



ECONOMIC ANALYSIS OF CRITICAL
HABITAT DESIGNATION FOR THE
SOUTHERN SELKIRK MOUNTAINS
POPULATION OF WOODLAND CARIBOU

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LIST OF ACRONYMS

Act	Endangered Species Act
BLM	U.S. Bureau of Land Management
CNF	Colville National Forest
CHD	critical habitat designation
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
HCPs	habitat conservation plans
IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
IEc	Industrial Economics, Incorporated
IPNF	Idaho Panhandle National Forests
LRMP	Land and Resource Management Plans
MBF	Thousand board feet
NPDES	National Pollutant Discharge Elimination System
OHV	Off-highway vehicles
OMB	Office of Management and Budget
PCEs	Primary Constituent Elements
RFA	Regulatory Flexibility Act
RMA	Risk Management Association
SBREFA	Small Business Regulatory Enforcement Fairness Act
Service	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
WTP	Willingness to pay

EXECUTIVE SUMMARY

1. The purpose of this report is to evaluate the reasonably foreseeable potential economic impacts associated with designation of critical habitat for the federally listed southern Selkirk Mountains population of woodland caribou (*Rangifer tarandus caribou*). This report was prepared by Industrial Economics, Incorporated (IEc), under contract to the U.S. Fish and Wildlife Service (Service).
2. The Service listed the southern Selkirk Mountains population of woodland caribou (hereafter “caribou”) as endangered under the Endangered Species Act (Act) on February 26, 1984.¹ Critical habitat was not designated at that time due to a concern that increased poaching could occur if maps highlighting the extent of the caribou’s range were made public. Due to declining numbers in the existing herd, an augmentation effort (transplanting caribou from other parts of Canada) during the late 1980’s and 1990’s, established a second herd in the southern Selkirk Mountains. In 1994 the revised Selkirk Mountains Woodland Caribou Recovery Plan laid out a recovery strategy to maintain the two existing herds and establish a third herd.² The Service completed a 5-year review for the Southern Selkirk Mountains Woodland Caribou Population on December 2, 2008, which determined the current classification of endangered under the Act to be warranted, and that the population met the discreteness and significance elements of the Service’s Distinct Population Segment Policy. The 5-year review also detailed information on caribou relevant to the designation of critical habitat.³
3. The Defenders of Wildlife, Lands Council, Selkirk Conservation Alliance, and the Center for Biological Diversity petitioned the Service to designate critical habitat on February 10, 2003. At that time the Service could not address the petition due to budgetary constraints.⁴ Due to the Service’s failure to make a decision more than six years after the petition was submitted, a complaint was submitted for declaratory and injunctive relief on January 15, 2009 (*Defenders of Wildlife et al., v. Salazar*, CV-09-15-EFS). The Service agreed to make a critical habitat prudency determination, and if prudent, to submit a proposed critical habitat rule.⁵ Due to increased education and awareness, illegal

¹ 1984 Final Rule, 49 FR 7390 *et seq.*

² U.S. Fish and Wildlife Service, Pacific Region. March 1994. Recovery Plan: Selkirk Mountain Woodland Caribou.

³ U.S. Fish and Wildlife Service, Upper Columbia Office. 2008. Southern Selkirk Mountain Caribou Population (*Rangifer tarandus caribou*): 5-Year Review, Summary and Evaluation. www.fws.gov/idaho/Caribou/Tab5References/USFWS_2008a.pdf.

⁴ 2011 Proposed Rule 76 FR 74021.

⁵ 2011 Proposed Rule 76 FR 74021.

poaching is now believed by the Service to be less of a threat, and designation of critical habitat is no longer deemed by the Service to be “not prudent.”⁶

4. In response to these actions, the Service published a proposed rule for the designation of critical habitat on November 30, 2011.⁷ The proposal would designate approximately 375,544 acres as critical habitat for the caribou, presented as two subunits within one unit. Subunit 1 is located in northern Idaho in Bonner and Boundary Counties, and Subunit 2 is located in northern Washington State in Pend Oreille County, both of which border Canada. For the purposes of this analysis we group the proposed habitat into three categories: Federal lands (approximately 294,947 acres or 79 percent of the proposed rule); State lands (approximately 65,218 acres, or 17 percent of the total); and private lands (approximately 15,379 acres, or four percent of the total).⁸ The proposed critical habitat is presented by subunit and landowner in Exhibit ES-1.

EXHIBIT ES-1. LANDOWNERSHIP WITHIN PROPOSED CRITICAL HABITAT BY SUBUNIT (IN ACRES)

SUBUNIT	FEDERAL	STATE	PRIVATE	TOTAL	PERCENT OF TOTAL
1. Bonner and Boundary Counties, Idaho	222,981	65,218	15,379	303,578	81%
2. Pend Oreille County, Washington	71,966	0	0	71,966	19%
Total	294,947	65,218	15,379	375,544	100%
Percent of Total	79%	17%	4%	100%	

Note: Totals may not sum due to rounding; totals are based on ArcGIS analysis and may differ slightly from the values presented in the Proposed Critical Habitat Designation.

Source: U.S. Fish and Wildlife Service shapefiles.

5. Review of the proposed rule, consultation history, and existing conservation plans identified the following economic activities as potential threats to the caribou and its habitat within areas proposed for designation. We focus our analysis of reasonably foreseeable impacts of caribou conservation on these activities.
 - **Timber harvests.** Timber harvesting can cause the loss and fragmentation of contiguous old-growth forest and forest habitats. Loss and fragmentation of this habitat type is a primary long-term threat to the caribou.⁹ Specifically, loss of this habitat type can cause causes a reduction in escape cover to protect against

⁶ 2011 Proposed Rule 76 FR 74022.

⁷ 2011 Proposed Rule 76 FR 74018 *et seq.*

⁸ Total acres do not sum due to rounding.

⁹ Proposed critical habitat. 76 FR 74027.

predators, migration corridors, and lichen production. It can also facilitate increased human and predator access to caribou habitat.¹⁰

- **Fire, fire suppression, and forest management practices.** These events and activities can also lead to habitat loss and fragmentation of contiguous old-growth forests.¹¹
- **Transportation and electricity projects.** Road, bridge, and power line construction and maintenance can cause the loss and fragmentation of contiguous old-growth forests and forest habitats.¹²
- **Mining.** Certain types of mining and associated road building can eliminate and fragment caribou and arboreal lichen habitat.¹³
- **Recreational activities and development.** Recreational development and activities, including off-road vehicle use (e.g., snowmobiles), backcountry skiing, and trail development can displace the caribou, while hunting, campground use, and hiking can potentially affect caribou. Increased levels of winter recreational activity, mainly snowmobiling, is considered to be affecting caribou recovery areas on the Colville National Forest (CNF) in Washington State and the Idaho Panhandle National Forests (IPNF) in Idaho and Washington.¹⁴

PUBLIC CONCERNS

Recreation

Various stakeholders (local citizens, businesses, government representatives) have expressed concerns over the effects of this proposed designation on recreation. Due to several factors, including existing environmental regulations, some motorized activities, including snowmobile and off-highway vehicle (OHV) use, have been limited within habitat where caribou are considered to occur for the purpose of caribou conservation. For example, IPNF imposes seasonal limitations on motorized vehicles to minimize disturbance to the caribou, including a 1994 closure for a large area of the Selkirk Crest. In addition, a 2007 court order restricts snowmobile use in some areas, and in other areas limits such use to designated trails.¹⁵ Local residents note that these types of regulations have impacted the snowmobile industry.¹⁶ Local residents are concerned that additional restrictions or litigation associated with the caribou and its habitat could further limit these types of activities.

Timber

For timber management activities, we only forecast incremental impacts to land managers due to time delays in permitting road access across national forest land. In addition, various stakeholders have expressed concerns with potential indirect effects of the proposed rule. This includes impacts of changes in timber harvests from private and public lands on mills,

¹⁰ U.S. Fish and Wildlife Service, Pacific Region. 1994. Recovery Plan: Selkirk Mountain Woodland Caribou, pg. 16.

¹¹ Proposed critical habitat. 76 FR 74027.

¹² Proposed critical habitat. 76 FR 74025.

¹³ Proposed critical habitat. 76 FR 74030.

¹⁴ Proposed critical habitat. 76 FR 74026.

¹⁵ Personal Communication with Jason Kirchner via email correspondence, Idaho Panhandle National Forests, March 6, 2012.

¹⁶ Personal Communication with Dan Denning, via phone correspondence, Boundary County Commissioner, March 1, 2012.

companies that transport logs, and county governments that benefit from U.S. Forest Service (USFS) timber sales. It is difficult to forecast how changes in forest management practices associated with this designation will indirectly affect these downstream sectors. In particular, it is not possible to model substitution to other sources of timber in the region. We do note, however, that these industries have already experienced impacts on timber supply through various environmental regulations related to endangered species and other requirements. Our quantitative analysis focuses on the incremental effects of the proposed CHD on forest land managers.

KEY FINDINGS

6. Exhibit ES-2 summarizes the total forecast incremental economic impacts likely to occur if both of the proposed subunits are designated as critical habitat. Using a seven percent discount rate, the total present value forecast economic impact, anticipated to result solely from this designation, is \$1.50 million over 20 years. If we use a discount rate of three percent, total present value impacts are calculated to be \$1.55 million over 20 years. Annualized, these impacts are expected to range from \$101,000 to \$132,000 per year, depending on the assumed discount rate.

EXHIBIT ES-2. SUMMARY OF TOTAL FORECAST ECONOMIC IMPACTS, 2012-2031 (2012\$)

DISCOUNT RATE ASSUMPTION	PRESENT VALUE	ANNUALIZED
7%	\$1.50 million	\$132,000
3%	\$1.55 million	\$101,000

Note: Impacts are estimated for the time period 2012 through 2031 (20 years from anticipated publication of the final rule).

7. The incremental impacts quantified in this analysis are limited to the administrative costs of considering adverse modification during section 7 consultation with the Service (about 19 percent of total forecast costs) as well as incremental costs for timber harvesting on private lands, including time delays in harvesting (about 81 percent of total forecast costs). Eighty three percent of the costs will be incurred by private landowners and the rest by the Service and Federal action agencies, mainly the USFS. Due to extensive baseline protections of the caribou, only time delays and no incremental project modifications are anticipated.
8. Exhibit ES-3 shows the distribution of incremental impacts by proposed subunit and affected entity. In the remainder of the Executive Summary, impacts are presented assuming a seven percent discount rate; see Appendix B for values assuming a three percent discount rate.

EXHIBIT ES-3. SUMMARY OF FORECAST INCREMENTAL IMPACTS BY SUBUNIT, 2012 TO 2031
(2012\$, DISCOUNTED AT SEVEN PERCENT)

SUBUNIT	AFFECTED ENTITY	PRESENT VALUE	ANNUALIZED
1: Idaho	Idaho Panhandle National Forests	\$135,000	\$11,900
	Bureau of Land Management	\$18,100	\$1,600
	Idaho Department of Lands	\$0	\$0
	Private Entities	\$1,220,000	\$107,000
	Other Federal Agencies	\$8,600	\$759
2: Washington	Colville National Forest	\$105,000	\$9,230
	Other Federal Agencies	\$6,400	\$564
Total:		\$1,500,000	\$132,000

Note: Totals may not sum due to rounding

DISCUSSION OF FORECAST IMPACTS TO SPECIFIC ECONOMIC ACTIVITIES

9. The following sections describe forecast incremental impacts to specific economic activities. As explained above, timber harvesting is the potential source of the greatest impacts from delays in harvesting. Due to the extensive baseline protections present within the area proposed for designation, few costs are expected on other activities. That is, while the presence of caribou and other endangered species currently impacts land uses, no additional limitations are expected with this rule. Aside from timber harvesting on privately held lands, activities considered in this analysis will only experience incremental administrative costs of addressing adverse modification in the context of section 7 consultation.

Recreation

10. Incremental impacts to recreation activities are forecast to be limited to the additional effort required to address adverse modification in consultations undertaken by USFS in IPNF and CNF. This analysis forecasts about one formal and informal section 7 consultation annually regarding recreation activities over the next 20 years. The 20 year time frame used in this analysis is chosen as the Office of Management and Budget (OMB) indicates that “a standard time period of analysis is 10 to 20 years, and rarely exceeds 50 years.”¹⁷ This analysis does not forecast additional project modifications associated with this designation.

Timber

11. Incremental impacts to timber harvesting accounts for the largest share of forecast impacts. All forecast project modification costs are expected to be borne by private entities in this sector. Project modifications to address adverse modification only occur on private lands due to Road Use Permits. These costs are mainly comprised of time delays

¹⁷ The U.S. Office of Management and Budget, February 7, 2011. “Regulatory Impact Analysis: Frequently Asked Questions (FAQs).” Accessed on May 3, 2011 by http://www.whitehouse.gov/sites/default/files/omb/circulars/a004/a-4_FAQ.pdf.

in obtaining road use permits. Costs of additional effort in consultation will be borne primarily by the USFS. This analysis forecasts about 1.4 formal and informal section 7 consultations annually regarding timber activities over the next 20 years.

Other Activities

12. Similar to recreation, forecast incremental impacts to all other activities are expected to be limited to the additional effort to address adverse modification in consultations undertaken by federal agencies, mainly the USFS. This analysis forecasts about 2.1 formal, informal, and programmatic section 7 consultations annually regarding other activities over the next 20 years.

POTENTIAL BENEFITS

13. The primary purpose of this rulemaking is to enhance conservation of the caribou. The published economics literature has documented that social welfare benefits can result from the conservation and recovery of endangered and threatened species. In its guidance to Federal agencies on best practices for preparing economic analyses of proposed rulemakings, OMB acknowledges that it may not be feasible to monetize, or even quantify, the benefits of environmental regulations due to either an absence of defensible, relevant studies or a lack of resources on the implementing agency's part to conduct new research. In addition, rather than rely on economic measures, the Service believes that the direct benefits of the proposed rule are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking.
14. In this report, we include a qualitative description of the categories of benefits potentially resulting from the designation. We also include a review of the existing literature on the benefits of caribou conservation, mainly a stated preference survey in Canada (Tanguay, Adamowicz, and Boxall 1995).

IMPACTS TO SMALL ENTITIES AND THE ENERGY INDUSTRY

15. This analysis also considers the potential for the designation to have a significant economic impact on a substantial number of small businesses as required by the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA). As Federal agencies, USFS, the Bureau of Land Management (BLM), the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (Corps), and U.S. Customs and Border Protection are not considered to be small entities. These federal entities are expected to bear all the incremental administrative cost of section 7 consultation. Additionally, we do not consider Forest Capital Partners, LLC, which owns 90 percent of privately managed land within the proposed CHD to be a small entity.
16. We forecast possible impacts to small entities in the timber sector from this rule. For purposes of this analysis, we assume that land owners and managers are small entities on the remaining ten percent of privately managed land not owned by Forest Capital Partners, LLC (1,691 acres). An estimate of incremental impacts for these land owners is \$386,000, or \$34,100 annualized at a seven percent discount rate. Even if all of these costs were borne by a single small timber tract operation with average revenue, this

would represent only a 0.96 percent loss in revenue, based on average revenue of \$3.53 million for entities under the small business threshold of \$6.5 million. Exhibit ES-4 presents the results of the threshold analysis developed to support the Service's determination regarding whether the proposed rule will have a significant economic impact on a substantial number of small entities.

17. Pursuant to Executive Order No. 13211, "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use," Federal agencies must prepare and submit a "Statement of Energy Effects" for all "significant energy actions." No changes in energy use, production, or distribution are anticipated to result from the designation of critical habitat for the caribou. Direct incremental costs of the designation are limited to the administrative costs of conducting section 7 consultations. No energy entities are involved in forecast consultations.

EXHIBIT ES-4. RFA/SBREFA THRESHOLD ANALYSIS RESULTS SUMMARY

ACTIVITY	TYPE OF IMPACT	AFFECTED ENTITIES	NUMBER OF SMALL ENTITIES AFFECTED ¹	ANNUALIZED IMPACTS EXCLUDING FEDERAL COSTS ²	AVERAGE ANNUAL REVENUES PER SMALL ENTITY	IMPACTS AS % OF ANNUAL REVENUES ⁴
Land Managers	Time delays on timber harvesting	Various land owners and managers	Likely to be small	Up to \$34,100	N/A	Expected to be small
Logging		Logging companies and log hauling companies in the region	There are 23 entities in the regional Zip Codes (not all would be impacted)	Indirect impacts unknown and depend on substitute logging sites	\$5.66 million	N/A
Timber Tract Operations		Firms involved in owning and managing forest land for silvicultural purposes	There are 5 entities in regional counties (not all would be impacted)	Up to \$34,100	\$3.53 million	0.96%
Notes: 1. Detailed analysis presented in this Appendix. 2. This estimate excludes the additional incremental costs of consultation that would be borne by the Federal action agency and the Service. Costs are estimated as described in Chapter 4.						

KEY SOURCES OF UNCERTAINTY

18. At the end of Chapter 4, we include a discussion of the key sources of uncertainty and major assumptions affecting the calculation of impacts.
19. One category of uncertainty that affects all activities is whether the Service may consider additional project modifications through Section 7 consultation to address critical habitat beyond what would be recommended due to the listing of the caribou. While the Service has stated that it does not expect to impose additional requirements (see Appendix C), the three counties located near the proposed designation, the State of Idaho, snowmobile companies, mills, and logging companies have all stated concerns about further limitations in land use due to the proposed designation. They believe these limitations would be in addition to current restrictions associated with the caribou and other species conservation efforts.
20. In addition, time delays could occur for activities beyond timber harvesting on privately owned lands. For example, delays could occur for recreational activities and timber harvesting on private lands due to reinitiated consultations, or extra effort required for new consultations, or for road use permits on USFS roads used to access private lands. Again, the Service does not expect such delays.
21. We also assume that consultations will occur with the same frequency in the future as over the past 16 years. Due to limited information on the expected future level of activity on federal lands, we consider past consultation rates to represent the best measure of future rates.
22. Finally, we assume that all private land aside from the area owned by Forest Capital Partners, LLC has a Federal nexus and would have been harvested over the next 20 years.¹⁸ This likely overestimates potential incremental costs, as it is unlikely that this land is only accessible via roads across federal land, and it is also unlikely that all of this land would undergo harvest activities in the next 20 years.

ORGANIZATION OF THIS REPORT

23. This report is organized into five chapters. Chapter 1 provides background on the proposed critical habitat rule. Chapter 2 discusses the framework employed in the analysis. Chapter 3 describes the baseline protections currently afforded the caribou and its habitat, while Chapter 4 discusses the potential incremental impacts of critical habitat designation for the caribou. Chapter 5 provides a brief discussion of potential benefits of the designation. Finally, three appendices highlight the small business and energy impacts, provide a sensitivity of results to discount rates explaining three percent discounted and undiscounted costs, and, provide information from the Service related to the potential for changes in conservation following critical habitat designation.

¹⁸ Since we have estimates of future activity level on Forest Capital Partners, LLC's land, we use that information to forecast impacts on lands managed by this firm. For the remaining privately owned land we assume a upper-bound estimate of impacts.

CHAPTER 1 | INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

24. This chapter provides an overview of the proposed critical habitat designation for the southern Selkirk Mountains population of woodland caribou (hereafter “caribou”). We include a description of the species, a summary of past publications and legal actions that relate to the current proposal, a summary of land ownership within the current proposal, maps of the proposed units, and a summary of threats to the proposed critical habitat designation. All official definitions and boundaries should be taken from the Proposed Rule.¹⁹

1.2 SPECIES DESCRIPTION

25. The woodland caribou is a subspecies of caribou, where the southern Selkirk Mountains population of woodland caribou is specifically categorized under the mountain ecotype. The mountain ecotype of caribou is found in the U.S. and occurs in high elevations (generally above 4,000 feet), steep terrain of the mountainous southeastern and east-central portions of British Columbia and the Selkirk Mountains of northern Idaho and northeastern Washington. The caribou primarily lives in old-growth western red cedar/hemlock and Engelmann spruce/subalpine fir forests that typically have high snow levels. The caribou generally do not form large herds and migrate in small groups. The caribou depend on old-growth coniferous forests of the Interior Wet-belt ecosystems of British Columbia and the U.S., and on the ability to spread out over large areas of suitable habitat to avoid predators. Caribou require habitat including two vegetation zones: the cedar/hemlock zone at lower elevations and the subalpine fir/Engelmann spruce zone at high elevations, and transition areas and corridors between them.²⁰ Before 1900, caribou as a broader species could be found in Minnesota, Maine, Vermont, New Hampshire, Michigan, Wisconsin, and Montana, but are now limited to northern Idaho and Washington and southeastern British Columbia.²¹

1.3 PREVIOUS FEDERAL ACTIONS

26. Below, we summarize key milestones in the Federal regulatory history for the caribou.

- **Listing:** The Service published a final rule listing caribou on February 26, 1984.²² Critical habitat was not designated at that time due to a concern that increased

¹⁹ 2011 Proposed Rule 76 FR 74018 *et seq.*

²⁰ 2011 Proposed Rule 76 FR 74018 *et seq.*

²¹ U.S. Fish and Wildlife Service, Pacific Region. 1994. Recovery Plan: Selkirk Mountain Woodland Caribou, pg. 3.

²² 1984 Final Rule, 49 FR 7390 *et seq.*

poaching could occur if maps highlighting the extent of the caribou's range were made public.

- **Recovery plan:** In 1994 the revised Selkirk Mountains Woodland Caribou Recovery Plan laid out a recovery strategy to maintain two existing herds and establish a third herd.²³
- **5-year review completed:** The Service completed a 5-year review for the Southern Selkirk Mountains Woodland Caribou Population on December 2, 2008, which confirmed the status of the species as endangered, confirmed that the herd meets the definition of a Distinct Population Segment, and provided information on caribou relevant to the designation of critical habitat.²⁴
- **Critical habitat petition:** The Defenders of Wildlife, Lands Council, Selkirk Conservation Alliance, and the Center for Biological Diversity petitioned the Service to designate critical habitat on February 10, 2003. The Service could not address the petition due to budgetary constraints.²⁵
- **Prudency determination:** Due to the Service's failure to make a decision more than six years after the petition was submitted, a complaint was submitted for declaratory and injunctive relief on January 15, 2009 (*Defenders of Wildlife et al., v. Salazar*, CV-09-15-EFS). The Service agreed to make a critical habitat prudency determination, and if prudent, to submit a proposed critical habitat rule.²⁶ Due to increased education and awareness, illegal poaching is now less of a threat, and designation of critical habitat is no longer deemed to be "not prudent."²⁷
- **Proposed rule to designate critical habitat:** The Service published the proposed rule for the designation of critical habitat on November 30, 2011.²⁸

1.4 PROPOSED CRITICAL HABITAT DESIGNATION

27. The proposed rule would designate approximately 375,544 acres of critical habitat across one unit consisting of two subunits in Boundary and Bonner Counties, Idaho, and Pend Oreille County, Washington, both of which are considered to be occupied by the caribou. Of the proposed acreage, approximately 294,947 acres (79 percent) are federally managed, 65,218 acres (17 percent) are managed by the State of Idaho, and 15,379 acres (four percent) are privately managed. Federal lands are managed by the U.S. Forest

²³ U.S. Fish and Wildlife Service, Pacific Region. March 1994. Recovery Plan: Selkirk Mountain Woodland Caribou.

²⁴ U.S. Fish and Wildlife Service, Upper Columbia Office. 2008. Southern Selkirk Mountain Caribou Population (*Rangifer tarandus caribou*): 5-Year Review, Summary and Evaluation. www.fws.gov/idaho/Caribou/Tab5References/USFWS_2008a.pdf

²⁵ 2011 Proposed Rule 76 FR 74021.

²⁶ 2011 Proposed Rule 76 FR 74021.

²⁷ 2011 Proposed Rule 76 FR 74022.

²⁸ 2011 Proposed Rule 76 FR 74018 *et seq.*

Service (USFS) and the Bureau of Land Management (BLM). Exhibit 1-1 summarizes land ownership for each unit of proposed habitat, and Exhibit 1-2 maps ownership.

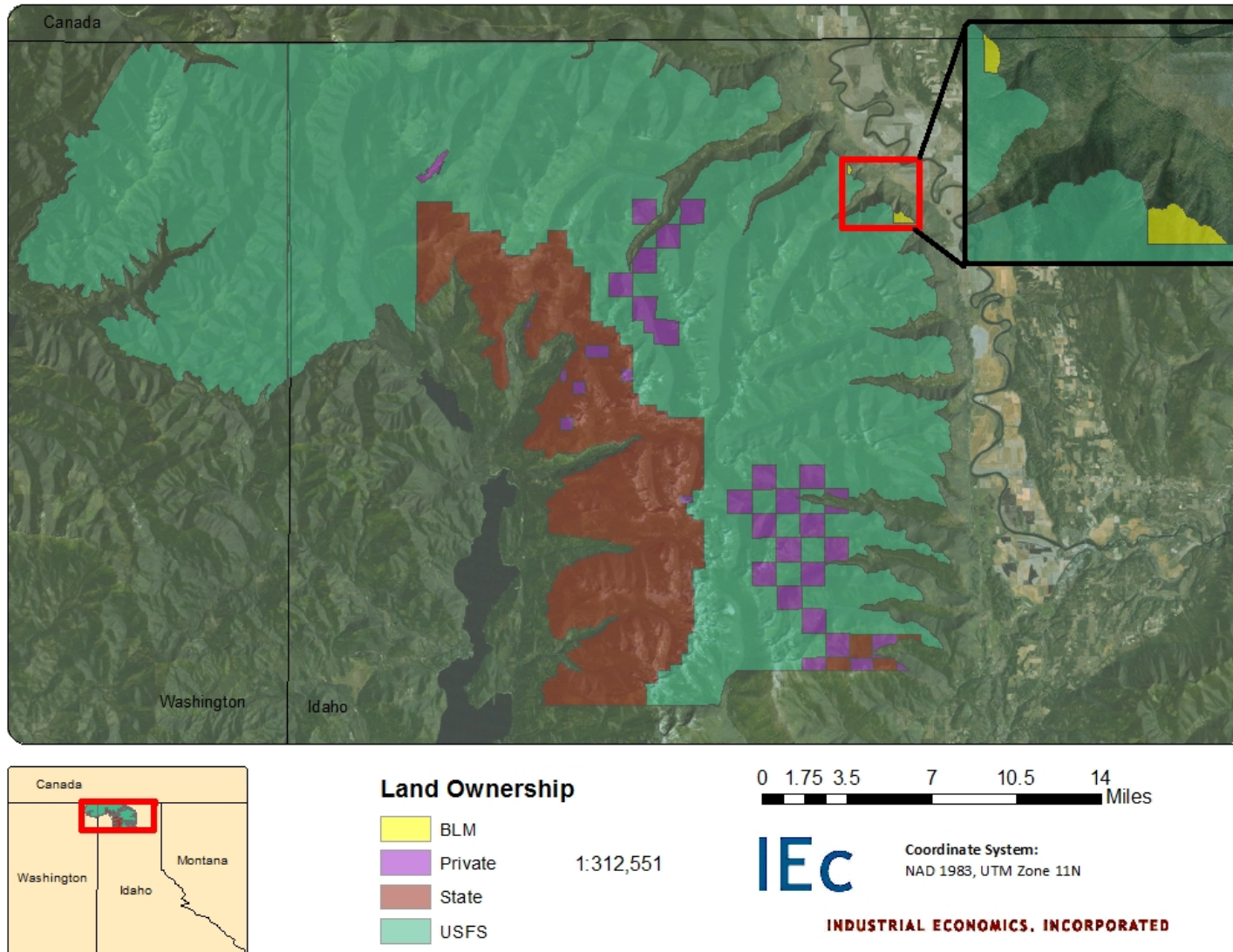
EXHIBIT 1-1. SUMMARY OF LAND OWNERSHIP IN PROPOSED CRITICAL HABITAT FOR THE CARIBOU

SUBUNIT	FEDERAL	STATE	PRIVATE	TOTAL	PERCENT OF TOTAL
1. Bonner and Boundary Counties, Idaho	222,981	65,218	15,379	303,578	81%
2. Pend Oreille County, Washington	71,966	0	0	71,966	19%
Total	294,947	65,218	15,379	375,544	100%
Percent of Total	79%	17%	4%	100%	

Note: Totals may not sum due to rounding; totals are based on ArcGIS analysis and may differ slightly from the values presented in the Proposed Critical Habitat Designation.

Source: U.S. Fish and Wildlife Service shapefiles.

EXHIBIT 1-2. OWNERSHIP MAP OF PROPOSED CARIBOU CRITICAL HABITAT



1.5 ECONOMIC ACTIVITIES CONSIDERED IN THIS ANALYSIS

28. Based on information provided in the Proposed Rule and discussions with the Service, conservation efforts to protect the caribou may affect the following economic activities.
- **Timber harvests.** Timber harvesting can cause the loss and fragmentation of contiguous old-growth forests and forest habitats; loss and fragmentation of this habitat type is a primary long-term threat to the caribou.²⁹ Specifically, loss of this habitat type can cause a reduction in escape cover to protect against predators, migration corridors, and lichen production. It can also facilitate additional human and predator access to caribou habitat.³⁰
 - **Fire, fire suppression, and forest management practices.** These events and activities can also lead to habitat loss and fragmentation of contiguous old-growth forests.³¹
 - **Transportation and electricity projects.** Road, bridge, and power line construction and maintenance can cause the loss and fragmentation of contiguous old-growth forests and forest habitats.³²
 - **Mining.** Certain types of mining and associated road building can eliminate and fragment caribou and arboreal lichen habitat.³³
 - **Recreational activities and development.** Recreational development and activities, including off-road vehicle use (e.g., snowmobiles), backcountry skiing, and trail development can displace the caribou, while hunting, campground use, and hiking can potentially affect caribou. Increased levels of winter recreational activity, mainly snowmobiling, is especially affecting caribou recovery areas on the Colville National Forest (CNF) in Washington and the Idaho Panhandle National Forests (IPNF) in Idaho and Washington.³⁴

1.6 ORGANIZATION OF THE REPORT

29. The remainder of this report proceeds through four additional chapters. Chapter 2 discusses the framework employed in the analysis. Chapter 3 describes the extensive baseline protections currently afforded the caribou. Chapter 4 provides an assessment of potential incremental economic impacts to the activities listed above, as well as incremental administrative impacts. Finally, Chapter 5 briefly describes the potential benefits of the CHD.

²⁹ Proposed critical habitat. 76 FR 74027.

³⁰ U.S. Fish and Wildlife Service, Pacific Region. 1994. Recovery Plan: Selkirk Mountain Woodland Caribou, pg. 16.

³¹ Proposed critical habitat. 76 FR 74027.

³² Proposed critical habitat. 76 FR 74025.

³³ Proposed critical habitat. 76 FR 74030.

³⁴ Proposed critical habitat. 76 FR 74026.

30. In addition, this report includes three appendices: Appendix A, which considers potential impacts on small entities and the energy industry; Appendix B, which discusses the sensitivity of results to the selected discount rate; and Appendix C, which provides the Service's consideration of the expected incremental effects of CHD.

CHAPTER 2 | FRAMEWORK FOR THE ANALYSIS

31. The purpose of this report is to estimate the reasonably foreseeable economic impact of actions taken to protect caribou habitat. This analysis examines the impacts of restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the proposed critical habitat area. This analysis employs "without critical habitat" and "with critical habitat" scenarios. The "without critical habitat" scenario represents the baseline for the analysis, considering protections otherwise accorded the caribou; for example, under the Federal listing and other Federal and State regulations. The "with critical habitat" scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts are those that would only occur because of the designation of critical habitat.
32. This information is intended to assist the Secretary of the U.S. Department of the Interior in determining whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation.³⁵ In addition, this information allows the Service to address the requirements of Executive Orders 12866 (as amended by 13563) and 13211, and the RFA, as amended by SBREFA.³⁶
33. This chapter describes the framework for this analysis. First, we describe case law that led to the selection of the framework applied in this report. Next, we describe in economic terms the general categories of economic effects that are the focus of the impact analysis, including a discussion of both efficiency and distributional effects. This chapter then defines the analytic framework used to measure these impacts in the context of critical habitat regulation and the consideration of benefits. We conclude with a presentation of the information sources relied upon in the analysis.

³⁵ 16 U.S.C. §1533(b)(2).

³⁶ Executive Order 12866, Regulatory Planning and Review, September 30, 1993; Executive Order 13563, Improving Regulation and Regulatory Review, January 18, 2011; Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use, May 18, 2001; 5 U.S.C. §§601 et seq; and Pub Law No. 104-121.

2.1 BACKGROUND

34. OMB's guidelines for conducting an economic analysis of regulations direct Federal agencies to measure the costs of a regulatory action against a baseline, which it defines as the "best assessment of the way the world would look absent the proposed action."³⁷ In other words, the baseline includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat. Impacts that are incremental to that baseline (i.e., occurring over and above existing constraints) are attributable to the proposed regulation. Significant debate has occurred regarding whether assessing the impacts of the Service's proposed regulations using this baseline approach is appropriate in the context of CHD.
35. In 2001, the U.S. Court of Appeals for the Tenth Circuit instructed the Service to conduct a full analysis of all of the economic impacts of proposed critical habitat, regardless of whether those impacts are attributable co-extensively to other causes.³⁸ Specifically, the court stated,
- “The statutory language is plain in requiring some kind of consideration of economic impact in the CHD phase. Although 50 C.F.R. 402.02 is not at issue here, the regulation's definition of the jeopardy standard as fully encompassing the adverse modification standard renders any purported economic analysis done utilizing the baseline approach virtually meaningless. We are compelled by the canons of statutory interpretation to give some effect to the congressional directive that economic impacts be considered at the time of critical habitat designation.... Because economic analysis done using the FWS's [Fish and Wildlife Service's] baseline model is rendered essentially without meaning by 50 C.F.R. § 402.02, we conclude Congress intended that the FWS conduct a full analysis of all of the economic impacts of a critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes. Thus, we hold the baseline approach to economic analysis is not in accord with the language or intent of the ESA [Endangered Species Act].”³⁹
36. Since that decision, however, courts in other cases have held that an incremental analysis of impacts stemming solely from the critical habitat rulemaking is proper.⁴⁰ For example, in the March 2006 ruling that the August 2004 critical habitat rule for the

³⁷ OMB, "Circular A-4," September 17, 2003, available at <http://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a004/a-4.pdf>.

³⁸ *New Mexico Cattle Growers Assn v. United States Fish and Wildlife Service*, 248 F.3d 1277 (10th Cir. 2001).

³⁹ *Ibid.*

⁴⁰ In explanation of their differing conclusion, later decisions note that in *New Mexico Cattle Growers*, the U.S. Tenth Circuit Court of Appeals relied on a Service regulation that defined "destruction and adverse modification" in the context of section 7 consultation as effectively identical to the standard for "jeopardy." Courts had since found that this definition of "adverse modification" was too narrow. For more details, see the discussion of *Gifford Pinchot Task Force v. United States Fish and Wildlife Service* provided later in this section.

Peirson's milk-vetch was arbitrary and capricious, the United States District Court for the Northern District of California stated,

“The Court is not persuaded by the reasoning of *New Mexico Cattle Growers*, and instead agrees with the reasoning and holding of *Cape Hatteras Access Preservation Alliance v. U.S. Dep’t of the Interior*, 344 F. Supp 2d 108 (D.D.C. 2004). That case also involved a challenge to the Service’s baseline approach and the court held that the baseline approach was both consistent with the language and purpose of the ESA and that it was a reasonable method for assessing the actual costs of a particular critical habitat designation *Id* at 130. ‘To find the true cost of a designation, the world with the designation must be compared to the world without it.’”⁴¹

37. More recently, in 2010, the U.S. Court of Appeals for the Ninth Circuit came to similar conclusions during its review of CHD for the Mexican spotted owl and 15 vernal pool species.⁴² Plaintiffs in both cases requested review by the Supreme Court, which declined to hear the cases in 2011.
38. In order to address the divergent opinions of the courts and provide the most complete information to decision-makers, this economic analysis:
 - Describes the baseline protections afforded the caribou absent CHD (Chapter 3); and
 - Monetizes the potential incremental impacts precipitated specifically by the CHD for the species (Chapter 4).
39. Incremental effects of CHD are determined using the Service's December 9, 2004 interim guidance on “Application of the ‘Destruction or Adverse Modification’ Standard Under Section 7(a)(2) of the Endangered Species Act” and information from the Service regarding what potential consultations and reasonably foreseeable project modifications may be imposed as a result of CHD over and above those associated with the listing.⁴³ Specifically, in *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, the Ninth Circuit invalidated the Service’s regulation defining destruction or adverse modification of critical habitat, and the Service no longer relies on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat.⁴⁴ Under the statutory provisions of the Act, the Service determines

⁴¹ *Center for Biological Diversity et al, Plaintiffs, v. United States Bureau of Land Management et. al, Defendants and American Sand Association, et al, Defendant Intervenors*. Order re: Cross Motions for Summary Judgment, Case 3:03-cv-02509 Document 174 Filed 03/14/2006, pages 44-45.

⁴² *Home Builders Association of Northern California v. United States Fish and Wildlife Service*, 616 F.3d 983 (9th Cir. 2010), cert. denied, 179 L. Ed 2d 301, 2011 U.S. Lexis 1392, 79 U.S.L.W. 3475 (2011); *Arizona Cattle Growers v. Salazar*, 606 F. 3d 1160 (9th Cir. 2010), cert. denied, 179 L. Ed. 2d 300, 2011 U.S. Lexis 1362, 79 U.S.L.W. 3475 (2011).

⁴³ Director, U.S. Fish and Wildlife Service, Memorandum to Regional Directors and Manager of the California-Nevada Operations Office, Subject: Application of the “Destruction or Adverse Modification” Standard under Section 7(a)(2) of the Endangered Species Act, dated December 9, 2004; and U. S. Fish and Wildlife Service.

⁴⁴ *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, No. 03-35279 (9th Circuit 2004).

destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional to serve its intended conservation role for the species. A detailed description of the methodology used to define baseline and incremental impacts is provided in Chapter 3.

2.2 CATEGORIES OF REASONABLY FORESEEABLE ECONOMIC EFFECTS OF SPECIES CONSERVATION

40. This economic analysis considers both the economic efficiency and distributional effects that may result from efforts to protect the caribou and its habitat (hereinafter referred to collectively as “caribou conservation efforts”). Economic efficiency effects generally reflect “opportunity costs” associated with the commitment of resources required to accomplish species and habitat conservation. For example, if the set of activities that may take place on a parcel of land is limited as a result of the designation or the presence of the species, and thus the market value of the land is reduced, this reduction in value represents one measure of opportunity cost or change in economic efficiency. Similarly, the costs incurred by a Federal action agency to consult with the Service under section 7 represent opportunity costs of caribou conservation efforts.
41. This analysis also addresses the distribution of impacts associated with the designation, including an assessment of any local or regional impacts of habitat conservation and the potential effects of reasonably foreseeable conservation efforts on small entities and the energy industry. This information may be used by decision-makers to assess whether the effects of species conservation efforts unduly burden a particular group or economic sector. For example, while conservation efforts may have a small impact relative to the national economy, individuals employed in a particular sector of the regional economy may experience relatively greater impacts.

2.2.1 EFFICIENCY EFFECTS

42. At the guidance of OMB and in compliance with Executive Order 12866 "Regulatory Planning and Review," Federal agencies measure changes in economic efficiency in order to understand how society, as a whole, will be affected by a regulatory action. In the context of regulations that protect caribou habitat, these efficiency effects represent the opportunity cost of resources used or benefits foregone by society as a result of the regulations. Economists generally characterize opportunity costs in terms of changes in producer and consumer surpluses in affected markets.⁴⁵
43. In some instances, compliance costs may provide a reasonable approximation for the efficiency effects associated with a regulatory action. For example, a Federal land manager may enter into a section 7 consultation with the Service to ensure that a particular activity is not likely to adversely modify critical habitat. The effort required for the consultation is an economic opportunity cost because the landowner or manager's

⁴⁵ For additional information on the definition of "surplus" and an explanation of consumer and producer surplus in the context of regulatory analysis, see: Gramlich, Edward M., *A Guide to Benefit-Cost Analysis* (2nd Ed.), Prospect Heights, Illinois: Waveland Press, Inc., 1990; and U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, EPA 240-R-00-003, September 2000, available at <http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>.

time and effort would have been spent in an alternative activity had the parcel not been included in the designation. When a compliance activity is not expected to significantly affect markets -- that is, not result in a shift in the quantity of a good or service provided at a given price, or in the quantity of a good or service demanded given a change in price -- the measurement of compliance costs can provide a reasonable estimate of the change in economic efficiency.

44. Where habitat protection measures are expected to significantly impact a market, it may be necessary to estimate changes in producer and consumer surpluses. For example, protection measures that reduce or preclude the development of large areas of land may shift the price and quantity of housing supplied in a region. In this case, changes in economic efficiency (i.e., social welfare) can be measured by considering changes in producer and consumer surplus in the market. Given the significant baseline protection already afforded the species, measurable market impacts are not anticipated. This analysis therefore focuses on compliance costs.

2.2.2 DISTRIBUTIONAL AND REGIONAL ECONOMIC EFFECTS

45. Measurements of changes in economic efficiency focus on the net impact of conservation efforts, without consideration of how certain economic sectors or groups of people are affected. Thus, a discussion of efficiency effects alone may miss important distributional considerations. OMB encourages Federal agencies to consider distributional effects separately from efficiency effects.⁴⁶ This analysis considers several types of distributional effects, including impacts on small entities; impacts on energy supply, distribution, and use; and regional economic impacts. It is important to note that these are fundamentally different measures of economic impact than efficiency effects, and thus cannot be added to or compared with estimates of changes in economic efficiency.

Impacts on Small Entities and Energy Supply, Distribution, and Use

46. This analysis considers how small entities, including small businesses, organizations, and governments, as defined by the RFA, might be affected by future species conservation efforts.⁴⁷ In addition, in response to Executive Order 13211 "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," this analysis considers the future impacts of conservation efforts on the energy industry and its customers.⁴⁸

Regional Economic Effects

47. Regional economic impact analysis can provide an assessment of the potential localized effects of conservation efforts. Specifically, regional economic impact analysis produces a quantitative estimate of the potential magnitude of the initial change in the regional

⁴⁶ U.S. Office of Management and Budget, "Circular A-4," September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

⁴⁷ 5 U.S.C. §§601 *et seq.*

⁴⁸ Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use, May 18, 2001.

economy resulting from a regulatory action. Regional economic impacts are commonly measured using regional input/output models. These models rely on multipliers that represent the relationship between a change in one sector of the economy (e.g., expenditures by recreators) and the effect of that change on economic output, income, or employment in other local industries (e.g., suppliers of goods and services to recreators). These economic data provide a quantitative estimate of the magnitude of shifts of jobs and revenues in the local economy.

48. The use of regional input-output models in an analysis of the impacts of species and habitat conservation efforts can overstate the long-term impacts of a regulatory change. Most importantly, these models provide a static view of the economy of a region. That is, they measure the initial impact of a regulatory change on an economy but do not consider long-term adjustments that the economy will make in response to this change. For example, these models provide estimates of the number of jobs lost as a result of a regulatory change, but do not consider re-employment of these individuals over time or other adaptive responses by impacted businesses. In addition, the flow of goods and services across the regional boundaries defined in the model may change as a result of the regulation, compensating for a potential decrease in economic activity within the region.
49. Despite these and other limitations, in certain circumstances regional economic impact analyses may provide useful information about the scale and scope of localized impacts. It is important to remember that measures of regional economic effects generally reflect shifts in resource use rather than efficiency losses. Thus, these types of distributional effects are reported separately from efficiency effects (i.e., not summed). In addition, measures of regional economic impact cannot be compared with estimates of efficiency effects, but should be considered as distinct measures of impact.
50. Given the limited nature of incremental impacts likely to result from this designation (see Chapter 4), measurable regional impacts are not anticipated.

2.3 ANALYTIC FRAMEWORK AND SCOPE OF THE ANALYSIS

51. This analysis: 1) identifies those economic activities most likely to threaten the caribou and its habitat; 2) describes the baseline regulatory protection for the species; and 3) monetizes the incremental economic impacts to avoid adverse modification of the proposed critical habitat area. This section provides a general description of the methodology used by the Service to separate baseline protections from the incremental impacts stemming from the designation of critical habitat. This evaluation of impacts in a "with CHD" versus a "without CHD" framework effectively measures the net change in economic activity associated with the proposed rulemaking. Further discussion of this methodology specific to the caribou is provided in Chapter 3.

2.3.1 IDENTIFYING BASELINE IMPACTS

52. The baseline for this analysis is the existing state of regulation, prior to the designation of critical habitat, which provides protection to the species under the Act, as well as under other Federal, State and local laws and guidelines. This "without CHD" scenario also considers a wide range of additional factors beyond the compliance costs of regulations

that provide protection to the listed species. As recommended by OMB, the baseline incorporates, as appropriate, trends in market conditions, implementation of other regulations and policies by the Service and other government entities, and trends in other factors that have the potential to affect economic costs and benefits, such as the rate of regional economic growth in potentially affected industries.

53. Baseline protections include sections 7, 9, and 10 of the Act, and economic impacts resulting from these protections to the extent that they are expected to occur absent the designation of critical habitat for the species. This analysis describes these baseline regulations. The primary focus, however, is not on baseline costs, since these will not be affected by the proposed regulation. Instead, the focus of this analysis is on monetizing the incremental impacts forecast to result from the proposed CHD.

- Section 7 of the Act, absent CHD, requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any endangered or threatened species. Consultations under section 7 result in administrative costs, as well as impacts of conservation efforts resulting from consultation.
- Section 9 defines the actions that are prohibited by the Act. In particular, it prohibits the "take" of endangered wildlife, where "take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."⁴⁹ "Harm" is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. "Harass" is defined by the Service as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. The economic impacts associated with this section manifest themselves in sections 7 and 10.

Under section 10(a)(1)(B) of the Act, a non-Federal entity (e.g., a landowner or local government) may develop a Habitat Conservation Plan (HCP) for a listed animal species in order to meet the conditions for issuance of an incidental take permit in connection with a land or water use activity or project.⁵⁰ The requirements posed by the HCP may have economic impacts associated with the goal of ensuring that the effects of incidental take are adequately avoided or minimized. The development and implementation of HCPs is considered a baseline protection for the species and habitat unless the HCP is determined to be precipitated by the designation of critical habitat, or the designation influences stipulated conservation efforts under HCPs. However, relative to caribou, there have been no HCPs developed or implemented.

⁴⁹ 16 U.S.C. 1532.

⁵⁰ U.S. Fish and Wildlife Service, "Endangered Species and Habitat Conservation Planning," August 6, 2002, accessed at <http://endangered.fws.gov/hcp/>.

Enforcement actions taken in response to violations of the Act are not included in this analysis.

54. The protection of listed species and habitat is not limited to the Act. Other Federal agencies, as well as State and local governments, may also seek to protect the natural resources under their jurisdiction. If compliance with the Clean Water Act (CWA) or State environmental quality laws, for example, protects habitat for the species, such protective efforts are considered to be baseline protections and costs associated with these efforts are categorized accordingly. Of note, however, is that such efforts may not be considered baseline in the case that they would not have been triggered absent the designation of critical habitat. In these cases, they are considered incremental impacts and are discussed below.

2.3.2 IDENTIFYING INCREMENTAL IMPACTS

55. This analysis quantifies the reasonably foreseeable potential incremental impacts of this rulemaking. The focus of the incremental analysis is to determine the impacts on land uses and activities from the designation of critical habitat that are above and beyond those impacts resulting from existing required or voluntary conservation efforts being undertaken due to other Federal, State, and local regulations or guidelines.
56. When critical habitat is designated, section 7 requires Federal agencies to consult on their actions regarding the potential destruction or adverse modification of critical habitat (in addition to considering whether the actions are likely to jeopardize the continued existence of the species). The added administrative costs of including consideration of critical habitat in section 7 consultations, and the additional impacts of implementing conservation efforts (i.e., conservation measures and reasonable and prudent alternatives in the case of an adverse modification finding) resulting from the protection of critical habitat are the direct compliance costs of designating critical habitat. These costs are not in the baseline and are considered incremental impacts of the rulemaking.
57. Incremental impacts may be the direct compliance costs associated with additional effort for consultations, reinitiated consultations, new consultations occurring specifically because of the designation, and additional conservation efforts that would not have been requested during consultation for the listed species without critical habitat. Additionally, incremental impacts may include indirect impacts resulting from reaction to the proposed designation of critical habitat (e.g., implementing caribou conservation in an effort to avoid designation of critical habitat), triggering of additional requirements under State or local laws intended to protect sensitive habitat, and uncertainty and perceptual effects on markets.

Direct Impacts

58. The direct, incremental impacts of CHD stem from the consideration of the potential for destruction or adverse modification of critical habitat during section 7 consultations. The two categories of direct, incremental impacts of CHD are: 1) the administrative costs of conducting section 7 consultation; and 2) implementation of any conservation efforts requested by the Service through section 7 consultation to avoid potential destruction or

adverse modification of critical habitat to the extent that those efforts would not also be required to avoid jeopardy or to minimize the impact of take.⁵¹

59. Section 7(a)(2) of the Act requires Federal agencies to consult with the Service whenever activities that they undertake, authorize, permit, or fund may affect a listed species or designated critical habitat. In some cases, consultations will involve the Service and another Federal agency only, such as the U.S. Army Corps of Engineers (the Corps). Often, they will also include a third party involved in projects that involve a permitted entity, such as the recipient of a CWA section 404 permit.
60. During consultation, the Service, the Action agency, and the entity applying for Federal funding or permitting (if applicable) communicate in an effort to minimize potential adverse effects to the species and/or to the designated critical habitat. Communication between these parties may occur via written letters, phone calls, in-person meetings, or any combination of these interactions. The duration and complexity of these interactions depends on a number of variables, including the type of consultation, the species, the activity of concern, and the potential effects to the species and designated critical habitat associated with the proposed activity, the Federal agency, and whether there is a private applicant involved.
61. Section 7 consultations with the Service may be either informal or formal. An *informal consultation* consists of discussions between the Service, the Action agency, and the applicant concerning an action that may affect a listed species or its designated critical habitat, and are designed to identify and resolve potential concerns at an early stage in the planning process. By contrast, a *formal consultation* is required if the Action agency determines that its proposed action may or will adversely affect the listed species or designated critical habitat in ways that cannot be resolved through informal consultation. The formal consultation process results in the Service's determination in its Biological Opinion of whether the action is likely to jeopardize a species or adversely modify critical habitat, and recommendations to minimize those impacts. Regardless of the type of consultation or proposed project, section 7 consultations can require substantial administrative effort on the part of all participants.

Administrative Section 7 Consultation Costs

62. Parties involved in section 7 consultations include the Service, a Federal "action agency," and in some cases, a private entity involved in the project or land use activity. The action agency (i.e., the Federal nexus necessitating the consultation) serves as the liaison with the Service. While consultations are required for activities that involve a Federal nexus and may affect a species regardless of whether critical habitat is designated, the designation may increase the effort for consultations in the case that the project or activity in question may adversely modify critical habitat. Administrative efforts for consultation may therefore result in both baseline and incremental impacts.

⁵¹ The term conservation efforts is intended to broadly capture efforts that stakeholders may undertake for the species, regardless of whether these efforts are explicitly called for in a section 7 consultation.

63. In general, two different scenarios associated with the designation of critical habitat may trigger incremental administrative consultation costs:
1. **Additional effort to address adverse modification in a new consultation -** New consultations taking place after CHD may require additional effort to address critical habitat issues above and beyond the listing issues. In this case, only the additional administrative effort required to consider critical habitat is considered an incremental impact of the designation.
 2. **Re-initiation of consultation to address adverse modification -** Consultations that have already been completed on a project or activity (but for which the project or activity is not yet completed) may require re-initiation to address critical habitat. In this case, the costs of re-initiating the consultation, including all associated administrative and project modification costs, are considered incremental impacts of the designation.
64. The administrative costs of these consultations vary depending on the specifics of the project. One way to address this variability is to show a range of possible costs of consultation, as it may not be possible to predict the precise outcome of each future consultation in terms of level of effort. Review of consultation records and discussions with multiple Service field offices resulted in a range of estimated administrative costs of consultation. For simplicity, the average of the range of costs in each category is applied in this analysis (see Exhibit 2-1).

Section 7 Conservation Effort Impacts

65. Section 7 consultation considering critical habitat may also result in additional conservation effort recommendations specifically addressing potential destruction or adverse modification of critical habitat. For future consultations considering jeopardy and adverse modification, and for re-initiations of past consultations to consider critical habitat, the economic impacts of conservation efforts undertaken to avoid adverse modification are considered incremental impacts of CHD, where such effort would not also be required to avoid jeopardy or to minimize the impact of take. For consultations that are forecast to occur specifically because of the designation (incremental consultations), impacts of all associated conservation efforts are assumed to be incremental impacts of the designation.

EXHIBIT 2-1. TYPICAL RANGE OF ADMINISTRATIVE CONSULTATION COSTS (2012\$)

CONSULTATION TYPE	SERVICE	FEDERAL AGENCY	THIRD PARTY	BIOLOGICAL ASSESSMENT	TOTAL COSTS
NEW CONSULTATION RESULTING ENTIRELY FROM CRITICAL HABITAT DESIGNATION (TOTAL COST OF A CONSULTATION CONSIDERING BOTH JEOPARDY AND ADVERSE MODIFICATION)					
Technical Assistance	\$570	n/a	\$1,050	n/a	\$1,620
Informal	\$2,450	\$3,100	\$2,050	\$2,000	\$9,500
Formal	\$5,500	\$6,200	\$3,500	\$4,800	\$20,000
Programmatic	\$16,700	\$13,900	n/a	\$5,600	\$36,100
NEW CONSULTATION CONSIDERING ONLY ADVERSE MODIFICATION (UNOCCUPIED HABITAT)					
Technical Assistance	\$428	n/a	\$788	n/a	\$1,220
Informal	\$1,840	\$2,330	\$1,540	\$1,500	\$7,130
Formal	\$4,130	\$4,650	\$2,630	\$3,600	\$15,000
Programmatic	\$12,500	\$10,400	n/a	\$4,200	\$27,100
RE-INITIATION OF CONSULTATION TO ADDRESS ADVERSE MODIFICATION					
Technical Assistance	\$285	n/a	\$525	n/a	\$810
Informal	\$1,230	\$1,550	\$1,030	\$1,000	\$4,750
Formal	\$2,750	\$3,100	\$1,750	\$2,400	\$10,000
Programmatic	\$8,330	\$6,930	n/a	\$2,800	\$18,100
INCREMENTAL EFFORT TO ADDRESS ADVERSE MODIFICATION IN A NEW CONSULTATION					
Technical Assistance	\$143	n/a	\$263	n/a	\$405
Informal	\$613	\$775	\$513	\$500	\$2,380
Formal	\$1,380	\$1,550	\$875	\$1,200	\$5,000
Programmatic	\$4,160	\$3,460	n/a	\$1,400	\$9,030
Source: IEC analysis of full administrative costs is based on data from the Federal Government Schedule Rates, Office of Personnel Management, 2012, and a review of consultation records from several Service field offices across the country conducted in 2002.					
Notes:					
1. Estimates are rounded to three significant digits and may not sum due to rounding.					
2. Estimates reflect average hourly time required by staff.					

Indirect Impacts

66. The designation of critical habitat may, under certain circumstances, affect actions that do not have a Federal nexus and thus are not subject to the provisions of section 7 under the Act. Indirect impacts are those unintended changes in economic behavior that may occur outside of the Act, through other Federal, State, or local actions, and that are caused by the designation of critical habitat. For example:

- **Triggering Other State and Local Laws.** Under certain circumstances, CHD may provide new information to a community about the sensitive ecological nature of a geographic region, potentially triggering additional economic impacts under other State or local laws. In cases where these impacts would not have been triggered absent CHD, they are considered indirect, incremental impacts of the designation.
- **Time Delays.** Both public and private entities may experience incremental time delays for projects and other activities due to requirements associated with the need to reinitiate the section 7 consultation process and/or compliance with other laws triggered by the designation. To the extent that delays result from the designation, they are considered indirect, incremental impacts of the designation. For example, third party law suits could result in delays in issuing permits for activities that occur on federal lands; however, time delays are difficult to measure.
- **Regulatory Uncertainty or Stigma** - Government agencies and affiliated private parties who consult with the Service under section 7 may face uncertainty concerning whether project modifications will be recommended by the Service and what the nature of these alternatives will be. This uncertainty may diminish as consultations are completed and additional information becomes available on the effects of critical habitat on specific activities. Where information suggests that this type of regulatory uncertainty stemming from the designation may affect a project or economic behavior, associated impacts are considered indirect, incremental impacts of the designation. In some cases, the public may perceive that CHD may result in limitations on private property uses above and beyond those associated with anticipated conservation efforts associated with regulatory requirements. Public attitudes about the limits or restrictions that critical habitat may impose can cause real economic effects to property owners, regardless of whether such limits are actually imposed. As the public becomes aware of the true regulatory burden imposed by critical habitat, the impact of the designation on property markets may decrease. In the case of the caribou, we would not expect property value declines associated with stigma. Uncertainty is explicitly addressed in this analysis associated with delays in permitting for silvicultural operations.

2.3.3 BENEFITS

67. Under Executive Order 12866, OMB directs Federal agencies to provide an assessment of both the social costs and benefits of proposed regulatory actions.⁵² OMB's Circular A-4 distinguishes two types of economic benefits: *direct benefits and ancillary benefits*. Ancillary benefits are defined as favorable impacts of a rulemaking that are typically unrelated, or secondary, to the statutory purpose of the rulemaking.⁵³
68. In the context of critical habitat, the primary purpose of the rulemaking (i.e., the direct benefit) is the potential to enhance conservation of the species. The published economics

⁵² Executive Order 12866, Regulatory Planning and Review, September 30, 1993.

⁵³ U.S. Office of Management and Budget, "Circular A-4," September 17, 2003, available at <http://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a004/a-4.pdf>

literature has documented that social welfare benefits can result from the conservation and recovery of endangered and threatened species. In its guidance for implementing Executive Order 12866, OMB acknowledges that it may not be feasible to monetize, or even quantify, the benefits of environmental regulations due to either an absence of defensible, relevant studies or a lack of resources on the implementing agency's part to conduct new research.⁵⁴ *Rather than rely on economic measures, the Service believes that the direct benefits of the proposed rule are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking.*

69. CHD may also generate ancillary benefits. Critical habitat aids in the conservation of species specifically by protecting the primary constituent elements (PCEs) on which the species depends. To this end, CHD can result in maintenance of particular environmental conditions that may generate other social benefits aside from the preservation of the species. That is, management actions undertaken to conserve a species or habitat may have coincident, positive social welfare implications, such as increased recreational opportunities in a region. While they are not the primary purpose of critical habitat, these ancillary benefits may result in gains in employment, output, or income that may offset the direct, negative impacts to a region's economy resulting from actions to conserve a species or its habitat.

2.3.4 GEOGRAPHIC SCOPE OF THE ANALYSIS

70. Economic impacts of caribou conservation are considered across the entire area proposed for CHD, as defined in Chapter 1. Results are presented by proposed critical habitat unit.

2.3.5 ANALYTIC TIME FRAME

71. Ideally, the time frame of this analysis would be based on the time period over which the critical habitat regulation is expected to be in place. Specifically, the analysis would forecast impacts of implementing this rule through species recovery (i.e., when the rule is no longer required). However, absent specific information on the expected time frame for recovery of the caribou, this analysis forecasts impacts over a "reasonably foreseeable" time frame. The time frame for this analysis includes, but is not limited to, activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. Forecast impacts will be based on the planning periods for potentially affected projects and will look out over a 20-year time horizon for most activities (2012 through 2031). OMB supports this time frame stating that "for most agencies, a standard time period of analysis is 10 to 20 years, and rarely exceeds 50 years."⁵⁵ We recognize that in some cases, the timeframe over which future impacts can

⁵⁴ *Ibid.*

⁵⁵ The U.S. Office of Management and Budget, February 7, 2011. "Regulatory Impact Analysis: Frequently Asked Questions (FAQs)." Accessed on May 3, 2011 by http://www.whitehouse.gov/sites/default/files/omb/circulars/a004/a-4_FAQ.pdf.

be reasonably forecast may be longer than this period, and this is discussed where appropriate in the analysis.

2.4 INFORMATION SOURCES

72. The primary sources of information for this report are communications with, and data provided by, personnel from the Service, local governments and other stakeholders. In addition, this analysis relies upon existing habitat management and conservation plans that consider the caribou. Data on baseline land use were obtained from regional planning authorities. A complete list of references is provided at the end of this document.

CHAPTER 3 | BASELINE PROTECTIONS

73. This chapter discusses the activities likely to be undertaken to protect the caribou absent the designation of critical habitat. These species and habitat protections result from implementation of the Act, as well as other Federal and State regulations and conservation plans. The qualitative discussion included in this chapter provides the context for the incremental analysis in Chapter 4.
74. The southern Selkirk Mountains population of woodland caribou occurs in high elevations (generally above 4,000 feet), steep terrain of the mountainous southeastern and east-central portions of British Columbia and the Selkirk Mountains of northern Idaho and northeastern Washington. Caribou require habitat including two vegetation zones: the cedar/hemlock zone at lower elevations and the subalpine fir/Engelmann spruce zone at high elevations, and transition areas and corridors between them.⁵⁶
75. Historically, federal land management agencies in the area where the caribou is found have undertaken extensive efforts to protect the caribou and other species, such as the grizzly bear (*Ursus arctos horribilis*), the bull trout (*Salvelinus confluentus*), and the Canada lynx (*Lynx canadensis*). As a result, all federally managed land already receives significant protection from management plans and existing critical habitat designations. An additional 54 percent (39,465 acres) of Subunit 2, Washington, includes wilderness areas and other Forest Management Areas that do not allow timber harvesting or most recreational activities.⁵⁷ Furthermore, the 1994 Recovery Plan provides protection to the caribou and its habitat.⁵⁸ We discuss these existing protections in greater detail in the following sections. At the end of the chapter, we summarize our approach to isolating the incremental impacts of CHD.
76. Chapter 3 of this report describes the protections afforded the caribou as a result of its listing under the Act. Efforts undertaken as a result of the listing may also benefit the species' habitat, since effects to habitat are considered during section 7 consultation, regardless of a critical habitat designation. Thus, the Act provides significant baseline protection for this species. The Selkirk Mountain Woodland Caribou Recovery Plan is discussed in section 3.1 of this chapter. In the remainder of this section, we describe other Federal laws and land management that supplement the baseline protections provided by the Act.

⁵⁶ 2011 Proposed Rule 76 FR 74018 *et seq.*

⁵⁷ Personal communication with Franklin Pemberton, Colville National Forest, via email correspondence, March 14, 2012.

⁵⁸ U.S. Fish and Wildlife Service, Pacific Region. 1994. Recovery Plan: Selkirk Mountain Woodland Caribou.

3.1 CONSERVATION PLANS AND EFFORTS

77. Various conservation efforts are already in place that benefit the caribou. These plans have existed and will exist in the future with or without the proposed critical habitat designation, so they are considered under the baseline.

3.1.1 RECOVERY PLAN

78. The Recovery Plan outlines conservation measures that can be implemented for recovery of the caribou. Actions to protect the species outlined in this document are voluntary and thus not required, but the Service recommends strategies included in the plan for inclusion in project designs during consultation to limit impact on the caribou.⁵⁹ The biggest concerns at the time of the Recovery Plan's publication were shootings and collisions, as these were by far the most prevalent known mortalities of Selkirk caribou from 1967 through 1990.⁶⁰ The plan emphasizes reducing vehicle-caribou collisions, shooting deaths, and purposeful poaching.⁶¹

3.1.2 RESEARCH

79. A significant amount of information has been collected on the caribou since 1994. The Idaho Department of Fish and Game (IDFG) and the British Columbia Ministry of Environment conduct annual surveys with fixed-wing aircraft and a helicopter. Additionally, information is collected on threats such as habitat fragmentation, predation, and human access, and various recovery efforts. Research efforts will continue to help in conservation and management plans, such as understanding caribou travel corridors, habitats, preferences, stressors, and natural history.⁶²

3.2 FEDERAL REGULATIONS/ACTS

80. Federal laws and regulations that benefit the caribou form a portion of the baseline protection for the caribou. Specifically, the following laws and regulations are part of the baseline scenario.

3.2.1 CLEAN WATER ACT

81. The Clean Water Act (CWA) establishes the basic framework for regulating discharges of pollutants into the waters of the United States. It gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs such as setting wastewater standards for industry. The CWA also includes requirements to set water quality standards for all contaminants in surface waters. Sections 401, 402, and 404 of the CWA may offer protection to the caribou by enhancing water quality, and preventing or limiting the discharge of dredge or fill materials. In particular, Section 404 of the Clean Water Act requires parties to obtain a permit from the Corps prior to discharging

⁵⁹ Incremental Effects Memorandum (Appendix C), pp. 3.

⁶⁰ U.S. Fish and Wildlife Service, Pacific Region. 1994. Recovery Plan: Selkirk Mountain Woodland Caribou, pg. 12.

⁶¹ Ibid. p. 28.

⁶² Incremental Effects Memorandum (Appendix C), pp. 3-4.

dredge or fill material into “waters of the United States.”⁶³ This permitting process represents a Federal nexus for purposes of section 7 consultation.⁶⁴ Jurisdictional waters of the United States are determined as follows: (1) in the absence of adjacent wetlands, jurisdiction extends to the ordinary high water mark; or (2) when adjacent wetlands are present, jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands; or (3) when the water of the United States consists only of wetlands, jurisdiction extends to the limit of the wetland. Because some streams flow through proposed critical habitat for the caribou, the EPA or the Corps may have jurisdiction over areas proposed as critical habitat.

82. The past consultation history for the caribou indicates that no section 402 or 404 permits have been issued within areas proposed for CHD, though they are possible in the future. As part of the section 404 permitting process, the Corps reviews the potential effects of the proposed action on plant and animal populations and recommends efforts to avoid adverse effects to these populations, providing baseline protection to the caribou and other species. In general, conservation efforts for plants and animals include:
- Selecting sites or managing discharges to ensure that habitat remains suitable for indigenous species.
 - Avoiding sites having unique habitat or other value, including habitat of threatened or endangered species.
 - Utilizing habitat development and restoration techniques to minimize adverse impacts and compensate for destroyed habitat.
 - Timing discharge to avoid biologically critical time periods.
 - Avoiding the destruction of remnant natural sites within areas already affected by development.⁶⁵
83. Any costs related to conservation measures required by the Corps as part of the section 404 permitting process, either for the caribou specifically or for waters of the U.S. in general, are considered baseline impacts.

3.2.2 WILDERNESS ACT OF 1964

84. The Salmo-Priest Wilderness encompasses 39,465 acres of Subunit 2, Washington. The Wilderness Act of 1964 protects wilderness areas by prohibiting all development and motorized recreation.⁶⁶ As the wilderness designation already provides strict protection benefiting the caribou, we do not anticipate that the CHD will result in incremental impacts in these areas.

⁶³ U.S. Code. Title 33, 1344.

⁶⁴ U.S. Code. Title 33, 1344.

⁶⁵ 40 CFR Part 230.75.

⁶⁶ 16 U.S. Code. 1131-1136

2.2.3 FEDERAL LAND POLICY AND MANAGEMENT ACT

85. BLM public lands are required to be managed in a way that protects scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values under the Federal Land Policy and Management Act of 1976. This includes providing food and habitat for fish and wildlife. Additionally, BLM manages habitat with focus on ecosystems to “conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species.”⁶⁷

3.2.4 NATIONAL FOREST MANAGEMENT ACT

86. The National Forest system preserves and enhances the diversity of plant and animal communities under the National Forest Management Act of 1976. Regulations issued under the Act require that, “Plan decisions affecting species diversity must provide for ecological conditions that . . . provide a high likelihood that those conditions are capable of supporting over time the viability of native and desired non-native species well distributed throughout their ranges within the plan area.”⁶⁸

3.2.5 OTHER LISTED SPECIES/CANDIDATE SPECIES

87. The proposed critical habitat for the caribou overlies areas occupied by the following species that are listed under the Act: grizzly bears, Canada lynx, and bull trout. The caribou, therefore, may benefit from the conservation efforts already in place for these species.
88. The range of the grizzly bear, which is federally listed as a threatened species,⁶⁹ covers 98 percent of proposed critical habitat for the caribou. The Selkirk Grizzly Bear Recovery Zone overlaps the proposed critical habitat designation and has standards for management of secure areas (areas without roads or without drivable roads) within grizzly bear management units. The reduced disturbance in these areas afforded due to the grizzly bear can help the caribou.⁷⁰
89. Streams in the final critical habitat designation for the bull trout intersect both subunits of the proposed critical habitat of the caribou. Recommendations for the bull trout include minimizing road construction within occupied watersheds and harvesting within riparian habitat conservation areas only if harvest will improve the health of the area. These conservation measures could also benefit the caribou through maintaining forage base distribution and abundance, and reducing the impacts of recreation.⁷¹
90. The USFS has mapped lynx analysis units (LAUs) across their ownership within the Selkirk Mountains. Management of lynx habitat within LAUs may provide some benefits to caribou by promoting retention/development of arboreal lichens. The Northern Rockies

⁶⁷ U.S. Bureau of Land Management 6840.02. Special Status Species Management, 2008.

⁶⁸ 36 C.F.R. § 219.20.

⁶⁹ 2010 Final Listing Rule 75 FR 14496.

⁷⁰ Incremental Effects Memorandum (Appendix C), pp. 5.

⁷¹ Incremental Effects Memorandum (Appendix C), pp. 4.

Lynx Management Direction restricts harvesting of multistoried stands within lynx habitat.⁷² Exhibit 3-1 maps how these areas overlap.

3.3 FEDERAL LAND MANAGEMENT

91. Federal agencies that manage land within the proposed critical habitat have ongoing management activities that consider the caribou, and which are considered part of baseline conservation efforts. Federal agencies already consult with the Service under section 7 and will continue to do so with or without the proposed critical habitat designation, so conservation measures resulting from consultations, including voluntary recommendations are considered baseline. Future section 7 consultations that address caribou habitat may be part of the incremental effects of the proposed rule, including additional protections completely due to the critical habitat.⁷³

3.3.1 U.S. FOREST SERVICE

92. The IPNF and CNF are managed by USFS. Both forests have National Forest Land and Resource Management Plans (LRMPs) that incorporate caribou conservation.

Idaho Panhandle National Forests

93. IPNF already takes extensive measures to protect the caribou within the CHD. These measures generally contribute to caribou recovery in IPNF, including management decisions or standards to:
- Create seasonal limitations on motorized vehicle access to public lands to minimize disturbance, including a 1994 closure for a large area of the Selkirk Crest and a 2007 court order restricting snowmobile use on some public land areas, and on other public land areas limits such use to designated trails;⁷⁴
 - Control or contain fire to reduce habitat loss;
 - Maintain caribou travel corridors in mature timber, especially in regards to timber harvesting;
 - Manage roads and human travel corridors to limit impacts; and
 - Implement the Selkirk Mountain Caribou Management Plan/recovery Plan.⁷⁵

The IPNFs incorporate the Recovery Plan and address adverse effects to caribou habitat in the context of establishing forest management practices. The Land and Resource Management Plan and Endangered Species Standard state that research regarding habitat of threatened and endangered species will be incorporated into forest management, including use of the best available science. For activities that involve timber harvests on the national forest, “IPNFs do not implement timber harvest that removes allocated old

⁷² Incremental Effects Memorandum (Appendix C), pp. 5.

⁷³ Incremental Effects Memorandum (Appendix C), pp. 6.

⁷⁴ Personal Communication with Jason Kirchner via email correspondence, Idaho Panhandle National Forests, March 6, 2012.

⁷⁵ Incremental Effects Memorandum (Appendix C), pp. 6.

growth stands.”⁷⁶ This includes 60,000 acres of old growth forest allocated within the Caribou Recovery Area.⁷⁷ Similar management considerations for adverse modification of grizzly bear habitat are addressed in areas intersecting the caribou CHD. For Idaho Roadless Areas, IPNFs will use land management plan components that are not necessarily consistent with the Roadless Rule for guidance. This includes consultation with the U.S. Fish and Wildlife Service if adverse effect to the grizzly bear is expected. The USFS is amending its land and resource management plans to create standards and guidelines for decisions regarding wheeled, motorized vehicle use, and to contribute to conservation and recovery of species within the forests. Activities considered include road construction, reconstruction, or timber cutting, sale or removal in Idaho Roadless Areas that are in core habitat within grizzly bear management units.⁷⁸

Colville National Forest

94. The CNF’s LRMP also has measures to support management of caribou habitat, including:

- Manage identified habitat with CNF Guidelines for Management of the Selkirk Mountain Caribou Habitat (Appendix I, FEIS) and Caribou Recovery Plan;
- Recreation facilities and uses must comply with the Semi-Primitive Non-Motorized or Semi-Primitive Motorized Recreation Opportunity Spectrum setting, which helps preserve habitat;
- Execute seasonal or permanent closures when key habitats are within a quarter mile of open roads or trails and off-road vehicle activity, when activities could negatively affect habitat use by the caribou.⁷⁹ For example two roads were closed to snowmobile use in 2003 for the caribou and the Travel Management Rule prohibits cross-country travel and prevents roads or trails to be open to off-highway vehicles (OHVs) in CNF’s portion of the proposed critical habitat;⁸⁰
- Coordinate timber management activities with site specific needs of the caribou. Ensure silvicultural prescriptions and harvest schedules meet caribou habitat needs;
- Restrict new road construction;
- Employ road closures to protect the species;
- Control wildfires that might threaten the caribou;⁸¹

⁷⁶ McNair, Ranotta K. Forest Supervisor, Idaho Panhandle National Forests. Letter to Rich Torguemada, U.S. Fish and Wildlife Service, September 18, 2008.

⁷⁷ Ibid.

⁷⁸ McNair, Ranotta, K. Forest Supervisor, Idaho Panhandle National Forests. Letter to Susan Martin, U.S. Fish and Wildlife Service, August 7, 2008.

⁷⁹ Incremental Effects Memorandum (Appendix C), 6-7.

⁸⁰ Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 6, 2012.

⁸¹ Incremental Effects Memorandum (Appendix C), pp. 6-7.

- Limit activities in the Salmo-Priest Wilderness, adjacent Roadless areas, and research natural areas due to protection of old growth associated species; and
- Harvest timber in riparian habitat conservation areas along streams in a way that improves riparian conditions.⁸²

3.3.3 WILDERNESS AREA

95. The proposed critical habitat in northeastern Washington and the Salmo-Priest Wilderness overlap. Over half of Subunit 2 includes this wilderness area and other Forest Management Areas that do not allow timber harvesting or most recreational activities.⁸³ Activities in the Salmo-Priest Wilderness are limited to non-motorized recreation, scientific research, and other non-invasive activities. Logging, mining, roads, mechanized vehicles (including bicycles), and other forms of development are prohibited.⁸⁴

3.3.4 BUREAU OF LAND MANAGEMENT

96. BLM manages 231 acres within the proposed critical habitat. The majority of this land is within a wilderness study area and the rest is in an area that BLM manages with a hands-off approach in order to allow conservation of grizzly bear habitat. Due to little management of the area, the only activity that occurs on these lands is primitive recreation.⁸⁵

3.4 STATE WILDLIFE LAWS

97. The states of Idaho and Washington also have laws to conserve the caribou, and that will continue regardless of critical habitat designation, so are therefore considered part of the baseline.

3.4.1 WASHINGTON

98. The State of Washington considers the caribou endangered. The Washington Department of Fish and Wildlife ensures the listing and recovery of species in danger of being lost in the state.⁸⁶ One conservation measure Washington has taken was a \$10,000 grant for education of snow rangers to talk to snowmobilers about caribou habitat.⁸⁷

3.4.2 IDAHO

99. The State of Idaho considers the caribou endangered.

⁸² Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 6, 2012.

⁸³ Personal communication with Franklin Pemberton, Colville National Forest, via email correspondence, March 14, 2012.

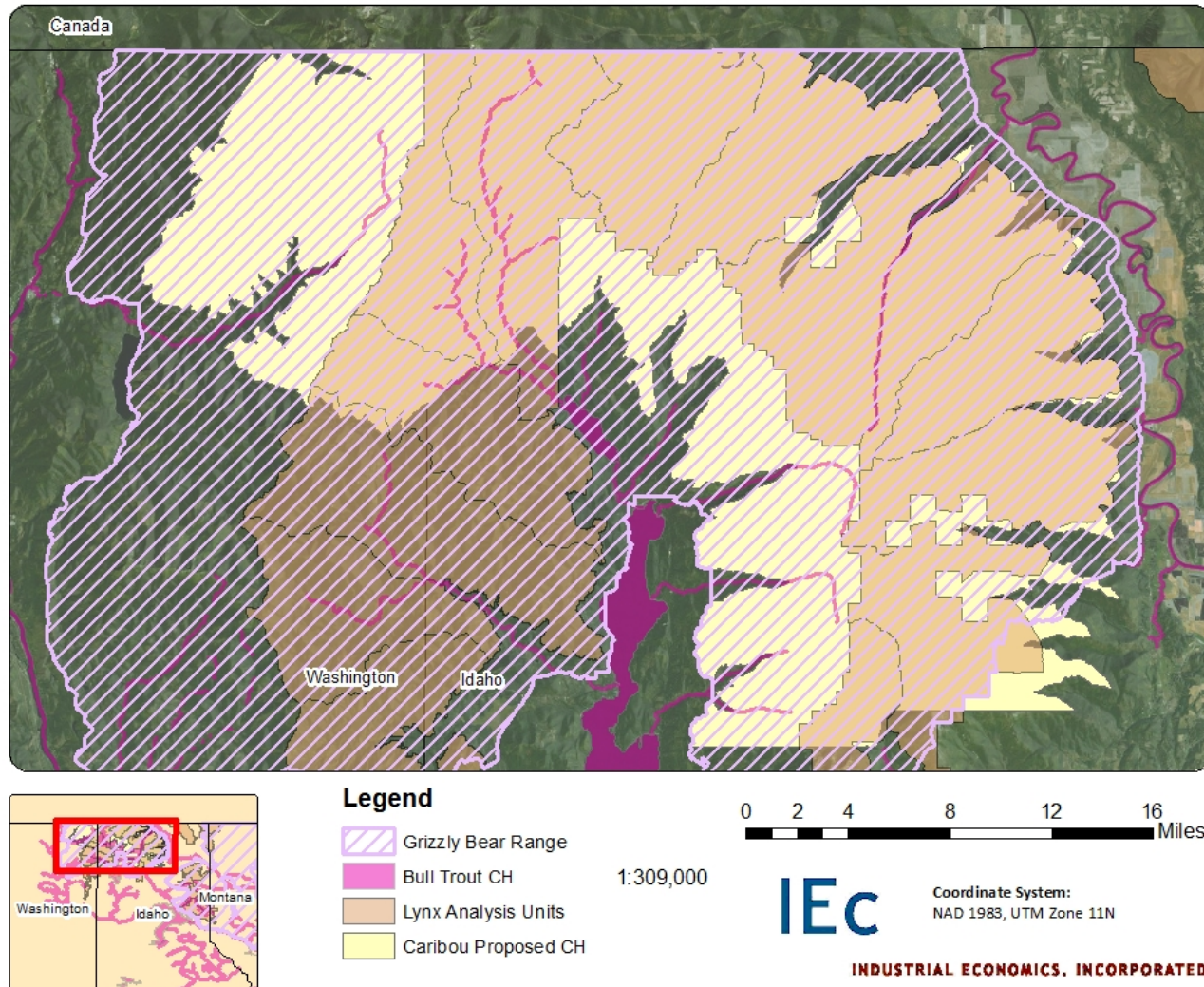
⁸⁴ Incremental Effects Memorandum (Appendix C), pp. 7.

⁸⁵ Personal Communication with Cindy Weston via phone correspondence, Bureau of Land Management, February 21, 2012.

⁸⁶ Washington Department of Fish & Wildlife. 2012. Species of Concern. Viewed on March 5, 2012 at: <http://wdfw.wa.gov/conservation/endangered/>.

⁸⁷ Personal Communication with Steve McClellan via phone correspondence, Washington State Recreation and Conservation Office, March 1, 2012.

EXHIBIT 3-1. PROPOSED CRITICAL HABITAT AREAS OVERLAPPING THE RANGES OF GRIZZLY BEARS (*URSUS ARCTOS HORRIBILIS*), CANADA LYNX (*LYNX CANADENSIS*), AND BULL TROUT (*SALVELINUS CONFLUENTUS*)



3.5 ISOLATING INCREMENTAL IMPACTS

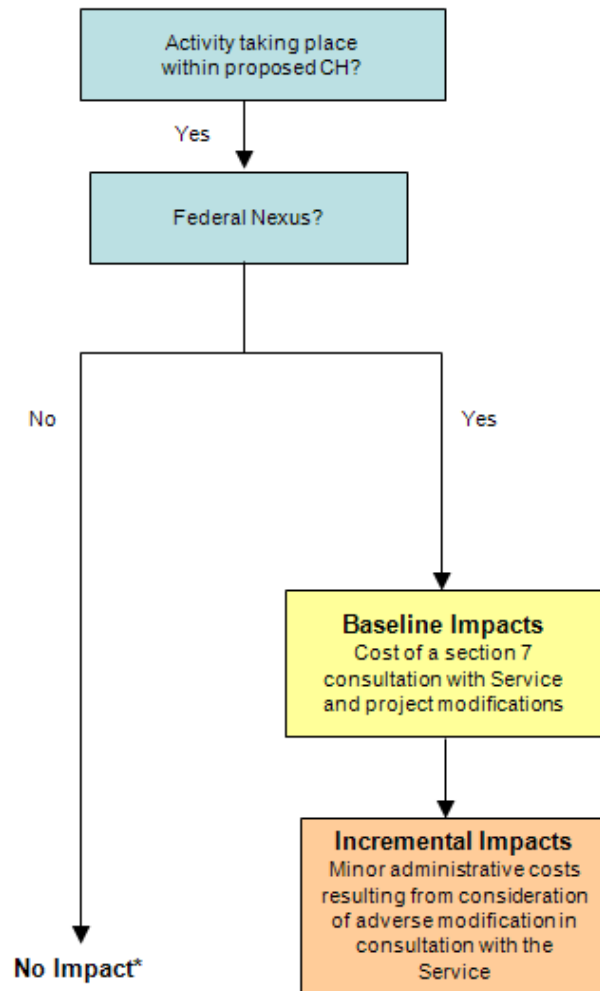
100. To inform the economic analysis, the Service provided a memorandum describing its expected approach to conservation for caribou CHD. Specifically, the Service’s memorandum provides information on how the Service intends to address projects during section 7 consultation that might lead to adverse modification of critical habitat as distinct from projects that may jeopardize the species. The Service’s memorandum is provided in Appendix C.
101. For purposes of this analysis, we generally assume that for projects occurring on federally managed lands, the baseline protections provided under the listing and under management plans that incorporate the Recovery Plan adequately protect the species and its habitat. Minor incremental administrative costs are possible if projects require section 7 consultation. Since both subunits are considered occupied, these administrative costs will be limited to the additional costs of considering critical habitat during consultation.
102. For projects not managed by the federal government, we first consider whether a Federal nexus compelling section 7 consultation exists. For projects with a Federal nexus (e.g., Corps CWA permits, or the presence of a listed animal species triggering the issuance of an incidental take permit under section 10 of the Act), direct incremental impacts may vary depending on whether the entity, such as the Corps, deems that a consultation is necessary.
103. Both proposed critical habitat subunits are occupied by the species and, absent the designation of critical habitat, are subject to jeopardy analysis during section 7 consultation. According to the memorandum provided by the Service, designation of these areas is unlikely to cause the

“completion of additional consultations to be necessary for projects proposed in areas proposed for designation as critical habitat that would not otherwise be subject to section 7 consultation under the jeopardy standard. However, as a result of the caribou critical habitat designation, Federal agencies may need to reinstate previously completed section 7 consultations for actions that only addressed effects to caribou under the jeopardy standard (due to its listing as an endangered species) in areas proposed as critical habitat.”⁸⁸

Therefore incremental costs will generally be the administrative efforts to reinstate consultations, and the additional cost to address adverse modification in consultation in the future to the extent that such cost would not already be incurred in order to avoid jeopardy or to minimize the impact of take.

104. Across the proposed designation, we also acknowledge that project modifications to avoid adverse modification may differ from those to avoid jeopardy to the species, though the Service deems this unlikely. We evaluate this possibility in Chapter 4.

⁸⁸ Incremental Effects Memorandum (Appendix C), pp. 10.

EXHIBIT 3-2. FRAMEWORK FOR DETERMINING BASELINE AND INCREMENTAL IMPACTS⁸⁹

* No measurable impact in this scenario; however, there may be an educational benefit to critical habitat designation.

Source: U.S. Fish and Wildlife Service, "Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Designate Critical Habitat for the Southern Selkirk Mountains population of the woodland caribou (*Rangifer tarandus caribou*)."
December 1, 2011 (see Appendix B).

⁸⁹ Incremental Effects Memorandum (Appendix C), pp. 3.

CHAPTER 4 | INCREMENTAL COSTS

105. In this chapter, we estimate the incremental costs of designating critical habitat for the caribou. Due to the significant existing protections already afforded the caribou, as described in Chapter 3, incremental impacts of CHD will, in most areas, be limited to the additional administrative cost of considering adverse modification during section 7 consultation. However, private land managers are expected to bear the majority of costs due to time delays associated with timber harvesting on private lands due to a federal nexus caused by use of federal roads for access.
106. In this chapter, we first summarize the results of this analysis, including forecast administrative and project modification costs. In the subsequent sections, we describe our analysis of reasonably foreseeable economic impacts to timber management, recreation, and other activities, by affected entity. The chapter then concludes with a discussion of key sources of uncertainty.

4.1 BACKGROUND ON POTENTIALLY IMPACTED ACTIVITIES

4.1.1 RECREATION

107. Recreation is a major use of lands within the proposed CHD. Recreational activities occurring on state and federally-managed lands include: hunting, fishing, hiking, picking huckleberries, camping, ATV use, snowmobiling, motorcycling, sight-seeing, wildlife viewing, mountain biking, horseback riding, geo-caching, photography, cross-country skiing, snowshoeing, and trapping. Various stakeholders have stated concerns regarding the impact of the designation on the snowmobiling industry. In 2011, there were 234 snowmobile registrations in Boundary County, and 2,754 in Bonner County.⁹⁰ Additionally, OHV registration by residence in 2010 were 3,593 in Bonner County and 850 in Boundary County.⁹¹ These sports have been growing in popularity, while environmental regulations have limited use of public lands within the proposed critical habitat for snowmobiling and OHV activities. Some of these limitations occurred due to:
- A 1994 closure order for snowmobile use for a large area of Selkirk Crest within IPNFs;

⁹⁰ Idaho Snowmobile Registration Designation Statistics 2007-2011, received via email communication with Marc Hildesheim from Idaho Parks and Recreation, North Region Trail Specialist, February 29, 2012.

⁹¹ Idaho OHV Registration by Residence 2006-2010, received via email communication with Marc Hildesheim from Idaho Parks and Recreation, North Region Trail Specialist, February 29, 2012.

- A court order in 2007 limiting snowmobile use to designated trails and areas while IPNFs completes and consults on a winter motorized recreation strategy;
- Monitoring of closure areas and monitoring of areas to which snowmobile use has shifted due to the restrictions;
- The listing of the caribou and other species (i.e. grizzly bear, Canada lynx); and
- Other regulations such as the Wilderness Act, National Forest Management Act, Multiple Sustained Yield Act, and Clean Water Act.

Additionally, the Idaho Panhandle National Forests note that, “Snowmobile technology has also made considerable advances in the last couple decades, allowing riders to access areas that would have been difficult or impossible to access in the past. Snowmobiles are faster, more powerful, and able to operate in a greater range of snow conditions than ever before.” These technological changes have increased the potential for conflicts between snowmobile use and caribou conservation.⁹² Other recreational activities, such as hiking, wildlife viewing, photography, and sight-seeing, have not been affected under the baseline and no changes are expected in these activities.

4.1.2 TIMBER

108. Timber harvesting is a major economic activity in the study area. Timber harvests are taking place within the IPNF, CNF, on privately owned lands, and on Idaho state-managed lands. Due to the Federal nexus on USFS lands, IPNF and CNF have already incorporated conservation measures for the caribou into permitting for timber harvesting.

4.2 SUMMARY OF INCREMENTAL COSTS ASSOCIATED WITH DESIGNATION OF CARIBOU HABITAT

109. Because the Service does not anticipate additional project modifications to result from consideration of adverse modification in future section 7 consultations (beyond that required under the jeopardy standard), this analysis focuses on incremental administrative costs and costs of time delays for some land use activities. In its Incremental Effects Memorandum, the Service states that for a proposed action to result in jeopardy and, coincidentally, adverse modification, “it would likely have to significantly alter large areas of high elevation mature to old-growth western hemlock/western red cedar climax forest, or subalpine fir/Engelmann spruce climax forest, or restrict caribou movement through such areas. In light of our history of consultations with federal land management agencies, we believe that it is unlikely that a federal agency would propose such a project.”⁹³
110. The proposed revised critical habitat falls into three categories: federally-managed public lands, state-managed land, and private lands. This analysis details costs to activities on all

⁹² Personal Communication with Jason Kirchner via email correspondence, Idaho Panhandle National Forests, March 6, 2012.

⁹³ Incremental Effects Memorandum (Appendix C), pp. 11.

three types of lands. This analysis also forecasts administrative costs associated with section 7 consultation for all activities. Because the Service and land managers do not anticipate any changes to the number of consultations occurring in occupied habitat, we use the average number of formal, informal and programmatic consultations per year for each activity, obtained from the 16-year consultation history for the caribou. To estimate the additional consultations anticipated, we multiply activity-specific consultation rates by the ratio of years in the time frame of our analysis (20) to years of consultation (16). Where more specific information is available, we use those forecasts in place of the numbers implied by the consultation history. For each activity, this analysis identifies the subunit where that activity occurs and who initiates the consultation. Annual consultation predictions from past rates are shown in Exhibit 4-1.

111. Exhibit 4-2 presents the anticipated incremental impacts of critical habitat by subunit and land manager. Over the 20-year period of this analysis, incremental impacts of the administrative cost of consultation and time delays due to road use permits are estimated to be \$1,500,000, in present value terms, assuming a seven percent real discount rate. This estimate represents an impact of approximately \$132,000 on an annualized basis.

EXHIBIT 4-1. ANNUAL CONSULTATION FORECAST BY ECONOMIC SUBUNIT, AFFECTED ENTITY, AND ACTIVITY

SUBUNIT	AFFECTED ENTITY	ACTIVITY	ANNUAL INFORMAL CONSULTATIONS	ANNUAL FORMAL CONSULTATIONS	ANNUAL PROGRAMMATIC CONSULTATIONS
1. Idaho	Idaho Panhandle National Forests	Recreation	0.25	0.08	0
		Timber	0.44	0.04	0
		Other	0.5	0.14	0
	Other federal agencies	Other	0.19	0.06	0
2. Washington	Colville National Forest	Recreation	0.44	0.09	0
		Timber	0.88	0.01	0
		Other	1.06	0.13	0
	Other federal agencies	Other	0	0	0.06

Note: Values are calculated by dividing the total number of consultations by the 16 years over which they took place.

EXHIBIT 4-2. SUMMARY OF FORECAST INCREMENTAL IMPACTS BY SUBUNIT AND AFFECTED ENTITIES, 2012-2031 (2012\$, DISCOUNTED AT SEVEN PERCENT)

SUBUNIT	AFFECTED ENTITY	PRESENT VALUE	ANNUALIZED
1: Idaho	Idaho Panhandle National Forests	\$135,000	\$11,900
	Bureau of Land Management	\$18,100	\$1,600
	Idaho Department of Lands	\$0	\$0
	Private Entities	\$1,220,000	\$107,000
	Other Federal Agencies	\$8,600	\$759
2: Washington	Colville National Forest	\$105,000	\$9,230
	Other Federal Agencies	\$6,400	\$564
Total:		\$1,500,000	\$132,000

4.3 IDAHO-PANHANDLE NATIONAL FORESTS

112. Land managed by the IPNF comprises about 222,750 acres, or nearly 60 percent of proposed critical habitat. Activities within proposed critical habitat on IPNF are mainly recreation and a relatively small amount of timber harvesting. Overall incremental costs for lands managed by IPNF are in Exhibit 4-3.

4.3.1 IMPACTS ON RECREATION

113. Recreation in IPNF varies by season. In the spring, summer and fall, activities include use of recreational vehicles (ATVs, motorcycles), sight-seeing, wildlife viewing, hiking, mountain biking, horseback riding, camping, geo-caching, hunting, fishing, photography, and berry picking, while in the winter activities include snowmobiling, cross-country skiing, snowshoeing, and trapping.⁹⁴ Currently, recreational activities do not have much effect on caribou habitat but can affect the use of the habitat by caribou through disturbance.

114. IPNF already consults with the Service on caribou, so the incremental effect of the designation will involve including consideration of the potential for adverse modification of caribou habitat as part of each consultation.⁹⁵ From the rates of consultation over the past 16 years, future rates of consultation over the 20 year time frame of the analysis were determined, and administrative costs assigned based on Exhibit 2-1. Incremental costs of consultation relating to recreation activities include a reinitiated formal consultation on road and trail maintenance in 2012 (\$18,100), additional effort to address adverse modification in future informal consultations (\$11,900), and additional effort to address adverse modification in future formal consultations (\$7,810).⁹⁶

⁹⁴ Personal Communication with Jason Kirchner via email correspondence, Idaho Panhandle National Forests, March 6, 2012.

⁹⁵ Ibid.

⁹⁶ Review of consultation history provided by the U.S. Fish and Wildlife Service.

4.3.2 IMPACTS ON TIMBER

115. Little timber harvesting occurs within the proposed critical habitat compared to the rest of the IPNF due to restrictions for caribou, grizzly bears, Canada lynx, and other environmental issues.⁹⁷ The 1987 IPNF National Forest Land and Resource Management Plan includes forest management standards for projects in caribou habitat. Conservation measures include basing timber management regimes on site-specific analysis of caribou habitat needs. Guidelines include providing seasonal habitat within caribou habitat, maintaining stands suitable for caribou, moving younger stands towards a suitable condition through stand stocking control, and creating spring habitat through management of early seral stands. Due to these baseline management standards, USFS does not expect changes in timber management projects. The only reasonably foreseeable incremental changes would be in the area outside the caribou recovery area, which encompass 18,771 acres within the proposed CHD.⁹⁸
116. There are currently four timber sales partially overlapping proposed critical habitat. One is likely to be cancelled for reasons other than species conservation and the majority of another sale area was previously logged, and therefore not in an area of mature forest. Two sales are expected to occur along the boundary of the proposed critical habitat. These projects represent a small portion of harvesting in IPNF.⁹⁹ Incremental costs related to timber activities on federal lands within proposed critical habitat include a reinitiated formal consultation on firewood cutting in 2012 (\$10,000), additional effort to address adverse modification in future informal consultations (\$20,800), and additional effort to address adverse modification in future formal consultations (\$3,650).¹⁰⁰

4.3.3 IMPACTS ON OTHER ACTIVITIES AND PLANS

117. **Incremental costs related to the proposed critical habitat designation within the IPNF are solely administrative.** We do not have a comprehensive list of activities for which IPNF will need to reinitiate consultation or make an additional effort to address adverse modification; however, we used information from communication with IPNF on those activities for which IPNF would have to reinitiate consultation, and we use the consultation history to determine overall rates of consultation for activities other than recreation and timber in the future. Based on this information, this analysis forecasts that there will likely be at least three reinitiated formal consultations for grazing, communications site maintenance, and fire suppression, and one reinitiated programmatic consultation on the travel management plan in 2012 (\$48,100).¹⁰¹
118. The Idaho Panhandle National Forest Land Management Plan from 1987 is currently being revised, and will need to consider CHD of the caribou.¹⁰² The Forest Plan is meant

⁹⁷ Personal Communication with Dave Cobb via phone correspondence, Idaho Panhandle National Forests, February 16, 2012.

⁹⁸ Personal Communication with Jason Kirchner via email correspondence, Idaho Panhandle National Forests, March 6, 2012.

⁹⁹ Ibid.

¹⁰⁰ Review of consultation history provided by the U.S. Fish and Wildlife Service.

¹⁰¹ Personal Communication with Jason Kirchner via email correspondence, Idaho Panhandle National Forests, March 6, 2012.

¹⁰² Ibid.

to be revised every 15 years,¹⁰³ so it will likely need to consider proposed critical habitat for the caribou twice within the 20 year timeframe of this analysis. The additional effort to address adverse modification will be taken in 2012 (\$9,030) and 2027 (\$9,030).

119. Activities that required consultations in the past within IPNF include: army activities, grazing, management plans, pest control, power projects, transportation, and weed maintenance. Using past rates of consultation, there will likely be additional effort to address adverse modification in future informal consultations (\$23,800), and additional effort to address adverse modification in future formal consultations (\$13,540).¹⁰⁴

EXHIBIT 4-3. SUMMARY OF FORECAST INCREMENTAL IMPACTS FOR IPNF, 2012-2031 (2012\$, DISCOUNTED AT SEVEN PERCENT)

ACTIVITY	PRESENT VALUE	ANNUALIZED
Recreation	\$29,300	\$2,580
Timber	\$23,900	\$2,110
Other	\$81,600	\$7,200
Total:	\$134,800	\$11,890

Note: Totals may not sum due to rounding

4.4 COLVILLE NATIONAL FOREST

120. The CNF encompasses all of Subunit 2 in Washington, just under 72,000 acres or 19 percent of the proposed critical habitat. Like IPNF, the majority of human activity in this area is recreational in nature, but there is also some timber harvesting. Total costs by activity for CNF are in Exhibit 4-4.

4.4.1 IMPACTS ON RECREATION

121. Recreation in CNF also varies by season. In the warmer months, recreational activity consists of sight-seeing, wildlife viewing, hiking, mountain biking, camping, geo-caching, hunting, fishing, and photography, while in the winter recreation consists of snowmobiling, cross-country skiing, and trapping. One known ongoing project is a trail reconstruction project (Salmo Basin Trail) within proposed critical habitat.¹⁰⁵ The CNF does not expect any incremental changes in recreational activities due to the proposed critical habitat designation.¹⁰⁶
122. Based on rates of consultation over the past 16 years, future rates of consultation over the 20 year time frame of the analysis were determined. Incremental costs of consultation

¹⁰³ Personal Communication with Dave Cobb via phone correspondence, Idaho Panhandle National Forests, February 16, 2012.

¹⁰⁴ Review of consultation history provided by the U.S. Fish and Wildlife Service.

¹⁰⁵ Ibid.

¹⁰⁶ Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 6, 2012.

relating to recreation activities include additional effort to analyze potential adverse modification in future informal consultations (\$20,800), and additional effort to address adverse modification in future formal consultations (\$9,380).¹⁰⁷

4.4.2 IMPACTS ON TIMBER

123. Since the CNF Land and Resource Management Plan already helps maintain timber stands suitable for the caribou, and moves younger stands towards a suitable condition through stand stocking control, CNF “does not expect any new changes in design and implementation of forest management projects because [they] are already required to design these projects using the most recent, best available science.”¹⁰⁸
124. There have been four forest management projects within the caribou recovery area in the last 10 to 15 years, three of which are in the proposed critical habitat area. The next forest management project tentatively planned within critical habitat in the next ten years is estimated to generate 12 million board feet of merchantable product.¹⁰⁹ CNF creates an informal plan for timber projects every 10 years. CNF must consult with the Service under NEPA for each project area within the larger plan, where multiple timber projects can be included in each consultation. Additionally, sensitive areas are sometimes separated into their own NEPA so other projects can continue without significant time delay.¹¹⁰ It is difficult to determine the number of future NEPA analyses required, so like the other activities, we use the past consultation rate to determine future consultations. Since no project modifications are expected to timber activities within the CHD, costs are limited to incremental costs of consultation relating to timber activities including additional effort to address adverse modification in future informal consultations (\$41,650), and additional effort to address adverse modification in future formal consultations (\$9,380) over the next 20 years.¹¹¹

4.4.3 IMPACTS ON OTHER ACTIVITIES AND PLANS

125. There is one trail reconstruction project proposed and two proposals for exploratory drilling to assess mineral resources (lead and zinc) on the western edge of the proposed critical habitat area in CNF.¹¹² CNF would consult on the caribou (as well as, potentially, other species) regardless of CHD, and the Forest Service currently believes that these consultations would likely have the same outcome regardless of the CHD.¹¹³ As such, we do not consider these projects individually in this analysis, but assume that past rates of consultation on other activities are indicative of future rates of consultation and incremental consultation costs over the 20 year time frame of the analysis.

¹⁰⁷ Review of consultation history provided by the U.S. Fish and Wildlife Service.

¹⁰⁸ Ibid.

¹⁰⁹ Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 6, 2012.

¹¹⁰ Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 16, 2012.

¹¹¹ Review of consultation history provided by the U.S. Fish and Wildlife Service.

¹¹² Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 6, 2012.

¹¹³ Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, April 25, 2012.

126. The CNF will reinitiate one programmatic consultation on all on-going activities of the area (\$18,100). Examples of included activities are personal use firewood cutting, routine road maintenance, communications site maintenance, and fire suppression. CNF does not expect any changes in uses in the reinitiated consultation.¹¹⁴ CNF will also consider adverse modification in future programmatic consultations on future management plans, which are revised every 15 years and are expected to be instituted in 2013 and 2028 (\$9,030 each).¹¹⁵ Other activities considered in past consultations include transportation, grazing, management projects, pest management, water management, and weed control. Future incremental costs of consultation relating to other activities include additional effort to address adverse modification in future informal consultations (\$50,575), and additional effort to address adverse modification in future formal consultations (\$12,500).¹¹⁶

EXHIBIT 4-4. SUMMARY OF FORECAST INCREMENTAL IMPACTS FOR CNF, 2012-2031 (2012\$, DISCOUNTED AT SEVEN PERCENT)

ACTIVITY	PRESENT VALUE	ANNUALIZED
Recreation	\$17,100	\$1,510
Timber	\$28,900	\$2,550
Other	\$65,300	\$5,760
Total:	\$111,300	\$9,820

Note: Totals may not sum due to rounding

4.5 BUREAU OF LAND MANAGEMENT

127. BLM owns 231 acres within the Idaho subunit of the proposed critical habitat. Within this area are two wilderness study areas and a third area that is managed as grizzly bear habitat; as a result, few activities take place in those areas. The BLM has a management plan for the grizzly bear, but this plan does not impose any active conservation measures, but simply prevents timber harvesting in these areas.¹¹⁷ Some “primitive recreation” does exist, but in the management plan these areas are considered “hands-off” (i.e., the public can access these areas but there are no campgrounds or plans for timber harvests). In addition, there is very limited public access to BLM lands. In these areas no changes are expected to be associated with the proposed critical habitat designation. Land managers indicate that the public does not utilize this area specifically to snowmobile, but could potentially access it in conjunction with the IPNF (i.e., snowmobiling is not prohibited).

¹¹⁴ Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 6, 2012.

¹¹⁵ Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 16, 2012.

¹¹⁶ Review of consultation history provided by the U.S. Fish and Wildlife Service.

¹¹⁷ Personal Communication with Cindy Weston, via phone correspondence, Bureau of Land Management, Coeur d’Alene Field Office, February 21, 2012.

128. The only incremental cost on the BLM lands within the proposed critical habitat would be reinitiating programmatic consultation of the management plan in 2012 (\$18,100), on which the BLM already consulted with the Service due to the listing of the caribou.

4.6 OTHER FEDERAL ENTITIES

129. Based on the consultation history, it is possible that other federal entities will have to consult with the Service on the proposed CHD. Consultations by other federal entities in the past included U.S. Army activities, border projects by U.S. Customs and Border Protection, mine removal by the EPA, and water treatment by the Corps. Based on the frequency of consultations with these entities in the past we estimate additional future effort to address adverse modification to caribou habitat in future informal consultations in Idaho (\$8,930), additional effort to address adverse modification in future formal consultations in Idaho (\$6,250), and additional effort to address adverse modification in programmatic consultation in Washington (\$11,300).¹¹⁸ These costs are shown in Exhibit 4-5. These consultation efforts are not expected to result in additional project modifications.

EXHIBIT 4-5. SUMMARY OF FORECAST INCREMENTAL IMPACTS FOR OTHER FEDERAL ENTITIES, 2012-2031 (2012\$, DISCOUNTED AT SEVEN PERCENT)

SUBUNIT	PRESENT VALUE	ANNUALIZED
1. Idaho	\$8,600	\$759
2. Washington	\$6,400	\$564
Total:	\$15,000	\$1,323

Note: Totals may not sum due to rounding

4.7 IDAHO DEPARTMENT OF LANDS

130. Idaho Department of Lands (IDL) manages 65,218 acres in Subunit 1, or 17 percent of the proposed CHD. Funds generated from these lands are primarily used for schools, and therefore are managed for maximum sustainable net revenue. The public utilizes these lands to hunt, fish, hike, snowmobile, and pick huckleberries, but the primary revenue source is from timber harvesting.¹¹⁹
131. The main Federal nexus on these lands is the need for a federal Clean Water Act 404 permit. Idaho undertakes 404 permitting jointly with the Corps and the Idaho Department of Water Resources. However, no consultations related to such permits involving the caribou have taken place to-date; therefore, we do not predict any in future consultations. Given a recent court decision, there is confusion over whether some silviculture activities

¹¹⁸ Review of consultation history provided by the U.S. Fish and Wildlife Service.

¹¹⁹ Personal Communication with Pat Seymore via phone correspondence, Idaho Department of Lands, February 29, 2012.

require National Pollutant Discharge Elimination System (NPDES) permits.¹²⁰ If such permits are required in the future, these activities may generate additional consultations with the Service.¹²¹ Given the uncertain regulatory and legal environment, this analysis does not forecast additional consultations on silvicultural activities in State lands in Idaho.¹²²

4.8 PRIVATE ENTITIES

132. Private entities own 15,379 acres in Subunit 1 in Idaho, or four percent of the proposed CHD. Nearly 90 percent of this area is owned by Forest Capital Partners, LLC, or 13,800 acres. Of this area, 4,300 acres could be included in consultation between the Service and the Forest Service by a Federal nexus, as this area is only accessible via USFS roads.¹²³ As an upper estimate for this analysis, we will assume that the 4,300 acres owned by Forest Capital Partners, LLC, and all other privately-owned land of other landowners that harvest timber, have a Federal nexus due to the requirement of obtaining a road use permit for using Federal roads. As a result, silvicultural activities on these lands could be impacted by the proposed critical habitat designation through delays in reinitiating consultation.
133. Critical habitat designation may lead to delays in timber harvesting on private lands, as a result of the additional effort needed to complete or reinitiate consultations for permitting for access across federally owned lands. The need to reinitiate road use permits within the proposed CHD can lead to one to three year delays in harvesting. In order to estimate losses associated with this potential delay, we assumed that all private acreage would otherwise be harvested over the 20 year period, beginning in year one. Assuming a three year time delay due to the need to obtain road use permits, and a seven percent weighted average cost of capital, the present value diminishment in value for harvested timber is estimated. To complete this calculation, this analysis assumes 10 million board feet (mbf) per acre harvested,¹²⁴ and assumes revenue of \$195 value per mbf.¹²⁵ Based on these assumptions, we estimate a \$1.22 million present value reduction in revenues. As a check we also estimated losses if all timber were harvested in 17 years, from 2015 to 2031, rather than maintaining a constant rate of harvesting; present value losses under this scenario are \$761,000.

¹²⁰ Northwest Environmental Defense Center, Plaintiff-Appellant, and Oregon Forest Industry Council; American Forest & Paper Association, Intervenor, v. Marvin Brown, et al. Defendants-Appelles. CV-06-01270-GMK Opinion (9th Cir. 2010).

¹²¹ Personal Communication with Pat Seymore via phone correspondence, Idaho Department of Lands, February 29, 2012.

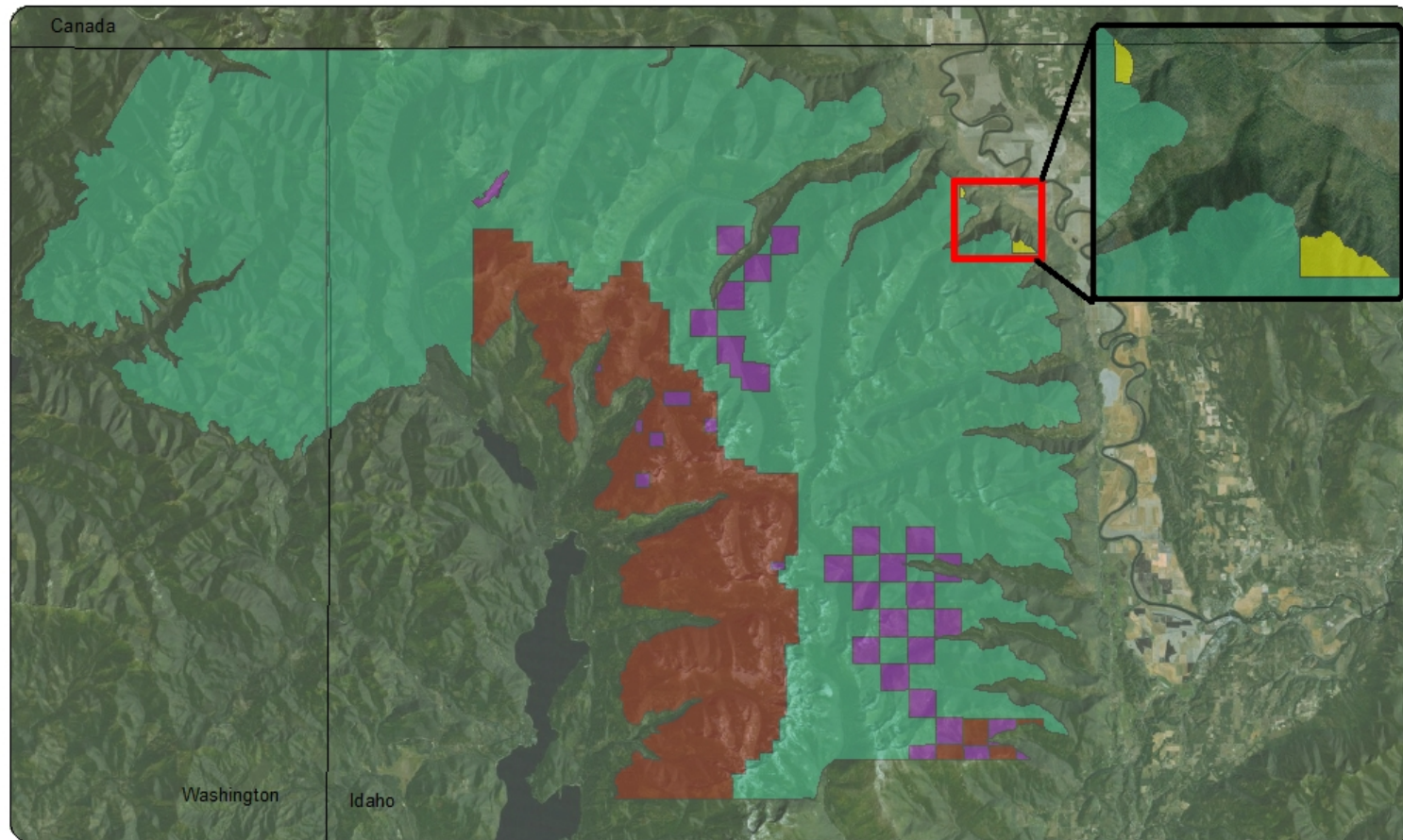
¹²² Review of consultation history provided by the U.S. Fish and Wildlife Service.

¹²³ Personal Communication with Brian Kernohan via email correspondence, Forest Capital Partners, LLC, March 16, 2012.





¹²⁴ Personal Communication with Brian Kernohan via email correspondence, Forest Capital Partners, LLC, March 15, 2012.

¹²⁵ Personal Communication with Pat Seymore via email correspondence, Idaho Department of Lands, March 7, 2012.

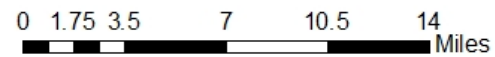
EXHIBIT 4-6. LAND MANAGEMENT WITHIN PROPOSED CRITICAL HABITAT



Land Ownership

-  BLM
-  Private
-  State
-  USFS

1:312,551



IEc

Coordinate System:
NAD 1983, UTM Zone 11N

INDUSTRIAL ECONOMICS, INCORPORATED

4.9 CAVEATS TO ECONOMIC ANALYSIS OF INCREMENTAL IMPACTS

134. Exhibit 4-7 summarizes the key assumptions of the economic analysis of incremental impacts, as well as the potential direction and relative scale of bias introduced by these assumptions.

EXHIBIT 4-7. CAVEATS TO THE ECONOMIC ANALYSIS OF INCREMENTAL IMPACTS

KEY ASSUMPTION	EFFECT ON IMPACT ESTIMATE
The Service will not require any additional project modifications beyond what is recommended in the Recovery Plan.	-
Potential time delays due to reinitiated or new consultations for federal land access for snowmobiling companies were not applied.	-
Estimation of future consultation rates are based on past rates.	+/-
All private land aside from area owned by Forest Capital Partners is assumed to have a federal nexus and that it will be harvested evenly over the next 20 years.	+
Notes: - : This assumption may result in an underestimate of real costs. + : This assumption may result in an overestimate of real costs. +/- : This assumption has an unknown effect on the magnitude of cost estimates.	

CHAPTER 5 | ECONOMIC BENEFITS

135. Two types of economic benefits result from critical habitat designation: direct benefits and ancillary benefits. The primary intended benefit of critical habitat (i.e., the direct benefit) is to support the conservation of threatened and endangered species, such as caribou. Thus, attempts to develop monetary estimates of the benefits of critical habitat designation would likely focus on the public's willingness to pay to achieve the conservation benefits to the southern Selkirk Mountains population of woodland caribou resultant to this proposed critical habitat designation.

5.1 DIRECT BENEFITS

136. Quantification and monetization of species conservation benefits requires information on the incremental change in the probability of caribou conservation that is expected to result from the proposed critical habitat designation. As described in Chapter 4, the primary impact of the designation is increased administrative costs associated with section 7 consultations and time delays. The possibility exists that the proposed critical habitat designation will result in additional conservation efforts (e.g., project modifications) above and beyond the efforts already taken in response to the listing, implementation of the Recovery Plan, and the needs of other endangered species within the study area; however, the Service and the Forest Service are unable to specify those efforts, and relevant costs are not quantified in this report. As a result, the data necessary to quantify reasonably foreseeable changes in the probability that the species will be conserved as a result of the proposed critical habitat designation are unavailable.
137. Numerous published studies estimate individual willingness to pay to protect endangered species.¹²⁶ The economic values reported in these studies reflect various groupings of benefit categories (including both use and non-use values). For example, these studies assess public willingness to pay for wildlife-viewing opportunities, for the option for seeing or experiencing the species in the future, to assure that the species will exist for future generations, and simply knowing a species exists, among other values. The studies generally elicit values for "all or nothing" changes (e.g., the species survives or goes extinct) rather than small changes along a continuum between two extreme endpoints.
138. By example, one study (Tanguay, Adamowicz and Boxall, 1995) specifically evaluates willingness to pay for implementation of a Maintenance Program to preserve the

¹²⁶ See, for example, Loomis, J.B. and Douglas S. White, 1996, "Economic Benefits of Rare and Endangered Species: Summary and Meta-Analysis," *Ecological Economics*, 19(3):197-206.

caribou.¹²⁷ This study, a contingent valuation mail survey, provided residents of Saskatchewan, and of all of Canada, maps and photographs of caribou, background information on the caribou, and information on threats to the caribou and the choice to implement a Maintenance Program to preserve the caribou. Importantly, the information conveyed the assumption that if the plan were not implemented the species would become extinct within 10 years due to logging. There were three sections of the survey, including a portion on attitudes and opinions towards wildlife and the caribou in particular, contingent valuation questions on the proposed Management Plan, and demographic information about the respondents. Residents were then asked to respond to a series of questions regarding their characteristics and environmental preferences, including rating statements, such as the following:

Even wildlife which has no direct benefits to people should be protected and preserved.

*Preserving wildlife for the future is not important as the future will take care of itself.*¹²⁸

139. A variety of versions of the survey were sent including questionnaires in both an open ended willingness to pay (WTP) and dichotomous choice WTP format. With the open ended WTP format, respondents could report how much they would be willing to pay for the Maintenance Program in either Northwestern Saskatchewan or all of Canada. In the dichotomous choice WTP surveys, respondents were allowed to choose between the option to have no Maintenance Program to preserve the caribou, or to pay a specified amount per year for the next ten years to fund the program. The option to pay specified the Maintenance Program taking place within Northwestern Saskatchewan or all of Canada, protecting 3,600 or 700,000 caribou, respectively. Response rates were considered good, at 51.22 percent overall.
140. The results of the aggregation vary depending on survey method used (open ended WTP or dichotomous choice WTP) and sample (northwestern Saskatchewan region or the Saskatchewan region overall). While there are no economic theories to determine which survey method is superior, there are overall positive valuations for caribou conservation. The benefit found in open ended WTP surveys was \$51 million and in dichotomous choice WTP surveys was \$188 million.¹²⁹
141. Unfortunately, we cannot directly compare the results of this study to the costs estimated in our report, because the good produced by the proposed critical habitat designation does not match the good being valued in the survey. The information provided to respondents suggests that without the program the species will go extinct, and their funds will be used for a maintenance program run by an independent foundation that will maintain the current range and numbers of the caribou. As discussed in Chapter 3 of our report, these

¹²⁷ Tanguay, M., Adamowicz, W.L., and Boxall, P. 1995. An Economic Evaluation of Woodland Caribou Conservation Programs in Northwestern Saskatchewan. Project Report 95-01. Department of Rural Economy, University of Alberta, Edmonton.

¹²⁸ Ibid., p. 52.

¹²⁹ Used a conversion rate of 0.73 USD = 1.0 CAD in 1995, Bank of Canada, <http://www.bankofcanada.ca>

activities already occur absent critical habitat. Based on our interviews with the Service and land managers, in a majority of the proposed critical habitat, incremental conservation activities beyond those already occurring in the baseline are unlikely. Rather, the most likely outcome of critical habitat is additional administrative burden and time delays. A more appropriate comparison to Tanguay et al. (1995) would involve the estimation of the total costs of all conservation efforts for caribou (e.g., listing protections such as section 7 consultations to consider jeopardy, the development and implementation of the Recovery Plan, and the designation of the proposed critical habitat) and evaluation of these costs relative to an estimate of willingness to pay aggregated across the three affected counties.

5.2 ANCILLARY BENEFITS

142. Other benefits may also be achieved through designation of critical habitat. For example, the public may hold a value for habitat conservation, beyond its willingness to pay for conservation of a specific species. Studies have been done that estimate the public's willingness to pay to preserve wilderness areas, for wildlife management and preservation programs, and for wildlife protection in general. These studies address categories of benefits (e.g., ecosystem integrity) that may be similar to the types of benefits provided by critical habitat, but do not provide values that can be used to establish the incremental values associated with this proposed critical habitat designation (i.e., the ecosystem and species protection measures considered in these studies are too dissimilar from the habitat protection benefits that may be accorded by this proposed critical habitat designation).
143. Similarly, economists have conducted research on the economic value of ancillary benefits, such as the preservation of open space, which may positively affect the value of neighboring parcels, or maintenance of natural hydrologic functions of an ecosystem, which result in improved downstream water quality. Such ancillary benefits are not the goal of critical habitat, and the Service has decided not to include such estimates in the Economic Analysis.

REFERENCES

16 U.S. Code. 1131-1136

16 U.S.C. §1533(b)(2).

16 U.S.C. 1532.

16 U.S.C. 1538(a)(2).

175 F. 3d 1027, 1044 (D.C. Cir. 1999).

36 C.F.R. § 219.20.

49 FR 7390 *et seq.*

40 CFR Part 230.75.

5 U.S.C. § 601 *et seq.*

5. U.S.C. §§601 *et seq.*

75 FR 14496.

76 FR 74018 *et seq.*

76 FR 74021.

76 FR 74022.

76 FR 74025.

76 FR 74026.

76 FR 74027.

76 FR 74030.

773 F. 2d 327 (D.C. Cir. 1985).

Arizona Cattle Growers v. Salazar, 606 F. 3d 1160 (9th Cir. 2010), cert. denied, 179 L. Ed. 2d 300, 2011 U.S. Lexis 1362, 79 U.S.L.W. 3475 (2011).

Bank of Canada, <http://www.bankofcanada.ca>

Center for Biological Diversity et al, Plaintiffs, v. United States Bureau of Land Management et. al, Defendants and American Sand Association, et al, Defendant Intervenors. Order re: Cross Motions for Summary Judgment, Case 3:03-cv-02509 Document 174 Filed 03/14/2006.

Dialog search of File 516, Dun and Bradstreet, “Duns Market Identifier,” on March 6, 2012.

Director, U.S. Fish and Wildlife Service, Memorandum to Regional Directors and Manager of the California-Nevada Operations Office, Subject: Application of the

“Destruction or Adverse Modification” Standard under Section 7(a)(2) of the Endangered Species Act, dated December 9, 2004.

Executive Order 12866, Regulatory Planning and Review, September 30, 1993.

Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use, May 18, 2001.

Executive Order 13563, Improving Regulation and Regulatory Review, January 18, 2011.

Gifford Pinchot Task Force v. United States Fish and Wildlife Service, No. 03-35279 (9th Circuit 2004).

Gramlich, Edward M., 1990, *A Guide to Benefit-Cost Analysis* (2nd Ed.), Prospect Heights, Illinois: Waveland Press, Inc.

Home Builders Association of Northern California v. United States Fish and Wildlife Service, 616 F.3d 983 (9th Cir. 2010), cert. denied, 179 L. Ed 2d 301, 2011 U.S. Lexis 1392, 79 U.S.L.W. 3475 (2011).

Idaho Governor’s Office of Species Conservation. Threatened & Endangered Species. Viewed on March 5, 2012 at: http://species.idaho.gov/thr_endgr.html

Idaho OHV Registration by Residence 2006-2010, received via email communication with Marc Hildesheim from Idaho Parks and Recreation, North Region Trail Specialist, February 29, 2012.

Idaho Snowmobile Registration Designation Statistics 2007-2011, received via email communication with Marc Hildesheim from Idaho Parks and Recreation, North Region Trail Specialist, February 29, 2012.

Loomis, J.B. and Douglas S. White, 1996, “Economic Benefits of Rare and Endangered Species: Summary and Meta-Analysis,” *Ecological Economics*, 19(3):197-206.

McNair, Ranotta K. Forest Supervisor, Idaho Panhandle National Forests. Letter to Rich Torguemada, U.S. Fish and Wildlife Service, September 18, 2008.

McNair, Ranotta, K. Forest Supervisor, Idaho Panhandle National Forests. Letter to Susan Martin, U.S. Fish and Wildlife Service, August 7, 2008.

Memorandum For Heads of Executive Department Agencies, and Independent Regulatory Agencies, Guidance For Implementing E.O. 13211, M-01-27, Office of Management and Budget, July 13, 2001, <http://www.whitehouse.gov/omb/memoranda/m01-27.html>.

New Mexico Cattle Growers Assn v. United States Fish and Wildlife Service, 248 F.3d 1277 (10th Cir. 2001).

Northwest Environmental Defense Center, Plaintiff-Appellant, and Oregon Forest Industry Council; American Forest & Paper Association, Intervenors, v. Marvin Brown, et al. Defendants-Appelles. CV-06-01270-GMK Opinion (9th Cir. 2010).

Personal Communication with Brian Kernohan via email correspondence, Forest Capital Partners, LLC, March 13, 2012, March 15, 2012, and March 16, 2012.

- Personal Communication with Cindy Weston, via phone correspondence, Bureau of Land Management, Coeur d'Alene Field Office, February 21, 2012.
- Personal Communication with Dan Denning, via phone correspondence, Boundary County Commissioner, March 1, 2012.
- Personal Communication with Dave Cobb via phone correspondence, Idaho Panhandle National Forests, February 16, 2012.
- Personal Communication with Franklin Pemberton via email correspondence, Colville National Forest, March 6, 2012, March 14, 2012, March 16, 2012, and April 25, 2012.
- Personal Communication with Jason Kirchner via email correspondence, Idaho Panhandle National Forests, March 6, 2012.
- Personal Communication with Pat Seymore via email correspondence, Idaho Department of Lands, February 29, 2012 and March 7, 2012.
- Personal Communication with Steve McClellan via phone correspondence, Washington State Recreation and Conservation Office, March 1, 2012.
- Pub Law No. 104-121.
- Risk Management Association (RMA), *Annual Statement Studies: Financial Ratio Benchmarks 2010 to 2011*, 2010
- Risk Management Association, 2012, NAICS code 11310, Logging.
- Sierra Club v. U. S. Fish and Wildlife Service*, 245 F.3d 434 (5th Cir. 2001).
- Small Business Administration, Office of Advocacy. May 2003. A Guide for Government Agencies: How to Comply with the Regulatory Flexibility Act.
- Tanguay, M., Adamowicz, W.L., and Boxall, P. 1995. An Economic Evaluation of Woodland Caribou Conservation Programs in Northwestern Saskatchewan. Project Report 95-01. Department of Rural Economy, University of Alberta, Edmonton.
- U.S. Bureau of Land Management 6840.02. Special Status Species Management, 2008.
- U.S. Census Bureau. 2009. County Business Patterns. Viewed on March 19, 2012 at: <http://www.census.gov/econ/cbp/>.
- U.S. Code. Title 33, 1344.
- U.S. Environmental Protection Agency, Guidelines for Preparing Economic Analyses, EPA 240-R-00-003, September 2000, available at <http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>.
- U.S. Fish and Wildlife Service, "Endangered Species and Habitat Conservation Planning," August 6, 2002, accessed at <http://endangered.fws.gov/hcp/>.
- U.S. Fish and Wildlife Service, Pacific Region. 1994. Recovery Plan: Selkirk Mountain Woodland Caribou.

- U.S. Fish and Wildlife Service, Upper Columbia Office. 2008. Southern Selkirk Mountain Caribou Population (*Rangifer tarandus caribou*): 5-Year Review, Summary and Evaluation.
www.fws.gov/idaho/Caribou/Tab5References/USFWS_2008a.pdf
- Incremental Effects Memorandum (Appendix C). U.S. Fish and Wildlife Service. Comments on How the DEA Should Estimate Incremental Costs for the Economic Analysis of the Proposed Rule to Designate Critical Habitat for the Southern Selkirk Mountains population of the woodland caribou (*Ranger tarandus caribou*) December 1, 2011.
- U.S. Office of Management and Budget, "Circular A-4," September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.
- U.S. Office of Management and Budget, February 7, 2011. "Regulatory Impact Analysis: Frequently Asked Questions (FAQs)." Accessed on May 3, 2011 by http://www.whitehouse.gov/sites/default/files/omb/circulars/a004/a-4_FAQ.pdf.
- U.S. Office of Personnel Management, 2012, Federal Government Schedule Rates.
- Washington Department of Fish & Wildlife. 2012. Species of Concern. Viewed on March 5, 2012 at: <http://wdfw.wa.gov/conservation/endangered/>.

APPENDIX A | SMALL BUSINESS AND ENERGY IMPACTS ANALYSES

144. This appendix considers the extent to which incremental economic impacts from critical habitat designation for the caribou may be borne by small entities and the energy industry. The analysis presented in Section A.1 is conducted pursuant to the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996. The energy analysis in Section A.2 is conducted pursuant to Executive Order No. 13211.
145. The analyses of impacts to small entities and the energy industry rely on the estimated incremental impacts resulting from the proposed critical habitat designation. The incremental impacts of the rulemaking are most relevant for the small business and energy impacts analyses because they reflect costs that may be avoided or reduced based on decisions regarding the composition of the final rule.

A.1 SBREFA ANALYSIS

146. When a Federal agency proposes regulations, the RFA requires the agency to prepare and make available for public comment an analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions as defined by the RFA).¹³⁰ No initial regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the RFA to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have significant economic impact on a substantial number of small entities. To assist in this process, this appendix provides a screening level analysis of the potential for caribou critical habitat to affect small entities.
147. To ensure broad consideration of impacts on small entities, the Service has requested this small business analysis without first making the threshold determination in the proposed rule regarding whether the proposed critical habitat designation could be certified as not having a significant economic impact on a substantial number of small entities. This small business analysis will therefore inform the Service's threshold determination.

¹³⁰ 5 U.S.C. § 601 et seq.

A.1.1 BACKGROUND AND FRAMEWORK FOR THE THRESHOLD ANALYSIS

148. This analysis is intended to improve the Service's understanding of the reasonably foreseeable effects of this proposed rule on small entities and to identify opportunities to minimize these impacts in the final rulemaking. The Act requires the Service to designate critical habitat for threatened and endangered species to the maximum extent prudent and determinable. Section 4(b)(2) of the Act requires that the Service designate critical habitat "on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts, of specifying any particular area as critical habitat." This section grants the Secretary [of the Interior] discretion to exclude any area from critical habitat if (s)he determines "the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat". However, the Secretary may not exclude an area if it "will result in the extinction of the species."
149. Three types of small entities are defined in the RFA:
- **Small Business** - Section 601(3) of the RFA defines a small business as having the same meaning as small business concern under section 3 of the Small Business Act. This includes any firm that is independently owned and operated and is not dominant in its field of operation. The Small Business Administration (SBA) has developed size standards to carry out the purposes of the Small Business Act, and those size standards can be found in 13 CFR 121.201. The size standards are matched to North American Industry Classification System (NAICS) industries. The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.
 - **Small Governmental Jurisdiction** - Section 601(5) defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with a population of less than 50,000. Special districts may include those servicing irrigation, ports, parks and recreation, sanitation, drainage, soil and water conservation, road assessment, etc. When counties have populations greater than 50,000, those municipalities of fewer than 50,000 can be identified using population reports. Other types of small government entities are not as easily identified under this standard, as they are not typically classified by population.
 - **Small Organization** - Section 601(4) defines a small organization as any not-for-profit enterprise that is independently owned and operated and not dominant in its field. Small organizations may include private hospitals, educational institutions, irrigation districts, public utilities, agricultural co-ops, etc.
150. The courts have held that the RFA/SBREFEA requires Federal agencies to perform a regulatory flexibility analysis of forecast impacts to small entities that are directly regulated. In the case of *Mid-Tex Electric Cooperative, Inc., v. Federal Energy Regulatory Commission (FERC)*, FERC proposed regulations affecting the manner in which generating utilities incorporated construction work in progress in their rates. The generating utilities that expected to be regulated were large businesses; however, their

customers -- transmitting utilities such as electric cooperatives -- included numerous small entities. In this case, the court agreed that FERC simply authorized large electric generators to pass these costs through to their transmitting and retail utility customers, and FERC could therefore certify that small entities were not directly impacted within the definition of the RFA.¹³¹

151. Similarly, *American Trucking Associations, Inc. v. Environmental Protection Agency* (EPA) addressed a rulemaking in which EPA established a primary national ambient air quality standard for ozone and particulate matter.¹³² The basis of EPA's RFA/SBREFA certification was that this standard did not directly regulate small entities; instead, small entities were indirectly regulated through the implementation of State plans that incorporated the standards. The court found that, while EPA imposed regulation on States, it did not have authority under this rule to impose regulations directly on small entities and therefore small entities were not directly impacted within the definition of the RFA.
152. The SBA in its guidance on how to comply with the RFA recognizes that consideration of indirectly affected small entities is not required by the RFA, but encourages agencies to perform a regulatory flexibility analysis even when the impacts of its regulation are indirect.¹³³ "If an agency can accomplish its statutory mission in a more cost-effective manner, the Office of Advocacy [of the SBA] believes that it is good public policy to do so. The only way an agency can determine this is if it does not certify regulations that it knows will have a significant impact on small entities even if the small entities are regulated by a delegation of authority from the Federal agency to some other governing body."¹³⁴
153. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which directly regulates only those activities carried out, funded, or permitted by a Federal agency. By definition, Federal agencies are not considered small entities, although the activities they may fund or permit may be proposed or carried out by small entities. Given the SBA guidance described above, this analysis considers the extent to which this designation could potentially affect small entities, regardless of whether these entities would be directly regulated by the Service through the proposed rule or by a delegation of impact from the directly regulated Federal agency. However, while it considers businesses that may be affected indirectly, it forecasts impacts only to those entities for which the regulatory link would not be measurably diluted.

¹³¹ 773 F. 2d 327 (D.C. Cir. 1985).

¹³² 175 F. 3d 1027, 1044 (D.C. Cir. 1999).

¹³³ Small Business Administration, Office of Advocacy. May 2003. A Guide for Government Agencies: How to Comply with the Regulatory Flexibility Act, pg. 20.

¹³⁴ *Ibid.*, pg. 21.

A.1.2 RESULTS OF THE THRESHOLD ANALYSIS

154. This analysis focuses on small entities that may bear the incremental impacts of this rulemaking. Specifically, this economic analysis quantifies the incremental impact of critical habitat designation on timber, recreation, and other activities. The most significant forecast cost, on a per-entity basis, arises from time delays for use of federally owned roads by private timber management entities. Specifically, it is possible that small entities may spend additional time addressing the requirements of critical habitat related to USFS section 7 consultations for the caribou. These consultations will involve permitting for road use by private entities within National Forest land, which may result in delays in certain activities. All other incremental costs of consultation will be borne by the Federal action agency and the Service, and thus are not relevant to this screening analysis.
155. Of the activities described in Chapter 4 of this analysis, small entities associated with recreation and other activities are not forecast to bear incremental costs, for the following reasons:
- **Recreation.** Chapter 4 discusses reasonably foreseeable impacts to recreational activities such as snowmobiling, hunting, fishing, hiking, picking huckleberries, camping, ATV use, motorcycling, sight-seeing, wildlife viewing, mountain biking, horseback riding, geo-caching, photography, cross-country skiing, snowshoeing, and trapping. Based on best available information, this analysis concludes that the only costs associated with critical habitat designation for these activities will be associated with incremental administrative costs borne by Federal agencies to conduct section 7 consultations. No project modifications are expected as habitat is adequately protected under the baseline scenario with the listing and the Recovery Plan. Thus, we do not forecast a change in land use by recreators associated with this rule.
 - **Other activities.** Chapter 4 of this analysis discusses the potential for caribou critical habitat to affect a variety of other activities. Again, no project modifications are expected as this habitat is assumed to be adequately protected under the baseline scenario. Thus, we do not forecast a change in these activities.
156. Incremental impacts associated with timber harvesting may be borne by small entities, and thus are the focus of this threshold analysis. Following RFA and SBREFA, the purpose of this threshold analysis is to determine if the critical habitat designation will have a significant economic impact on a substantial number of small entities. Importantly, the impacts of the rule must be *both* significant *and* substantial to prevent certification of the rule. If a substantial number of small entities are affected by the critical habitat designation, but the per-entity economic impact is not significant, the Service may certify. Likewise, if the per-entity economic impact is likely to be significant, but the number of affected entities is not substantial, the Service may also certify. To assist the Service in making this determination, this analysis presents information on both the number of small entities that may be affected and the magnitude of the expected impacts.

157. Exhibit A-1 provides relevant NAICS codes and Exhibit A-2 displays results for the number of entities that may bear incremental impacts related to recreation, timber management, and transportation. Exhibit A-2 presents the relevant small entity thresholds by NAICS code, the total number of entities in the study area, and the total number of small entities in the study area. For purposes of this screening analysis, the study area includes the three counties overlapping the proposed critical habitat designation.¹³⁵ Within the zip codes overlapping the CHD, 23 logging companies exist,¹³⁶ and within counties overlapping the CHD, there are five timber tract operations.¹³⁷
158. To determine reasonably foreseeable impacts to small entities, we examined the incremental cost of potential reductions in timber harvest due to time delays within privately owned forest land that may be controlled by small entities.¹³⁸ Total incremental costs on these lands are forecast to be \$343,000, or \$30,300, annualized at a seven percent discount rate. There is much uncertainty in these cost estimates, as we do not know if these lands would in fact have a Federal nexus due to the need for Road Use Permits, if they would all undergo timber harvest during the time period of this analysis, or if they are all owned by small entities. Therefore, these costs may overestimate reasonably foreseeable incremental costs to small businesses. Since the number of landowners is not known at this time, we are unable to determine the incremental costs per entity. Note that, if all of the incremental costs were borne by one small timber tract operations entity, which is unlikely, this entity would experience a 0.86 percent annual loss in revenue, based on average revenue for small timber tract operations companies of \$3.53 million.¹³⁹

¹³⁵ These counties include Bonner and Boundary Counties in Idaho, and Pend Oreille County in Washington.

¹³⁶ U.S. Census Bureau. 2009. County Business Patterns. Viewed on March 19, 2012 at: <http://www.census.gov/econ/cbp/>.

¹³⁷ Dialog search of File 516, Dun and Bradstreet, "Duns Market Identifier," on March 6, 2012.

¹³⁸ For purposes of this analysis, Forest Capital Partners, LLC is not considered a small entity.

¹³⁹ Risk Management Association, 2012, NAICS code 113110, Timber Tract Operations. Calculated using revenue buckets up to \$5-10 million in net sales as the definition of a small timber tract operation is under \$6.5 million.

EXHIBIT A-1. OVERVIEW OF RELEVANT INDUSTRY SECTORS

MAJOR RELEVANT ACTIVITY	DESCRIPTION OF INCLUDED INDUSTRY SECTOR	NAICS CODE	SBA SIZE STANDARD
Forestry and Logging	<p><u>Timber Tract Operations</u></p> <p>The industry comprises establishments primarily involved in the operation of timber tracts for the purpose of selling standing timber.</p>	113110	\$6.5 million average annual receipts
	<p><u>Logging</u></p> <p>The industry comprises establishments primarily engaged in cutting timber, cutting and transporting timber, or producing wood chips in the field.</p>	11310	500 employees
Heavy and Civil Engineering Construction	<p><u>Highway, Street and Bridge Construction</u></p> <p>This industry comprises establishments primarily engaged in the construction of highways (including elevated), streets, roads, airport runways, public sidewalks, or bridges. The work performed may include new work, reconstruction, rehabilitation, and repairs.</p>	237310	\$33.5 million average annual receipts
Amusement, Gambling and Recreation Industries	<p><u>All Other Amusement and Recreation Industries</u></p> <p>The industry comprises establishments primarily engaged in providing recreational and amusement services, aside from amusement parks and arcades, gambling industries, golf courses and country clubs, skiing facilities, marinas, fitness and recreational sports centers, and bowling centers.</p>	713990	\$6.5 million average annual receipts

EXHIBIT A-2. OVERVIEW OF NUMBER OF SMALL ENTITIES WITHIN STUDY AREA

ACTIVITY	INDUSTRY (NAICS CODES)	SMALL ENTITY SIZE STANDARD	TOTAL NUMBER OF ENTITIES IN THE STUDY AREA ¹	NUMBER OF SMALL ENTITIES IN THE STUDY AREA ²	PERCENT OF ENTITIES THAT ARE SMALL
Timber	Logging (11310) ³	500 employees	23	23	100%
	Timber Tract Operations (113110)	\$6.5 million	5	5	100%
Transportation	Highway, Street and Bridge Construction (237310)	\$33.5 million	20	16	80%
Recreation	All Other Amusements and Recreation Industry (713990)	\$6.5 million	6	5	83%

Sources: Dialog search of File 516, Dun and Bradstreet, "Duns Market Identifier," on March 6, 2012; and U.S. Census Bureau, 2009, Country Business Patterns on March 19, 2012.

Notes:

1. The total number of entities in the study area was estimated by querying the Dun and Bradstreet database to identify the number of entities in the relevant NAICS codes for each industry across the three counties with areas proposed as critical habitat.
2. The total number of small entities in the study area was calculated by querying the Dun and Bradstreet database to identify the number of entities falling under the small entity size standard for the relevant NAICS code as developed by the Small Business Administration.
3. The number of logging entities in the study area was estimated by using the U.S. Census Bureau's 2009 Country Business Patterns, which includes a category for the number of employees which is used to determine the number of entities under the small business threshold.

A.2 REASONABLY FORESEEABLE IMPACTS TO THE ENERGY INDUSTRY

159. Pursuant to Executive Order No. 13211, “Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use,” issued May 18, 2001, Federal agencies must prepare and submit a “Statement of Energy Effects” for all “significant energy actions.” The purpose of this requirement is to ensure that all Federal agencies “appropriately weigh and consider the effects of the Federal Government’s regulations on the supply, distribution, and use of energy.”¹⁴⁰
160. The Office of Management and Budget provides guidance for implementing this Executive Order, outlining nine outcomes that may constitute “a significant adverse effect” when compared with the regulatory action under consideration:
- Reductions in crude oil supply in excess of 10,000 barrels per day (bbls);
 - Reductions in fuel production in excess of 4,000 barrels per day;
 - Reductions in coal production in excess of 5 million tons per year;
 - Reductions in natural gas production in excess of 25 million Mcf per year;
 - Reductions in electricity production in excess of 1 billion kilowatts-hours per year or in excess of 500 megawatts of installed capacity;
 - Increases in energy use required by the regulatory action that exceed the thresholds above;
 - Increases in the cost of energy production in excess of one percent;
 - Increases in the cost of energy distribution in excess of one percent; or
 - Other similarly adverse outcomes.¹⁴¹
161. There are no forecast incremental impacts to the energy industry as no incremental impacts are predicted on energy-related activities.

¹⁴⁰ Memorandum For Heads of Executive Department Agencies, and Independent Regulatory Agencies, Guidance For Implementing E.O. 13211, M-01-27, Office of Management and Budget, July 13, 2001, <http://www.whitehouse.gov/omb/memoranda/m01-27.html>.

¹⁴¹ Ibid.

APPENDIX B | SENSITIVITY OF RESULTS TO DISCOUNT RATE

162. This appendix first summarizes the incremental impacts forecast assuming an annual three percent real discount rate. We provide these exhibits to demonstrate the sensitivity of our results to the discount rate selected, as compared to the results presented in the Executive Summary and Chapter 4, which were developed assuming an annual seven percent real discount rate. We also present a summary of the forecast stream of undiscounted costs.

EXHIBIT B-1. SUMMARY OF FORECAST INCREMENTAL IMPACTS BY SUBUNIT AND ENTITY, 2012 TO 2031 (2012\$, DISCOUNTED AT THREE PERCENT)

SUBUNIT	AFFECTED ENTITY	PRESENT VALUE	ANNUALIZED
1: Idaho	Idaho Panhandle National Forests	\$153,000	\$10,000
	Bureau of Land Management	\$18,100	\$1,180
	Idaho Department of Lands	\$0	\$0
	Private Entities	\$1,220,000	\$79,400
	Other Federal Agencies	\$11,600	\$759
2: Washington	Colville National Forest	\$143,000	\$9,340
	Other Federal Agencies	\$8,650	\$564
Total:		\$1,550,000	\$101,000

Note: Totals may not sum due to rounding

EXHIBIT B-2. SUMMARY OF FORECAST INCREMENTAL IMPACTS FOR THE IDAHO PANHANDLE NATIONAL FOREST, 2012-2031 (2012\$, DISCOUNTED AT THREE PERCENT)

ACTIVITY	PRESENT VALUE	ANNUALIZED
Recreation	\$33,200	\$2,170
Timber	\$28,700	\$1,880
Other	\$91,500	\$5,970
Total:	\$153,400	\$10,020

Note: Totals may not sum due to rounding

EXHIBIT B-3. SUMMARY OF FORECAST INCREMENTAL IMPACTS FOR COLVILLE NATIONAL FOREST, 2012-2031 (2012\$, DISCOUNTED AT THREE PERCENT)

ACTIVITY	PRESENT VALUE	ANNUALIZED
Recreation	\$23,100	\$1,510
Timber	\$39,100	\$2,550
Other	\$80,800	\$5,270
Total:	\$143,000	\$9,330

Note: Totals may not sum due to rounding

EXHIBIT B-4. SUMMARY OF FORECAST INCREMENTAL IMPACTS FOR OTHER FEDERAL ENTITIES, 2012-2031 (2012\$, DISCOUNTED AT THREE PERCENT)

Subunit	PRESENT VALUE	ANNUALIZED
1: Idaho	\$11,600	\$759
2: Washington	\$8,650	\$564
Total:	\$20,300	\$1,320

Note: Totals may not sum due to rounding

EXHIBIT B-5. SUMMARY OF UNDISCOUNTED FORECAST INCREMENTAL IMPACTS TO RECREATION BY SUBUNIT AND AFFECTED ENTITY (2012\$)

SUBUNIT	YEAR(S)	AFFECTED ENTITY	IMPACT	DESCRIPTION
1: Idaho	2012	Idaho Panhandle National Forests	\$18,100	Reinitiate formal consultation on road and trail maintenance
	2012-2031	Idaho Panhandle National Forests	\$595	Informal consultations in next 20 years
		Idaho Panhandle National Forests	\$391	Formal consultations in next 20 years
2: Washington	2012-2031	Colville National Forest	\$1,040	Informal consultations in next 20 years
	2012-2031	Colville National Forest	\$469	Formal consultations in next 20 years
				Formal consultations in next 20 years

EXHIBIT B-6. SUMMARY OF UNDISCOUNTED FORECAST INCREMENTAL IMPACTS TO TIMBER BY SUBUNIT AND AFFECTED ENTITY (2012\$)

SUBUNIT	YEAR(S)	AFFECTED ENTITY	IMPACT	DESCRIPTION
1: Idaho	2012	Private timber companies	\$1,220,000	Time delays due to road use permits
		Idaho Panhandle National Forests	\$10,000	Reinitiate formal consultation on firewood cutting
		Idaho Panhandle National Forests	\$1,040	Informal consultations in next 20 years
		Idaho Panhandle National Forests	\$182	Formal consultations in next 20 years
		Colville National Forest	\$2,080	Informal consultations in next 20 years
2: Washington	2012-2031	Colville National Forest	\$469	Formal consultations in next 20 years

EXHIBIT B-7. SUMMARY OF UNDISCOUNTED FORECAST INCREMENTAL IMPACTS TO OTHER ACTIVITIES BY SUBUNIT AND AFFECTED ENTITY (2012\$)

SUBUNIT	YEAR(S)	AFFECTED ENTITY	IMPACT	DESCRIPTION	
1: Idaho	2012	Idaho Panhandle National Forests	\$48,100	Reinitiate programmatic consultation on the travel management plan and formal consultations on 3 activities - communications site maintenance, grazing and fire suppression	
		Idaho Panhandle National Forests	\$9,030	Programmatic consultation on 2012 management plan	
		Bureau of Land Management	\$18,100	Reinitiate a programmatic consultation for the management plan	
	2027	Idaho Panhandle National Forests	\$9,030	Programmatic consultation on 2027 management plan	
	2012-2031	Idaho Panhandle National Forests	\$1,190	Informal consultations in next 20 years	
		Idaho Panhandle National Forests	\$677	Formal consultations in next 20 years	
		Other federal entities	\$446	Informal consultations in next 20 years	
		Other federal entities	\$313	Formal consultations in next 20 years	
	2: Washington	2012	Colville National Forest	\$18,100	Reinitiate programmatic consultation across activities
		2013	Colville National Forest	\$9,030	Programmatic consultation on new management plan
2028		Colville National Forest	\$9,030	Programmatic consultation on new management plan	
2012-2032		Colville National Forest	\$2,529	Informal consultations in next 20 years	
		Colville National Forest	\$625	Formal consultations in next 20 years	
		Other federal entities	\$564	Programmatic consultations in next 20 years	

APPENDIX C:

INCREMENTAL EFFECTS MEMORANDUM OF THE ECONOMIC ANALYSIS OF THE PROPOSED RULE TO
DESIGNATE CRITICAL HABITAT FOR THE SOUTHERN SELKIRK MOUNTAINS POPULATION OF WOODLAND
CARIBOU (*RANGIFER TARANDUS CARIBOU*)

Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Designate Critical Habitat for the southern Selkirk Mountains population of woodland caribou (*Rangifer tarandus caribou*)

The purpose of this memorandum is to provide information to serve as a basis for conducting an economic analysis for the proposed designation of critical habitat for the southern Selkirk Mountains population of woodland caribou (caribou). This information will fulfill the request as identified in the November 30, 2010, Memorandum, *Guidance for Preparing Incremental Effects Memo* (from Jennifer Baxter, Industrial Economics, Inc., to Douglas Krofta, Service).

Section 4(b)(2) of the Endangered Species Act (Act) requires the U.S. Fish and Wildlife Service (Service) to consider the economic, national security, and other impacts of designating a particular area as critical habitat. The Service may exclude an area from critical habitat if it determines that the benefits of exclusion outweigh the benefits of including the area as critical habitat, unless the exclusion will result in the extinction of the species. To support its weighing of the benefits of excluding versus including an area as critical habitat, the Service prepares an economic analysis for each proposed critical habitat rule describing and monetizing, where possible, the economic impacts (costs and benefits) of the proposed regulation.

Determining the economic impacts of critical habitat designation involves evaluating the "without critical habitat" baseline versus the "with critical habitat" scenario. Impacts of a designation equal the difference, or the increment, between these two scenarios. Measured differences between the baseline (area without critical habitat) and the designated critical habitat (area with critical habitat) may include (but are not limited to) changes in land or resource use, environmental quality, or time and effort expended on administrative and other activities by Federal landowners, Federal action agencies, and in some instances, State and local governments or private third parties. These are the "incremental effects" that serve as the basis for the economic analysis.

There are a number of ways that designation of critical habitat could influence activities, but one of the important functions of this memorandum is to explain any differences between actions required to avoid jeopardy versus actions that may be required to avoid adverse modification. The Service is working to update the regulatory definition of adverse modification since it was invalidated by several Courts of Appeal, including the Ninth Circuit and the Fifth Circuit.¹⁴² At this time (without updated regulatory language) the Service is analyzing whether destruction or adverse modification would occur based on the statutory language of the Act itself, which requires the Service to consider whether the agency's action is likely "to result in the destruction or adverse modification of habitat which is determined by the Service to be critical" to the conservation of the species. To perform this analysis, the Service considers how the proposed action is likely to affect the function of the critical habitat unit to serve the intended conservation role. The information provided below is intended to identify the possible differences for this species under the different section 7 standards.

¹⁴² *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir. 2004); *Sierra Club v. U. S. Fish and Wildlife Service*, 245 F.3d 434 (5th Cir. 2001).

Background

In total, approximately 375,562 acres (ac) (151,985 hectares (ha)) are being proposed for designation as critical habitat for caribou within the contiguous United States. We are not proposing to designate critical habitat for caribou in Canada. Unit 1 includes proposed critical habitat in Boundary and Bonner counties in Idaho (referred to as subunit 1 in the proposed rule), and Pend Oreille County in Washington (referred to as subunit 2). Land ownership within the Unit consists of 294,947 ac (119,361 ha) of Federal land (primarily USFS), 65,236 ac (26,400 ha) of State of Idaho land, and 15,379 ac (6,224 ha) of private land. Our caribou critical habitat proposal is based on the recovery recommendations contained in the Selkirk Mountains Woodland Caribou Recovery Plan (Recovery Plan) (USFWS 1994) as well as the Southern Selkirk Mountain Caribou 5-Year Review completed by the Service on December 2, 2008 (USFWS 2008).

The proposed critical habitat unit for the caribou is considered essential to the conservation of this species. This unit and 2 subunits represent a habitat based population distribution associated with known occurrence records and is considered to be occupied. A jeopardy analysis for this species would look at the magnitude of the project's impacts relevant to the population across the species' entire range. Furthermore, the jeopardy analysis would focus on effects to the species' reproduction, numbers, or distribution. An adverse modification analysis would focus on a project's impacts to the physical or biological features (primary constituent elements (PCEs)), or other habitat characteristics in areas determined by the Secretary to be essential for the conservation of the species, and analyze impacts to the capability of the critical habitat unit to maintain its conservation role and function for the species.

Caribou habitat is provided by high elevation, mature to old-growth western red cedar (*Thuja plicata*)/ hemlock (*Tsuga heterophylla*) and Engelmann spruce (*Picea engelmannii* or *P. glauca x engelmannii*)/ subalpine fir (*Abies lasiocarpa*) forests (generally above 4,000 feet (ft) (1,220 meters (m) elevation), of the mountainous southeastern and east-central portions of British Columbia (B.C.), and the Selkirk Mountains of northern Idaho and northeastern Washington (USFWS 1994, p. 6; USFWS 2008a, p. 2). Therefore, occupied caribou habitat consists of habitat within western hemlock/western red cedar and subalpine fir/Engelmann spruce vegetation zones, including the transitional habitats between these two zones. All the areas within the critical habitat unit are within the habitat-based population distribution and are considered occupied by the species.

There are numerous activities within lands proposed for critical habitat that could potentially be affected by the designation. Parts of the lands proposed as critical habitat are subject to livestock grazing and management; fire suppression; road/bridge construction and maintenance; mining; vegetation removal and planting; recreation developments and activities including off-road vehicle use (e.g. snowmobiles), backcountry skiing, hunting, trail development, campground, and hiking use; and other effects.

Baseline Analysis

Aside from federal National Forest Land and Resource Management Plans (LRMPs) (e.g., Colville National Forest (CNF) and Idaho Panhandle National Forest (IPNF)), within the caribou proposed critical habitat rule, we have determined that there are currently no HCPs or other management plans

for caribou, and the proposed designation does not include any Tribal lands or trust resources. Therefore, we anticipate no impact to Tribal lands, partnerships, or HCPs from this proposed critical habitat designation.

Conservation plans and regulatory mechanisms that provide protection to the species and its habitat without critical habitat designation

The following list includes other areas, plans, regulations, and actions that have, and likely will continue to, provide baseline protections to the caribou. All of these areas represent actions/areas that are anticipated to occur within the proposed designation.

Conservation Plans/Efforts

The following are ongoing conservation efforts that provide some benefits to caribou and are considered part of the baseline because these activities will occur with or without critical habitat designation.

1. Recovery Plan

While not a regulatory document, the Recovery Plan describes conservation strategies and those measures that can be implemented to recover the caribou. Since implementation of Recovery Plan objectives and actions are not required and are voluntary, the Service will recommend their incorporation into project design, as appropriate, during consultation to minimize effects to listed species. If incorporation of recovery a plan action(s) is appropriate to reasonably minimize incidental take of a listed species, the Service could require their implementation through inclusion in Reasonable and Prudent Measures in Terms and Conditions of an incidental take statement issued pursuant to formal consultation.

2. Research

Annual surveys are conducted by Idaho Department of Fish and Game (IDFG), with both fixed-wing aircraft and a helicopter, using standard survey protocols developed for caribou (Wakkinen et al. 2009, pp. 3, 5–6). Since 1994, a great deal of information has been collected regarding caribou and their habitat, the effects of threats such as habitat fragmentation, predation and human access, and various options and approaches for recovery efforts. Much of this valuable work is expected to continue into the future (given continued funding), and will yield valuable insights on caribou status, distribution, and ecology. The overall goal of these efforts is to improve design, execution, and evaluation of caribou conservation and management actions. For example, the idea of identifying and protecting from disturbance (either year-long or seasonally) caribou travel corridors has been acknowledged as potentially important to the recovery of caribou. Tracking caribou movement patterns may provide valuable information facilitating identification of caribou movement corridors within the area proposed for designation as critical habitat for the caribou. As this occurs, it will be important to maintain local, statewide, and rangewide data synthesis and reporting, and the collaborative sharing of research needs, ideas, and information.

All of these efforts help to identify where caribou are located, their habitats, preferences, stressors, and natural history, which helps to frame the protection and conservation needed while implementing projects and working towards recovery goals.

Federal Regulations/Acts

The following Federal laws and regulations provide some benefits to caribou and are considered part of the baseline because these benefits will continue with or without critical habitat designation.

3. Federal Land Policy and Management Act

The Federal Land Policy and Management Act of 1976 requires that “. . . the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that . . . will preserve and protect certain public lands in their natural condition; (and) that will provide food and habitat for fish and wildlife . . .” Furthermore, it is the policy of the Bureau of Land Management “to conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species.” BLM Manual 6840.02.

4. National Forest Management Act

The National Forest Management Act of 1976 directs that the National Forest System “...where appropriate and to the extent practicable, will preserve and enhance the diversity of plant and animal communities.” Additionally, 36 C.F.R. § 219.20 requires that “Plan decisions affecting species diversity must provide for ecological conditions that . . . provide a high likelihood that those conditions are capable of supporting over time the viability of native and desired non-native species well distributed throughout their ranges within the plan area.”

5. Clean Water Act

Congress passed the Federal Water Pollution Control Act Amendments of 1972 and the Clean Water Act (CWA) of 1977 to provide for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s lakes, streams, and coastal waters. Primary authority for the implementation and enforcement of the CWA now rests with the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (COE). In addition to the measures authorized before 1972, the CWA implements a variety of programs, including: Federal effluent limitations and state water quality standards, permits for the discharge of pollutants and dredged and fill materials into navigable waters, and enforcement mechanisms.

Section 402 of the CWA is the principal Federal program that regulates activities affecting water quality. One of the most significant features of the 1972 CWA is the creation of a national pollutant discharge elimination system (NPDES). Except as otherwise provided in the CWA, industrial sources and publicly owned treatment works may not discharge pollutants into navigable waters without a permit. The EPA or state authorized programs may issue a permit for discharge upon condition that the discharge meets applicable requirements,

which are outlined extensively in the CWA and which reflect, among other things, the need to meet Federal effluent limitations and state water quality standards.

6. Other Listed Species/Candidate Species

Grizzly bears (*Ursus arctos horribilis*), Canada lynx (*Lynx canadensis*), and bull trout (*Salvelinus confluentus*), all listed as threatened under the Act, also occur within the area we are proposing to designate as critical habitat for caribou. As a result of these other species listings, the caribou receives some benefits from the implementation of conservation actions for these species where their habitat needs and occurrences overlap with caribou.

For example, relative to grizzly bears, science has shown that road management is one of the most important tools that can be used to achieve grizzly bear recovery. To this end, standards for management of secure areas (areas with no roads or no drivable roads) have been established for all grizzly bear management units (BMU) in the Selkirk Grizzly Bear Recovery Zone, which entirely overlaps with the proposed caribou critical habitat designation. Management of unroaded areas within BMUs for grizzly bears can also help provide areas free of disturbance that caribou require. Additionally, maintenance of multistoried and old-growth stands within subalpine fir habitats has been identified as an important habitat variable in the management of Canada lynx habitat. Consequently, the Northern Rockies Lynx Management Direction, which amended the IPNF's LRMP, restricts harvest of multistoried stands within lynx habitat. Similar to grizzly bears, Canada Lynx Analysis Units (LAUs) have been established in the Selkirk Mountains. Several of the LAUs completely overlap with the proposed caribou critical habitat designation. Restricting harvest of multistoried or old-growth subalpine fir habitat stands within lynx habitat within LAUs may also facilitate retention and/or development of arboreal lichens, which is an important forage base for caribou. For bull trout, in accordance with the Inland Native Fish Strategy, harvest within riparian habitat conservation areas (RHCA) may only occur if such harvest is designed to improve the health of the RHCA. Further, the Service strongly recommends minimizing road construction within watersheds occupied by bull trout. Protecting RHCAs and minimizing road construction within watersheds occupied by bull trout will provide benefits to caribou through supporting maintenance of forage base distribution and abundance, and potentially reduced recreational disturbance.

On December 14, 2010, the Service published a finding determining that the wolverine (*Gulo gulo luscus*) is a species warranted for listing under the Act, but a rulemaking to propose the species for protection is precluded by the need to address the needs of other higher priority species (e.g., the wolverine is a candidate for listing under the Act) (74 FR 79030). The IPNF also identifies the wolverine as a sensitive species. Special emphasis is given to assessing the potential effects of winter activities (e.g., snowmobiling, helicopter/sno-cat skiing) within high elevation cirque basin habitats, which may be utilized as denning sites by wolverine. Potentially restricting or controlling winter recreational activities within high elevation cirque basin habitats may serve to lessen disturbance of caribou during the winter when they may be physiologically stressed by environmental and nutritional conditions, and/or during spring when female caribou may seek high elevation ridge tops for calving.

Federal Land Management

The following Federal agencies own and manage lands within the some of the areas proposed for designation as critical habitat. Their ongoing land management activities are considered part of the baseline because they will continue to provide conservation benefits to caribou regardless of the designation of critical habitat. For future proposed activities affecting caribou, Federal agencies are already consulting under section 7 and will continue to do so regardless of the critical habitat designation, so any conservation measures, voluntary conservation recommendations, or terms and conditions resulting from those consultations would fall within the baseline. For those future proposed activities that may affect caribou critical habitat, section 7 consultation to address potential effects to caribou critical habitat will occur and may be considered as part of the incremental effects of critical habitat designation. Any additional protections triggered exclusively by the designation of critical habitat would be considered incremental effects of the designation (see further discussions that follow).

7. U.S. Forest Service

The Forest Service actively manages lands within the IPNF and CNF for caribou. Both the IPNF's and CNF's LRMPs include standards pertaining to caribou. Relative to the IPNF, application of their LRMP standards has resulted in the design of all vegetation management projects on the Forest since 2001 so they are not likely to adversely affect the caribou. At the programmatic level, these measures, although relatively general, provide the overarching direction to reduce impacts to caribou and contribute to their recovery. For example, management area standards include, but are not limited to measures such as:

- Seasonal closures motorized vehicles where necessary to reduce disturbance to caribou;
- Control or containment of fire to reduce further loss of caribou habitat;
- Maintenance of caribou travel corridors in mature timber;
- Management of roads and other human travel corridors to minimize impacts to caribou, where possible;
- Cooperate in implementation of the Selkirk Mountain Caribou Management Plan/Recovery Plan.

The CNF's LRMP contains standards pertaining to the management of caribou habitat. The key standards are as follows:

- Manage identified caribou habitat in accordance with the CNF Guidelines for Management of the Selkirk Mountain Caribou Habitat (Appendix I, FEIS) and Caribou Recovery Plan.
- Recreation facilities and/or uses should be compatible with the Semi-Primitive Non-Motorized or Semi-Primitive Motorized Recreation Opportunity Spectrum setting that maintain the integrity of the habitat.
- Implement seasonal or permanent closures when key habitats are located within 1/4 mile of open roads or trails and off-road vehicle activities would adversely affect caribou use of these habitats during the normal season of use. Continue use of present snowmobile route over Pass Creek Pass. Close route if caribou are within three miles of the Pass.

- Coordinate timber management activities with site specific caribou habitat needs. Design silvicultural prescriptions and harvest schedules to meet caribou habitat requirements.
- Limit new road construction.
- Implement temporary or permanent road closures to protect threatened and endangered species.
- Control all wildfires which threaten caribou habitat.

8. Wilderness Areas

The Salmo-Priest Wilderness overlaps with the area we are proposing to designate as caribou critical habitat in Selkirk Mountains in northeastern Washington. Within wilderness areas, human activities are restricted to non-motorized recreation (such as backpacking, hunting, fishing, horseback riding, etc.), scientific research, and other non-invasive activities. In general, the law prohibits logging, mining, roads, mechanized vehicles (including bicycles), and other forms of development.

State Wildlife Laws

The following wildlife laws by the states where the caribou occurs provide some benefits to caribou and are considered part of the baseline because these benefits will continue with or without critical habitat designation.

9. Washington

The State of Washington classifies caribou within the state as endangered.

10. Idaho

The State of Idaho classifies caribou within the state as endangered.

Some Federal agencies and other project proponents that are likely to consult with the Service under section 7 without critical habitat

In the baseline scenario, section 7 of the Act requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out will not likely jeopardize the continued existence of the caribou.

Some of the Federal agencies and projects that would likely go through the section 7 consultation process, regardless of the designation of critical habitat, include the following:

1. U.S. Bureau of Land Management (fire suppression, fuel reduction treatments, land resource management plans, livestock grazing and management plans, mining permit, renewable energy development).
2. U.S. Department of Homeland Security (border security infrastructure and operations).

3. U.S. Fish and Wildlife Service (issuance of section 10 permits for enhancement of survival, habitat conservation plans, and safe harbor agreements; Partners for Fish and Wildlife program projects benefiting the caribou).
4. U.S. Forest Service (vegetation management, noxious weed treatments, fire management plans, fire suppression, fuel reduction treatments, forest plans, livestock grazing allotment management plans, mining permits, travel management plans).

Service administrative effort for section 7 consultations without critical habitat

To date, we have completed approximately 128 consultations involving caribou, 9 of which resulted in the issuance of biological opinions (formal consultations); the remaining (119 consultations) were concurrence letters (informal consultations). All 9 biological opinions resulted in non-jeopardy determinations for the caribou. All of these consultations (both formal and informal) evaluated more than one species.

What types of project modifications are currently recommended or will likely be recommended by the Service to avoid jeopardy (i.e., the continued existence of the species)?

To date there have been no biological opinions for caribou that resulted in jeopardy determinations. However, in 2001, we issued non-jeopardy biological opinions to the IPNF and CNF for effects to caribou resulting from continued implementation of the IPNF's and CNF's LRMPs. The Service was litigated on our non-jeopardy determination on a portion of the biological opinion issued for the continued implementation of the IPNF's LRMP related to effects to caribou. Pursuant to litigation, the Service withdrew a portion of the IPNF's biological opinion pertaining to winter recreation activities within the caribou recovery zone occurring on IPNF's ownership. On March 26, 2006, the IPNF agreed to reinitiate consultation on their LRMP to address the effects of winter recreation upon caribou occurring on IPNF ownership within the caribou recovery zone. In December 2005, the Court in which the lawsuit was filed granted a preliminary injunction prohibiting snowmobile trail grooming within the caribou recovery area on the IPNF during the winter of 2005–2006. In November 2006, the Court granted a modified injunction restricting snowmobiling and snowmobile trail grooming on portions of the IPNF within the southern Selkirk Mountains caribou recovery area. This injunction is currently in effect, pending the completion of section 7 consultation on the IPNF's proposed winter travel plan. To date, this reinitiated consultation has not been completed.

Recommended project modifications to avoid jeopardy during section 7 consultation could include requests that impacts to mature and old-growth stands within western hemlock/western red cedar and subalpine fir/Engelmann spruce forests be avoided, when possible. If avoidance is not possible, the Service would consider whether the project impacts are temporary or permanent. If temporary, seasonal timing constraints would be recommended.

Adverse Modification Analysis

The following discussion describes the regulatory circumstances anticipated with the proposed designation of caribou critical habitat.

The 2011 caribou critical habitat proposal will designate approximately 375,562 ac (151,985 ha) in Boundary and Bonner counties in Idaho, and Pend Oreille County in Washington. Once critical habitat is designated in this area, section 7 of the Act also requires Federal agencies to ensure that their actions will not result in the destruction or adverse modification of critical habitat. The key factor related to evaluating potential adverse modification is whether, with implementation of the proposed Federal action, the affected critical habitat will continue to have the capability to serve its intended conservation role for the species. From section 3(3) of the Act: The terms "conserve," "conserving," and "conservation" means to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided under the Act are no longer necessary. Thus, designation of critical habitat helps ensure that proposed project actions will not result in the adverse modification of habitat to the point that the species will not achieve recovery.

What Federal agencies or project proponents are likely to consult with the Service under section 7 with designation of critical habitat? What kinds of additional activities are likely to undergo consultation with critical habitat?

The same Federal agencies listed above under the baseline analysis are also anticipated to be the primary agencies that would consult with the Service under section 7 on caribou critical habitat, for activities similar to those previously described. We expect consultation to primarily involve the effects of federal actions occurring within old-growth western red cedar/hemlock and Engelmann spruce/subalpine fir.

Previous consultations were based on effects to caribou habitat or individuals (e.g., displacement of caribou from caribou habitat), and the Physical or Biological Features (PBF) and Primary Constituent Elements (PCE) are based on similar habitat components under which the previous consultations were completed. Accordingly, we do not anticipate a need for different Federal agencies to initiate section 7 consultations, or a need to analyze the effects of new types of Federal actions as a result of this proposed designation. The PCEs identified in the proposed critical habitat rule include:

- Mature to old-growth western hemlock (*Tsuga heterophylla*)/western red cedar (*Thuja plicata*) climax forest, and subalpine fir (*Abies lasiocarpa*)/Engelmann spruce (*Picea engelmanni*) climax forest over 4,000 ft (1,220 m) in elevation; these habitats typically have 70 percent or greater canopy closure.
- Ridge tops with deep (up to 16 ft (5 m)) snowpack that are generally 6,000 ft (1,830 m) in elevation or higher, in mature to old stands of subalpine fir (*Abies lasiocarpa*)/Engelmann spruce (*Picea engelmanni*) climax forest, with relatively open (approximately 50 percent) canopy.
- Arboreal hair lichen growth in high enough amounts to support southern Selkirk Mountains caribou herds.
- High-elevation benches and shallow slopes, secondary stream bottoms, riparian areas, and seeps, and subalpine meadows with succulent forbs and grasses, flowering plants, horsetails, willow, huckleberry, dwarf birch, sedges and lichens. Southern Selkirk Mountains caribou, including pregnant females, use these areas for feeding during the spring and summer seasons.

- Transition zones that connect the habitats described above and that facilitate seasonal caribou movements between habitat types.

Accordingly, Federal actions would be evaluated with regard to their effect to (1) the arrangement of the above habitat types and their components and transition zones on the landscape; (2) seasonal movement, feeding, breeding, and sheltering needs; (3) seasonal space needed on the landscape to allow caribou to spread out and avoid predators; and (4) the need for areas with little or no disturbance from forest practices, roads, or recreational activities.

Because the Service considers all caribou habitat within the area proposed for designation as critical habitat to be occupied by caribou (due to the species' ability to move large distances, and due to both confirmed and unconfirmed reports of caribou presence throughout much of the area proposed for designation over many years) we do not anticipate the completion of additional consultations to be necessary for projects proposed in areas proposed for designation as critical habitat that would not otherwise be subject to section 7 consultation under the jeopardy standard. However, as a result of the caribou critical habitat designation, Federal agencies may need to reinitiate previously completed section 7 consultations for actions that only addressed effects to caribou under the jeopardy standard (due to its listing as an endangered species) in areas proposed as critical habitat. The administrative efforts required for any reinitiation of consultation due to the area included in the proposed designation of critical habitat would be an incremental effect of critical habitat designation.

How much administrative effort does or will the Service expend to address adverse modification in its section 7 consultations with critical habitat? Estimate the difference compared to baseline.

Based on the potential increase in consultations resulting from the area proposed for designation as critical habitat, we anticipate some increase in overall consultation workload and administrative efforts. This increase is expected primarily in the form of reinitiated consultations to address the effects of actions for which effects to caribou were previously analyzed under the jeopardy standard. As stated previously, all actions affecting caribou or their habitat within the proposed critical habitat area currently undergo section 7 consultation under the jeopardy standard. However, for both reinitiated and new critical habitat consultations, some increased administrative efforts are anticipated. However, we anticipate the increased effort will be tempered by the fact that we have a long history of consultation on this species, and the consultation history is largely based on effects to caribou habitat, which also forms the basis of the critical habitat PBFs and PCEs. This situation will likely make any new consultations or reinitiated consultations that would result from the designation of critical habitat relatively straightforward. In other words, our prior experience provides the Service and Federal action agencies some certainty in what to expect under consultations both for analysis and avoidance of jeopardy and adverse modifications. Nevertheless, an increase in administrative effort would be anticipated to carry out new consultations in the area where critical habitat is being proposed.

The amount of increased administrative effort due to the proposed critical habitat is difficult to foresee and quantify. When we complete a consultation for caribou with critical habitat, each consultation will evaluate whether that project would result in adverse modification. As a result, each formal consultation that "may adversely affect" critical habitat has to consider adverse modification. As stated previously, we do not anticipate an increase in the number of consultations

to address critical habitat (other than initially to address reinitiated consultations) as section 7 consultations are currently routinely conducted for actions occurring within caribou habitat within the proposed critical habitat areas. Nevertheless, the future effort will depend on the nature and complexity of any future consultation.

What project proponents are likely to pursue HCPs under section 10 after the designation of critical habitat?

As a result of this critical habitat revision, it is possible that private landowners or a collection of non-federal entities may pursue creation of a new SHA or a HCP. For example, we are proposing to designate approximately 65,218 ac (26,393 hectares) of Idaho State lands as critical habitat for caribou, which is administered by the Idaho Department of Lands (IDL). The IDL has initiated a process to identify and protect important caribou travel corridors on their ownership to facilitate seasonal caribou movements and dispersal. Thus, while we are not familiar with any ongoing HCP development, the critical habitat designation could provide the stimulus for IDL to develop an HCP for their ownership.

What types of project modifications might the Service make during a section 7 consultation to avoid destruction or adverse modification of critical habitat that are different than those for avoiding jeopardy?

We expect that, for a proposed action to result in adverse modification (in other words substantially reduce the conservation value of caribou habitat to such an extent that would affect its ability to serve its intended recovery role), it would likely have to significantly alter large areas of high elevation mature to old-growth western hemlock/western red cedar climax forest, or subalpine fir/Engelmann spruce climax forest, or restrict caribou movement through such areas. In light of our history of consultations with federal land management agencies, we believe that it is unlikely that a federal agency would propose such a project. Nonetheless, should this occur, to avoid adverse modification we would most likely recommend reducing the scale of impacts to mature and old-growth stands within western hemlock/western red cedar and subalpine fir/Engelmann spruce forests. If impacts are temporary or seasonal in nature and avoidance is not possible, the Service would most likely recommend temporary, seasonal timing constraints be employed to avoid disruption of caribou movement and/or seasonal habitat use.

However, due to the extremely precarious status of caribou, it is difficult for us to predict the differences between actions required to avoid jeopardy (baseline) and actions required to avoid adverse modification (incremental effects). Although we do not currently have a regulatory definition of adverse modification, we rely on the statutory definition in light of the *Gifford Pinchot* ruling that provides some guidance in distinguishing different standards for determination of jeopardy and adverse modification. Adverse modification is considered a higher standard of preventing substantial loss of the conservation value of the critical habitat segment to allow for caribou recovery goals. Because of the caribou's precarious status, however, we anticipate that the measures required to avoid jeopardy and those required to avoid adverse modification would, in most cases, be identical, because the impacts in either case will most likely affect the persistence, development, and recycling of habitat. For caribou, adverse modifications to critical habitat that

would potentially adversely affect the ability of the few remaining extant individuals of the caribou population to fulfill their life requisite needs would most likely result in jeopardy as well.

Conclusion

In summary, the incremental effects of the designated critical habitat for caribou are limited by the relatively large overlap the designation has with the existing habitat based consultation framework for actions having already undergone section 7 consultations for the effects to the species under the jeopardy standard. An incremental effect of the critical habitat designation could occur under the following scenarios (these are not all mutually exclusive): (1) an increased workload for action agencies and the Service to conduct re-initiated consultations for ongoing actions in newly designated critical habitat; and (2) completing consultations for new projects occurring in designated critical habitat.