic Sciences* 48:2499-2508.
- Bisson, P. A., R. E. Bilby, M. D. Bryant, C. A. Dolloff, G. B. Grette, R. A. House, M. L. Murphy, K. V. Koski, and J. R. Sedell. 1987. Large woody debris in forested streams in the Pacific Northwest: past, present, and future. Pages 143-190 in Salo and Cundy (1987).
- Bisson, P. A. and J. R. Sedell. 1982. Salmonid populations in streams in clearcut vs old growth forest of western Washington. In: Meehan, W.R., T.R. Merrill, J.W. Matthews Eds. *Fish and Wildlife Relationships in Old-Growth Forests*. Proceedings of a Symposium. *Amer. Inst. Fish. Res. Bios.* pp 121-130.

- Bjornn, T. C. 1975. The St. Joe River Cutthroat Fishery - A Case History of Angler Preference. Presented at the Western Assoc. of State Game Commissioners. pp 1-2.
- Bjornn, T. C. 1971. Trout and salmon movements in two Idaho streams as related to temperature, food, streamflow, cover, and population density. *Trans. Amer. Fish. Soc.* 100(3):423-438.
- Bjornn, T. C. and G.A. Liknes. 1986. Life History, Status and Management of Westslope Cutthroat Trout. IN *The Ecology and Management of Interior Stocks of Cutthroat Trout*. Special Publication of the Western Division, American Fisheries Society. pages 57-64.
- Campbell, Ronald F. and J. H. Neuner. 1985. Seasonal and diurnal shifts in habitat utilized by resident rainbow trout in western Washington Cascade mountain streams. In: Forest Olson, Robert G. White, and R.H. Hamre Technical Eds. *Proceedings of the Symposium on Small Hydropower and Fisheries*. pp 39-48.
- Chapman, D. W. and K. P. McLeod. 1987. Development of criteria for fine sediment in the northern rockies ecoregion. EPA 910/9-87-162. 279p.
- Cross, P. D. 1992. Status of bull trout on the Idaho Panhandle National Forests. USDA Forest Service, Coeur d'Alene, Idaho.
- Dolloff, C. A. and G. H. Reeves. 1990. Microhabitat partitioning among stream-dwelling juvenile coho salmon *Oncorhynchus kisutch* and Dolly Varden, *Salvelinus malma*. *Can. J. Fish. Aquat. Sci.* 47:2297-2306.
- Everest, F. H. and J. R. Sedell. 1984. Evaluating effectiveness of stream enhancement projects. In: Thomas J. Hassler Ed., *Proceedings: Pacific northwest stream habitat management workshop*. Humboldt State University. pp 246-256.
- Fields. 1935. Five year fish and game report. St. Joe National Forest. U.S.D.A. Forest Service.
- Fraley, J., T. Weaver, and J. Vashro. 1989. Cumulative effects of human activities on bull trout (*NUSalvelinus confluentus*) in the upper Flathead drainage, Montana. *Headwaters Hydrology*. American Water Resources Assoc. pp 111-119.
- Gorman, O. T. and J. R. Karr. 1978. Habitat structure and stream fish communities. *Ecology* 59(3):507-515.
- Grette, G. B. 1985. The role of large organic debris in juvenile salmonid rearing habitat in small streams. Master's thesis. University of Washington, Seattle.
- Hickman, T. and R. F. Raleigh. 1982. Habitat suitability index models: cutthroat trout. FWS/OBS-82/10.5. WELUT, Fort Collins, Co. 38p.
- Hicks, B. J. 1990. The influence of geology and timber harvest on channel geomorphology and salmonid populations in Oregon coast range streams. Doctoral dissertation. Oregon State University, Corvallis.
- Karr, J. R. and D. R. Dudley. 1981. Ecological perspectives on water quality goals. *Env. Man.* 5:55-68.

## References

- Karr, J. R. and K. E. Freemark. 1983. Habitat selection and environmental gradients: dynamics in the "stable" tropics. *Ecology* 64(6):1481-1494.
- Maclay, David J. 1940. Tentative fish management plan St. Joe National Forest. U.S.D.A., Forest Service. 25p.
- Martin, D. J., E. O. Salo, S. T. White, J. A. June, W. J. Foris, G. L. Lucchetti. 1981. The impact of managed streamside timber removal on cutthroat trout and the stream ecosystem. Final Report. Seattle, WA: Univ. of WA, Fisheries Research Institute. 65p.
- Moore, K. M. S. and S. V. Gregory. 1988. Summer habitat utilization and ecology of cutthroat trout fry in Cascade Mountain streams. *Can. J. Fish. Aquatic. Sci.* 45:1921-1930.
- McFadden, James T. 1969. Dynamics and regulation of salmonid populations in streams. In: T.G. Northcote Ed. *Symposium on Salmon and Trout in Streams*. Univ. British Columbia. pp 313-329.
- Orth, Donald J. 1987. Ecological considerations in the development and application of instream flow habitat models. *Regulated Rivers: Research and Management* 1:171-181.
- Reel, S., L. Schassberger, and W. Ruediger. 1989. *Caring for our natural community*. USDA Forest Service. Northern Region Wildlife and Fisheries publication.
- Reeves, G. H., F. H. Everest, and J. R. Sedell. 1993. Diversity of juvenile anadromous salmonid assemblages in coastal Oregon basins with different levels of timber harvest. *Transactions of the American Fisheries Society* 122:309-317.
- Rieman, B. and K. Apperson. 1989. Status and analysis of salmonid fisheries: Westslope cutthroat trout synopsis and analysis of fishery information. Idaho Department of Fish and Game. Project F-73-R-11, Subproject No. 11, Job No. 1. 112 pg.
- Schlosser, I.J. 1982. Trophic structure reproductive success, and growth rate of fishes in a natural and modified headwater stream. *Can. J. Fish. Aquat. Sci.* 39:968-978.
- Sedell, James R., P. A. Bisson, F. J. Swanson, and S. V. Gregory. 1988. What we know about large trees that fall into streams and rivers. In: Chris Maser, Robert F. Tarrant, James M. Trappe, and Jerry F. Franklin, Technical Ed. *From the Forest to the Sea: a Story of Fallen Trees*. GTR PNW-GTR-229. 153p.
- USDI. 1998. Bi-annual Forest-wide Species List. FWS 1-9-98-SP-100. US Fish and Wildlife Service.
- United States Forest Service. 1995. *Inland Native Fish Strategy Environmental Assessment*. U.S.D.A., Forest Service Intermountain, Northern, and Pacific Northwest Regions.
- United States Forest Service. 1994. *Aquatic Ecosystem Strategy*. U.S.D.A., Forest Service Idaho Panhandle National Forests. 22 p.
- United States Forest Service. 1987. *Forest Plan Idaho Panhandle National Forests*. U.S.D.A., Forest Service Northern Region.

Williams, Richard N. 1994. Unpublished report on mitochondrial DNA variation among bull trout populations in the Columbia and Klamath Rivers. Clear Creek Genetics. Meridian, ID. 2p.

**Grandmother Mountain Land Exchange Fisheries BA, Tim Price, 5/9/06**

**Informal consultation with:**

Chad Baconrind, Fisheries Biologist, Bonners Ferry Ranger District, USDA Forest Service

John Macy, St. Joe District Zone Hydrologist, USDA Forest Service, Tom Ball, Lands Forester, Forest Supervisors Office, USDA Forest Service, Chuck Stock, St. Joe Ranger District Zone Wildlife Biologist, USDA Forest Service.

Averett, R. and Craig MacPhee. 1971. Distribution and Growth of Indigenous Fluvial and Adfluvial Cutthroat Trout (*Salmo clarki*), St. Joe River, Idaho. Northwest Science, 45(1):38-47.

Bilby, R.E. and G.E. Likens. 1980. Importance of organic debris dams in the structure and function of stream ecosystems. Ecology 61(5):1107-1113

Bisson, P.A. and J. R. Sedell. 1982. Salmonid populations in streams in clear cut vs old growth forest of western Washington. In: Meehan, W.R., T.R. Merrall, J.W. Matthews Eds. Fish and Wildlife Relationships in Old-growth Forests. Proceedings of a Symposium. Amer. Inst. Fish. Res. Bios. pp121-130.

Bjornn, T. C. and G.A. Likens. 1986. Life History, Status and Management of Westslope Cutthroat Trout. IN The Ecology and Management of Interior Stocks of Cutthroat Trout. Special Publication of the Western Division, American Fisheries Society. pages 57-64.

Cross, P. David. 1992. Status of bull trout on the Idaho Panhandle National Forests. USDA Forest Service, Coeur d'Alene, Idaho.

Fields. 1935. Five year fish and game report. St. Joe National Forest. U.S.D.A., Forest Service. 12p.

Fraley, J., T. Weaver, and J. Vashro. 1989. Cumulative effects of human activities on bull trout (*Salvelinus confluentus*) in the upper Flathead drainage, Montana. Headwaters Hydrology. American Water Resources Assoc. pp 111-119.

Goetz, F. 1989. Biology of the Bull Trout *Salvelinus confluentus* a Literature Review. Willamette National Forest, Eugene, Oregon.

Hicks, R. and W. Current. 1971. St. Joe River stream habitat survey and analysis. USDA Forest Service St. Joe Ranger District, St. Maries, Idaho. 54p.

Karr, J. R. and D.R. Dudley. 1981. Ecological perspectives on water quality goals. Env. Man. 5:55-68.

Karr, J. R. and K. E. Freemark. 1983. Habitat selection and environmental gradients: dynamics in the "stable" tropics. Ecology 64(6):1481-1494.

## References

- Maclay, D. J. 1940. Tentative Fish Management Plan, St. Joe National Forest. USDA Forest Service. 25p.
- Rieman, B.E. and J.D. McIntyre. 1993. Demographic and habitat requirements for conservation of bull trout. Gen. Tech. Rep. Int-302. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 38 p.
- Roberts, B.C. and R.G. White. 1992. Effects of angler wading on survival of trout eggs and pre-emergent fry. *North Amer. J. Fish. Mgmt.* 12:450-459.
- Schlosser, Isaac J. 1982. Trophic structure, reproductive success, and growth rate of fishes in a natural and modified headwater stream. *Can. J. Fish. Aquat. Sci.* 39:968-978.
- USDA Forest Service 1995. Inland Native Fish Strategy Environmental Assessment. Decision Notice and Finding of No Significant Impact. United States Department of Agriculture, USDA Forest Service, Intermountain, Northern, and Pacific Northwest Regions 17 p.
- USDA Forest Service 2004. Programmatic biological assessment for trail maintenance [In Draft]. Idaho Panhandle National Forests. Coeur d'Alene, Idaho. 71p.
- USDA Forest Service 1998. Biological assessment for the St. Joe River Basin/ NF Clearwater. Idaho Panhandle National Forests. U.S.D.A. Forest Service Northern Region. Coeur d'Alene, Idaho. 145p.
- Williams, R.N. 1994. Unpublished report on mitochondrial DNA variation among bull trout populations in the Columbia and Klamath Rivers. Clear Creek Genetics. Meridian, Idaho. 2p.

### **Recreation Including Roadless Areas**

- Grandmother Mountain Land Exchange Recreation/Roadless Report, Tracy Gravelle, 4/26/06
- Forest Capital, Anticipated Management Plans, 2005.
- Gravelle, Roadless Acre Calculation Sheet, 2006.
- Personal Conversation, Terry Kincaid, BLM, April 25, 2006.
- USDA Forest Service, Idaho Panhandle National Forests Forest Plan, 1987.
- USDA Forest Service, Idaho Panhandle National Forests Forest Plan FEIS, Appendix C, 1987.
- USDA Forest Service, Project Planning Recreation Opportunity Spectrum Users Guide, 1987.

### **Wildlife; Threatened, Endangered, Sensitive and Management Indicator Species (MIS)**

- Grandmother Mountain Land Exchange Wildlife Report/Sensitive Species BE, St. Joe Ranger District, 8/9/06.
- Adam, Michael D. and John P. Hayes. 1996. Use of Bridges by Bats as Night Roosts in the Oregon Coast Range, A final report submitted to Suislaw N.F. U.S. Forest Service and the Bureau of Land Management, Eugene District. Adaptive COPE, Oregon State University, Hatfield Marine Science Center, Newport. OR 97365.

- Brundin, Lee, A. Dohmen, A. Rohrbacher, F. Samson, P. Sweeney, and J. Wiggins. 2004. DRAFT Conservation of Species at Risk in the Northern Region. Unpublished paper, Northern Region, USDA Forest Service, Missoula, Montana, USA.
- Bull, Evelyn L.; Parks, Catherine G.; Torgersen, Torolf R. 1997. Trees and logs important to wildlife in the interior Columbia River basin. Gen. Tech. Rep. PNW-GTR-391. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 55p.
- Cassirer E. Frances and Craig R. Groves. 1991. Harlequin Duck Ecology in Idaho: 1987-1990. Idaho Department of Fish and Game.
- Cassirer, E. F.; C. R. Groves; D.L. Genter. 1994. Conservation Assessment for the Coeur d'Alene Salamander *Plethodon idahoensis*. U.S.D.A. Forest Service. Region 1.
- Cassirer E. Frances, J. D. Reichel, R. L. Wallen, and E. C. Atkinson. 1996. (Draft) Harlequin Duck (*Histrionicus histrionicus*) United States Forest Service/Bureau of Land Management Habitat Conservation Assessment and Conservation Strategy for the U.S. Rocky Mountains.
- Dobkin, D.S. 1992. Neotropical Migrant Landbirds in the Northern Rockies and Great Plains. U.S.D.A. Forest Service Northern Region. Publication No. R1-93-34. Missoula, MT.
- Dobkin, D.S. 1994. Conservation and Management of Neotropical Migrant Landbirds in the Northern Rockies and Great Plains. University of Idaho Press, Moscow, Idaho
- Ghalambor, C. 2003. Conservation Assessment of the Pygmy Nuthatch in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mountain Region, Black Hills National Forest.
- Green, P., J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann. 1992 (errata corrected 9/04). Old Growth Forest Types of the Northern Region. R-1 SES 4/92; USDA Forest Service, Northern Region. Missoula, MT.
- Groves, C. 1987. Distribution of the wolverine (*Gulo gulo*) in Idaho. Idaho Natural Heritage Program, Non-game program, Idaho Department of Fish and Game.
- Harvey, Michael J., J. Scott Altenbach and Troy L. Best. 1999. Bats of the United States. Arkansas Game & Fish Commission. 64 pp.
- Hayward, G.D. and J. Verner, tech. editors. 1994. Flammulated, boreal, and great gray owls in the United States: A technical conservation assessment. Gen. Tech. Rep. RM-253. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 214p.3 maps.
- Heinemeyer, K.S., and J.L. Jones. 1994. Fisher Biology and Management in the Western United States; a literature review and adaptive management strategy (version 1.2). U.S.D.A. Forest Service, Northern Region and Interagency Forest Carnivore Working Group.
- Hejl, S.J. 1994. Human-induced changes in bird populations in coniferous forests in western North America during the past 100 years in J.R. Jehl, Jr., and N.K. Johnson (eds.), A century of avifaunal change in western North America. Studies in Avian Biology No. 15.

## References

- Hutto, Richard L. 1995. USFS Northern Region Songbird Monitoring Program; Distribution and Habitat Relationships: USFS contract # R1-95-05, Second Report.
- Idaho Bird Conservation Plan, Version 1.0. January 2000. Prepared by: Idaho Partners in Flight.
- IPNF. 1995. Reserve Tree Guide. Idaho Panhandle National Forests. USDA Forest Service, Coeur d'Alene, ID. 14 p.
- IPNF. 1997. Integration of Forest Planning into Ecosystem Management; Toward a Forest Ecosystem Approach: An Assessment for the St. Joe Area. Ecosystem Paper #3. Idaho Panhandle National Forests, Coeur d'Alene, ID.
- Keinath, D.A. 2004. Fringed Myotis (*Myotis thysanodes*): A Technical Conservation Assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/fringedmyotis.pdf> [12/2/04]
- Kennedy, P.L. (2003, January 2). Northern Goshawk (*Accipiter gentiles atricapillus*): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/northerngoshawk.pdf>
- Jones, Jeffrey L., 1991. Habitat Use of Fisher in Northcentral Idaho. Unpublished thesis, University of Idaho, Moscow, Idaho.
- Leege, T.A. 1984. Guideline for Evaluating and Managing Summer Elk Habitat in Northern Idaho. Wildlife Bulletin No. 11, Idaho Department of Fish and Game.
- Leonard, G. M. 1992. Memo dated May 15, 1992 from the Washington Office to Regional Foresters on Forest Health and Biological Evaluations, Washington Office Interpretation of FSM 2670. USDA Forest Service, Washington D.C.
- Loeffler, C. (ed.). 1998. Conservation Plan and Agreement for the Management and Recovery of the Southern Rocky Mountain Population of the Boreal Toad (*Bufo boreas boreas*). Boreal Toad Recovery Team and Technical Advisory Group.
- Lieberg J.B. 1897. Present condition of the forested areas in northern Idaho outside the limits of the Priest River forest reserve and north of the Clearwater River. In: 19th annual report of the US Geologic Survey to the Secretary of the Interior. Washington D.C. pp. 373-386
- Mack, C.M., J. Holyan, and I. Babcock. 2005. Idaho Wolf Recovery Program: Restoration and Management of Gray Wolves in Central Idaho. Progress report 2004. Nez Perce Tribe, Department of Wildlife Management, Lapwai, ID. 50 pages
- Maxell, B.A. 2000. Management of Montana's amphibians: a review of factors that may present a risk to population viability and accounts on the identification, distribution, taxonomy, habitat use, natural history, and the status and conservation of individual species. Report to USFS Region 1, Order Number 43-0343-0-0224, University of Montana, Wildlife Biology Program. Missoula, Montana. 161 pp.
- Montana Animal Field Guide. [INTERNET@ <http://fwp.state.mt.us/fieldguide/species>] 11/04/04.

- Moore, T.L. and G.P. Frederick. 1991. Distribution and Habitat of Flammulated Owls (*Otus flammeolus*) in West-Central Idaho. Conservation Data Center, Nongame and Endangered Wildlife Program, Bureau of Wildlife. Idaho Department of Fish and Game.
- Perkins, J.M. 1992. *Plecotus townsendii* Survey for the Nez Perce National Forest. Idaho Department of Fish and Game.
- Pierson, E.D., M.C. Wackenhut, J.S. Altenbach, P. Bradley, P. Call, D.L. Genter, C.E. Harris, B.L. Keller, B. Lengus, L. Lewis, B. Luce, K.W. Navo, J.M. Perkins, S. Smith, and L. Welch. 1999. Species conservation assessment and strategy for Townsend's big-eared bat (*Corynorhinus townsendii townsendii* and *Corynorhinus townsendii pallescens*). Idaho Conservation Effort, Idaho Department of Fish and Game, Boise, Idaho.
- Quigley, T.M., R.W. Haynes and R.T. Graham., tech. eds. 1996. Interegated scientific assessment for ecosystem management in the interior Columbia Basin and portions of the Klamath and Great Basins. Gen. tech. Rep. PNW-GTR-082 Portland, OR: USDA Forest Service, Pacific Northwest Research Station. 303 p.
- Reichel, Jim, and Dennis Flath. 1995. Identification of Montana's Amphibians and Reptiles.
- Reichel, J. D. and S. G. Beckstrom. 1993. Northern Bog Lemming Survey 1992. Report to the Kootenai National Forest. Montana Natural Heritage Program. Helena, MT. 44p.
- Reynolds, R.T.; Graham, R.T.; Reiser, M. H.; and others. 1992. Management Recommendations for the Northern Goshawk in the Southwestern United States. Gen. Tech. Rep. RM-217. Ft. Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 90p.
- Ruggiero, L.F., et. al. tech. eds. 1994. The Scientific Basis for Conserving Forest Carnivores: American Marten, Fisher, Lynx, and Wolverine in the Western United States. Gen. Tech. Rep. RM-254. Ft. Collins CO: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station. 184 p.
- Saab, Victoria A.; Rich, Terrel D. 1997. Large-scale conservation assessment for Neotropical migratory land birds in the interior Columbia River basin. Gen. Tech. Rep. PNW-GTR-399. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 56.p. (Quigley, Thomas M., ed. Interior Columbia Basin Ecosystem Management Project: scientific assessment).
- Samson, F. B. 2005 (amended March 6, 2006). A Conservation Assessment of the Northern Goshawk, Black-backed Woodpecker, Flammulated Owl, and Pileated Woodpecker in the Northern Region, USDA Forest Service. Unpublished report on file, Northern Region, Missoula, Montana, USA.
- USDA Forest Service Northern Region. 1990. Old-Growth Habitat and Associated Wildlife Species in the Northern Rocky Mountains, Northern Region Wildlife Habitat Relationships Program.
- USDA Forest Service. 1992b. Letter and Enclosure dated May 15, 1992: interpretation of FSM 2670.

## References

- USDA Forest Service Biophysical Classification. 1996. Habitat groups and descriptions. U.S. Department of Agriculture, Forest Service, Northern Region. Missoula, MT. 17 p.
- USDA Forest Service. 2000. Northern Region Snag Management Protocol.
- U.S. Forest Service 1987. Forest Plan Idaho Panhandle National Forests. USDA Forest Service, Coeur d'Alene, ID.
- Wiggins, D. A. 2004. Black Swift (*Cypseloides niger*): A Technical Conservation Assessment. USDA Forest Service, Rocky Mountain Region.
- Wilson, Albert G. Jr., 1992. A Survey of the St. Maries and Sandpoint Ranger Districts, Panhandle National Forests, for the Coeur d'Alene salamander (*Plethodon idahoensis*). Idaho Department of Fish and Game.
- 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. Eames. 2000. Source Habitats for Terrestrial Vertebrates in the Interior Columbia Basin: Broad-scale Trends and Management Implications. Vols. 1-3. General Technical Report PNW-GTR-485. USDA Forest Service, Pacific Northwest Research Station. Portland, Oregon.
- Wildlife Report/Sensitive Species BE**
- Bull, Evelyn L.; Parks, Catherine G.; Torgersen, Torolf R. 1997. Trees and logs important to wildlife in the interior Columbia River basin. Gen. Tech. Rep. PNW-GTR-391. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 55p.
- Cassirer E. Frances and Craig R. Groves. 1991. Harlequin Duck Ecology in Idaho: 1987-1990. Idaho Department of Fish and Game.
- Cassirer, E. F.; C. R. Groves; D.L. Genter. 1994. Conservation Assessment for the Coeur d'Alene Salamander *Plethodon idahoensis*. U.S.D.A. Forest Service. Region 1.
- Cassirer E. Frances, J. D. Reichel, R. L. Wallen, and E. C. Atkinson. 1996. (Draft) Harlequin Duck (*Histrionicus histrionicus*) United States Forest Service/Bureau of Land Management Habitat Conservation Assessment and Conservation Strategy for the U.S. Rocky Mountains.
- Coffin, K., C. Fager, Q. Kujala, L. Irby, and R. Douglass. 2002. Winter ecology of American Marten in southwestern Montana. Montana Fish, Wildlife, and Parks, Wildlife Division, Technical Bulletin. Helena, Montana. pp. 54
- Dixon R.D., and V.A. Saab. 2000. Black-backed Woodpecker (*Picoides arcticus*). In *The Birds of North America*, No. 509 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Dobkin, D.S. 1992. Neotropical Migrant Landbirds in the Northern Rockies and Great Plains. U.S.D.A. Forest Service Northern Region. Publication No. R1-93-34. Missoula, MT.
- Dobkin, D.S. 1994. Conservation and Management of Neotropical Migrant Landbirds in the Northern Rockies and Great Plains. University of Idaho Press, Moscow, Idaho

- Frederick, G.P. 1991. Effects of Forest Roads on Grizzly Bears, Elk, and Gray Wolves: A Literature Review. USDA Forest Service, Kootenai National Forest, Libby MT.
- Ghalambor, C. 2003. Conservation Assessment of the Pygmy Nuthatch in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mountain Region, Black Hills National Forest.
- Green, P., J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann. 1992 (errata corrected 9/04). Old Growth Forest Types of the Northern Region. R-1 SES 4/92; USDA Forest Service, Northern Region. Missoula, MT.
- Groves, C. 1987. Distribution of the wolverine (*Gulo gulo*) in Idaho. Idaho Natural Heritage Program, Non-game program, Idaho Department of Fish and Game.
- Hansen, J. 1986. Wolves of Northern Idaho and Northeastern Washington. MT Coop. Wildli. Res. Unit, U.S. Fish Wildl. Ser. 88pp.
- Harvey, Michael J., J. Scott Altenbach and Troy L. Best. 1999. Bats of the United States. Arkansas Game & Fish Commission. 64 pp.
- Hayward, G.D. and J. Verner, tech. editors. 1994. Flammulated, boreal, and great gray owls in the United States: A technical conservation assessment. Gen. Tech. Rep. RM-253. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 214p.3 maps.
- Heinemeyer, K.S., and J.L. Jones. 1994. Fisher Biology and Management in the Western United States; a literature review and adaptive management strategy (version 1.2). U.S.D.A. Forest Service, Northern Region and Interagency Forest Carnivore Working Group.
- Hejl, S.J. 1994. Human-induced changes in bird populations in coniferous forests in western North America during the past 100 years in J.R. Jehl, Jr., and N.K. Johnson (eds.), A century of avifaunal change in western North America. Studies in Avian Biology No. 15.
- Hutto, Richard L. 1995. USFS Northern Region Songbird Monitoring Program; Distribution and Habitat Relationships: USFS contract # R1-95-05, Second Report.
- Idaho Partners in Flight. 2000. Idaho Bird Conservation Plan, Version 1.0. January 2000.
- IPNF. 1995. Reserve Tree Guide. Idaho Panhandle National Forests. USDA Forest Service, Coeur d'Alene, ID. 14 p.
- IPNF. 1997. Integration of Forest Planning into Ecosystem Management; Toward a Forest Ecosystem Approach: An Assessment for the St. Joe Area. Ecosystem Paper #3. Idaho Panhandle National Forests, Coeur d'Alene, ID.
- IPNF. 2004. Idaho Panhandle National Forests, Forest Plan, Monitoring and Evaluation Report, 2004. USDA Forest Service, Coeur d'Alene, ID.
- Keinath, D.A. 2004. Fringed Myotis (*Myotis thysanodes*): A Technical Conservation Assessment. [Online].USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/fringedmyotis.pdf> [12/2/04]

## References

- Kennedy, P.L. (2003, January 2). Northern Goshawk (*Accipiter gentiles atricapillus*): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/northerngoshawk.pdf>
- Kingery, H.E., and C.K. Ghalambor. 2001. Pygmy Nuthatch (*Sitta pygmaea*). In *The Birds of North America*, No. 567 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Jones, Jeffrey L., 1991. Habitat Use of Fisher in Northcentral Idaho. Unpublished thesis, University of Idaho, Moscow, Idaho.
- Leege, T.A. 1984. Guideline for Evaluating and Managing Summer Elk Habitat in Northern Idaho. *Wildlife Bulletin* No. 11, Idaho Department of Fish and Game.
- Loeffler, C. (ed.). 1998. Conservation Plan and Agreement for the Management and Recovery of the Southern Rocky Mountain Population of the Boreal Toad (*Bufo boreas boreas*). Boreal Toad Recovery Team and Technical Advisory Group.
- Lieberg J.B. 1897. Present condition of the forested areas in northern Idaho outside the limits of the Priest River forest reserve and north of the Clearwater River. In: 19th annual report of the US Geologic Survey to the Secretary of the Interior. Washington D.C. pp. 373-386
- Lyon, L. Jack; Christensen, Alan G. 1992. A partial glossary of elk management terms. Gen. Tech. Rep. INT-288. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station.
- Mack, C.M., J. Holyan, and I. Babcock. 2005. Idaho Wolf Recovery Program: Restoration and Management of Gray Wolves in Central Idaho. Progress report 2004. Nez Perce Tribe, Department of Wildlife Management, Lapwai, ID. 50 pages
- MacCracken, James G; D. Goble; and J. O'Laughlin. 1994. Grizzly Bear Recovery in Idaho. Idaho Forest, Wildlife and Range Policy Analysis Group. Report No. 12.
- Maxell, B.A. 2000. Management of Montana's amphibians: a review of factors that may present a risk to population viability and accounts on the identification, distribution, taxonomy, habitat use, natural history, and the status and conservation of individual species. Report to USFS Region 1, Order Number 43-0343-0-0224, University of Montana, Wildlife Biology Program. Missoula, Montana. 161 pp.
- Montana Bald Eagle Working Group. 1991. Habitat Management Guide for Bald Eagles in Northwestern Montana. USDA. For. Serv. Northern Region. 29 pp.
- Moore, T.L. and G.P. Frederick. 1991. Distribution and Habitat of Flammulated Owls (*Otus flammeolus*) in West-Central Idaho. Conservation Data Center, Nongame and Endangered Wildlife Program, Bureau of Wildlife. Idaho Department of Fish and Game.
- Perkins, J.M. 1992. *Plecotus townsendii* Survey for the Nez Perce National Forest. Idaho Department of Fish and Game.
- Pierson, E.D., M.C. Wackenhut, J.S. Altenbach, P. Bradley, P. Call, D.L. Genter, C.E. Harris, B.L. Keller, B. Lengus, L. Lewis, B. Luce, K.W. Navo, J.M. Perkins, S. Smith, and L. Welch.

1999. Species conservation assessment and strategy for Townsend's big-eared bat (*Corynorhinus townsendii townsendii* and *Corynorhinus townsendii pallescens*). Idaho Conservation Effort, Idaho Department of Fish and Game, Boise, Idaho.
- Quigley, T.M., R.W. Haynes and R.T. Graham., tech. eds. 1996. Interegated scientific assessment for ecosystem management in the interior Columbia Basin and portions of the Klamath and Great Basins. Gen. tech. Rep. PNW-GTR-082 Portland, OR: USDA Forest Service, Pacific Northwest Research Station. 303 p.
- Reichel, Jim, and Dennis Flath. 1995. Identification of Montana's Amphibians and Reptiles.
- Reichel, J. D. and S. G. Beckstrom. 1993. Northern Bog Lemming Survey 1992. Report to the Kootenai National Forest. Montana Natural Heritage Program. Helena, MT. 44p.
- Reynolds, R.T.; Graham, R.T.; Reiser, M. H.; and others. 1992. Management Recommendations for the Northern Goshawk in the Southwestern United States. Gen. Tech. Rep. RM-217. Ft. Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 90p.
- Ruediger, Bill, Jim Claar, Steve Gniadek, Bryon Holt, Lyle Lewis, Steve Mighton, Bob Naney, Gary Patton, Tony Rinaldi, Joel Trick, Anne Vandehey, Fred Wahl, Nancy Warren, Dick Wenger, and Al Williamson. 2000. Canada Lynx Conservation Assessment and Strategy. 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 pp.
- Ruggiero, L.F., et. al. tech. eds. 1994. The Scientific Basis for Conserving Forest Carnivores: American Marten, Fisher, Lynx, and Wolverine in the Western United States. Gen. Tech. Rep. RM-254. Ft. Collins CO: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station. 184 p.
- Saab, Victoria A.; Rich, Terrel D. 1997. Large-scale conservation assessment for Neotropical migratory land birds in the interior Columbia River basin. Gen. Tech. Rep. PNW-GTR-399. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 56.p. (Quigley, Thomas M., ed. Interior Columbia Basin Ecosystem Management Project: scientific assessment).
- Samson, F. B. 2005 (amended March 6, 2006). A Conservation Assessment of the Northern Goshawk, Black-backed Woodpecker, Flammulated Owl, and Pileated Woodpecker in the Northern Region, USDA Forest Service. Unpublished report on file, Northern Region, Missoula, Montana, USA.
- Tucker, P.A., D.L. Davis, and R.R. Ream. 1990. Wolves: Identification, Documentation, Population Monitoring and Conservation Considerations. Northern Rockies Natural Resource Center of the National Wildlife Federation, Missoula, MT.
- USDA Forest Service Northern Region. 1990. Old-Growth Habitat and Associated Wildlife Species in the Northern Rocky Mountains, Northern Region Wildlife Habitat Relationships Program.

## References

- USDA Forest Service. 1992b. Letter and Enclosure dated May 15, 1992: interpretation of FSM 2670.
- USDA Forest Service Biophysical Classification. 1996. Habitat groups and descriptions. U.S. Department of Agriculture, Forest Service, Northern Region. Missoula, MT. 17 p.
- USDA Forest Service. 2000. Northern Region Snag Management Protocol.
- U.S. Forest Service 1987. Forest Plan Idaho Panhandle National Forests. USDA Forest Service, Coeur d'Alene, ID.
- USDI, Bureau of Reclamation. 1994. Montana Bald Eagle Management Plan. Billings MT. 51 pp.
- USDI, Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Establishment of a Nonessential Experimental Population of Gray Wolves in Central Idaho and Southwestern Montana. November 22, 1994. Federal Register Vol. 59, No. 224: 60266-60281.
- U.S. Fish and Wildlife Service 1987. Northern Rocky Mountain Wolf Recovery Plan. U.S. Fish and Wildlife Service, Denver, Colorado
- U.S. Fish and Wildlife Service 1993. Letter containing guidelines for species lists.
- U.S. Fish and Wildlife Service. 1993. Recovery Plan for Woodland Caribou in the Selkirk Mountains. Portland, Oregon. 71 pp.
- Wiggins, D. A. (2004, January 26). Black Swift (*Cypseloides niger*): A Technical Conservation Assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/blackswift.pdf> [3/6/06].
- Wilson, Albert G. Jr., 1992. A Survey of the St. Maries and Sandpoint Ranger Districts, Panhandle National Forests, for the Coeur d'Alene salamander (*Plethodon idahoensis*). Idaho Department of Fish and Game.
- 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. Eames. 2000. Source Habitats for Terrestrial Vertebrates in the Interior Columbia Basin: Broad-scale Trends and Management Implications. Volume 2-Group level results. General Technical Report PNW-GTR-485. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Grandmother Mountain Listed Wildlife Species BE, St. Joe Ranger District, 5/9/06**
- Frederick, G.P. 1991. Effects of Forest Roads on Grizzly Bears, Elk, and Gray Wolves: A Literature Review. USDA Forest Service, Kootenai National Forest, Libby MT.
- Hansen, J. 1986. Wolves of Northern Idaho and Northeastern Washington. MT Coop. Wildli. Res. Unit, U.S. Fish Wildl. Ser. 88pp.

- Leonard, G. M. 1992. Memo dated May 15, 1992 from the Washington Office to Regional Foresters on Forest Health and Biological Evaluations, Washington Office Interpretation of FSM 2670. USDA Forest Service, Washington D.C.
- Leege, T.A. 1984. Guideline for Evaluating and Managing Summer Elk Habitat in Northern Idaho. Wildlife Bulletin No. 11, Idaho Department of Fish and Game.
- Lyon, L. Jack; Christensen, Alan G. 1992. A partial glossary of elk management terms. Gen. Tech. Rep. INT-288. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station.
- MacCracken, James G; D. Goble; and J. O’Laughlin. 1994. Grizzly Bear Recovery in Idaho. Idaho Forest, Wildlife and Range Policy Analysis Group. Report No. 12.
- Mack, C.M., J. Hoylan, and I. Babcock. 2005. Idaho Wolf Recovery Program: Restoration and Management of Gray Wolves in Central Idaho. Progress report 2004. Nez Perce Tribe, Department of Wildlife Management, Lapwai, ID. 50 pages
- Montana Bald Eagle Working Group. 1991. Habitat Management Guide for Bald Eagles in Northwestern Montana. USDA. For. Serv. Northern Region. 29 pp.
- Ruediger, Bill, Jim Claar, Steve Gniadek, Bryon Holt, Lyle Lewis, Steve Mighton, Bob Naney, Gary Patton, Tony Rinaldi, Joel Trick, Anne Vandehey, Fred Wahl, Nancy Warren, Dick Wenger, and Al Williamson. 2000. Canada Lynx Conservation Assessment and Strategy. 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 pp.
- Ruggiero, L.F., et. al. tech. eds. 1994. The Scientific Basis for Conserving Forest Carnivores: American Marten, Fisher, Lynx, and Wolverine in the Western United States. Gen. Tech. Rep. RM-254. Ft. Collins CO: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station. 184 p.
- Tucker, P.A., D.L. Davis, and R.R. Ream. 1990. Wolves: Identification, Documentation, Population Monitoring and Conservation Considerations. Northern Rockies Natural Resource Center of the National Wildlife Federation, Missoula, MT.
- USDA, Forest Service. 1987. Forest Plan: Idaho Panhandle National Forests.
- USDI, Bureau of Reclamation. 1994. Montana Bald Eagle Management Plan. Billings MT. 51 pp.
- USDI, Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Establishment of a Nonessential Experimental Population of Gray Wolves in Central Idaho and Southwestern Montana. November 22, 1994. Federal Register Vol. 59, No. 224: 60266-60281.
- USDI, Fish and Wildlife Service. 2000a. Grizzly Bear Recovery in the Bitterroot Ecosystem, Summary of the Final Environmental Impact Statement.

## References

USDI, Fish and Wildlife Service. 2000b. Record of Decision and Statement of Findings for the EIS on Grizzly Bear Recovery in the Bitterroot Ecosystem AND Final Rule on Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana.

U.S. Fish and Wildlife Service 1987. Northern Rocky Mountain Wolf Recovery Plan. U.S. Fish and Wildlife Service, Denver, Colorado

U.S. Fish and Wildlife Service 1993. Letter containing guidelines for species lists.

U.S. Fish and Wildlife Service. 1993. Recovery Plan for Woodland Caribou in the Selkirk Mountains. Portland, Oregon. 71 pp.

U.S. Fish and Wildlife Service 1997. Grizzly Bear Recovery in the Bitterroot Ecosystem; DEIS. U.S. Fish and Wildlife Service, Missoula, Montana

### **Social and Economic Environment**

Grandmother Mountain Socio-Economic Analysis, Tom Ball, 11/3/06

Grandmother Mountain Land Exchange Right-of-Way Report, Tom Ball, 10/17/06

Acres of Federal Lands Conveyed and non-Federal Lands Acquired 1981-2006, Tom Ball, 10/17/06

Grandmother Mountain Land Exchange Forest Land Surveyor Report, 10/31/06

# Acronyms

<b>ATI</b>	Agreement to Initiate
<b>BE</b>	Biological Evaluation
<b>BF</b>	Board foot
<b>BLM</b>	Bureau of Land Management
<b>BMP</b>	Best Management Practices
<b>CEQ</b>	Council on Environmental Quality
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CWA</b>	Clean Water Act
<b>DBH</b>	Diameter breast height
<b>EA</b>	Environmental Assessment
<b>DEQ</b>	Department of Environmental Quality
<b>EIS</b>	Environmental Impact Statement
<b>EPA</b>	Environmental Protection Agency
<b>ESA</b>	Endangered Species Act
<b>FP</b>	Forest Plan
<b>FS</b>	Forest Service
<b>FSH</b>	Forest Service Handbook
<b>FSM</b>	Forest Service Manual
<b>GIS</b>	Geographic Information System
<b>IDFG</b>	Idaho Department Fish and Game
<b>IDT</b>	Interdisciplinary Team
<b>INFS</b>	Inland Native Fish Strategy
<b>IPNF</b>	Idaho Panhandle National Forests
<b>IRA</b>	Inventoried roadless area
<b>LAU</b>	Lynx Analysis Units
<b>LCAS</b>	Lynx Conservation Assessment and Strategy
<b>LRMP</b>	Land and Resource Management Plans
<b>LWCF</b>	Land and Water Conservation Funds
<b>MA</b>	Management Area
<b>MBF</b>	Thousand Board Feet
<b>MIS</b>	Management Indicator Species
<b>NCHP</b>	Advisory Council on Historic Preservation
<b>NEPA</b>	National Environmental Policy Act
<b>NF</b>	National Forest
<b>NFS</b>	National Forest System
<b>NHPA</b>	National Historic Preservation Act
<b>NRHP</b>	National Register of Historic Places
<b>OHV</b>	Off-highway vehicle
<b>ORV</b>	Outstandingly remarkable value
<b>PILT</b>	Payments in-lieu of taxes
<b>PR</b>	Project Record
<b>RHCA</b>	Riparian Habitat Conservation Areas
<b>RMA</b>	Riparian Management Areas
<b>RMO</b>	Riparian Management Objectives
<b>ROS</b>	Recreation Opportunity Spectrum
<b>SHPO</b>	State Historic Preservation Office
<b>TMDL</b>	Total Maximum Daily Load
<b>USA</b>	United States of America

Acronyms

<b>USDA</b>	U.S. Department of Agriculture
<b>USDI</b>	U.S. Department of Interior
<b>USFS</b>	U.S. Forest Service
<b>USFWS</b>	U.S. Fish and Wildlife Service

# Glossary

<b>Acquired Land</b>	Unreserved National Forest System (NFS) land; NFS land that has been received in exchange for unreserved land or land that has been purchased or donated. Acquired lands have Weeks Act status under the Act of September 2, 1958, and therefore are not available for mineral entry.
<b>Affected Environment</b>	The biological, social, economic, and physical aspects of the environment that would or may be changed by proposed actions.
<b>Aliquot Parts</b>	Legal subdivisions, except fractional lots, or further subdivision of any smaller legal subdivision, except fractional lots, by division into halves or fourths ad infinitum.
<b>Alternative</b>	In an EA, one of a number of possible options for responding to the purpose and need for action and for addressing identified significant issues. One of several policies, plans, or projects proposed for decision making.
<b>Analysis Area</b>	A delineated area of land subject to analysis of (1) responses to proposed management practices in the production, enhancement, or maintenance of forest and rangeland outputs and environmental quality objectives, and (2) economic and social impacts.
<b>Appraisal or Appraisal Report</b>	A written statement independently and impartially prepared by a qualified appraiser setting forth an unbiased opinion as to the market value of an adequately described property as of a specific date(s), supported by the presentation and analysis of relevant market information.
<b>Appurtenance</b>	Anything incidental or belonging to the land that is considered part of the real property (e.g. an improvement or easement). See real property.
<b>Bedrock</b>	Any solid rock exposed or overlain by unconsolidated material.
<b>Best Management Practices (BMP's)</b>	Practices designed to prevent or reduce water pollution, including sedimentation. Practices used for the protection of water quality.
<b>Big Game</b>	Those species of large mammals normally managed as a sport hunting resource.
<b>Big Game Winter Range</b>	The area available to and used by big game through the winter season.

<b>Biological Diversity or Biodiversity</b>	The variety of life forms and processes, including the complete natural complex of species, communities, genes, and ecological functions.
<b>Board Foot (bf)</b>	A unit of measurement represented by a board one foot square and one inch thick.
<b>Buffer Zone</b>	An administratively defined area established along a stream, lake, wetland, or erosion hazard to provide protection for aquatic resources during land use activities.
<b>Cadastral Survey</b>	A survey that creates, marks, defines, retraces, or reestablishes the boundaries and subdivisions of the public domain lands of the United States.
<b>Ceded Lands</b>	Lands that tribes ceded to the United States by treaty while reserving specific land and resource rights, annuities, and other promises in the treaties.
<b>Chain of Title</b>	A history of conveyances and encumbrances affecting a title from the time the original patent was granted or as far back as records are available.
<b>Clean Water Act of 1987</b>	Amends the Federal Water Pollution Control Act of July 9, 1956. The purpose of the 1956 act is to enhance the quality and value of the water resource, and to establish a national policy for the prevention, control, and abatement of water pollution. Among the important provisions are authority for the State and Federal Governments to establish water quality standards; provision for water pollution grants for research and development, control programs, construction of treatment works, and comprehensive programs for water pollution control; enforcement measures against pollution from Federal facilities; and provision for the control of pollution by oil, hazardous substances, or sewage from vessels. The basic act (Public Law 84-660), is amended by the Federal Water Pollution Control Act/Amendments of 1961 (Public Law 87-88); Water Quality Act of 1965 (Public Law 89-234); Clean Water Restoration Act of 1966 (Public Law 89-753Z); Title 1, Water Quality Improvement Act of 1970 (Public Law 91-224); Title 1, National Environmental Policy Act of 1969 (Public Law 91-224); Federal Water Pollution Act of 1969 (Public Law 91-224); Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500); Clean Water Act of 1977 (Public Law 95-217); Clean Water Act of 1987.

<b>Closed Road</b>	A road on which motorized traffic has been excluded by regulation, barricade, blockage or by obscuring the entrance. A closed road is still an operating facility on which motorized traffic has been removed (year-long or seasonal) and remains on the Forest Road Transportation System.
<b>Closure</b>	An administrative order restricting either location, timing, or type of use in a specific area.
<b>Code of Federal Regulations (CFR)</b>	Government publication listing all Federal regulations in existence.
<b>Community Stability</b>	The capability of a community to absorb and cope with change without major hardship to institutions or groups within the community.
<b>Congressionally Classified and Designated Areas</b>	Areas established by Congressional legislation, such as National Wilderness, National Wild and Scenic Rivers, and National Recreation Areas.
<b>Consultation</b>	A formal interaction between the U.S. Fish and Wildlife Service and another Federal agency when it is determined that the agency's action may affect a species that has been listed as threatened or endangered or its critical habitat.
<b>Convey</b>	The act of deeding or transferring title to another.
<b>Cost Shared Road</b>	Road on which construction and maintenance costs are shared and easements are exchanged.
<b>Cost Share and FRTA Programs</b>	National agreements under which large private landowners and the government agree to share road costs and exchange easements.
<b>Council on Environmental Quality (CEQ)</b>	Government agency with oversight on the implementation of the National Environmental Policy Act (NEPA).
<b>Cover</b>	(1) Trees, shrubs, rocks, or other landscape features that allow an animal to partly or fully conceal itself. (2) The area of ground covered by plants of one or more species.
<b>Critical Habitat</b>	Specific areas within the geographical area occupied by the species on which are found those physical and biological features (1) essential to the conservation of the species, and (2) which may require special management considerations or protection. Critical habitat shall not include the entire geographic area which can be occupied by the Threatened and Endangered Species.

<b>Cultural Resources</b>	Fragile and nonrenewable elements of the environment including archaeological remains (evidence of prehistoric or historic human activities) and sociocultural values traditionally held by ethnic groups (including sacred places, traditionally utilized raw materials, etc.).
<b>Cumulative Effects</b>	Impacts on the environmental that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. (40CFR 1508.7)
<b>Deciding Officer</b>	The Forest Service employee who has the authority to select and/or carry out a specific planning action.
<b>Density (Stand)</b>	The number of trees growing in a given area usually expressed in terms of trees per acre.
<b>Developed Recreation</b>	Recreation that occurs where improvements enhance recreation opportunities and accommodate intensive recreation activities in a defined area.
<b>Diameter at Breast Height (DBH)</b>	The diameter of a tree 4.5 feet above the ground on the uphill side of the tree.
<b>Direct Effects (land exchange)</b>	Impacts that are caused by an action and occur at the same time and place.
<b>Dispersed Recreation</b>	That portion of outdoor recreation use which occurs outside developed sites in the unroaded and roaded forest environment: this includes activities such as hunting, fishing, berry picking, off-road vehicle use, hiking, horseback riding, picnicking, camping, viewing scenery, snowmobiling, and many others.
<b>District Ranger</b>	The official responsible for administering the National Forest System Lands on a Ranger District.
<b>Ditches and/or Canals</b>	Used to indicate a reservation to the United States of a right or an easement for the construction and maintenance of ditches or canals, as stated in a particular patent.
<b>Diversity</b>	A measure of the variety of species and habitats in an area that takes into account the relative abundance of each species or habitat.
<b>Dominant Estate or Tenement</b>	The land or person that benefits from easements on another property.

<b>Environmental Assessment (EA)</b>	The statement of environmental effects required for Federal actions under section 102 of the National Environmental Policy Act (NEPA) and released to the public and other agencies for comment and review.
<b>Easement</b>	A right given the holder to use real estate owned by another for a specified purpose. The land having the right of use as an appurtenance (e.g. road, powerline, oil and gas line, etc.) is known as the dominant estate, and the land subject to the easement is known as the servient estate.
<b>Ecology</b>	The study of interrelationships of organisms with their environment.
<b>Economics</b>	The study of how limited resources, goods, and services are allocated among competing uses.
<b>Ecosystem</b>	A complete, interacting system of living organisms and the land and water that make up their environment; the home places of all living things, including humans.
<b>Effects</b>	Environmental changes resulting from a proposed action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects, impacts, and consequences, as used in this environmental statement are synonymous. Effects may be direct, indirect, or cumulative.
<b>Encroachment</b>	An obstruction that physically intrudes upon, overlaps, or trespasses upon the property of another.
<b>Encumbrance</b>	A claim, lien, charge, or liability attached to and binding real property.
<b>Endangered Species</b>	A plant or animal species listed under the Endangered Species Act that is in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register.

<b>Endangered Species Act (ESA)</b>	An act passed by Congress in 1973, that directed all Federal departments and agencies to seek to conserve Endangered and Threatened species and that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any Threatened or Endangered species or result in the destruction or adverse modification of their critical habitat. The act also mandates conferencing with the appropriate agencies.
<b>Environment</b>	The combination of external physical, biological, social, and cultural conditions affecting the growth and development of organisms and the nature of an individual or community.
<b>Environmental Analysis</b>	An analysis of alternative actions and their predictable short and long-term environmental effects which include physical, biological, economic, social, and environmental design factors and their interactions.
<b>Environmental Impact Statement (EIS)</b>	A document prepared by a Federal agency on the environmental effects of its proposals for major actions used as a tool for decision making. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal. A Draft EIS is released to the public and other agencies for review and comment. A Final EIS is issued after consideration of public comments. A Record of Decision (ROD) is based on the information and analysis in the Final EIS. (40 CFR 1508.11)
<b>Erosion</b>	The group of processes whereby earthy or rocky material is worn away by natural sources such as wind, water or ice and removed from a part of the earth's surface.
<b>Exchange</b>	Lands or interests therein may be exchanged between the Forest Service and private landowners, states, or local governments. Exchanges can include but are not limited to land-for-land, land-for-timber, or partial interest exchanges. Exchanges must be of equal value on both sides or be equalized with cash payment not to exceed 25 percent of the total value of the lands or interests transferred out of Federal acquisitions (except in Alaska).
<b>Federal Register</b>	Daily government publication reporting all activities in the Federal government.
<b>Fee Simple Title or Estate</b>	Absolute estate where the owner is entitled to the entire property. Also called "fee title or fee"

<b>Final Environmental Impact Statement (FEIS)</b>	The final statement of environmental effects required for major Federal actions under section 102 of the National Environmental Policy Act (NEPA) and released to the public and other agencies for comment and review.
<b>Fish Bearing Stream</b>	Stream segments that support fish during all or a portion of a typical year.
<b>Floodplain</b>	A relatively flat area or lowlands adjoining a body of standing or flowing water that has been or might be covered by floodwater. The term “floodplain” shall mean the lowland and relatively flat areas, adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year (Executive Order 11988).
<b>Forage</b>	All browse and nonwoody plants that are available to livestock or wildlife and used for grazing or harvested for feed.
<b>Forest Plan (Land and Resource Management Plan)</b>	A document that guides natural resource management and establishes standards and guidelines for a National Forest; required by the National Forest Management Act.
<b>Forest Service Handbook (FSH)</b>	For Forest Service use, directives that provide detailed instructions on how to proceed with a specialized phase of a program or activity.
<b>Forest Service Manual (FSM)</b>	A system of manuals which provides direction for Forest Service activities.
<b>Forest Supervisor</b>	The official responsible for administering National Forest System Lands in a Forest Service administrative unit, which may consist of one or more National Forests or all the Forests within a State.
<b>Forest System Road</b>	A road wholly or partly within or adjacent to and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and developments of its resources.
<b>Fragmentation (Habitat)</b>	The breakup of a large land area (such as a forest) into smaller patches isolated by areas converted to a different land type. The opposite of connectivity.
<b>Fuels</b>	Includes living plants; dead, woody vegetative materials; and other vegetative materials which are capable of burning.

<b>Fuels Management</b>	Manipulation or reduction of fuels to meet Forest protection and management objectives while preserving and enhancing environmental quality.
<b>Fuel Treatment</b>	The rearrangement or disposal of natural or activity fuels (generated by management activity, such as slash left from logging) to reduce fire hazard or meet other management objectives.
<b>Game Species</b>	Any species of wildlife or fish for which seasons and bag limits have been prescribed, and which are normally harvested by hunters, trappers, and fisherman under State or Federal laws, codes, and regulations.
<b>Geographic Information System (GIS)</b>	An information processing technology to input, store, manipulate, analyze, and display data; a system of computer maps with corresponding site-specific information that can be combined electronically to provide reports and maps.
<b>Goal</b>	A concise statement that describes a desired condition to be achieved. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.
<b>Habitat</b>	A place that provides seasonal or year-round food, water, shelter, and other environmental conditions for an organism, community, or population of plants or animals.
<b>HAZMAT</b>	Hazardous material. Regulations implementing Section 120(h) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of October 16, 1990, which requires Federal agencies to do a file search on all property, disposed of prior to transfer of title.
<b>Indicator Species</b>	A species that is presumed to be sensitive to habitat changes; population changes of indicator species are believed to best indicate the effects of land management activities.
<b>Indirect Effects</b>	Impacts on the environment that are caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable.
<b>INFISH</b>	Interim Inland Native Fish Strategy for the Intermountain, Northern, and Pacific Northwest Regions (Forest Service). A strategy intended to provide interim direction to protect habitat and populations of resident fish outside of anadromous fish habitat in eastern Oregon, eastern Washington, western Montana, and portions of Nevada.

<b>Interdisciplinary Team (IDT)</b>	A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. Through inter-action, participants bring different points of view to bear on the problem.
<b>Interest</b>	A right, claim, title, or legal share in something.
<b>Intermittent Stream</b>	A stream which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow.
<b>Irretrievable</b>	A category of impacts that applies to losses of production or commitment of renewable resources. For example, while a linear piece of land is being used as a road, some or all of the timber production there is “irretrievably lost”. If the road was rehabilitated after use and soil compaction was reduced, timber production could resume; therefore, the loss of timber production during the time the road was in use is irretrievable but not irreversible, because it is possible for timber production to resume if the piece of land is no longer needed as a road.
<b>Irreversible</b>	A category of impacts that applies to non-renewable resources, such as minerals and archaeological sites. Losses of these resources cannot be reversed. Irreversible effects can also refer to effects of actions on resources that can be renewed only after a very long period of time, such as the loss of soil productivity. Irreversible also includes loss of future options.
<b>Issue</b>	A matter of controversy, dispute, or general concern over resource management activities or land uses. To be considered a “significant” EIS issue, it must be well defined, relevant to the proposed action, and within the ability of the agency to address through alternative management strategies.
<b>Land Exchange Agreement</b>	A contract that identifies the estates to be exchanged, all reservations and outstanding rights, any cash equalization, and all other terms and conditions that each party is obligated to perform.
<b>Landform</b>	An area that is defined by its particular combination of bedrock and soils, erosion processes and climatic influences.
<b>Landline Location</b>	The legal identification, accurate location, and description of property boundaries.

<b>Landownership Adjustment</b>	The process of changing ownership or jurisdiction of real property (lands and interests in land).
<b>Landownership Status</b>	The system of assembling, recording, and making landownership and related information available to field personnel. Sometimes simply called land statue, this includes ownership records of title to lands, withdrawals, rights, and/or privileges that affect or influence the use and management of National Forest System lands.
<b>Large Woody Debris (LWD)</b>	Any large piece of relatively stable woody material having a diameter of at least 10 centimeters and a length greater than 1 meter that intrudes into a stream channel.
<b>Listed Species</b>	A wildlife or plant species listed under the authorization of the Endangered Species Act as Threatened or Endangered.
<b>Lot</b>	A subdivision of a section that is not described as an aliquot part of the section, but which is designated by number, e.g. Lot 2. A lot may be regular or irregular in shape, and its acreage varies from that of regular subdivisions.
<b>Management Area (MA)</b>	An area with similar management objectives and a common management prescription.
<b>Management Direction</b>	A statement of goals and objectives, management prescriptions, and associated standards and guidelines for attaining them.
<b>Management Indicator Species (MIS)</b>	Species identified in a planning process that are used to monitor the effects of planned management activities on viable populations of wildlife and fish, including those that are socially or economically important.
<b>Mineral Entry</b>	The filling of a mining claim on Federal land to obtain the right to mine any locatable minerals it may contain. Also, the filing for a millsite on Federal land for the purpose of processing off-site locatable minerals
<b>Minerals, Common Variety</b>	Deposits of sand, stone, gravel, etc. of widespread occurrence and not having distinct or special value. These deposits are used generally for construction and decorative purposes and are disposed of under the Minerals Act of 1947.
<b>Minerals, Leasable</b>	Those minerals which are disposed of under authority of the various mineral leasing acts. Minerals include coal, oil, gas, phosphate, sodium, potassium, oil shale, sulfur (in Louisiana and New Mexico), and geothermal steam.

<b>Minerals, Locatable</b>	Those minerals which are disposed of under the general mining laws. Included are minerals such as gold, silver, lead, zinc, and copper, which are not classed as leasable or salable.
<b>Mineral Rights</b>	An interest in the minerals in the land, with or without ownership of the surface. These rights include minerals such as gold, silver, copper, iron, etc., as well as oil, gas, and geothermal (steam). Mineral rights can be either leased or sold.
<b>Mitigation</b>	Measures designed to counteract environmental impacts or to make impacts less severe (50 CFR 1508.20).
<b>Multiple Use Management</b>	The management of public lands and their various resource values so they are used in a combination that best meets the present and future needs of the public.
<b>National Environmental Policy Act (NEPA)</b>	An act, passed by Congress in 1969, that declared a national policy to encourage productive harmony between humans and their environment to promote efforts that will prevent or eliminate damage to the environment and the biosphere and stimulate the health and welfare of humans. Also the act was intended to enrich the understanding of the ecological systems and natural resources important to the nation and to establish a Council on Environmental Quality. This act requires the preparation of environmental impact statements for Federal actions that are determined to be of major significance.
<b>National Forest</b>	Lands administered by the USDA Forest Service.
<b>National Forest Management Act (NFMA)</b>	An act passed by Congress in 1976, that amends the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Forest plans, Regional guides, and regulations to guide that development.
<b>National Forest System (NFS) Land</b>	Federal lands that have been designated by Executive order or statute as National Forest, National Grasslands, or Purchase units, and other lands under the administration of the Forest Service, including Experimental Areas and Bankhead-Jones Title III lands.
<b>National Register of Historic Places</b>	A listing maintained by the National Park Service of areas which have been designated as being of historical significance. The Register includes places of local and State significance as well as those of value to the Nation as a whole.
<b>National Wilderness Preservation System</b>	All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

<b>Native Fish</b>	Fish species that are indigenous to a regions waters, as opposed to introduced or exotic fish.
<b>No Action Alternative</b>	The most likely condition expected to exist in the future if current management direction would continue unchanged.
<b>Nongame</b>	Species of fish or animal which are not managed as a sport hunting or fishing resource; all mammals, birds, reptiles, amphibians and fish, not classified as game species by the Oregon Department of Fish and Wildlife.
<b>Non-fish Bearing Perennial Stream</b>	Stream segments that contain running water throughout a typical year, but do not support fish during any portion of a typical year.
<b>Noxious Weed</b>	Any exotic plant species established or that may be introduced in the area which may render land unfit for agriculture, forestry, livestock, wildlife or other beneficial uses.
<b>Objective</b>	A concise, time-specific statement of measurable planned results that respond to preestablished goals. An objective forms the basis for further planning, to define the precise steps to be taken and the resources to be used in achieving identified goals.
<b>Off-Highway Vehicle (OHV)</b>	Any vehicle capable of being operated off an established road or trail, e.g. motor bike, four-wheel drive, or snowmobile.
<b>Old Growth Allocation</b>	Management area or allocation in the Forest Plans intended to provide habitat for old growth associated species or to provide aesthetic values for the enjoyment of human visitors.
<b>Old growth Dependant Species</b>	The group of wildlife species that is associated with old growth forest plant communities.
<b>Old growth Indicator Species</b>	Those species of wildlife that are dependent on or that find optimum habitat in old growth stands for at least part of their life cycle. It is assumed that if the requirements of these species are met, the requirements of other old growth associated species will be satisfied.
<b>Open Road</b>	A road, or segment thereof, that is open to use.
<b>Open Road Density</b>	The miles of open road in a specific area of land. Commonly miles per section.
<b>Outstandingly Remarkable Value (ORV)</b>	Unusual and/or unique qualities which are associated with a stream which determine eligibility for potential designation as a wild and scenic river. These include features such as free flowing water, scenic, geologic, fisheries or wildlife values.

<b>Outstanding Rights</b>	A right or interest in property owned by a person other than the present landowner.
<b>Overstory</b>	The upper canopy layer.
<b>Parcel</b>	All, or a portion of a section or several connected sections or portions of connected sections considered for exchange.
<b>Patent</b>	The instrument by which the government grants public lands, public domain, or interests to an individual.
<b>Patented Mining Claim</b>	A patent is a document which conveys title to land. When patented, a mining claim becomes private property and land over which the United States has no property rights, except as may be reserved in the patent. After a mining claim is patented, the owner does not have to comply with requirements of the General Mining Law or implementing regulations.
<b>Payment in Lieu of Taxes (PILT)</b>	Payments to local or State governments based on ownership of Federal land and not directly dependent on production of outputs or receipt sharing. Specifically, they include payments made under the Payments in Lieu Act of 1976 by U.S. Department of the Interior.
<b>Perennial Stream</b>	A stream that flows continuously throughout most of the year.
<b>Preferred Alternative</b>	The alternative identified in a draft environmental impact statement which has been initially selected by the agency as the most acceptable resolution to the problems identified in the purpose and need.
<b>Prescribed Fire</b>	A fire burning under specified conditions which will accomplish planned objectives in strict compliance with an approved plan and the conditions under which the burning takes place, and the expected results are specific, predictable, and measurable.
<b>Prime or Unique Farmland</b>	<i>Prime farmland</i> is land best suited for production of food, feed, forage, fiber, and oilseed crops; its soil properties, growing season, and moisture supply can generally support soils capable of producing sustained high yields economically. <i>Unique farmland</i> is land other than prime farmland that is used for the production of specific high value food and fiber crops, such as tree nuts, fruits, and vegetables. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods.

<b>Property Corner</b>	A geographic point on the surface of the earth that is on, is part of, and controls a property line.
<b>Proposed Action</b>	In terms of National Environmental Policy Act, the project, activity, or action that a Federal agency intends to undertake or implement and which is the subject of an environmental analysis.
<b>Public Domain Lands</b>	The term applies to any and all areas of land ceded to the Federal government by the colonial states, and to lands acquired by the Federal government later by purchase from or treaty with the native Indians, or with the foreign powers that have previously exercised their sovereignty. These areas are subject to administration, survey, and transfer of title under the Public Land Survey System laws of the United States. The Public Land Survey System laws are not applicable within the colonial states or any of the Atlantic Coast states except Florida, nor within the states of West Virginia, Kentucky, Tennessee, and Texas.
<b>Public Involvement</b>	A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) informing the public about Forest Service activities, plans, and decisions, and (2) encouraging public understanding about and participation in the planning processes which lead to final decision making.
<b>Ranger District</b>	An administrative subdivision of the Forest supervised by a District Ranger.
<b>Real Property</b>	Land and generally whatever is erected, growing or affixed to the land.
<b>Record of Decision (ROD)</b>	A document based on information disclosed in a final environmental impact statement, that identifies the alternative chosen, mitigation and monitoring measures to be implemented, and other information relative to the decision (40 CFR) 1505.2).
<b>Recreation Opportunities</b>	The combination of recreation settings, activities, and experiences provided by the Forest.
<b>Regional Forester</b>	The official responsible for administering a single Region of the Forest Service.
<b>Regulations</b>	Refers to the CFR for implementing the National Forest Management Act, 36 CFR, Part 219.

<b>Reserved Land</b>	Lands reserved from the public domain for National Forest purposes.
<b>Reservation</b>	A clause in a deed or other instrument of conveyance that reserves some right, interest, or profit in the transferred estate.
<b>Resident Fish</b>	Species of fish which spend their entire life cycle within a lake or river system. These may be native, or introduced species (compare anadromous fish).
<b>Responsible Officials</b>	The Forest Service employee who has the authority to select and/or carry out a specific planning action.
<b>Right-of-Way</b>	A permit or easement that authorizes the use of public lands for specified purposes, such as pipelines, roads, telephone lines, electric lines, and reservoirs.
<b>Riparian Area</b>	An area with distinctive soil and vegetation between a stream or other body of water and the adjacent upland; includes wetlands and those portions of floodplains and valley bottoms that support riparian vegetation.
<b>Riparian Habitat Conservation Areas (RHCA)s</b>	Portions of watersheds where riparian dependent resources receive primary emphasis and management activities are subject to specific standards and guidelines. RHCA's include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris and nutrient delivery systems.
<b>Roadless Area</b>	A National Forest area which (1) is larger than 5,000 acres or, if smaller than 5,000 acres, contiguous to a designated wilderness or primitive area; (2) contains no roads; and (3) has been inventoried by the Forest Service for possible inclusion in the Wilderness Preservation System.
<b>Scenic Area</b>	An area which has been designated by the Forest Service as containing outstanding natural beauty that requires special management to preserve this beauty.

<b>Scoping process</b>	The early stages of preparation of an environmental assessment or environmental impact statement use to solicit public opinion, receive comments and suggestions, and determine the issues to be considered in the development and analysis of a range of alternatives. Scoping may involve public meetings, telephone conversations, mailings, letters, and other contacts. Identifying the significant environmental issues deserving of study and de-emphasizing insignificant issues, narrowing the scope of the environmental impact statement accordingly (CEQ regulations, 40 CFR 1501.7).
<b>Sediment</b>	Solid material, both mineral and organic, that is in suspension, being transported, or has been moved from its site of origin by air, water, gravity, or ice.
<b>Sensitive Species</b>	Those species which (1) have appeared in the Federal Register as proposals for classification and are under consideration for official listing as Endangered or Threatened Species: (2) are on an official State list: or (3) are recognized by the Regional Forester to need special management in order to prevent the need for their placement on Federal or State lists.
<b>Seral Stage</b>	A stage in the progression of an ecosystem from initial development to maturity; an age, structure, and development classification for a biological community.
<b>Site Productivity</b>	Production capability of specific areas of land.
<b>Small Game</b>	Birds and small mammals normally hunted or trapped.
<b>Snag</b>	A standing dead tree usually greater than 6 feet in height and 4 inches in diameter at breast height.
<b>Special Status Species</b>	Refers to Federally listed Threatened or Endangered species, Federal candidate species, species recognized as requiring special protection by state agencies and species managed as sensitive species by the Forest Service.
<b>Special Use Permit</b>	A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.
<b>Species</b>	A population or series of populations of organisms that can interbreed and reproduce freely with each other but not with members of other species.
<b>Stand</b>	A group of trees in a specific area that are sufficiently alike in composition, age, arrangement, and condition to be distinguishable from the forest in adjoining areas.

<b>Standards and Guidelines</b>	An indication or outline of policy or conduct dealing with the basic management of the forest. Forest wide management standards and guidelines apply to all areas of the forest regardless of the other management prescriptions applied.
<b>Stream Categories</b>	A classification system which groups streams or water bodies into four types: Category 1: Fish-bearing streams; Category 2: Permanently flowing non-fish bearing streams; Category 3: Ponds, lakes, reservoirs, and wetlands greater than 1 acres and; Category 4: Seasonally flowing or intermittent streams, wetlands less than 1 acre, landslides, and landslide-prone areas.
<b>Stream Reach</b>	A stream segment of varying length with similar characteristics.
<b>Subwatershed</b>	An area mostly bounded by ridges or other similar topographic features contributing water, organic matter, dissolved nutrients, and sediments to a lake or stream.
<b>Succession</b>	A series of dynamic changes by which one group of organisms succeeds another through stages leading to potential natural community or climax. An example is the development of a series of plant communities (called seral stages) following a major disturbance.
<b>Summer Range</b>	Land used by wildlife species (specifically big game) during the summer months.
<b>Suppression (Fire Suppression)</b>	Any act taken to slow, stop, or extinguish a fire. Examples of suppression activities include fireline construction, backfiring, and application of water or chemical fire retardants.
<b>Surface Rights</b>	The rights of the operator or responsible agency to use or manage renewable surface resources. On National Forest System lands the Forest Service manages surface resources without having jurisdiction over subsurface development.
<b>Thermal Cover</b>	Cover used by animals to protect them against the weather.
<b>Threatened and Endangered Species (T&amp;E)</b>	A species or subspecies of animal or plant whose prospects of survival and reproduction are in immediate jeopardy or likely to become so within the foreseeable future. Threatened species are identified by the Secretary of Interior in accordance with the 1973 Endangered Species Act.
<b>Threatened Species</b>	Species listed under the Endangered Species Act that are likely to become Endangered within the foreseeable future throughout all or a significant portion of their range.

<b>Tiering</b>	Refers to the elimination of repetitive discussions of the same issue by incorporating by reference the general discussion in an environmental impact statement of broader scope. For example, a project environmental assessment could be tiered to the Forest Plan EIS.
<b>Title</b>	The right of ownership of property.
<b>Trailhead</b>	The parking, signing, and other facilities available at the terminus of a trail.
<b>Tribe</b>	Term used to designate a Federally recognized group of American Indians and their governing body. Tribes may be comprised of more than one band.
<b>Understory</b>	The trees and other woody species which grow under a more or less continuous cover of branches and foliage formed collectively by the upper portion of adjacent trees and other woody growth.
<b>Unpatented Mining Claim</b>	A claim made by a qualified person for possession of locatable minerals on public domain land (e.g. National Forests); a properly recorded claim allows an exclusive right to extract and sell valuable minerals from the claim. Unpatented mining claims may be occupied and used solely for mining and related activity.
<b>Viable Population</b>	A viable population is one which has such numbers and distribution of reproductive individuals as to provide a high likelihood that species will continue to exist and be well distributed throughout its range.
<b>Visual Resource</b>	The composite of terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.
<b>Water Rights</b>	A legal right to use the water of a natural stream or water furnished through a ditch or canal for general or specific purposes.
<b>Water Yield</b>	A term loosely used to identify the increase in runoff of stream flow that results from management activities.
<b>Watershed</b>	The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream or lake.

<b>Weeks Act Status Lands</b>	Lands acquired under the Act of March 1, 1911 (Weeks Act) as well as lands that have been granted Weeks Act status by virtue of the Act of September 2, 1958; such lands are not subject to the U.S. Mining Laws Act of 1872.
<b>Wetlands</b>	Those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds (Executive Order 11990).
<b>Wildfire</b>	Any wildland fire not designated and managed as a prescribed fire within an approved prescription.
<b>Wilderness</b>	Areas designated by congressional action under the 1964 Wilderness Act; undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation.
<b>Winter Range</b>	The area, usually at lower elevations, occupied by migratory deer and elk during the winter months.
<b>Year around Closure</b>	Gate, earthen barrier or sign closing a road or area all year long. These areas are sometimes open to the public during harvest or other land management activities.

# Appendix

## A – Legal Descriptions

### Federal Lands to be Conveyed

<b>Shoshone County</b>			<b>Acres</b>
T. 44 N., R. 7 E., B.M. (Whistling Creek)			
	Sec. 20	S1/2, S1/2S1/2N1/2	400.00
T. 47 N., R. 1 E., B.M. (Pine Creek West)			
	Sec. 23	SE1/4SE1/4	40.00
	Sec. 24	SW1/4SW1/4	40.00
	Sec. 26	N1/2NE1/4, SE1/4NE1/4	120.00
T. 47 N., R. 2 E., B.M.			
	Sec. 25	NW1/4NW1/4	40.00
T. 47 N., R. 1 E., B.M. (Pine Creek East)			
	Sec. 25	N1/2NE1/4, SE1/4NE1/4, NE1/4SE1/4	160.00
T. 47 N., R. 2 E., B.M.			
	Sec. 30	lots 1-3 inclusive, NE1/4NW1/4	165.38
<b>T. 47 N., R. 2 E., B.M. (Lemonade Peak)</b>			
	Sec. 28	N1/2NE1/4, NW1/4	240.00
	Sec. 29	SE1/4NE1/4, N1/2SE1/4	120.00
<b>Shoshone County Total</b>			<b>1,325.38</b>

**Non-Federal Lands to be Acquired**

<b>Shoshone County</b>			<b>Acres</b>
<b>T. 43 N., R. 4 E., B.M. (Lost Lake Creek)</b>			
	Sec. 1	SW1/4SW1/4	40.00
	Sec. 3	SE1/4SE1/4	40.00
	Sec. 11	N1/2	320.00
<b>T. 43 N., R. 4 E., B.M. (Duplex Creek)</b>			
	Sec. 5	lots 3 and 4, SW1/4NE1/4, S1/2NW1/4, SW1/4, W1/2SE1/4	440.00
	Sec. 7	E1/2E1/2	160.00
	Sec. 17	N1/2NW1/4	80.00
<b>T. 43 N., R. 4 E., B.M. (Freezeout)</b>			
	Sec. 31	lots 1-4 inclusive, E1/2W1/2	319.50
<b>T. 43 N., R. 4 E., B.M. (Twin Springs Creek)</b>			
	Sec. 33	N1/2SE1/4	80.00
<b>T. 43 N., R. 5 E., B.M. (Adair Creek)</b>			
	Sec. 9	N1/2N1/2	160.00
<b>T. 44 N., R. 2 E., B.M. (Lines Creek)</b>			
	Sec. 33	NW1/4SW1/4	40.00
<b>T. 44 N., R. 4 E., B.M. (Daveggio Creek)</b>			
	Sec. 7	NE1/4, E1/2NW1/4	240.00
<b>T. 44 N., R. 4 E., B.M. (Twodot Peak)</b>			
	Sec. 17	E1/2NE1/4, NE1/4SE1/4	120.00
<b>T. 44 N., R. 4 E., B.M. (Fishhook Peak)</b>			
	Sec. 21	N1/2NE1/4	80.00
<b>Shoshone County Total</b>			<b>2,119.50</b>
<b>Boundary County</b>			<b>Acres</b>
<b>T. 62 N., R. 1 W., B.M. (Myrtle Creek)</b>			
	Sec. 23	NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4	280.00
<b>Boundary County Total</b>			<b>280.00</b>
<b>Grand Total non-Federal lands to be Acquired</b>			<b>2,399.50</b>

## **B – Maps**

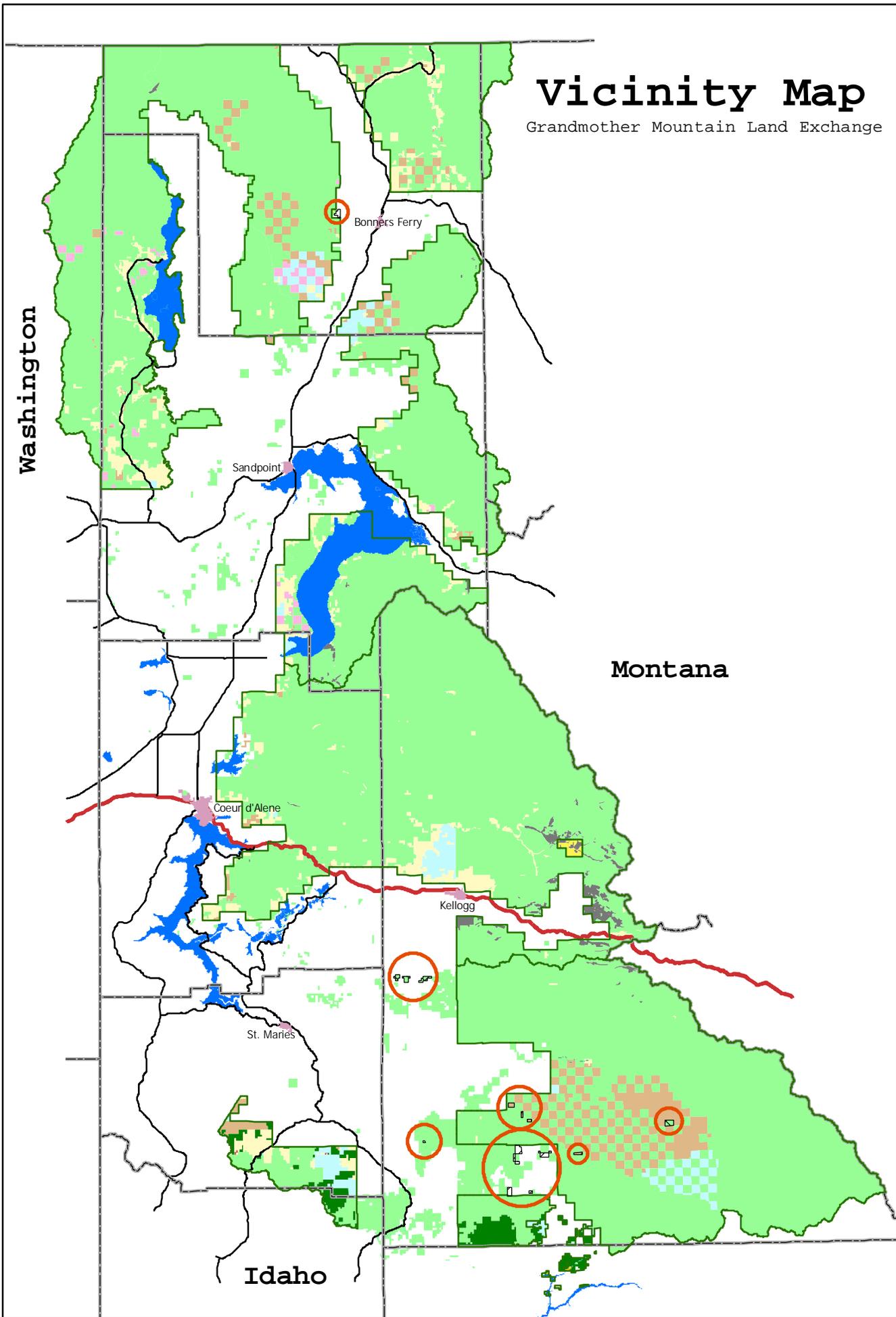


Figure 1. Grandmother Mountain Land Exchange Vicinity Map



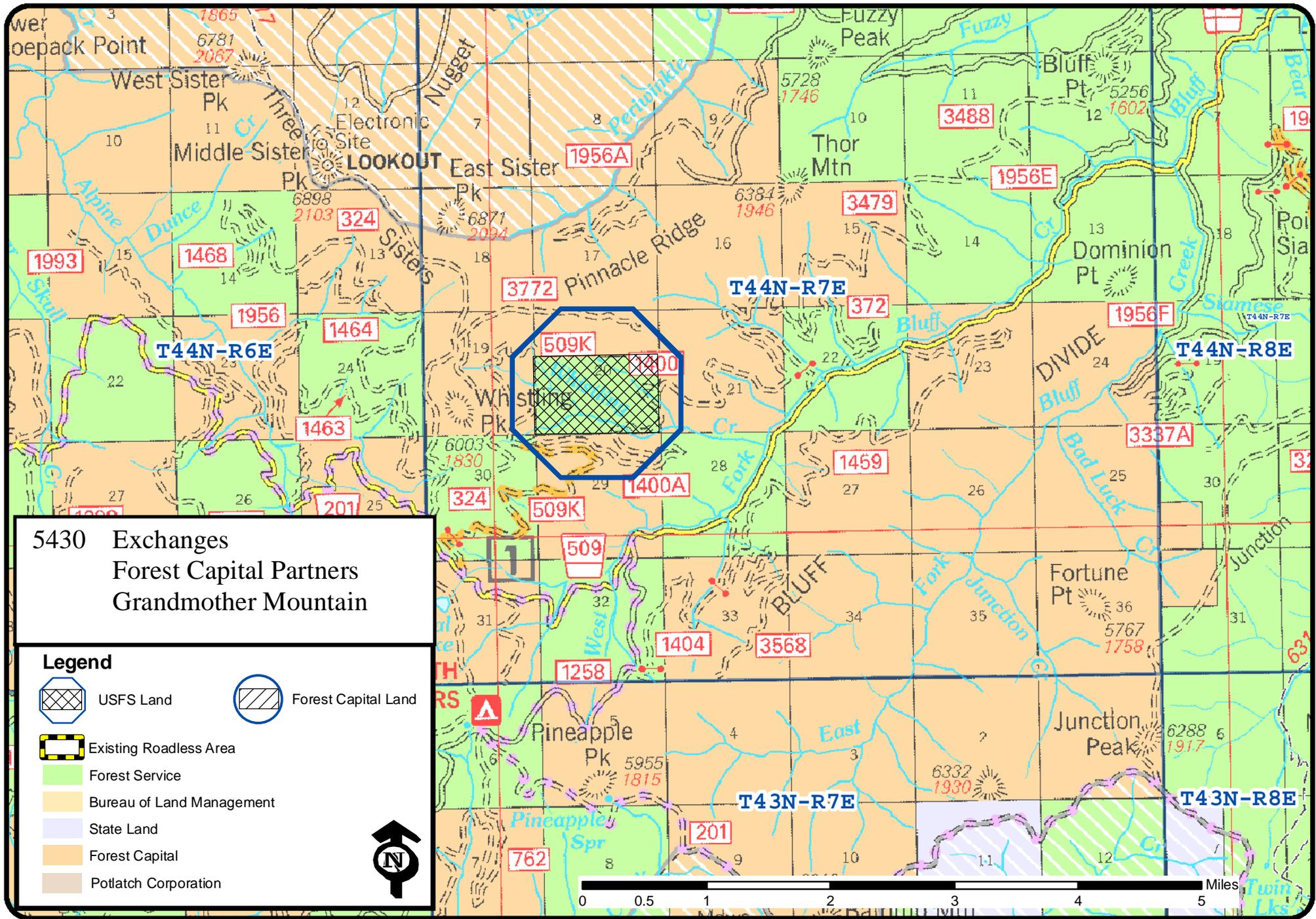


Figure 3. Grandmother Mountain Land Exchange Federal Lands to Convey Map



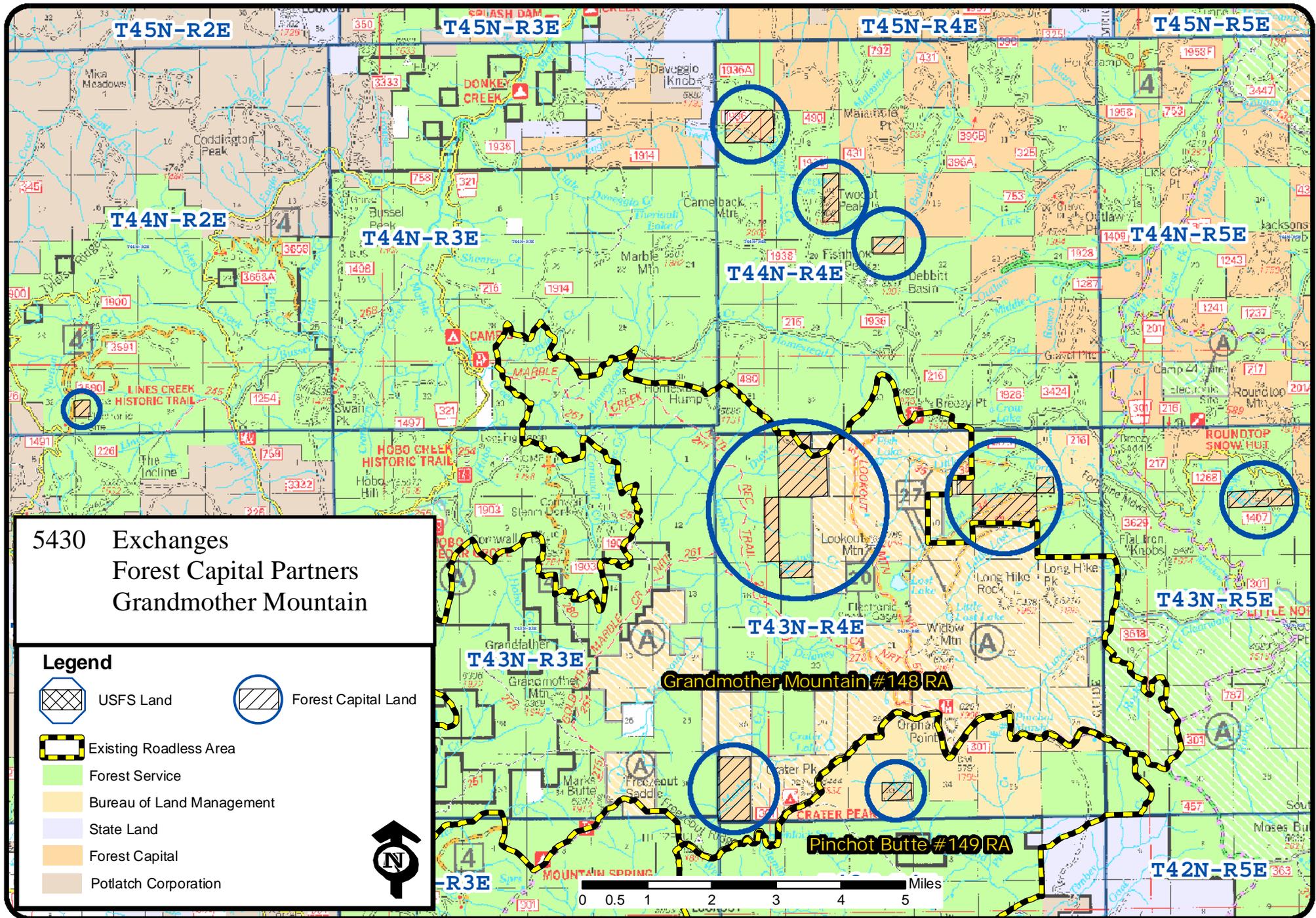


Figure 5. Grandmother Mountain Land Exchange non-Federal Lands to Acquire Map

## **C – Land Exchange Process**

### **Introduction**

Land exchanges involve three phases that may overlap slightly in time: 1) the Land Exchange Proposal Phase, 2) the NEPA/Appraisal Phase, and 3) the Land Title Transfer and Closing Phase. The first phase involves initial discussions and a non-binding agreement to exchange lands, along with the completion of various technical studies. The second phase involves the completion of the environmental analysis, documented in either an Environmental Assessment (EA) or an Environmental Impact Statement (EIS), if the proposed action is not categorically excluded from such documentation, as per FS Manual 1909.15, Chapter 30. This phase also involves the final appraisal and decision to complete the exchange. The third phase involves executing the binding exchange agreement and the actual exchange of title to the lands and closing the transaction. These three phases are discussed in more detail below.

The land exchange process includes some procedures that are open for public review and others that are confidential. The NEPA process and the associated FS implementing regulations provide for an open public review process. The process of developing a land exchange proposal, however, is essentially a business negotiation between the non-Federal and Federal landowners. In this process, non-Federal landowners share confidential or proprietary information with the Federal landowner. Additionally, prior to signing the exchange agreement, either party to a land exchange may withdraw from the proposal. Because of the confidential business information shared between the two parties as well as the possibility of withdrawal from the Proposed Exchange, the appraisal and associated records are exempt from public disclosure until the exchange agreement is executed. Requests for appraisal information must be made under the Freedom of Information Act (FOIA). Certain appraisal information is exempt from disclosure under the FOIA procedures and may not be released.

### **Land Exchange Proposal Phase**

The first phase of the land exchange process leads to an Agreement to Initiate (ATI) an exchange. The first step involves the negotiations that take place between the FS and the non-Federal landowner. Land exchanges are voluntary agreements and must be advantageous to both parties in order to take place. Based on these negotiations, the parties develop a mutually agreeable exchange proposal.

A Feasibility Analysis is done to insure that the proposal is consistent with the Forest Resource Management Plans and with the requirements of applicable laws and regulations. A review is also made of the public interest benefits of the exchange pursuant to 36 CFR 254.3(b). If it is determined that the proposal is feasible, the ATI for the exchange can be executed. The ATI is a non-binding agreement between the FS and the non-Federal party setting out the terms and conditions for completing the exchange. The ATI also includes a tentative time schedule and assignment of responsibilities for completion of the exchange. Upon signing the ATI, a Notice of Exchange Proposal (NOEP) is prepared to give public notice that the proposal is being considered and comments are requested. The NOEP is sent to interested parties and is published in local newspapers once a week for four consecutive weeks.

After an ATI has been signed, environmental reports are prepared concerning pertinent issues such as minerals, cultural resources, threatened and endangered species, and timber resources.

During this time, discussions may also occur with interested parties, such as local communities, environmental groups, American Indian tribes and governmental agencies. Toward the end of the first phase, the NEPA and appraisal processes are initiated.

### **NEPA/Appraisal Phase**

The second phase begins when the draft exchange proposal and the environmental responses are completed or nearing completion and the potential for the land exchange to actually occur becomes apparent. With the initiation of the NEPA process, public and agency scoping and public involvement continues. Issues are identified, alternatives are developed, and the environmental analysis is conducted and documented. In this instance, the analysis is documented in an EA. The final decision will be documented in a Decision Notice (DN).

In this phase, the appraisal of both the Federal and non-Federal lands is prepared. The appraisal is prepared in accordance with the Uniform Standards of Professional Appraisal Practice and the Uniform Appraisal Standards for Federal Land Acquisition. These documents require that the land and interests associated with the land be appraised to the highest and best use. Values of both the Federal and non-Federal lands are based upon the private, open market, not value to the government or non-Federal party. The appraisal prepared for the land exchange is reviewed by a qualified review appraiser to ensure that it is acceptable and complies with the appropriate standards. The appraised value of the lands will be shown in the Decision Notice. Under the Federal Land Policy and Management Act of 1976, all exchanges must be equal in value. FS regulations at 36 CFR 254.3(c) require that exchanges must be of equal value or equalized pursuant to 36 CFR 254.12 by cash payment, after making all reasonable efforts to equalize values by adding or deleting lands. If lands proposed for exchange are not equal in value, either party may make them equal by cash payment not to exceed 25 percent of the Federal land value. The amount of any cash equalization payment must be kept to a minimum.

Once the DN is issued, a Notice of Decision (NOD) is prepared and sent to interested parties and published one time in local newspapers. The NOD briefly describes the decision made and provides directions for obtaining a copy of the decision.

### **Land Title Transfer and Closing Phase**

After the NEPA/Appraisal phase, the third phase of the land exchange process begins. During this final phase, both parties agree to the appraised land values and mix of lands and/or cash equalization, and a binding exchange agreement is prepared and signed. Additionally, at this stage there is a review of the exchange agreement by the appropriate Regional Office of the FS. These approvals are necessary for the exchange agreement to be implemented. Final processing steps involve the transfer of land title by exchanging of deeds and patent, usually through a simultaneous escrow closing procedure and obtaining final title insurance to assure clear title. A final title opinion by the FS and it's Office of General Counsel is obtained and posting of land records is accomplished completing the exchange process.

## D – Biological Assessments/Biological Evaluations (BAs/BEs)

### Appendix D-1 – Sensitive Species Biological Evaluation

#### Summary of Conclusion of Effects\*

**Project Name:** Grandmother Mountain Land Exchange

**Table D-1. Sensitive Species Conclusion of Effects**

Species	No Action	Proposed Action
Black-backed Woodpecker	MIIH	MIIH
Black Swift	NI	MIIH
Coeur d'Alene Salamander	NI	NI
Common Loon	NI	NI
Fisher	MIIH	MIIH
Flammulated Owl	NI	NI
Fringed Myotis	NI	NI
Harlequin Duck	NI	NI
Northern Bog Lemming	NI	NI
Northern Goshawk	MIIH	MIIH
Peregrine Falcon	NI	NI
Pygmy Nuthatch	NI	NI
Townsend's Big-Eared Bat	NI	NI
Western Toad	MIIH	MIIH
Wolverine	MIIH	MIIH

**NI** = No Impact

**MIIH** = May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species

**WIFV\*\*** = Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species

**BI** = Beneficial Impact

\* Note: The rationale for the conclusion of effects is contained in the Wildlife Report.

\*\* Considered a trigger for a significant action in NEPA

**Conditions:** None

**Recommendations:** None

Conditions: Include any actions or activities that are necessary to maintain the determination of effects.

Recommendations: Include any activities or opportunities that are optional.

Prepared by:  
Wildlife Biologist

Date: