

**BIOLOGICAL EVALUATION AND ASSESSMENT  
OF  
ENDANGERED, THREATENED, CANDIDATE,  
AND FOREST SERVICE SENSITIVE  
PLANTS AND TERRESTRIAL ANIMAL SPECIES**

for the Proposed

**Camp Bradley Shaded Fuel Break Project**

*A National Fire Plan and Healthy Forests Initiative Project*

Custer County, Idaho

USDA FOREST SERVICE  
SALMON-CHALLIS NATIONAL FOREST

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## I. INTRODUCTION

The purpose of this Biological Evaluation and Assessment is to identify the likely effects of the proposed action on Endangered Species Act listed threatened, endangered, or candidate species and Forest Service sensitive plants and terrestrial animal species. This document conforms to the legal requirements set forth under Section 7 of the Endangered Species Act (19 U.S.C. 1536(c), 50 CFR 402.12(f) and 402.14(c)) and to the standards established in the Forest Service Manual direction (FSM 2672.42).

## II. DESCRIPTION OF THE PROPOSED ACTION

**Proposed Action:** The proposed action is to continue thinning a 200 acre lodgepole stand that is infested with mountain pine beetle and dwarf mistletoe. The objective is to create crown spacing that would reduce the possibility of a wildlife spreading into the tree crowns. The lodgepole pine would be reduced to a stocking level of approximately 170 trees per acre. The trees would be commercially removed and slash would be piled and burned in the fall.

**Project Area:** The proposed project area is in Management Area 3, Marsh Creek. The project location is T12N, R11E, sections 2 and 3. The proposed project area is adjacent to the historic Camp Bradley Boy Scout Camp, 15 miles northwest of Stanley, Idaho, within Custer County.

## III. CONSULTATION TO DATE

This consultation is being conducted under the Alternative Consultation Agreement (ACA), signed March 2004. The ACA was prepared pursuant to the Joint Counterpart Endangered Species Act (ESA) Section 7 Consultation Regulations issued on December 8, 2003 (Federal Register, pages 68254-68265).

The U.S. Fish and Wildlife Service identified two mammal and two bird species that are either threatened, endangered, or candidate species that could potentially occur on the Yankee Fork District of the Salmon-Challis National Forest. There are no listed or proposed plant species currently listed for the Forest. (SP#1-4-05-SP-122 dated December 8, 2004) (Table 1).

**Table 1.** ESA Species Potentially Occurring on the Yankee Fork RD, Salmon-Challis NF

Species	Scientific Name	Status
Gray wolf	<i>Canis lupus</i>	Experimental/ Nonessential Population
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened
Canada lynx	<i>Lynx canadensis</i>	Threatened
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate

## IV. CURRENT MANAGEMENT DIRECTION

### A. Forest Land and Resource Management Plan

The proposed project is within Management Unit #3, Marsh Creek, of the Challis Land and Resource Management Plan (USFS 1987). Appropriate to this project, management area direction is to emphasize management of the most productive and accessible timber stands and emphasize management of threatened and endangered species where appropriate (USFS 1987).

## B. National Fire Plan and Healthy Forest Initiative

This proposal is consistent with the National Fire Plan and the Healthy Forest Initiative as outlined in 68 FR 33814

## V. EXISTING ENVIRONMENT

The proposed project area vegetation is primarily lodgepole pine. The lodgepole pine trees have a high mortality, due to a mountain pine beetle epidemic. The ground vegetation consists of mainly pinegrass (*Calamagrostis rubescens*) and grouse whortleberry (*Vaccinium scoparium*).

## VI. DETERMINATIONS

### A. Federally Listed Species

#### 1. Summary of Likely Effects

The proposed project was reviewed and analyzed for the likely effects on the threatened and endangered terrestrial species (Table 2).

**Table 2.** Summary of the Analysis of Effects for Threatened, Endangered, and Candidate Animal Species

Species	Probability of Effect	Determination of Effect
Gray wolf	No	No Effect
Bald eagle	No	No Effect
Canada lynx	Yes	Not Likely to Adversely Affect
Yellow-billed cuckoo	No	No Effect

See Appendix A for criteria for the effects analysis

#### 2. Discussion

The discussion here contains a review of the biological requirements, potential occurrence, and determination rationale of the likely effects of the proposed action on each of the threatened, endangered, or proposed terrestrial animal species.

##### Gray Wolf

**Biological Requirements:** Historically, the grey wolf was found in every type of habitat that large ungulates occupied in the northern hemisphere (Mech 1995). The necessary components of wolf habitat are adequate year-round prey, secluded and suitable den sites, and ample space with minimal exposure to humans and a low risk of human-caused mortality (Kaminski and Hansen 1984). The wolf pack consists of two to 30 wolves (average of 10) that are socially bonded to each other (USFWS 1994). Wolves mainly dig burrows in the ground for den sites, although they will also use hollow logs, rock caves, and abandoned beaver lodges. These sites are usually located within forest cover and away from human activity. Some wolf packs are sensitive to human disturbance and may abandon the den if disturbed, which can pose a risk to very young pups that cannot regulate their own body temperature (USFWS 1994).

A wolf pack will usually move from the den site to rendezvous sites when the pups are 6 to 10 weeks of age (late May through early July). These sites, which usually have meadows with

adjacent timber and surface water, are resting and gathering areas occupied by wolf packs during the summer and early fall. A succession of rendezvous sites are used by the pack until the pups are mature enough to travel with the adults sometime in September or early October. These sites may receive traditional use by the pack. The initial rendezvous site that the wolves use appears most sensitive to prolonged or substantial human disturbance (USFWS 1994).

In most wolf populations, packs occupy exclusive territories and non-paired loners either live in the buffer zones between territories or avoid packs altogether and establish their own territories. Territories in Montana average about 300 to 400 square miles (777 to 1036 km<sup>2</sup>) (USFWS 1994).

Ungulates comprise approximately 90% of the biomass of the wolves' diet. The diet is supplemented during spring through fall with beaver and other small mammals. Wolves eat an average of nine pounds of meat a day; however, food is not always available, so wolves may go up to two weeks without eating while searching for prey (USFWS 1994). In Central Idaho, elk, mule deer, white-tailed deer, and moose are the primary prey species (Kaminski and Hansen 1984). Habitat evaluations conducted by Kaminski and Hansen (1984) in Central Idaho concluded that high mountain complexes and basins frequented by summering elk, deer, and moose represent the most suitable habitat for wolves. During winter periods, these prey species continue to represent the principle food source and wolf distribution is keyed to the winter ranges of these species.

*Potential Occurrence:* The gray wolf is listed as a threatened species under the Endangered Species Act (ESA), but is classified as an experimental and non-essential population under the provisions of Section 10j of ESA. Wolves were reintroduced in the central Idaho area in the winters of 1995 and 1996. By definition, the area is currently considered "occupied wolf range" (USFWS 1994). No land use restrictions are warranted in accordance with the gray wolf reintroduction EIS (USFWS 1994).

In 2003, the population of wolves in the Central Idaho Wolf Recovery Area was 345 animals; 211 of those wolves were in 31 known packs with collared individuals, and 134 were in packs without collared individuals. In the northern Rocky Mountain States, the wolf population has reached the biological recovery objectives outlined by the US Fish and Wildlife Service (USFWS et al. 2004). The Idaho State Wolf Plan has been approved as adequate for delisting of wolves, but the entire Rocky Mountain population will not be delisted until all states have approved plans. Currently, Montana's plan has been approved, but Wyoming's plan has not been approved (USFWS et al. 2004).

*Determination Rationale:* Wolves are highly mobile and the movements of wolves can be expected to include the project area. Minor disturbance and/or displacement are expected. There are no denning or rendezvous sites identified within the project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no effect on the gray wolf or its habitat.

### Bald Eagle

**Biological Requirements:** In the upper Main and Middle Fork Salmon River country, the bald eagle is primarily a winter resident. Winter habitat is critical for bald eagle survival. Vital components of winter habitat are an abundant food supply of fish, waterfowl, small mammals and carrion, suitable foraging habitat with adequate perch trees, and protected areas for night roosting. Fish, followed closely by carrion, are the most common diet constituents of wintering bald eagles along the Salmon River (Warren 1980).

**Potential Occurrence:** Bald eagles winter along the Salmon River from November to mid-March, on private lands and lands administered by the Sawtooth National Recreation Area, Sawtooth National Forest (upper reaches) and the Bureau of Land Management. Mid-winter bald eagle count data from 1986 to 2000 show a mean number of 1.13 eagles (maximum 4) from Hell Roaring Creek (Stanley Basin) to Sunbeam, and a mean number 3.06 eagles (maximum 8) from Sunbeam to Challis (including East Fork of the Salmon River). This is an annual percent change of +12.7 and +8.07, respectively (Steenhof et al. 2002). Bald eagles are not known nest near the project area. The nearest active nest is over 50 miles northeast near Challis. No winter roosting sites have been identified in or near the project area.

**Determination Rationale:** The use of the project area by bald eagles is not expected due to lack of potential nesting habitat and lack of carrion or fish foraging habitat. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no effect on the bald eagle or its habitat.

### Canada Lynx

**Biological Requirements:** Lynx occur in the temperate forests of North America, primarily in the boreal forests of Alaska and Canada. Its range extends south into northern portions of the western mountains, where environmental conditions at high elevations support boreal forest habitats similar to those found in northern regions (Groves et al. 1997, Ruggiero et al. 1999).

The lynx is a specialized predator of snowshoe hare (*Lepus americanus*). The dependence upon hares greatly influences lynx population dynamics; when and where snowshoe hare populations are abundant, lynx reproduction and densities are high, when hares are scarce, lynx productivity and numbers are low (Koehler and Brittell 1990). In Idaho, lynx also prey upon white and black-tailed jackrabbits, beaver, and porcupines (Lewis and Wenger 1998), as well as red squirrels, small mammals, and grouse (Koehler and Aubry 1994). Lynx occupy Engelmann spruce (*Picea engelmanni*), subalpine fir (*Abies lasiocarpa*), lodgepole pine (*Pinus contorta*) forests above 4,000 feet in the western United States (Koehler and Brittell 1990). In central Idaho, cool, moist, high-elevation Douglas-fir (*Pseudotsuga menziesii*) forests and aspen (*Populus tremuloides*) are considered habitat (Ruediger et al. 2000). Lynx habitat consists of two structurally different forest types: early successional forests which contain higher numbers of prey, especially snowshoe hare, and late-successional forests which provide cover for denning and kittens (Koehler and Brittell 1990). Intermediate successional stages may serve as travel cover for lynx, and help provide connectivity within a forested landscape between foraging and denning habitat within a landscape. Lynx favor hunting in early successional forests, where snowshoe hares are abundant. These areas result from fires, timber harvest, wind throw and disease (Koehler and Aubry 1994).

Denning habitat consists of mature, mesic forests with an abundance of large woody debris, such as fallen trees or upturned stumps, which provides thermal cover for kittens. Den sites should also have minimal human disturbance, close proximity to foraging habitat, connectivity to travel corridors, and be at least one to five acres in size (Koehler and Brittell 1990). The availability of den sites may be an important determinant of habitat quality (Ruediger et al. 2000).

Individuals are usually solitary, however, they will travel in groups (females with kittens, two females with litters, males and females during breeding season) (Koehler and Aubry 1994). Home ranges of male lynx are usually larger than that of females. In western U.S., home range is usually between 9 to 19 mi<sup>2</sup> (24 to 48 km<sup>2</sup>) (Groves et al. 1997). Some researchers have found that lynx abandon their home range and become nomadic when the snowshoe hare density is <1.0 hare/ha (Lewis et al. 1998).

*Potential Occurrence:* Lynx are known to occur on the Salmon-Challis National Forest. Records indicate that the cat has been observed in the vicinity of the project area (Lewis and Wenger 1998) but the extent of use of the project area is unknown. It is believed that current populations are considerably lower than historical levels throughout the upper Salmon River area. While the relatively limited distribution of lynx in the upper Salmon River area is probably more related to the lack of natural habitat rather than the availability of prey, snowshoe hare densities are very low in the project area. Secondary prey, primarily the red squirrel, occurs in the project area but in relatively low numbers. Potential lynx denning and foraging habitat does occur within the project area, but this makes up a very small proportion of the LAU. The lynx could use the project area incidentally during the period of project activity, such as an occasional nomadic or transient lynx using the road as a travel corridor.

*Determination Rationale:* The project area is located within two Lynx Analysis Units (LAU); Knapp Creek and Lower Beaver Creek, which were developed under the guidelines of the Canada Lynx Conservation Assessment and Strategy (Ruediger et al. 2000) (Table 3). Approximately 10 acres of the 200 acre project area is located in the Knapp Creek LAU. For purposes of this analysis, the entire project area is assumed to be potential habitat and potential denning habitat and percentages of acres affected are calculated using the Lower Basin LAU.

**Table 3.** Lynx Analysis Units (LAU) Affected

Analysis Unit	Total Acres	Acres of Potential Habitat (% in LAU)	Acres of Potential Denning Habitat (% in LAU)
Lower Beaver Creek	22,909	18,075 (79%)	8,616 (38%)
Knapp Creek	21,759	16,987 (78%)	7,766 (36%)
Bradley Scout Camp Project Area	200	200 (0.87%)	200 (0.87%)

The above analysis was derived from GIS interpretation. The assumptions that were used for analysis were the potential vegetation types (PVTs) of alpine fir/lodgepole, lodgepole, Douglas fir, aspen, and conifer/mountain big sage were considered potential habitat. Dry Douglas-fir is not suitable lynx habitat, and was removed from the analysis. Fuel Models 8 and 10 in

lodgepole and sub-alpine fir were considered to be potential denning habitat. Size class was not taken into consideration due to limitations of existing GIS data.

The proposed project area is comprised almost entirely of lodgepole pine. The mountain pine beetle epidemic has rendered the lodgepole pine stands as currently unsuitable for lynx for either foraging or denning. These stands will remain unsuitable until sufficient regeneration of lodgepole seedlings grow enough to provide for snowshoe hare foraging.

The proposed project is in compliance with the interagency Canada Lynx Conservation Agreement between the USDA Forest Service and the USDI Fish and Wildlife Service dated February 7, 2000 (USFS and USFWS, 2000), in compliance with the Biological Opinion issued by the USDI Fish and Wildlife Service for BLM and FS Plans and implementation of the FS Canada Lynx Conservation Agreement (USFWS 2000), and in compliance with the conservation measures spelled out in the Canada Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et al. 2000).

The determination is that the potential lodgepole habitat is currently in unsuitable condition due to the mountain pine beetle outbreak. However, the Camp Bradley Shaded Fuel Break Project is located within a LAU and there may be incidental use by lynx passing through the proposed project area. The determination is that the proposed project may affect, but is not likely to adversely affect, the Canada lynx or its habitat.

#### Yellow-billed Cuckoo

*Biological Requirements:* In Idaho, the yellow-billed cuckoo utilizes riparian areas with dense understory. The species is primarily insectivorous, but will occasionally eat small amphibians, eggs, and some fruits. The species was once widespread throughout the United States, but has declined dramatically during the last few decades. The reason for the decline is not fully understood, but is believed to be, in part, due to deteriorating riparian condition (Groves et al. 1997).

*Potential Occurrence:* It is not likely that any yellow-billed cuckoos would be in the vicinity of the project area due to lack of dependent habitat. There is potential habitat in the vicinity on the main Salmon River corridor but none near the project area.

*Determination Rationale:* The use of the project area by yellow-billed cuckoos, currently or in the future is not unlikely and not expected due to lack of potential nesting and foraging habitat. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no effect on the yellow-billed cuckoo or its habitat.

#### **B. Forest Service Sensitive Species**

Forest Service sensitive species, designated by the Regional Forester, Intermountain Region, are those species for which population viability is a concern. Those species that are known or expected to occur on the Challis portion of the Salmon-Challis National Forest include five mammals, eight birds, one amphibian and fifteen plants (Table 4 and 5).

**Table 4.** Salmon-Challis National Forest Region 4 Sensitive Terrestrial Animal Species

Species	Scientific Name
Spotted bat	<i>Euderma maculatum</i>
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>
Pygmy rabbit	<i>Brachylagus idahoensis</i>
Fisher	<i>Martes pennanti</i>
Wolverine	<i>Gulo gulo</i>
Harlequin duck	<i>Histrionicus histrionicus</i>
Northern goshawk	<i>Accipiter gentiles</i>
Peregrine falcon	<i>Falco peregrinus anatum</i>
Greater sage-grouse	<i>Centrocercus urophasianus</i>
Boreal owl	<i>Aegolius funereus</i>
Flammulated owl	<i>Otus flammeolus</i>
Great gray owl	<i>Strix nebulosa</i>
Three-toed woodpecker	<i>Picoides tridactylus</i>
Columbia spotted frog	<i>Rana luteiventris</i>

**Table 5.** Salmon-Challis National Forest Region 4 Sensitive Plant Species

Species	Scientific Name
Lost River milkvetch	<i>Astragalus amnis-amissi</i>
Lemhi milkvetch	<i>Astragalus aquilonius</i>
Mesic milkvetch	<i>Astragalus diversifolius</i>
White Cloud milkvetch	<i>Astragalus vexiliflexus</i> var. <i>nubilus</i>
Maritime sedge	<i>Carex incurviformis</i>
Douglass's wavewing	<i>Cymopterus douglasii</i>
Rockcress draba	<i>Draba densifolia apiculata</i>
Stanley's whitlow-grass	<i>Draba trichocarpa</i>
Welsh's buckwheat	<i>Eriogonum capistratum</i> var. <i>welshii</i>
Guardian buckwheat	<i>Eriogonum meledonum</i>
Challis crazyweed	<i>Oxytropis besseyi</i> var. <i>salmonensis</i>
Marsh's bluegrass	<i>Poa abbreviata marshii</i>
Wavy-leaf thelypody	<i>Thelypodium repandum</i>
Stanley thlaspi	<i>Thlaspi idahoense</i> var. <i>aileeniae</i>

### **Forest Service Sensitive Vertebrate Species**

#### **Summary of Likely Effects**

The proposed project was reviewed and analyzed for the likely effects on the Forest Service terrestrial sensitive vertebrate species (Table 6).

**Table 6.** Summary of the Analysis of Effects for Terrestrial Animal Vertebrate Species

Species	Probability of Effect	Determination of Effect
Spotted bat	No	No Impact
Townsend's big-eared bat	No	No Impact
Pygmy rabbit	No	No Impact
Fisher	No	No Impact
Wolverine	Yes	May Impact Individuals or Habitat
Harlequin duck	No	No Impact
Northern goshawk	No	May Impact Individuals or Habitat
Peregrine falcon	No	No Impact
Greater sage-grouse	No	No Impact
Boreal owl	No	No Impact
Flammulated owl	No	No Impact
Great gray owl	Yes	May Impact Individuals or Habitat
Three-toed woodpecker	Yes	May Impact Individuals or Habitat
Columbia spotted frog	No	No Impact

See Appendix A for criteria for the effects analysis

## Discussion

The following discussion contains a review of the biological requirements, potential occurrence, and determination rationale of the likely effects of the proposed action on each of the sensitive vertebrate terrestrial species known or suspected to occur within the project area.

### Spotted Bat

**Biological Requirements:** Extensive Idaho surveys have only recently located this species in the southwestern part of the state. The species is found up to 8000 foot elevation, in various habitats from deserts to mountainous coniferous forests. The spotted bat feeds primarily on noctuid moths. It apparently is relatively solitary but may hibernate in small clusters; however winter behavior is poorly known. Spotted bats roost solitarily in cracks and crevices in cliffs and canyons. Individual bats maintain exclusive foraging areas, primarily over dry, open coniferous forest, and forage four to six miles from the day roost each night. The spotted bat is very sensitive to human disturbance (Groves et al. 1997)

**Potential Occurrence:** No surveys have been conducted in the vicinity of project area. The closest known location for this bat is one animal captured in 1997 on the Middle Fork of the Salmon River (Wenger, pers. comm.). This sighting is a major extension of its known range from southwestern Idaho (Groves et al. 1997). This species is not expected to be in the vicinity of the project area. Therefore, no further discussion on the spotted bat will be presented in this document.

**Determination Rationale:** This species is not expected to be in the vicinity of the project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the spotted bat or its habitat.

### Townsend's Big-eared Bat

*Biological Requirements:* Townsend's big-eared bats are a non-migratory species that roost in colonies. The bats exhibit a high degree of site fidelity, returning year after year to the same maternity roost; however, the colony may utilize multiple roosts in a year. They will roost in caves, mine shafts, rock outcrops, lava tubes and occasionally buildings. Roosts, both maternity and hibernacula, are selected based on temperature, dimension, light quality, air flow, and humidity (Idaho State Cons. Effort 1995).

Townsend's big-eared bats forage over tree canopies, wet meadows and other areas of open water with riparian vegetation. They have been observed gleaning insects from vegetation. The main prey item is moths, primarily noctuid, but they will also feed on beetles, flies and other flying insects (Idaho State Cons. Effort 1995).

*Potential Occurrence:* There are confirmed records of this species occurring on the Forest although the population numbers are unknown. Surveys designed specifically to confirm the presence of this species have not been conducted. Suitable foraging habitat occurs in the proposed project area; however suitable roosting habitat is not known to occur in the project area.

*Determination Rationale:* Townsend's big-eared bat roosts are vulnerable to disturbance. There are no known suitable colonial roost sites located near or within the proposed project area. Potential foraging habitat is not expected to be altered. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the Townsend's big-eared bat or its habitat.

### Pygmy Rabbit

*Biological Requirements:* Pygmy rabbits are the smallest rabbit in North America; length is between 10 to 12 inches, and weight is 13 to 18 ounces (Janson 2002). It is the only rabbit in North America that digs burrows and uses a burrow system (Roberts 2001). They are sagebrush obligates that require dense stands of big sagebrush for cover and food.

Pygmy rabbits are habitat specialists within the sagebrush steppe. They require sites with deep, sandy soils that are suitable for burrow excavation. They have been shown to select sites with greater cover, density, and height of the shrub community and with a higher forb density than the surrounding habitat (Heady et al. 2001). Sagebrush leaves make up a large proportion of the pygmy rabbit diet, especially in the winter when sage accounts for nearly 99% of their diet. In the spring and summer, they will eat grass and forbs, which make up approximately 50% of their diet. They do not require free water, although they have been observed eating snow (Janson 2002).

Pygmy rabbits breed during their second spring; they are unable to reproduce the year of their birth (McAllister 1995). Studies found first litter breeding dates to be mid- to late March in southern Idaho and April and May in Montana (Janson 2002). Pygmy rabbits produce at least two litters per year (Janson 2002). In central Idaho, they may occasionally produce up to four litters per years (Estes-Zumph, pers. comm.).

Pygmy rabbits are both diurnal and nocturnal and remain active throughout the year. They utilize burrow complexes year after year. Burrow systems have multiple entrances, ranging from one to ten. Other species, such as ground squirrels and kangaroo rats, use pygmy rabbit burrows as well as pygmy rabbits using other species burrows. In the winter, pygmy rabbits dig subnivian tunnels from burrow opening to foraging areas. These tunnels protect the rabbits from predation and extreme temperatures (Janson 220).

*Potential Occurrence:* No documented sightings have occurred in the vicinity of the project area. Pygmy rabbits are sagebrush dependant and there is no potentially suitable habitat where this species could occur on the project area.

*Determination Rationale:* The pygmy rabbit is not expected to be present in the project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the pygmy rabbit or its habitat.

### Fisher

*Biological Requirements:* The fisher is a medium-sized member of the Mustelid family. The species is sexually dimorphic; males generally weigh 8 to 12 pounds (3.5 to 5.5 kg) and females generally weigh 4.5 to 5.5 pounds ((2.0 to 2.5 kg) (Powell and Zielinski 1994). Female fishers breed at one year of age. Implantation is delayed about ten months, so females give birth at approximately two years of age. Litter sizes range from 2 to 2.9 kits (Powell and Zielinski 1994).

A study in north central Idaho suggested that fishers select habitat characteristics seasonally. In the summer, mature to old-growth forests with more large diameter trees, snags and logs relative to available habitat were chosen. They preferentially selected forested riparian habitat (Jones 1991). In the winter, fishers appeared to prefer younger forest cover type (lodgepole and Douglas-fir), that had a higher availability of large diameter trees, snags, and logs than surrounding habitat. The availability of large diameter logs appeared to be an important factor in the choice of winter habitat. Open (<40% crown cover) and drier sites (ponderosa pine, Douglas-fir, upland subalpine fir, and xeric grand fir) and stands with a large proportion of pole-sized or smaller trees were avoided in both summer and winter (Jones 1991).

Physical structure and prey species associated with that structure may determine fisher habitat use, rather than specific forest type. Three types of structure that are important for fishers include structure that provides for a high diversity and density of prey, structure that makes prey vulnerable, and structure that provides denning and resting sites (Powell and Zielinski 1994). Fisher disproportionately use habitat with high canopy closure (Powell and Zielinski 1994) that is close to water (Heinemeyer 1993, Jones 1991).

Fishers are prey generalists. Snowshoe hares (*Lepus americanus*), porcupines (*Erethizon dorsatum*), sciurids, mice, voles, and ungulate carrion are important food items. They will also eat birds, reptiles, and fruit (Powell and Zielinski 1994).

*Potential Occurrence:* Fishers have been documented as occurring on the Challis National Forest, however, their range and extent of habitat use on the Forest is unknown. There have

been no documented sightings of fisher in the project area. There was a sighting in the Lower Stanley area in September 2004 (B. Waterbury, pers. comm.). Mapped locations, generated from GIS data from the Idaho Conservation Database Center, show fisher observations in watersheds adjacent to the proposed project area.

*Determination Rationale:* The fisher is not expected to be present in the project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the fisher or its habitat.

### Wolverine

*Biological Requirements:* Wolverines are the largest terrestrial member of the mustelid family. They are generally solitary and territorial, with the ranges of opposite sexes overlapping (Banci 1994). Spatial separations of home ranges are more pronounced in the summer (Copeland 1996). In Idaho, the annual home ranges of adult females averaged 148 mi<sup>2</sup> (384 km<sup>2</sup>). While accompanied by kits, home ranges were reduced 42%. Annual home ranges for adult males averaged 588 mi<sup>2</sup> (1,522 km<sup>2</sup>). Population density was estimated to be 1 wolverine/76 mi<sup>2</sup> (198 km<sup>2</sup>). (Copeland 1996).

Wolverines occupy a wide range of habitat types. The prominent characteristic of wolverine habitat appears to be absence of human presence and influence and an abundant prey base. In Idaho, wolverine seemed to prefer Douglas-fir forest types in the summer and lodgepole forest types in the winter. Higher elevation rock habitats were preferred in summer and avoided in winter. Lower elevation montane coniferous forests were utilized in the winter. In both summer and winter, northerly aspects were preferentially chosen (Copeland 1996).

Wolverines are opportunistic omnivores in the summer and scavengers in the winter. In Idaho, ungulates were the most common food item, regardless of season. Small mammals (rodents and lagomorphs), carnivores (marten, skunk, and black bear), vegetative material, birds, and insects also comprised their diet (Copeland 1996). Although most ungulates are eaten as carrion, wolverines are capable of killing especially when snow or other situations make ungulates vulnerable. Berries, small mammals, sciurids, fish, and insect larvae are important to wolverine diets during snow free periods. (Banci 1994).

*Potential Occurrence:* The wolverine is known to occur on the Salmon-Challis National Forest throughout the year. Extensive research on the wolverine from 1992 to 1996 documented a resident population with home ranges of several animals, both male and female, that included the entire project area (Copeland 1996). Reports of wolverine sightings are not uncommon. The extent of use of the project area by wolverines is unknown but is expected to be moderate to high.

*Determination Rationale:* Habitat components needed by the wolverine are present within the area to be disturbed. However, the small size of proposed disturbed area is insignificant for this wide-ranging carnivore when compared to available habitat in the immediate vicinity of the proposed project. The determination is that the proposed Camp Bradley Shaded Fuel Break Project may impact individual wolverine but is not likely to cause a trend to federal listing or loss of viability of the species or its habitat.

### Harlequin Duck

*Biological Requirements:* The Harlequin is a small duck that winters in rough, coastal waters and migrates inland to nest along mountain streams. They will nest on the ground, on cliffs, under creek bank overhangs, in cavities and logjams and under bushes or trees (Degraaf et al. 1991, Groves et al. 1997). Harlequins in Idaho use riffle, run, and rapid streams with cobble and boulder substrates. In northern Idaho, streams used by harlequin ducks had a mature to old-growth red cedar-western hemlock or spruce-fir overstory and in southeastern Idaho, streams had shrubby riparian vegetation and a younger age class Douglas-fir overstory (Cassirer and Groves 1991).

Harlequin ducks forage along the bottom of swift streams, looking between rocks for mollusks, insects, aquatic invertebrates and small fish (Degraaf et al. 1991).

*Potential Occurrence:* No documented sightings have occurred in the vicinity of the project area. There is potentially suitable habitat where this species could occur on the nearby streams and the main Salmon River. In Idaho, harlequin ducks have been documented breeding north of the Lochsa River and suspected of breeding in the Priest River area (Cassirer and Groves 1991).

*Determination Rationale:* Suitable habitat does not occur within the proposed project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the harlequin duck or its habitat.

### Northern Goshawk

*Biological Requirements:* The northern goshawk is that largest of the three Accipiter species in North America. There are three components to goshawk breeding home range; the nest area, the post-fledging area, and the foraging area. They nest in a variety of forest habitat types which have similar structural characteristics. Generally, nests are located in mature to old forests with large trees, high canopy closure in relation with surrounding habitat, sparse ground cover, and open understories. Nests are often located near the bottom of slopes with a northerly aspect near water (Graham et al. 1999, Reynolds et al. 1992). In Utah, the highest proportion of nests was found in mixed lodgepole pine/aspen forests (Graham et. al 1999). The post-fledging area surrounds the nest area and includes a variety of habitat components, such as patches of dense trees, well developed herbaceous and/or shrubby understory, snags, downed logs, and other habitat attributes that would support a prey base. The foraging area surrounds the post-fledging area and is used opportunistically as prey is available (Reynolds et al. 1992).

Goshawk diets vary depending on where they are located geographically. Their diet consists of small to medium-sized mammals and birds, depending upon availability. Some prey species, such as squirrels, chipmunks, woodpeckers, robins, and jays, are consistent throughout the species' range (Reynolds et al. 1992).

*Potential Occurrence:* Surveys in the vicinity of the proposed project area in 2004 did not detect the presence of goshawks. Goshawks may utilize the proposed project area for foraging.

*Determination Rationale:* Although habitat components needed by the goshawk are present within the area to be disturbed, the quality is low to moderate. The size of proposed disturbed

area is, however, minor for this wide-ranging raptor when compared to available, higher quality habitat in the immediate vicinity of the proposed project. The project area would continue to be available for foraging after completion of the project. The determination is that the proposed Camp Bradley Shaded Fuel Break Project may impact individual northern goshawk foraging habitat but is not likely to cause a trend to federal listing or loss of viability of the species or its habitat.

#### American Peregrine Falcon

*Biological Requirements:* Peregrines are summer residents that generally nest on cliff faces that are usually adjacent to water. Preferred nest sites are on dominant cliffs with heights exceeding 200 feet (61 m). Nests are situated on open ledges or potholes with some preference for south facing aspects. They will also nest on the ledges of buildings. Hunting territories are up to 17 miles (27 km) from nesting cliffs (USFWS 1984).

The diet of the peregrine consists almost entirely of avian prey, including passerines and shorebirds. Peregrines are noted for their speed and agility in flight and take the majority of their prey on the wing. Preferred foraging habitats include wetlands, riparian areas, meadows, croplands, river bottoms, and lakes (USFWS 1984).

*Potential Occurrence:* There are no known active nest sites and no known potential nesting habitat in the vicinity of the project area. There are documented active nesting pairs in the Redfish Lake area on the Sawtooth National Forest (>15 miles southwest) and along the East Fork Salmon River (>25 miles east) (Sallabanks 2003). The project area provides very little opportunity for foraging and no nesting habitat. There is very little probability of the peregrine falcon occurring in the project area.

*Determination Rationale:* The peregrine is not expected to be present in the project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the American peregrine falcon or its habitat.

#### Greater Sage Grouse

*Biological Requirements:* Sage grouse are a sagebrush obligate species that are found in low and big sagebrush in foothills, shrub lands, and mountain slopes. They also occur in mosaics of sagebrush and grasslands, meadows, and aspen. Sage grouse lack a muscular gizzard, so their diet consists of soft foods. The primary year-round food is sagebrush (leaves and buds), and forbs during the summers. Insects such as beetles, ants, and grasshoppers, are a very important seasonal part of their diet, especially for chicks (Paige and Ritter 1999).

Sage grouse have specific seasonal habitat needs for breeding, nesting, brood rearing, and wintering. In the spring, males gather at traditional breeding sites called leks, which are generally open areas surrounded by sagebrush, and attract females through intricate displays. Sage grouse nest primarily under sagebrush that has more canopy, ground, and lateral cover than surrounding sagebrush. Grass height and cover is also important for camouflage of nests. It is thought that a residual grass cover averaging 7 inches (18 cm) reduces nest predation by providing scent, visual, and physical barriers (Connelly et al. 2000). Brood rearing habitat is generally somewhat open stands of sagebrush with good grass and forb understory. Later in the

summer, sage grouse utilize more mesic sites with a good forb component. Winter habitat is in big sagebrush stands with good canopy cover and taller sagebrush than surrounding habitat (Connelly et al. 2000).

*Potential Occurrence:* Suitable habitat does not occur throughout the proposed project area. The greater sage-grouse has not been reported nor have any surveys been conducted for the bird near the project area.

*Determination Rationale:* Suitable habitat for sage grouse is not present in the project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the greater sage grouse or its habitat.

#### Boreal Owl

*Biological Requirements:* Boreal owls are year-round residents that utilize similar habitat during all seasons. In the continental United States, boreal owls have been documented occurring in primarily spruce-fir forest types, as well as lodgepole pine, mixed-conifer, Douglas-fir, aspen, black spruce, red-fir, and western hemlock forest types. They feed mainly on small mammals; often red-backed voles, but also shrews, pocket gophers, and deer mice. They will also eat birds and insects. Boreal owls hunt from a perch and utilize a sit and wait method. They are known to cache prey items. In Idaho, nesting occurs from mid-April to late May in abandoned or natural cavities in standing snags in older forests with complex structure. They roost in dense cover by day and forage mostly at night. In the summer, boreal owls choose cool microsites to roost to prevent thermal stress (Hayward 1994).

*Potential Occurrence:* Surveys have been conducted for the boreal owl in central Idaho; however none have been conducted in the proposed project area. Although the owl has not been reported in the vicinity, the lodgepole stands within and around the project area do potentially provide limited low quality habitat. Probability of the boreal owl occurrence in the area is low.

*Determination Rationale:* Very few of the habitat components needed by the boreal owl are present within the proposed project area. The size of proposed disturbed area is minor in relation to available habitat in the immediate vicinity of the proposed project. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the boreal owl or its habitat.

#### Flammulated Owl

*Biological Requirements:* The flammulated owl is a neotropical migratory bird that winters in interior mountain ranges of Mexico south to Guatemala and El Salvador and breeds in western montane forests north to southern British Columbia. In summer, the owl occurs in mid-elevation forests with a significant yellow pine (Ponderosa and Jeffery) component mixed with Douglas-fir. Dry Douglas-fir stands that approximate the structure of mature Ponderosa pine stands are also used. They nest in cavities excavated by woodpeckers beginning in early May. One clutch of 2 to 4 eggs is laid per year. Females incubate eggs and brood chicks while males bring food through approximately the twelfth night after hatching then both male and female bring food to the chicks until fledging. Flammulated owls are almost strictly insectivorous, feeding largely on noctuid moths, beetles, grasshoppers, and arachnids. They are nocturnal

foragers and hunt by gleaning among tree branches, capturing flying insects, and pouncing on ground prey from a perch (McCallum 1994).

*Potential Occurrence:* Surveys have not been conducted for the flammulated owl in the vicinity of the project area. The lodgepole and patchy Douglas-fir do not provide the habitat components necessary for flammulated owls.

*Determination Rationale:* Suitable habitat for flammulated owls does not occur within the proposed project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the flammulated owl or its habitat.

### Great Gray Owl

*Biological Requirements:* The great gray owl is a year-round resident that shows fidelity to an area, but will disperse based upon prey availability. Nest site availability and adequate foraging habitat are the most important factors for habitat use by breeding great gray owls. Nest sites are old hawk or raven stick nests or depressions on to of broken snags or stumps. Platforms in trees created by mistletoe and artificial nest structures will also be used. In Idaho, nests were found in aspen, lodgepole pine, Douglas-fir, and Englemann spruce trees. In the southern portion their range, great gray owls generally nest in relatively xeric, montane coniferous or deciduous forests up to 9,180 feet (2,800 m) in close proximity to meadows suitable for foraging. Foraging is usually in open areas where scattered trees on forest margins provide suitable sites for visual and aural searching from a perch. Primary prey items are pocket gophers and voles, but they will also eat shrews, moles, mice, squirrels, and birds. They hunt when prey species are active; they are diurnal, nocturnal, and crepuscular hunters (Duncan and Hayward 1994).

*Potential Occurrence:* The great gray owl has been reported in the vicinity of the project area. The proposed project could affect a nesting pair's territory in the vicinity of the Cape Horn meadows.

*Determination Rationale:* The great gray owl is present in the general vicinity of the project area but is not expected to be present other than for incidental foraging use adjacent to the proposed project area. The determination is that the proposed Camp Bradley Shaded Fuel Break Project may impact individual great gray owls but is not likely to cause a trend to federal listing or loss of viability of the species or its habitat.

### Three-toed Woodpecker

*Biological Requirements:* The three-toed woodpecker is found in coniferous forests, primarily in spruce/fir and lodgepole and less frequently in mixed forests (Groves et al. 1997). A study on Canada found that three-toed woodpeckers are found in recently burned areas and in forests with old-growth structural characteristics (Hoyt and Hannon 2002). They forage by flaking and scaling on tree bark (Hoyt and Hannon 2002). Their diet consists mainly of wood-boring insects, but they also eat spiders, berries, and cambium. Fire killed trees that have been infested by bark beetles are a major food source. This woodpecker excavates cavities for nesting in trees or standing snags and maintains a home range from 129 to 740 acres (52 to 300 ha), depending on habitat quality. They require snags for feeding, perching, nesting, and roosting (Groves et al. 1997).

*Potential Occurrence:* Three-toed woodpeckers have not been reported in the project area however it is highly likely the birds are present in the lodgepole stands within and around the project area. The Stanley Basin area is currently in the midst of a large outbreak of mountain pine beetle which has substantially increased the amount of foraging habitat available. Probability of the three-toed woodpecker occurrence in the area is moderate to high.

*Determination Rationale:* Although habitat components needed by the woodpecker are present within the area to be disturbed, the size of proposed disturbed area is minor when compared to available habitat in the immediate vicinity of the proposed project. It is unlikely that the entire project would impact more than a small portion of one pair's territory. The determination is that the proposed Camp Bradley Shaded Fuel Break Project may impact individual three-toed woodpeckers but is not likely to cause a trend to federal listing or loss of viability of the species or its habitat.

### Columbia Spotted Frog

*Biological Requirements:* The spotted frog is found from sea level to about 10,000 feet in elevation (3,000 m). Spotted frogs are usually found near permanent, quiet water such as marshy areas, streams, springs, and wet meadows. They breed early in the spring when water is sufficiently thawed. Eggs are laid in ponds or still water in clusters of several egg masses. Hatching and tadpole development are temperature dependent and vary based upon elevation. Spotted frogs will disperse away from permanent water in forest and shrubland habitat, if water, such as seeps, is available (Gomez 1994). Spotted frogs appear to prefer areas of thick algae and emergent vegetation, but may use sunken, dead, or decaying vegetation for cover. The frog is an opportunistic feeder eating a wide variety of insects as well as different mollusks, crustaceans, and arachnids. Larvae eat algae, organic debris, plant material, and minute water-borne organisms (Groves et al. 1997). They hibernate in the winter near springs where water does not freeze and is renewed constantly, and in muddy substrate in rivers and ponds. Spotted frogs take 2 to 6 years to reach maturity, and can live as long as 13 years (Gomez 1994).

*Potential Occurrence:* Surveys on the Yankee Fork Ranger District conducted in 1994 to 1997 indicate that the frog is relatively abundant and well distributed in suitable habitats in the vicinity of the proposed project area and surrounding watersheds. The species is thought to be declining in parts of their range but appears widespread and abundant in Idaho (Groves et al. 1997), but there is no data indicating that the frog is declining anywhere on the Yankee Fork Ranger District.

*Determination Rationale:* The proposed project area does not contain riparian habitat. The determination is that the proposed Camp Bradley Shaded Fuel Break Project would have no impact on the Columbia spotted frog or its habitat.

### Forest Service Sensitive Plant Species

#### **Summary of Likely Effects**

The proposed project was reviewed and analyzed for the likely effects on the Forest Service sensitive plant species (Table 8).

**Table 8.** Summary of the Analysis of Effects for Sensitive Plant Species

Species	Probability of Effect	Determination of Effect
Lost River milkvetch	No	No Impact
Lemhi milkvetch	No	No Impact
Mesic milkvetch	No	No Impact
White Cloud milkvetch	No	No Impact
Maritime sedge	No	No Impact
Douglass's wavewing	No	No Impact
Rockcress draba	No	No Impact
Stanley's whitlow-grass	No	No Impact
Welsh's buckwheat	No	No Impact
Guardian buckwheat	No	No Impact
Challis crazyweed	No	No Impact
Marsh's bluegrass	No	No Impact
Wavy-leaf thelypody	No	No Impact
Stanley thlaspi	Yes	May Impact Individuals or Habitat
Lost River milkvetch	No	No Impact

## Discussion

Records indicate that no Region 4 sensitive plant species, other than the Stanley thlaspi (described below), occur within the watershed in which the proposed project is located (USFS 2002). The proposed Camp Bradley Shaded Fuel Break Project would have no impact on any Region 4 sensitive plant species, other than Stanley thlaspi, or associated habitat.

### Stanley Thlaspi

*Biological Requirements:* The Stanley thlaspi is a perennial, low-growing, densely tufted, white flowered forb in the Mustard family. This variety is only found in the Stanley Basin, Custer County, Idaho (NatureServe 2004). It was originally found on a stony flat with low-growing sagebrush on the Cape Horn Road between Knapp and Valley creeks (NYBG 2004) and habitat is described as steep slopes on sandy and gravelly soil on sagebrush flats (USFS 1989). It flowers from May to July (USFS 1989). Known populations on the Sawtooth National Forest are currently healthy and a conservation agreement is not needed at this time (Stahl 1999).

*Potential Occurrence:* Mapped locations, generated from GIS data from the Idaho Conservation Database Center, show two locations of Stanley thlaspi along FS Road #203 between Dry Creek and Asher Creek and one location along Forest Road #008 along Beaver Creek. These locations are outside of the proposed action area.

*Determination Rationale:* Suitable habitat is not expected to be found in the proposed project area. However, since populations were found nearby, the proposed project area will be surveyed in late May through mid-June to determine if the plant is present. The proposed Camp Bradley Shaded Fuel Break Project may impact individual Stanley thlaspi plants, but is not likely to cause a trend to federal listing or loss of viability of the species or its habitat.

## **VII. CUMULATIVE EFFECTS OF THE PROPOSED PROJECT**

### **General Cumulative Effects on Wildlife**

For this Biological Assessment and Evaluation, cumulative effects are the sum of all past, present, and near (within five years) future activities that affect the population viability of threatened, endangered, proposed, or sensitive species. The cumulative effects analysis area includes all National Forest System lands within the Knapp Creek Lynx Analysis Unit.

While the species diversity of wildlife species has remained relatively high within the project area, four activities; livestock grazing, timber harvest, road construction, and fire suppression; have probably influenced the species richness. None of these activities is known to have eliminated or significantly reduced the numbers of animals in any one species.

The Cape Horn area is used extensively by recreationalists year-round, including winter. Groomed over-snow trails have been identified as potentially detrimental to lynx because the packed snow allows access of other snowshoe hare predators, such as coyotes, into areas that were previously unavailable to them. The Stanley area has approximately 185 miles of groomed snowmobile trails which attracts high numbers of snow machine users. Forest Road #203 is a groomed snowmobile trail in the winter and area is very popular with snow machinists. No increase in the miles of groomed trails is anticipated. However, snow machines are capable of traversing deep, ungroomed snow and steep terrain, packing snow that is not part of a trail system, potentially increasing access for other predators.

Within the analysis area there are 303 acres in private ownership. Currently, there is a single residential seasonal dwelling and outbuildings on the property. In October 2004, a Wilderness bill was submitted to Congress that would put 960 acres of current Forest Service land within the analysis area into private ownership. If this bill is passed and the land is transferred, then in all likelihood the area would be subdivided and residential development would occur. This could have impacts on listed and sensitive species by impacting habitat, movement and dispersal patterns, prey abundance, native vegetation through invasive plant introduction, and sustained human disturbance.

## **VIII. MANAGEMENT RECOMMENDATIONS**

### **A. Recommended Mitigation**

A field survey will be conducted late May through mid-June to determine if the Stanley thlaspi is present within the proposed project area. If the plant is located, populations will be marked and avoided during project implementation.

### **B. Recommended Monitoring**

Coordinate with the Forest Wildlife Biologist, District Wildlife Biologist, and other public land managers to:

1. Monitor for possible reports of Canada lynx in the vicinity of the project area.
2. Continue to monitor the over-snow recreation use (snow machine, snowshoeing and cross-country skiing) in the area.

### **C. Recommended Surveys or Research**

1. Survey area for presence of sensitive plant species

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## Appendix A

### **CRITERIA FOR THE ANALYSIS OF EFFECTS**

#### **Probability of effect on the species or their habitat**

No: No evidence of or potential for the species or habitat

Yes: Evidence of or potential for the species or their habitat

#### **Consequence of effect on the species and/or their habitat**

None: No effect on species or their habitat

Low: Negligible effects (direct or indirect) on species or their habitat. Activities controlled by seasonal or spatial stipulations. No cumulative effects are anticipated.

Moderate: Possible effects on the species population or their habitat. Effects are not completely mitigated by the described proposed action. Effects are manageable through special management actions. Cumulative effects are possible. No irreversible or irretrievable effects are expected.

High: Effects on the species or their habitat is likely to occur. Cumulative effects are probable. Irreversible and irretrievable effects are probable.

#### **Determination of effect on the species and/or their habitat.**

- For federally listed threatened and endangered species:

No effect: No effect is expected.

Not likely to adversely affect: Effects are expected to be beneficial, insignificant (not measurable), or discountable (extremely unlikely).

Likely to adversely affect: Effects are expected to be adverse or detrimental.

- For species proposed for federal listing as threatened or endangered; also for species federally listed as experimental, nonessential populations.

No effect: No effect is expected.

Not likely to jeopardize continued existence or adversely modify proposed habitat: effects are expected to be beneficial, insignificant (not measurable), or discountable (extremely unlikely).

Likely to jeopardize continued existence or adversely modify proposed habitat: Effects are expected to be adverse or detrimental.

- For species listed as sensitive species by the Regional Forester.

No impact: No effect is expected.

Beneficial effects: Effects are expected to be beneficial

May Impact individuals but is not likely to cause a trend to federal listing or loss of viability: Effects are expected to be beneficial, insignificant (not measurable), or discountable (extremely unlikely).

Likely to result in a trend to federal listing or loss of viability: Effects are expected to be detrimental and substantial.