# Tumbledown Hazardous Fuels Reduction Project

# Wildlife Report

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October 29, 2008

# Wildlife

## *Abstract*

This report analyzes the effects of the Tumbledown Hazardous Fuels Reduction Project on wildlife species and their habitat. The report identifies which species occur in the area and analyzes whether or not they would be affected by the project. For a complete description of the proposed action, including treatment types, acres of treatment and road construction/maintenance, see the Tumbledown Hazardous Fuels Reduction Project Environmental Assessment (from here forward referenced as the "Tumbledown EA").

As a result of the analysis contained in this report, only minor effects are expected to wildlife species in the area and there would be no effect to any threatened or endangered species. See Table 1 for a summary of the effects determinations. This project complies with all applicable Forest Plan direction and applicable laws with regard to wildlife.

**Table 1. Summary of effects determinations**

| Species | Alternative 1 | Alternative 2 |
|---|---|---|
| **Threatened and Endangered Species** | | |
| Woodland Caribou | No effect | No effect |
| Canada Lynx | No effect | No effect |
| Grizzly Bear | No effect | No effect |
| Gray Wolf | No effect | No effect |
| **Sensitive Species** | | |
| Bald Eagle | No impact | No impact |
| Flammulated Owl | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species |
| Black-backed Woodpecker | No impact | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species |
| Black Swift | No impact | No impact |
| Harlequin Duck | No impact | No impact |
| Peregrine Falcon | No impact | No impact |
| Pygmy Nuthatch | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species |
| Common Loon | No impact | No impact |
| Fisher | No impact | No impact |
| Wolverine | No impact | No impact |
| Northern Bog Lemming | No impact | No impact |
| Townsend's Big-eared Bat | No impact | No impact |

| Species | Alternative 1 | Alternative 2 |
|---|---|---|
| Fringed Myotis | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species |
| Coeur d'Alene Salamander | No impact | No impact |
| Western Toad | No impact | May impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species |
| **Management Indicator Species and Others** | | |
| Northern Goshawk | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status |
| Pileated Woodpecker | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status |
| American Marten | No impact | No impact |
| White-tailed Deer | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status |
| Forest Landbirds | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status | May impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status |

## *Regulatory Framework*

The principle regulatory direction applicable to the management of wildlife resources on the Idaho Panhandle National Forests (IPNF) include:

- The Endangered Species Act of 1973 (ESA), as amended
- Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA)
- National Forest Management Act of 1976 (NFMA)
- The Migratory Bird Treaty Act of 1918 (MBTA), as amended
- Idaho Panhandle National Forests Forest Plan (1987)
- Forest Service Manual (FSM) and Handbook (FSH) direction

The following is a summary of regulatory guidance and its relation to the management of wildlife species and habitats on the Idaho Panhandle National Forests.

### *Threatened, Endangered and Proposed Species*

The National Forest Management Act requires the Forest Service to "*provide for a diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives*" (NFMA 1976 Sec. 6[g][3][B]). Additional guidance is found in Forest Service Manual direction that states: "*identify and prescribe measures to prevent adverse modification or destruction of critical habitat and other habitats essential for the conservation of endangered, threatened*

*and proposed species*" (FSM 2670.31 [6]). The IPNF Forest Plan provides additional direction to "*manage vertebrate wildlife habitat to maintain viable populations*" of wildlife and "*to contribute to the conservation and recovery of listed species*", in accordance with species recovery or management plans (USDA Forest Service 1987).

The ESA, as amended, requires the Forest Service to manage for recovery of threatened, endangered, and proposed species and the ecosystems upon which they depend. The direction requires the completion of a biological assessment to evaluate the potential effects of proposed actions on listed species or identified habitats and a determination as to the effects of those actions. The Forest is required to consult with the U.S. Fish and Wildlife Service if a proposed activity may affect the population or habitat of a listed species. The biological assessment and any necessary consultation documents will be located in the wildlife project file upon their completion

On April 9, 2008, the U.S. Fish and Wildlife Service issued a list of threatened and endangered species that may be present on the Idaho Panhandle National Forests within the evaluation area (USDI Fish and Wildlife Service 2008). Endangered species on that list only include woodland caribou (*Rangifer tarandus caribou*). Threatened species include grizzly bear (*Ursus arctos*) and Canada lynx (*Lynx canadensis*). Although the gray wolf (*Canis lupus*) was removed from the endangered species list in March 2008, a court ruling on July 18, 2008, imposed a preliminary injunction on the delisting of wolves. Consequently, the gray wolf has been re-listed as endangered north of Interstate 90.

### *Sensitive Species*

The Forest Service Manual also directs the Regional Forester to identify sensitive species for each National Forest where species viability may be a concern. The direction requires the Forest Service to manage the habitat of the species listed in the Regional Sensitive Species List (USDA Forest Service 2005) to prevent further declines in populations, which could lead to federal listing under the Endangered Species Act.

### *Management Indicator Species and Other Wildlife*

NFMA directs the Forest Service to manage wildlife habitat for existing native and desired non-native species in the planning area (Idaho Panhandle National Forests). To facilitate the management of all wildlife species and their habitat, management indicator species (MIS) were identified in the Forest planning process. These species are used to evaluate or assess impacts, whose population changes are believed to indicate effects of land management activities on other species with similar habitat needs. MIS are also used to monitor effects of planned management activities on populations of socially or economically important wildlife and fish species.

## *Analysis Methods*

### *Introduction*

Species surveys were conducted for some species, where relevant and applicable, to determine presence. However, presence surveys do not necessarily determine absence of a species. Therefore, a more meaningful and creditable approach in conducting an analysis is to assume presence based on habitat attributes, using survey information to help validate suitability of habitats. In some cases, surveys can identify key habitats (e.g., breeding or nesting sites) that can be protected through design features.

An important concept in discussing habitat suitability for some species is the distinction between *capable habitat* and *suitable habitat*. Capable habitat refers to the inherent potential of a site to produce the necessary biotic and abiotic components to support a given species. Suitable habitat refers to habitat that is currently providing the necessary components to support a species. Therefore, habitat that is *unsuitable*

is capable habitat that has the potential to develop into a suitable condition, but currently does not meet the habitat requirements for a species. Habitat that is *not capable* has no potential to develop into a suitable condition.

### *Species Screen*

The Council on Environmental Quality (40 CFR 1502.2) directs that impacts be discussed in proportion to their significance. Some wildlife species require a detailed analysis to determine effects of an action on them. Other wildlife species may not be impacted or impacted at a level that does not increase risk to the species. Some species may be adequately protected by altering the project design. Generally, these species do not require a detailed discussion and analysis.

The appropriate methodology and level of analysis needed to determine potential effects are influenced by a number of variables including presence of a species or its habitat, the scope and nature of the activities associated with the proposed action and alternatives, and the risk to factors that could ultimately result in a meaningful adverse or favorable effect.

In preparation for this document, a review was conducted using a variety of information including scientific literature, resource inventories, and sighting records, to help screen and determine species relevancy to the project. The screening process included the following documents:

- USFWS list of federally threatened and endangered species that may occur on the Idaho Panhandle National Forests (USDI Fish and Wildlife Service 2008)
- Region 1 Sensitive Species list (USDA Forest Service 2005)
- IPNF Management Indicator Species List (USDA Forest Service 1987)
- Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin (Quigley and Arbelbide 1997)
- Idaho Panhandle National Forest Land and Resource Management Plan
- Conservation Assessments and Strategies for wildlife species, including the Idaho Comprehensive Wildlife Conservation Strategy

#### *Species Not Analyzed in Detail*

A preliminary analysis was conducted for each potentially affected wildlife species and their habitat to determine the scope of analysis. The species listed in Table 2 would not likely be affected by the proposed activities because:

- they do not have suitable habitat,
- they are not expected to be in or near the project area,
- they would not be impacted,
- or impacts would be avoided or inconsequential given the project design.

For these reasons, these species were not analyzed in detail. See the wildlife project file and the biological assessment for additional rationale.

**Table 2. Wildlife species not analyzed in detail**

| Species | Rationale for Elimination from Detailed Analysis | Preferred Habitat |
|---|---|---|
| **Threatened and Endangered Species** | | |
| Woodland Caribou (*Rangifer tarandus caribou*) | No suitable habitat is present within the project area. The project area is outside recognized caribou habitat. | Above 4,000 ft. in Englemann spruce/subalpine fir and western red cedar/western hemlock forests. |
| Canada Lynx (*Lynx Canadensis*) | The project area is not within a designated Lynx Analysis Unit (LAU) and does not provide a corridor for linking lynx habitat. | Higher elevation lodgepole pine and spruce/ fir forests with adequate prey base of snowshoe hares, its primary food. |
| Grizzly Bear (*Ursus arctos horribilis*) | The project area is not within a designated Bear Management Unit (BMU) or an area supporting grizzly bears outside of the recovery area. | Habitat generalist with seasonal preferences. Denning areas isolated and remote from human development. |
| Gray Wolf (*Canis lupus*) | No wolf packs or wolf activity documented within or near the project area. | Wide variety of habitats generally remote and isolated from human development. Adequate populations of prey species, including wintering concentrations of deer or elk. |
| **Sensitive Species** | | |
| Bald Eagle (*Haliaeetus leucocephalus*) | Active nest and suitable nest/roost trees within the project area would not be impacted by project activities due to project design | Normally nest and forage near large bodies of water. Winter visitors or yearlong residents of northern Idaho. |
| Black Swift (*Cypseloides niger*) | No suitable habitat is present within the project area. | Builds nest behind or next to waterfalls and wet cliffs. |
| Harlequin Duck (*Histrionicus histrionicus*) | Suitable habitat within the project area would not be impacted by project activities due to project design. | Shallow, swift streams in forested areas. |
| Peregrine Falcon (*Falco peregrinus anatum*) | No suitable habitat is present within the project area. | Open habitats near cliffs and mountains. Nest in cliffs near an adequate prey base. |
| Common Loon (*Gavia immmer*) | No suitable habitat is present within the project area. | Large, clear lakes below 5,000 ft. elevation with at least a partially forested shoreline. |
| Fisher (*Martes pennanti*) | Project area does not contain the appropriate habitat characteristics to support fisher largely due to the lack of an adequate amount of contiguous suitable habitat. | Mature, mesic forested habitats. Strong affinity of forested riparian habitats. |
| Northern Bog Lemming (*Synaptomys borealis*) | No suitable habitat is present within the project area. | Bogs, fens and, wet alpine and sub-alpine meadows. |

| Species | Rationale for Elimination from Detailed Analysis | Preferred Habitat |
|---|---|---|
| Townsend's Big-eared Bat (*Plecotus townsendii*) | Potentially suitable habitat within the project area would not be impacted by project activities due to project design. | Caves, mines, and abandoned buildings. |
| Wolverine (*Gulo gulo*) | No suitable habitat is present within the project area. | Far-ranging omnivorous, habitat generalist. |
| Coeur d'Alene Salamander (*Plethodon vandykei idahoensis*) | Potentially suitable habitat within the project area would not be impacted by project activities due to project design. | Springs, seeps, spray zones. |
| **Management Indicator Species and Others** | | |
| American Marten (*Martes americana*) | Project area does not contain the appropriate habitat characteristics to support marten largely due to the lack of an adequate amount of contiguous suitable habitat. | Variable mature conifer stands with canopy closures greater than 40 percent with abundant large, down woody debris |
| Forest Landbirds | Best addressed on a large scale and by ecosystem and habitat condition rather than on a species-by-species basis at the project level, particularly since any action, including no action, would be detrimental to some species and beneficial to others. The potential impacts on habitats utilized by forest landbirds are addressed in the analysis for other wildlife species that are analyzed in detail. | Diverse habitats, dependent on species. |

### *Species Analyzed in Detail*

Wildlife species analyzed in detail are those that have been identified as species of concern within the project area that could potentially be affected by proposed activities. The detailed analysis for each species describes the environmental baseline and relevant habitat components that may or may not be affected by the alternatives, if they were to be implemented. Information presented in the analysis is based on scientific literature, wildlife databases, and professional judgment, along with field surveys and habitat evaluations conducted over the last four years. Table 3 summarizes the species analyzed in detail, the rationale for analyzing them, and their preferred habitat.

The resource information provided, especially as it relates to habitat analysis, includes past actions such as timber harvest that have influenced vegetative changes to create what now is part of the existing or baseline condition. For example, the characterization of forest structure from a past regeneration harvest would acknowledge changes that have occurred over the past 25 years, from stand initiation to a mid-seral stage of succession.

**Table 3. Wildlife species analyzed detail**

| Species | Rationale for Detailed Analysis | Preferred Habitat |
|---|---|---|
| **Sensitive Species** | | |
| Flammulated Owl (*Otus flammeolus*) | Suitable habitat is present within the project area. | Mature to old growth ponderosa pine, Douglas-fir forest. |
| Black-backed Woodpecker (*Picoides arcticus*) | Suitable habitat may be present within the project area. | Mature conifer stands with numerous snags. Post-fire habitat producing an abundance of snags. |
| Pygmy Nuthatch (*Sitta pygmaea*) | Suitable habitat is present within the project area. Due to similarities in habitat requirements and potential impacts, this species will be analyzed with flammulated owl. | Ponderosa pine habitat, especially mature to old growth stands. |
| Fringed Myotis (*Myotis thysanodes*) | Suitable habitat is present within the project area. Due to similarities in habitat requirements and potential impacts, this species will be analyzed with flammulated owl. | Caves, mines, and abandoned buildings, large snag habitat. |
| Western Toad (*Bufo boreas*) | Terrestrial and breeding habitat is present within the project area. | Adults occur in a variety of uplands. Breed in shallow ponds, lakes, or slow moving streams. |
| **Management Indicator Species and Focal Species** | | |
| Northern Goshawk (*Accipiter gentilis*) | Suitable habitat is present within the project area. | Mature to old growth forest with a relatively closed canopy. |
| Pileated Woodpecker (*Dryocopus pileatus*) | Suitable habitat is present within the project area. | Forests with tall, large diameter dead or defective trees for nesting. |
| White-tailed Deer (*Odocoileus virginianus*) | Winter range and general deer habitat within the project area would not be impacted in a way that would result in a meaningful or detectable change. | Mosaic of habitat types that provide open parks for foraging and forested areas for thermal and security cover. |

## *Effects Analysis Methodology*

The environmental consequences discussion for each species provides information regarding the potential effects on those wildlife species from the proposed actions. Effects discussions include direct, indirect, and cumulative effects, all of which may have positive, negative or neutral consequences. Effects are quantified where possible, and qualitative discussions are also included. Table 4 lists the species analyzed in detail and the issue indicators that are used to measure potential effects to those species.

Direct environmental effects are those occurring at the same time and place as the triggered action. Indirect effects are those that occur later in time or are spatially removed from the activity. Cumulative effects result from incremental effects of proposed actions, when added to other past, present, and reasonably foreseeable future actions, regardless of the source. Cumulative effects can result from individually minor, but collectively significant actions taking place over a period of time.

Past actions contribute to the baseline conditions that provide a foundation for the analysis (e.g., previous timber harvesting, road building, and fire suppression actions since the early 1900s). Past activities (such as timber harvest) and natural processes (such as succession) are described in the existing condition section for each species, and provide baseline conditions for habitats.

**Table 4. Issue indicators used to measure effects**

| Species | Status | Indicator |
|---|---|---|
| Flammulated Owl | Sensitive | Changes/trends in suitable habitat (acres) |
| Black-backed Woodpecker | Sensitive | Changes/trends in the distribution and quality of snag habitat |
| Pygmy Nuthatch | Sensitive | Changes/trends in suitable habitat (acres) |
| Fringed Myotis | Sensitive | Changes/trends in suitable habitat (acres) |
| Western Toad | Sensitive | Changes/trends in the quality of wetlands and terrestrial habitats |
| Northern Goshawk | Management Indicator | Changes/trends in suitable nesting habitat (acres) |
| Pileated Woodpecker | Management Indicator | Changes/trends in nesting habitat (e.g. mature to old growth forests), including the distribution and quality of large diameter trees and snags |
| White-tailed Deer | Management Indicator | Changes/trends in general habitat characteristics |

### *Cumulative Effects*

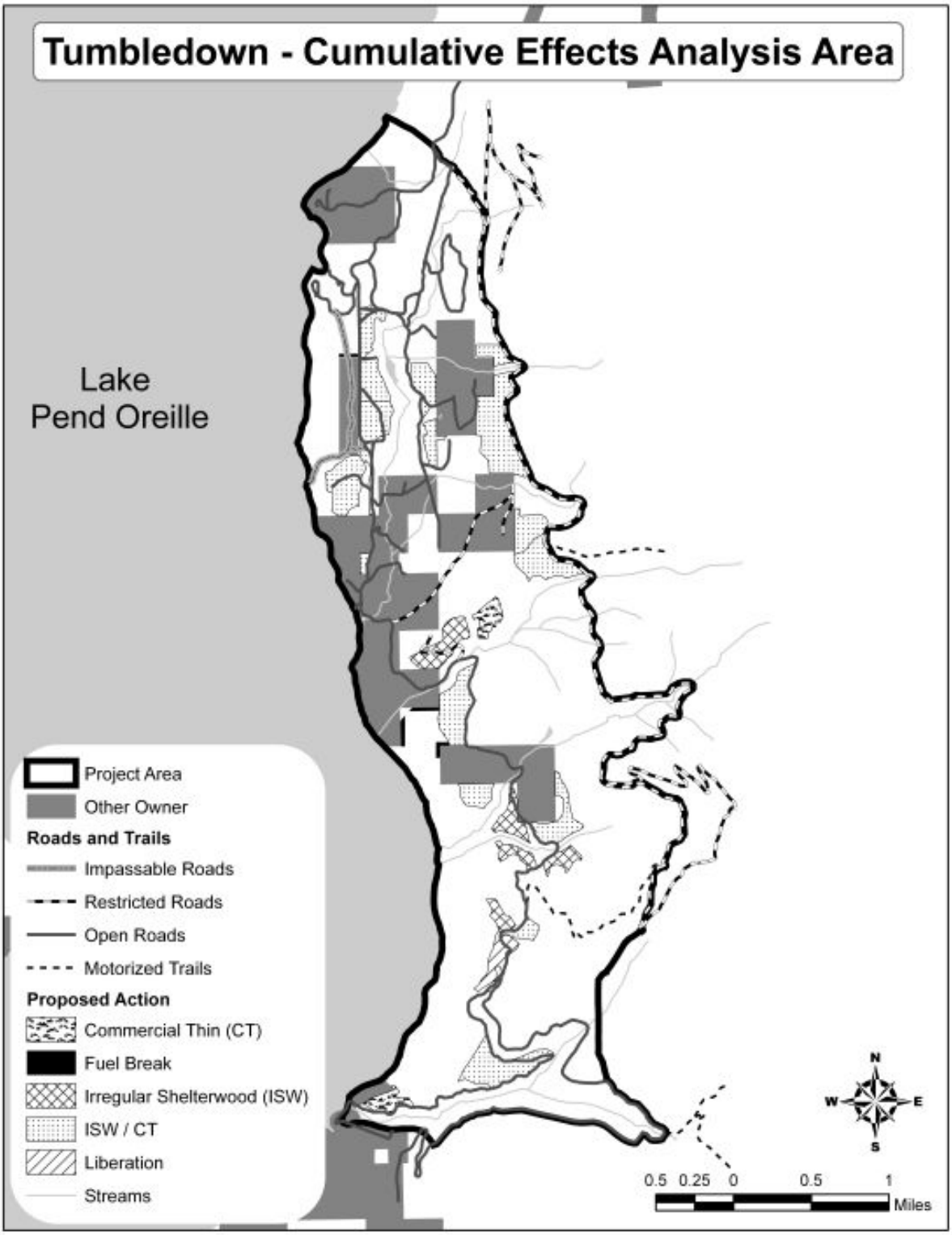
Present, ongoing, and reasonably foreseeable actions that could contribute to cumulative effects for species being analyzed are identified in Appendix E of the Tumbledown EA.

### Cumulative Effects Analysis Area

The appropriate scale or geographic bounds for a cumulative effects analysis relates to an area that would be affected by the proposed action or reasonable alternative, in addition to other past, ongoing, or reasonably foreseeable activities in the vicinity of the project area. The task of selecting the geographical boundaries involves several factors, including the scope of the project considered, the features of the land, species' relative home range size in relation to available habitat, and points of diminishing effects.

For species that may be affected by the proposed action, the cumulative effects analysis area is the same as the project area boundary and encompasses approximately 5,611 acres. This represents the size of multiple home ranges for all of the species that may be impacted, with the exception of northern goshawk. For northern goshawk, this cumulative effects analysis area roughly represents the size of one goshawk territory (Reynolds et al. 1992). Because the project area adequately addresses the spatial scale of the species analyzed and because the effects of the project would not be measurable beyond its boundary, it is an appropriate scale at which to analyze the potential effects on these species.

**Figure 1. Tumbledown Wildlife Cumulative Effects Analysis Area**



**Cumulative Effects Analysis Area**

Effects of previous timber harvest, road building and other activities on wildlife species have been incorporated into the environmental baseline. There are also several private parcels of land within the analysis area. Activities associated with these private parcels include, but are not limited to, road construction, road maintenance and use, lot clearing, hazardous fuels reduction around homes and the conversion of forested lands. As a result, these ownerships are highly susceptible to adverse habitat modifications, and the presence of suitable habitat for the species analyzed cannot be relied upon over time.

For wildlife species not impacted by the project, there is no need to consider the cumulative impacts because the proposed project would not be an additional impact on those species. For wildlife species potentially impacted by the proposed project, the ongoing and reasonably foreseeable activities on nearby National Forest lands include noxious weed treatment, routine road maintenance, hunting, maintenance of the power line corridor, personal use firewood cutting, precommercial thinning and fire suppression.

Noxious weed activities would follow guidelines established by the Sandpoint Noxious Weeds Control Project Environmental Impact Statement (USDA Forest Service 1998). No effects, other than those described in that document and its adaptive strategy, are expected to occur. The maintenance of open, drivable roads is unlikely to negatively impact any species affected by the project because these activities would take place on existing roads that do not provide wildlife habitat. The project would also not increase access and is unlikely to have a meaningful or detectable change on hunting within the cumulative effects analysis area.

The power line corridor is generally maintained as a brush field, which periodically involves vegetation clearing. This corridor has been on the landscape for many years and periodic maintenance is unlikely to negatively impact any species that may be impacted by the project. Personal firewood cutting would not cause measurable impacts to these species because areas within 50 meters of drivable roads are assumed to currently lack snag habitat due to past firewood removal. Precommercial thinning and fire suppression would not cause detrimental habitat alterations for wildlife species that may be impacted by the project because they would not reduce the acres of suitable habitat. Therefore, the implementation of either alternative, in combination with the past, present or reasonably foreseeable actions would have no significant cumulative effects to designated threatened, endangered, sensitive or MIS species.

## *Existing Habitat Condition*

The project area is mostly made up of dense mixed conifer stands in the 70 to 90 year old range with some stands containing a birch and aspen component. The understory in the heavily overstocked stands is nearly depauperate and in more open stands there is a high coverage of ocean-spray and ninebark. The stands within the project area have regenerated naturally after large fires in the 1920s and are now dominated by Douglas-fir, grand fir, western red cedar and western larch, with lesser amounts of western white pine, western hemlock and lodgepole pine. Although variable, many of the stands are overstocked and dominated by pole size trees in the 8 to 16 inch dbh range and contain smaller, sapling size understories of Douglas-fir, grand fir and western red cedar. Some stands contain scattered, large, older western larch and western red cedar fire survivors.

Current canopy closure is generally between 60 and 70 percent. Down fuels are very heavy in most of the stands, particularly along Forest Road 278. The combination of ground fuels and dense forest canopies has created a high fire hazard. Although the health and growth of these stands varies from area to area, insect and disease is common to prevalent throughout the project area stands. Shade tolerant species are impacting seral species and decreasing the health and vigor of the stands. Spreadsheets outlining the existing condition of the individual units are located in the project files for wildlife and vegetation.

Some stands within the project area that are proposed for treatment have been affected by past timber harvest. Stands receiving a regeneration harvest were opened up, which initiated a trend toward a species composition that is more ecologically stable and within the natural range of variability. Stands receiving a commercial thin or thin from below harvest retained their general structure and species composition, but continue to be impacted by insect and disease and in some stands have regenerated a dense understory of shade-tolerant tree species. Stands receiving an intermediate harvest (e.g. sanitation/salvage, improvement cut) were impacted to varying degrees depending on the condition of the vegetation within each area of the stand at the time of harvest, but generally received a lighter harvest that trended these stands more towards healthy stands of desired tree species. It is likely that past timber harvest activities removed some of the dead and dying tree components, thereby affecting the availability of snags within harvested units over time. In some cases, past treatments likely trended stands toward the production of larger diameter, longer-lived snags, while in others it like reduced snag densities and resulted in an abundance of smaller diameter, shorter-lived snags. Because the effects of past timber harvest are an important component in determining the habitat suitability of wildlife species analyzed, the effects on the environmental baseline from these past activities has been incorporated into the analysis. See Appendix E of the Tumbledown EA for a more detailed summary of past timber harvest activities.

The project area is in Management Area 4, which is defined as lands designated for timber production within big game winter range with a goal of managing for big game winter range to provide sufficient forage to support projected big game habitat needs through scheduled timber harvest and permanent forage areas.

## *Sensitive Species*

### *Flammulated Owl, Pygmy Nuthatch and Fringed Myotis*

#### *Introduction*

These three species share similar habitat requirements in dry site ponderosa pine/Douglas-fir forests, and they all depend on snags as prominent habitat features. Therefore, the analysis for these species begins with separate existing condition discussions, but for analysis purposes, the potential effects to pygmy nuthatch and fringed myotis are discussed in conjunction with flammulated owl.

#### *Existing Condition*

**Flammulated Owls**

Flammulated owls are seasonal migrants to the northern latitudes during spring and summer. They are attracted to relatively open grown, older forests of ponderosa pine and Douglas-fir that are associated with drier habitats. Reynolds and Linkhart (1992) reported that all published records of nesting in North America, except for one, were in forests in which ponderosa pine trees were present, if not dominant, in the stand. The flammulated owl's preference for the ponderosa pine/Douglas-fir cover type can be linked to food availability. Reynolds and Linkhart (1992) noted a stronger correlation between prey availability and this cover type than with other common western conifers.

The Assessment of Ecosystem Components in the Interior Columbia Basin (Quigley and Arbelbide 1997) revealed that the amount of single strata, interior ponderosa pine forests that have been maintained by frequent, low-intensity fires have declined by approximately 80 percent from historic conditions to present. Accordingly, species associated with this community, such as flammulated owl and the pygmy nuthatch, have declined in abundance.

While no population numbers exist for the historic presence of flammulated owls, inferences can be made when comparing the historical occurrence of ponderosa pine with current levels, based on flammulated

owls close association with ponderosa pine. According to historic vegetation estimates, ponderosa pine comprised 11 percent of the National Forests lands within the Pend Oreille subbasin. Today, only 2 percent of these lands consist of sites that are predominantly ponderosa pine (USDA Forest Service, unpublished report1).

Primary risk factors attributed to forest management activities include 1) reduction in the amount of old forests and associated structures (large-diameter snags and logs) and 2) the unsustainable conditions of old forests where there have been transitions from shade-intolerant to shade-tolerant species, primarily due to fire exclusion (Wisdom et al. 2000).

The analysis area consists of approximately 5,611 acres, with National Forest lands constituting approximately 4,451 acres or 79 percent. Within the analysis area there are approximately 2,019 acres of capable flammulated owl habitat with approximately 104 acres of that considered to be suitable. There are also approximately 2,432 acres that are not capable flammulated owl habitat.

### *Pygmy Nuthatch*

The pygmy nuthatch is a sedentary, year-round resident of ponderosa pine forests (Ghalambor 2003). It relies heavily on the foliage of live, larger ponderosa pines as foraging habitat and on larger ponderosa pine snags for nesting and roosting cavities (McEllin 1979). Their almost exclusive association with ponderosa pine, particularly mature stands that are fairly open (less than 70 percent canopy closure), leads to a patchy distribution of the pygmy nuthatch as they mirror the distribution of ponderosa pine (Kingery and Ghalambor 2001, Engle and Harris 2001). Pygmy nuthatch abundance is directly correlated with snag density and foliage volume (Ghalambor 2003). They generally excavate their own nest cavity, but at times are a secondary cavity nester and locate their nest cavities in dead trees or in dead sections of live trees (Ghalambor 2003). The pygmy nuthatch is somewhat unique among North American songbirds in that it breeds cooperatively in small units (Norris 1958). During the non-breeding season, these units form family flocks, which join other family flocks and roost communally in the same cavity to reduce heat loss during cooler temperatures (Sydeman et al. 1988). Their diet consists mainly of insects during the breeding season and in some areas, they forage almost exclusively on pine seeds in the non-breeding season (Ghalambor 2003).

The main threats to the pygmy nuthatch are the loss of ponderosa pine-dominated forests and low snag densities (Ghalambor 2003). There has been a substantial decline of mature ponderosa pine forests in recent years (Wisdom et al. 2000). This decline is largely due to fire suppression, which as discussed previously, has replaced natural regimens of frequent, low intensity fires that maintained relatively open ponderosa stands and has allowed for a marked increase in the density of shade-tolerant tree species. As a result, the availability of habitat for the pygmy nuthatch has been greatly reduced. There is also an increased probability of stand-replacing fire in these stands, which again could lead to the loss of mature ponderosa pine habitat (Wisdom et al. 2000). In addition, studies have shown that due to the high dependence of pygmy nuthatch on snags, reducing the number of snags greatly reduces pygmy nuthatch densities by decreasing the availability of suitable nest and roost cavities (Balda et al. 1983, Scott 1979).

Information on the presence and distribution of pygmy nuthatch in north Idaho is limited. There have been no concerted efforts to survey pygmy nuthatch in this area and there are no records of observation. Although population dynamics of this species are not fully understood for this area, the declining availability of ponderosa pine-dominated habitat due to the increase in shade-tolerant species would seem to indicate that pygmy nuthatch numbers may be in decline because of their dependence on ponderosa pine.

### *Fringed Myotis*

The fringed myotis is a member of the group of bats referred to as the "long-eared" bats. Except for ear size, it is larger than most other bats in this group (approximately 3½ inches in total length) and is identified by a distinct fringe of hair along the tail membrane (Keinath 2004, Montana Fish, Wildlife and Parks 2004). Fringed myotis use a fairly broad range of habitats usual represented by open areas (e.g., grasslands) interspersed with mature forests (usually ponderosa pine, pinyon-juniper or oak) at middle elevations that contain suitable roosts sites and are near water sources (Keinath 2004).

Fringed myotis are relatively slow, but highly maneuverable flyers and are most active the first two hours following sunset (O'Farrell and Studier 1980). Fringed myotis feed on insects during flight and glean insects off of vegetation, usually near the top of the forest canopy, with beetles and moths making up the majority of their diet (Keller 2000, O'Farrell and Studier 1980, Wisdom et al. 2000). Where available, fringed myotis use caves, mines, buildings and rock crevices as day, night, maternity, and hibernation roost sites (Ellison et al. 2004). They also roost underneath the bark and inside hollows of snags, particularly larger ponderosa pine and Douglas-fir snags in medium stages of decay (O'Farrell and Studier 1980, Rabe et al. 1998, Weller and Zabel 2001, Rasheed et al. 1995). Generally, snags used as roost sites are in somewhat open microsites within otherwise contiguous forest (Weller and Zabel 2001, Keinath 2004). Because of the short lifespan of snags, bats using snags to roost require a high density of snags and often move between snags while roosting (Weller and Zabel 2001, Rabe et al. 1998). The area used by fringed myotis varies substantially based on the location of water sources, foraging areas (which fluctuates with insect abundance), and appropriate roost sites. However, it is thought that these habitat components need to occur within roughly one-half-mile to 2½ miles of each other in a configuration that minimizes total commuting time (Keinath 2004).

Information on the historic presence and distribution of fringed myotis in north Idaho is limited. However, due to the decrease in dry site ponderosa pine habitat, which produced large-diameter-long lived ponderosa snags associated with fringed myotis habitat, it can be reasonably inferred that fringed myotis population numbers were higher prior to fire suppression, which altered species composition and structure.

The main risks to fringed myotis are the loss of suitable habitat for foraging or roosting, and human disturbance of roost sites. Fringed myotis, like many bat species, are very sensitive to disturbance or habitat modification and any change in conditions altering the microclimate (e.g., airflow, thermal regime) close to roosts can have a substantial impact (Keinath 2004). Fringed myotis are perhaps more vulnerable to alterations of mature or old growth forest conditions than most bat species because of their close association with these forests that contain abundant, large snags for roosting (Keinath 2004). According to Rabe et al. (1998), the use of multiple snags by roosting bats and the short-term nature of snags in the early decomposition stages of decay suggest that bats require higher densities of snags than birds. Tree harvest can also affect bats by potentially reducing foraging areas, as insect prey tends to concentrate just above the canopy and along forested edges, and can also impact the thermal properties of the remaining forest. In addition, riparian areas should be managed to retain natural stream hydrology and healthy riparian vegetation to allow for sufficient water sources and to promote use by emergent insects.

Information on the current presence and distribution of fringed myotis in north Idaho is limited. There have been multiple bat surveys conducted in the mines and adits within the project area, and there has been one fringed myotis documented next to a wetlands pothole within the project area.

Impacts to mines and adits that act as potential fringed myotis habitat would be avoided through the project's treatment design and the implementation of the Townsend's Big-eared Bat Conservation Strategy (see Design Features).

### *Environmental Consequences*

**Methodology**

Flammulated owl habitat within the cumulative effects analysis area was evaluated using habitat data in the Forest timber stand database (TSMRS) and in the habitat spreadsheet created for this project. These data sources were reviewed and updated to reflect changes in conditions resulting from wildlife surveys, field walk-through exams, and aerial photo interpretations conducted for this project over the last four years to insure that they reflect current conditions as accurately as possible. These data sources were then queried to determine the stands that met the following basic habitat requirements for flammulated owls:

- All of habitat groups 1 (Warm and Dry), 2 (Moderately Warm and Dry) and 3 (Moderately Warm and Moderately Dry)
- Habitat group 4 (Moderately Warm and Moist) with south, southwest or west aspect where the elevation is below 3,000 feet

The potential effects on flammulated owl and its habitat, as well as effects to pygmy nuthatch and fringed myotis, were determined by evaluating the change and trends in habitat suitability that would result from each alternative. The following assumptions and/or research findings were used to aid in the assessment of effects:

- Flammulated owls are associated with mature and late successional ponderosa pine and Douglas-fir forests (Reynolds and Linkhart 1992)
- Reynolds and Linkhart (1992) reported that all published North American records of flammulated owl nesting, except one, came from forests in which ponderosa pine was at least present, if not dominant

**Direct, Indirect and Cumulative Effects of Alternative 1**

There would be no direct effects to flammulated owl from the No Action Alternative because there would be no new management activities within the project area.

Under the No Action Alternative, there would be a continued shift toward more dense stands of shade-tolerant tree species in most stands. Forest encroachment that historically would have been periodically removed by wildfire would continue to proliferate and crowd out remaining open stands of ponderosa pine and Douglas-fir leading to a decrease in habitat suitability for flammulated owls.

While this alternative would not alter the existing vegetation through timber harvesting or fuels treatments, mortality caused by agents such as root disease and insect outbreaks would continue to change habitat conditions. Without management, dry habitats consisting of more open grown stands of ponderosa pine/Douglas-fir within the project area would continue to decline (see Vegetation Report). Higher forest fuel accumulations resulting from increases in small diameter down woody debris as a result of increased tree mortality and increased densities of shorter-lived, shade-tolerant tree species would lead to a higher risk of a large-scale, stand-replacing wildfire (see Fire and Fuels Report). If such a wildfire were to occur, it would take about 100 years for the next generation of trees to achieve suitable habitat conditions for flammulated owls. Consequently, the implementation of this alternative may impact individuals or habitat, but would not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species.

**Direct and Indirect Effects of Alternative 2**

Alternative 2 would treat approximately 290 acres or 14 percent of the capable flammulated owl habitat within the project area. Trees would be harvested using a thinning prescription on approximately 36 acres, an irregular shelterwood prescription on approximately 47 acres and a combination of the two harvest prescriptions on approximately 207 acres. This alternative would also treat approximately 8 acres of suitable flammulated owl habitat. These acres would be treated as part of the fuel breaks created along the border with private land. See the Tumbledown EA for detailed descriptions of the treatment and harvest types.

On the approximately 36 acres of flammulated owl habitat that would be treated with a commercial thin, approximately 18 acres are currently suitable. However, this patch of suitable habitat does not comprise a large enough percentage of the stand (approximately 14 percent) for the entire stand to be considered suitable for flammulated owls. The proposed treatment on these acres is a light commercial thin that would act to reduce competition on existing ponderosa pine from encroaching Douglas-fir, which would enhance the ability of these acres to be maintained as suitable flammulated owl habitat. The remaining approximately 18 acres would remain capable following treatment because this alternative would focus on removing smaller diameter trees, which would reduce competition for the remaining larger trees while maintaining a canopy closure within the parameters of flammulated owl habitat.

On the approximately 47 acres of capable flammulated owl habitat that would be treated with an irregular shelterwood harvest, the acres would remain capable after treatment. The canopy closure on these acres would be reduced below what is typically utilized by flammulated owls for nesting because of the existing high degree of insect and disease. However, in the long term (approximately 60 to 100 years), as the remaining trees and planted seral species mature, the acres would evolve into a more open grown, older forest of ponderosa pine/Douglas-fir with ample large diameter, longer-lived snags, which would trend the area toward suitable habitat for flammulated owls and other dry site associated species.

On the approximately 207 acres that would be treated with a combination treatment, an irregular shelterwood would be conducted wherever there is currently a lack of desirable species (roughly 52 percent of the acres receiving this treatment) and a commercial thin would be conducted in areas that contain a greater density of desirable tree species (roughly 48 percent of the acres receiving this treatment). This would result in a mosaic of habitat conditions that would maintain the treated areas as capable flammulated owl habitat. The treatments would trend the habitat toward suitability for flammulated owls and other dry site associated species by favoring larger ponderosa pine and decreasing the canopy closure to more closely match flammulated owl habitat. The treated areas would likely become suitable flammulated owl habitat over varying time frames depending on the existing availability of ponderosa pine and larger snags within each habitat patch and the treatment type it would receive. Areas treated with a commercial thin have the potential to become suitable flammulated owl habitat in a shorter time from than areas treated with an irregular shelterwood.

On the approximately 8 acres of suitable flammulated owl habitat to be treated as a fuel break, this alternative would remove hardwoods, smaller diameter trees and brush. This treatment would not negatively impact these acres as suitable flammulated owl habitat because it would not remove larger diameter live trees or snags and would maintain the canopy closure within the parameters for suitable flammulated owl habitat. Therefore, these 8 acres would remain suitable flammulated owl habitat after project implementation.

Over 97 percent of the flammulated owl habitat treated by Alternative 2 is habitat that flammulated owls are currently unlikely to use because it lacks the forest characteristics and structural composition (e.g. open grown stands of mature ponderosa pine/Douglas-fir) that are important to flammulated owls. In

addition, the 8 acres of suitable habitat treated by this alternative is not a large enough patch of habitat to represent an entire flammulated owl home range (e.g. averages approximately 35 acres; McCallum 1994) and as stated above, the structural components important to flammulated owls would be retained.

Wildlife tree retention and live tree replacement guidelines would mitigate potential impacts to snags utilized by flammulated owls, pygmy nuthatch and fringed myotis by retaining trees and snags that represent the largest diameter class available in the stand to simulate what would be expected under periodic fire regimes or insect/disease occurrences that were within the natural range of variation (see Design Features). In addition, although prescribed burning activities are designed to allow for a minimal amount of live tree mortality, some additional snags are likely to be created as a result of the burn.

**Conclusion of Effects**

The implementation of Alternative 2 would not negatively impact flammulated owl habitat within the project area and would act to improve approximately 282 acres of habitat for flammulated owls over varying time frames. This would be accomplished by trending the area towards a more open grown, older forest of ponderosa pine/Douglas-fir that produces large diameter, longer-lived snags, which would enhance the long-term stability of flammulated owls and other dry site associated species such as pygmy nuthatch and fringed myotis.

In addition, Samson (2006) concluded the following with regard to the short-term viability of the flammulated owl in the Northern Region of the Forest Service:

- No scientific evidence exists that the flammulated owl is decreasing in numbers.
- Increases in the extent and connectivity of forested habitat have occurred since European settlement.
- Well-distributed and abundant flammulated owl habitat exists on today's landscape.
- Level of timber harvest in the Northern Region is insignificant.

Consequently, the implementation of the either alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions, would have an inconsequential or discountable negative effect on the species. Therefore, the implementation of either alternative ***may impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species*** for flammulated owl, pygmy nuthatch and fringed myotis.

**Consistency with Forest Plan and Other Regulations**

Both alternatives are consistent with the Forest Plan direction to manage the habitat of species listed in the Regional Sensitive Species List to prevent further declines in populations, which could lead to federal listing under the Endangered Species Act (USDA Forest Service 1987). Therefore, these actions would also be consistent with the National Forest Management Act requirements to provide for the diversity of plant and animal communities across the Forest. However, Alternative 1 could result in a trend toward a decline in habitat quality over time.

## *Black-backed Woodpecker*

### *Existing Condition*

The black-backed woodpecker is a year-round resident that occurs in various forest types over a wide elevation range. They are considered forest specialists because they are mostly restricted to early post-fire habitat (Hutto 1995) and experience local population increases and temporary range extensions resulting from fire or insect and disease outbreaks that increase populations of wood-boring insects. While they are found in unburned forests and in areas of insect outbreaks, black-backed woodpeckers in

these areas occur at low densities and viability may not persist over time without sufficient post-fire habitat (O'Connor and Hillis 2001). The abundance of wood-boring insects begins to decline after about three years after a fire and the value for large numbers of woodpeckers appears to significantly decline after five to six years (Powell 2000). Black-backed woodpeckers have been shown to select smaller diameter snags (i.e., 15 inches DBH) than other cavity nesters (Saab et al. 2002).

While black-backed populations are most responsive to beetle outbreaks connected to recent fires, source habitats can include late-seral forests that contain patches of insect-infested trees (Wisdom et al. 2000). These forests may provide adequate habitat to support baseline populations of black-backed woodpeckers when burned areas are not available (Montana Partners in Flight 2000). Insect-killed forests support lower wood-boring beetle abundance than burned forests, even though insect-killed forests may consist of a comparable number of snags as burned forests (Powell 2000).

Historically, ecosystems in north Idaho were shaped by disturbance patterns that altered the size and distribution of forest structure across the landscape. Forest succession, wind damage, fire, insects, and diseases created snags in areas that ranged in size from individual trees or small patches, to entire drainages. As a result, snag densities varied substantially across the landscape. Before human influences, forests in different structure classes and successional stages, including post-fire habitat, were randomly distributed across the landscape (Oliver 1992). Consequently, post-fire habitat available for black-backed woodpeckers was maintained by these random disturbances. However, there have also been no major fires within the cumulative effects analysis area within the past 74 years.

The change in dominance of tree species to Douglas-fir and grand fir has increased the prevalence of insect and disease, resulting in higher levels of tree mortality. In root disease pockets and areas affected by insects, higher levels of snags are present. However, these snags are generally small and degenerate more quickly than snags from longer-lived, healthier trees. Shade-tolerant Douglas-fir trees replace these dead trees and in time perpetuate the cycle of disease, creating snags in the smaller size classes.

Suitable black-backed woodpecker habitat likely exists within the project area as a result of small scale insect infestations and other tree mortality. There are no recently burned areas in the Tumbledown analysis area and very few on the entire Sandpoint Ranger District. Aerial surveys in 2005 mapped over 4000 acres of insect infestation and flights in 2006 documented roughly 14,000 acres of insect disease on the district and over 56,000 acres of insect and disease on the North Zone of the IPNF. In addition, Samson (2006) estimated that the amount of bark beetle infested habitat on the IPNF in 2003 was approximately 304,099 acres. These figures indicate that there is more than adequate beetle-infested habitat on the North Zone of the IPNF alone to meet the 30,000 acre recommendation to maintain a minimum viable population in the Region (Samson 2006) or in the Ecological Province (USDA Forest Service, unpublished report2).

Although there have been no documented sightings, due to the presence of insect-killed trees and the absence of disturbance, such as a large-scale fire, black-backed woodpeckers likely occur at low levels within the project area. However, the project area is unlikely to represent high quality foraging or nesting habitat due to the lack of post-fire habitat.

### *Environmental Consequences*

**Methodology**

The potential effects on the black-backed woodpecker and other snag-dependent species were determined by estimating the change in distribution and quality of snag habitat that would result from implementation of the alternatives. In addition, the analysis applies Samson's habitat threshold analysis, which concludes

that 30,000 acres is the critical habitat estimate needed in the Northern Region to maintain a minimum viable black-backed woodpecker population (2006).

**Direct, Indirect and Cumulative Effects of Alternative 1**

No immediate changes in snag habitat would occur as a result of implementing the No Action Alternative. Habitat conditions would change over time in response to natural events. As a healthy forest matures, some trees die from competition and other natural forces, resulting in higher quality and quantity of snags. Consequently, nesting and foraging habitat would be improved for snag dependent species in healthy stands with a low risk of insect and disease.

In high-risk stands, the prevalence of insect and disease damage would be expected to increase under this alternative, resulting in higher levels of tree mortality. These forests that contain perpetual patches of beetle-infested trees would continue to support baseline populations of black-backed woodpeckers when burned forest is not available. However, high fuel accumulations resulting from elevated tree densities, as a result of this alternative, would lead to a higher risk of a large-scale, stand-replacing wildfire (see Fire and Fuels Report). If a stand-replacing fire were to occur, it would create a temporary flush of habitat for black-backed woodpeckers.

**Direct and Indirect Effects of Alternative 2**

Alternative 2 would harvest trees on approximately 671 acres that contain some form of snag habitat. In the long term (more than 80 years), this alternative would increase the occurrence of quality snags (e.g. longer-lived, seral tree species such as western larch and ponderosa pine) by converting areas at high risk of insect and disease (e.g. Douglas-fir and grand fir) to more resilient, longer-lived species.

However, Alternative 2 would likely represent an overall decrease in snags, as tree cutting may remove small snags and result in stand conditions with lower levels of small snag recruitment. Removal of young Douglas-fir and to a lesser extent grand fir, and the subsequent open stand conditions would result in reduced susceptibility to disease. Habitat loss due to tree removal would be compensated for by snag retention and live tree replacement guidelines where opportunities exist to help to ensure that snags persist at a level and distribution that would support snag-dependent species (see Design Features). Also, although prescribed burning activities are designed for a minimal amount of live tree mortality, some snags would likely be created as a result of the proposed underburning, thereby creating additional snag habitat.

Although this alternative would reduce the quantity of available small snag habitat within the treatment areas, approximately 54 percent of the federally managed lands within the analysis area would remain untreated by past and proposed harvests and would therefore continue to contain some degree of insect and disease infestation. In addition, even within treatment areas, not all occurrences of insects and disease would be eliminated. As a result, tree mortality would continue to persist in and adjacent to the treated areas allowing black-backed woodpeckers to persist at their likely current low level.

**Conclusion of Effects**

Alternative 2, in conjunction with the snag and live tree retention guidelines, would maintain the ability of black-backed woodpeckers to persist at low endemic levels, such as currently exists, and maintain their current distribution within the analysis area because 1) they are closely tied to post fire habitat, which is absent within the project area; 2) the influence of insect and disease would continue on the landscape; and 3) source habitat (e.g. late-seral forests) would be largely unaffected by this alternative. There would also continue to be a great deal more than the 30,000 acres of beetle-infested habitat to meet the 30,000 acres of habitat for black-backed woodpeckers recommended within the Ecological Province (USDA Forest Service, unpublished report2) and the Region (Samson 2006) to maintain a viable population.

In addition, Samson (2006) concluded the following with regard to the short-term viability of the black-backed woodpecker in the Northern Region of the Forest Service:

- No scientific evidence exists that the black-backed woodpecker is decreasing in numbers.
- Increases in the extent and connectivity of forested habitat have occurred since European settlement.
- Increases in amounts of small and mid-size trees have increased since European settlement.
- Well-distributed and abundant black-backed woodpecker habitat exists on today's landscape.
- Level of salvage or overall timber harvest in the Northern Region and IPNF is insignificant.

Consequently, the implementation of alternative 2, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions, ***may impact individuals or habitat, but would not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species***.

**Consistency with Forest Plan and Other Regulations**

Both alternatives would meet or exceed the Forest Plan goals and objectives for managing snag habitat (USDA Forest Service 1987). All alternatives are consistent with Forest Plan direction to manage the habitat of species listed in the Regional Sensitive Species List to prevent further declines in populations, which could lead to federal listing under the Endangered Species Act (USDA Forest Service 1987, p. II-28). Therefore, these actions would also be consistent with the National Forest Management Act requirements to provide for a diversity of plant and animal communities.

## *Western Toad*

### *Existing Condition*

Western toads can be found in a variety of habitat types depending on the time of year, including forested areas while foraging. Breeding takes place from May to July in shallow areas of large and small lakes, beaver ponds, temporary ponds, slow moving streams, and backwater channels of rivers (Maxell 2000). Western toads have been documented traveling more than four kilometers (approximately 2.5 miles) between terrestrial burrows and breeding sites (Maxell 2000). The diet of western toads includes insects, spiders, mites, millipedes, ants, and ground beetles. The western toad is most active at night in lower elevations and diurnal at higher, more northerly aspects. It is inactive during the winter and like other toads, buries itself in loose soils or enters rodent burrows during this period.

Survey results combined with incidental observations suggest that this species is found throughout much of northern Idaho. However, while western toads may be widespread across the landscape, it is unknown in what proportion of suitable habitat they occur. Surveys conducted in the northern Rocky Mountains in the 1990s revealed that western toads were absent from a large portion of their historic range and occupied only a small proportion of suitable habitat (Maxell 2000).

Although there have been no documented observations of western toads within the analysis area, their presence is likely based on the widespread distribution of the species. The entire project area is within 4 kilometers of potential western toad breeding habitat. See the wildlife project file for a map of potential western toad breeding habitat.

The loss or alteration of breeding habitat, migration barriers (i.e., roads) between breeding habitat and terrestrial habitat and mortality risk from roads bisecting migration routes appear to be the primary potential risk factors for western toads.

*Environmental Consequences*

**Methodology**

The potential effects on western toads were determined by predicting the change to breeding habitat (ponds, wetlands, streams) and terrestrial habitat resulting from the alternatives.

**Direct, Indirect and Cumulative Effects of Alternative 1**

Under the No Action Alternative, there would be no change to breeding habitat or terrestrial habitat within the project area because there would be no timber harvesting or the associated fuels treatments. Consequently, there would be no direct or indirect effects to western toad from this alternative and since there would be no direct or indirect effects on western toad there would be no cumulative effects.

**Direct and Indirect Effects of Alternative 2**

Alternative 2 may result in western toads being temporarily displaced or killed due to vehicles, tree removal, skid trails, road maintenance and reconstruction, fireline construction and underburning. This disturbance would be relatively short term in nature, lasting only as long as project activities and western toad activity would likely resume in the area following project completion. Western toads use a variety of upland areas, so the change in vegetation structure should have no long-term effects beyond project activities. In fact, research has indicated that western toads may benefit from fuels reduction treatments and that they appear to be attracted to recently disturbed areas (Pilliod et al. 2006).

Indirect effects could potentially occur if there was an increase in sediment delivery to wetlands and waterways as a result of tree removal, which could potentially degrade breeding habitat. However, best management practices (BMPs) would be in place to protect water quality and fish habitat (see Hydrology Report and Appendix C of the Tumbledown EA outlining the BMPs) and the implementation of this alternative would also be in compliance with the Inland Native Fish Strategy (INFS) standards, which require that protective measures be implemented to protect waterways and wetlands (see Fisheries Report and Appendix D of the Tumbledown EA detailing the INFS Standards and Guidelines). Therefore, the chance of project activities having an impact on potential breeding habitat would be negligible.

**Conclusion of Effects**

There would be a possibility of displacement and/or mortality to western toads as a result of the implementation of Alternative 2. However, all above ground water sources and consequently potential western toad breeding habitat would be protected.

Therefore, the implementation of Alternative 2, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions, ***may impact individuals, but would not contribute to a trend toward federal listing or cause a reduction in the viability of the population or species***.

**Consistency with Forest Plan and Other Regulations**

Because potential breeding habitat would be protected, both alternatives would comply with the Forest Plan direction to manage the habitat of species listed in the Regional Sensitive Species Lists to prevent further declines in populations, which could lead to federal listing under the Endangered Species Act.

## *Management Indicator Species*

### *Northern Goshawk*

#### *Existing Condition*

The northern goshawk is a forest habitat generalist that uses a wide variety of forest age classes, structural conditions and successional stages, inhabiting mixed-conifer forests in much of the northern hemisphere (Reynolds et al. 1992). Nesting habitat appears to be the most critical and limiting factor for goshawks. Throughout North America, goshawk nest sites have consistently been associated with the later stages of succession (mature and old growth forests) having moderate to high tree densities located on the lower one-third or bottom of the hill slope and in many cases in areas with less than a 40 percent slope (Hayward and Escano 1989, Warren 1990, Squires and Reynolds 1997, Graham et al. 1999). Foraging habitat entails a general relaxation of habitat requirements involving a wider range of forest age classes and structures that provide a relatively open forest environment for unimpeded movement or flight through the understory.

Historic numbers of goshawks were likely higher than they are today because many of the species they prey upon were more numerous. Historically, the Lake Pend Oreille drainage contained a greater proportion of old growth than it does currently. Although goshawks are not considered to be old growth dependent, old growth is an important for goshawks, not only for prey species habitat, but also for the large trees that provide substrate for their substantial nest structures.

Another factor influencing goshawk habitat is the amount of understory vegetation that this generally mesic (moist) area produces. Because northern goshawks require a combination of adequate overstory to provide prey species and adequate clearance for flight maneuverability, some stands that historically were suitable for foraging are no longer suitable due to an increased density of understory vegetation.

At the landscape scale, at least six suitable nest areas should be provided per home range (5,000 to 6,000 acres) to provide long-term nesting habitat for goshawks. The minimal stand size for goshawk nest sites is considered to be approximately 30 acres with nest sites typically within 0.5 mile of each other (Reynolds et al. 1992).

Primary risk factors attributed to forest management activities include a reduction in the amount of mature forests and their associated structures (e.g., large-diameter snags and logs) along with the transition of older forests from being dominated by shade-intolerant tree species to being dominated by a dense structure of shade-tolerant tree species, primarily due to fire exclusion (Wisdom et al. 2000). This increase in shade-tolerant species has increased the forest's susceptibility to stand-replacing fires, and has adversely affected habitat suitability by 1) obstructing flight corridors used by goshawks to obtain prey, 2) by suppressing tree growth that would produce large diameter trees that provide substrate for their substantial nest structures, and 3) reducing herbaceous understory that supports potential prey species (Wisdom et al. 2000).

The IPNF Forest Plan (USDA Forest Service 1987) selected the northern goshawk as a management indicator species for old growth habitats and established guidance for managing old growth to provide for viable populations of this species. It states, "*Approximately 10 percent of the Forest will be maintained in old growth as needed to provide for viable populations of old growth dependent and indicator management species*." To obtain the desired distribution, each designated old growth unit would be managed to maintain approximately five percent old growth where it exists. There are no stands of designated old growth within the project area. Consequently, there would be no impact to old growth from this project.

The analysis area consists of approximately 5,611 acres (which is roughly the size of one goshawk territory), with National Forest lands constituting approximately 4,451 acres or 79 percent. Within the analysis area there is approximately 4,276 acres of capable goshawk nesting habitat and approximately 106 acres that are considered to be suitable. There are also approximately 174 acres that are not capable goshawk nesting habitat.

During goshawk surveys in 2005, there was an active goshawk nest discovered within the project area and two inactive nests, presumably from previous years, discovered in the same general area (see Project File – Wildlife). There is also a record from 1992 of a goshawk nest within the project area approximately a quarter of a mile to the northeast of the 2005 nest site.

In 2006 and 2007, goshawk surveys within the project area did not locate any active goshawk nests, including site visits to the known nest locations (see Project File – Wildlife). Nevertheless, because an active territory was discovered in a stand being contemplated for treatment, this stand was eliminated from further consideration. Therefore, there would be no proposed project activities within the stand that contains the goshawk nest located in 2005.

### *Environmental Consequences*

#### Methodology

Northern goshawk habitat within the cumulative effects area was evaluated using habitat data in the Forest timber stand database (TSMRS) and in the habitat spreadsheet created for this project (see Project File – Wildlife). These data sources were reviewed and updated to reflect changes in conditions resulting from wildlife surveys, field walk-through exams, and aerial photo interpretations conducted within the past three years to ensure that they reflect current conditions as accurately as possible. Stands were then evaluated on a stand-by-stand basis to assess tree size and age class, stand structure, and canopy closure to further refine the determinations for goshawk habitat.

While the habitat assessment may be an adequate broad predictor of habitat suitability, field verification of a limited number of stands determined to be “suitable” within the project area have shown that portions of these stands contain too dense an understory to provide preferred goshawk nesting habitat. In other words, not every acre shown as “suitable” is necessarily suitable nesting habitat. As a result, the habitat assessment is likely to somewhat overestimate the amount of currently suitable habitat. On the opposite spectrum, field surveys of known goshawk nests on the IPNF indicate that goshawks may nest in small, suitable patches of otherwise unsuitable habitat, which are not included in the amount of suitable nesting habitat and may lead to slight underestimates of suitable habitat.

The potential effects on the northern goshawk and its habitat were determined by assessing the change and trend in nesting habitat suitability that would result from each alternative, changes to the vegetation structural changes (VSS) within the goshawk home range or analysis area and more specifically within the post-fledgling family area (PFA) of the active and alternative nest sites, and the potential disturbance to active goshawk nests from project activities.

#### Direct, Indirect and Cumulative Effects of Alternative 1

There would be no direct effects to northern goshawks from the No Action Alternative because there would be no new management activities within the project area. The quantity, quality and distribution of suitable nesting habitat would continue to change over time as natural disturbances, fire suppression and stand development influence habitat suitability for northern goshawks. However, it is questionable if the majority of stands would be able to trend toward producing sufficient forest structure and stand characteristics to improve habitat conditions for goshawks given the increasing densities of shade-tolerant species in the understory and the high degree of insect and disease within the analysis area.

While Alternative 1 would not alter the existing vegetation through timber harvesting or fuels treatments, mortality caused by agents such as root disease and insect outbreaks would continue to change habitat conditions. Deteriorating stand health would result in dense stands of numerous small-diameter, shade-tolerant tree species that are shorter lived and more susceptible to insect and disease, thereby decreasing their ability to become suitable goshawk nesting habitat. Therefore, Alternative 1 may impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status.

**Direct and Indirect Effects of Alternative 2**

Alternative 2 would treat approximately 670 acres or 16 percent of the capable goshawk nesting habitat within the project area. None of the stands proposed for treatment are currently suitable for goshawk nesting. Trees would be harvested using a thinning prescription on approximately 36 acres, an irregular shelterwood prescription on approximately 95 acres and a combination of the two harvest prescriptions on approximately 504 acres. Of the remaining acres to be treated, approximately 25 acres would be harvested with a liberation cut and approximately 11 acres would be hand slashed to serve as a fuel break along private property. See the Tumbledown EA for a more detailed description of the harvest and treatment types.

Although no stands within the proposed treatment areas represent suitable goshawk nesting habitat due to the high densities of small diameter trees, there are a few small pockets of habitat that represent the structure and forest characteristics typically selected by goshawks as nesting habitat. However, none of these areas constitutes an entire stand or is a large enough patch to be considered suitable for goshawk nesting. During project implementation, the treatment within these pockets would retain the habitat characteristics that make it a suitable patch for northern goshawks such as maintaining a canopy closure above 50 percent with a relatively open understory and the retention of larger diameter trees.

On the approximately 95 acres treated entirely with an irregular shelterwood harvest, the stand structure would be transitioned to an earlier successional stage due to the existing level of insect and disease. Even without treatment it is unlikely these acres would continue to progress toward a forest structure suitable for goshawk nesting habitat based on the impacts of insect and disease in these stands. The proposed treatment would allow for the development of more ecologically stable stands, which would trend these stands more toward conditions within their natural range of variability. On the approximately 36 acres treated entirely with a commercial thin, there would be a small reduction in the canopy closure as trees in the lower crown classes would be removed to reduce competition and ladder fuels to the larger, seral species such as ponderosa pine and western larch. This would result in forest stands that are more ecologically stable in the face of potential disturbance, longer-lived and less susceptible to stand-replacing wildfires.

On the approximately 504 acres to be treated with a combination treatment, an irregular shelterwood would be conducted wherever there is currently a lack of desirable tree species (roughly 60 percent of the acres receiving this treatment) and a commercial thin would be conducted in areas that contain a greater density of desirable tree species (roughly 40 percent of the acres receiving this treatment). This would result in a mosaic of habitat conditions within the treated areas that would remain capable as goshawk nesting habitat and would continue to provide, or even enhance, the foraging conditions for northern goshawks.

In general, the treated areas would trend from dense stands dominated by small diameter trees to more open stands with a higher proportion of larger, more mature trees. This trend would ultimately be beneficial to foraging goshawks by producing larger trees and increasing the desirability for foraging areas by removing the congestion of dense understory vegetation. Over the long term, Alternative 2

would result in the maintenance of a long-lived seral forest habitat, which would retain the habitat conditions of capable goshawk nesting habitat.

Given the project objectives (fuels reduction and changing the forest structure to favor long-lived seral species), approximately 298 acres are not likely to become suitable goshawk nesting habitat in the foreseeable future, although these acres would continue to provide foraging opportunities for goshawks. Instead these acres would be managed for dry site dependent sensitive species such as flammulated owls and pygmy nuthatch that are reliant on more open grown stands of seral species, particularly ponderosa pine stands, which have drastically declined across the landscape since the advent of fire suppression. In contrast, northern goshawks utilize a wider array of forest types, ranging from cedar/hemlock old growth to smaller diameter Douglas-fir/ponderosa pine forests. Consequently their habitat is not as limited. Therefore, it seems prudent in stands capable of providing habitat for either species to trend the management in favor of dry site dependent species such as flammulated owls. In addition, it is questionable whether the stands in question would have ever attained suitability as goshawk nesting habitat under natural fire regimes, particularly in light of evidence that these type of stands historically were naturally maintained in an open grown condition that more closely approximated flammulated owl nesting habitat (USDA Unpublished Report1).

Reynolds et al. (1992) recommends analyzing a post-fledgling family area (PFA) of approximately 420 acres roughly centered on suitable and alternative nest sites. Within the PFA various research recommends maintaining or trending toward the vegetative structural stage (VSS) of approximately 7 to 11 percent grasses/shrub, 4 to 17 percent seedling/sapling, 6 to 66 percent pole-sized or young forest and 11 to 66 percent mature or older forest (Reynolds et al. 1992, Patla 1997, Desimone 1997, Clough 2000 and McGrath et al. 2003). Most research combined VSS 4 (mid-aged forest), VSS 5 (mature forest) and VSS 6 (old growth) for analysis purposes, so this document and analysis will do the same. An analysis of forest structure classes within the PFA of the 2005 goshawk nest location was conducted using the 1992 nest site as the alternate nest site. The nest areas, power line corridor and natural openings are excluded from the PFA analysis (Reynolds et al. 1992). The existing condition and proposed post treatment VSS percentages are summarized in Table 5.

This analysis assumes that regeneration harvest reverts stands to the grass/shrub stage, while selective harvest does not change the predominant size class of the stand. Although within each stand treated with an irregular shelterwood harvest the majority of area would be converted to the grass/shrub structural class, in some patches there would be enough trees remaining to potentially be categorized as VSS 3, VSS 4 or VSS 5. Accordingly, this analysis will slightly underestimate the percent of the PFA in those structural classes. Similarly, the assumption that stands receiving a commercial thin would remain in the same structural class does not take into account that the proportion of larger trees within these stands would increase following treatment and some slight increases in VSS 4 or VSS 5 would occur that are not accounted for in this analysis.

**Table 5. VSS percentages within the Tumbledown Analysis Area**

| VSS | Size Class | Recommended Percentage per VSS[1] | Existing Condition | Alt 1 – No Action | Alt 2 – Proposed Action |
|---|---|---|---|---|---|
| 1 | Grass/Shrub | 7 to 11% | 8% | 8% | 16% |
| 2 | Seedling/Sapling | 4 to 17% | 0% | 0% | 0% |
| 3 | Immature/Pole | 6 to 66% | 8% | 8% | 8% |
| 4,5,6 | Mature and Older | 11 to 66% | 84% | 84% | 76% |

[1] Based on Reynolds et al. 1992, Patla 1997, Desimone 1997, Clough 2000 and McGrath et al. 2003

Based on the above habitat percentages, the existing condition of the Tumbledown PFA is lacking in the seedling/sapling structural class and is above the percentages noted in the research for mature and older forest, although none of the habitat within the PFA is currently old growth. Following treatment, the PFA would remain lacking in seedling/sapling habitat, but additional acres would be converted to grass/shrub in the portions of the PFA that would receive an irregular shelterwood harvest. In the areas receiving a commercial thin within the PFA, the stands would remain in the same structural class, but the proportion of larger trees would increase and the likelihood of those stands trending toward stands of larger, longer-lived trees would also increase. In a relatively short timeframe, particularly with the proposed planting of these units, the majority of the acres converted to grass/shrub would transition into the seedling/sapling structural class and the PFA would then be expected to be within the percentage ranges for all of the structural classes analyzed in Table 5.

**Conclusion of Effects**

After implementation of Alternative 2, the treated areas would continue to provide, or even enhance, foraging conditions for northern goshawks. In general, the treated areas would trend from dense stands dominated by small diameter trees to more open stands with a higher proportion of larger, more mature trees in the stands receiving a commercial thin. This trend would ultimately be beneficial to foraging goshawks by producing larger trees and increasing the desirability of foraging areas by removing the congestion of dense understory vegetation. Over the long term (80 to 100 years), the Alternative 2 would result in the maintenance of a long-lived seral forest habitat, which would retain the habitat conditions of capable goshawk nesting habitat. In addition, approximately 84 percent of goshawk habitat within the cumulative effects analysis area would not be impacted by project activities.

Based on the above analysis, Alternative 2 is not likely to negatively impact northern goshawk because it would not treat any stands within an active nest nor would it treat any suitable goshawk nesting habitat. It would not treat any designated old growth, and would likely increase the foraging opportunities for nesting goshawks and trend the PFA towards being within the range of structural classes recommended by research. Based on that rationale, the project area would continue to be able to support the same general distribution and population numbers of northern goshawks, such as currently exists.

In addition, Samson (2006) concluded the following with regard to the short-term viability of the northern goshawk in the Northern Region of the Forest Service:

- No scientific evidence exists that the northern goshawk is decreasing in numbers.
- Increases in the extent and connectivity of forested habitat have occurred since European settlement.
- Well-distributed and abundant northern goshawk habitat exists on today's landscape.
- Level of timber harvest in the Northern Region is insignificant.
- Suppression of natural ecological processes has increased and continues to increase amounts of northern goshawk habitat.

Consequently, the implementation of either alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions, would have a negligible effect on the species. Therefore, the implementation of either alternative ***may impact individuals or habitat, but would not indicate a local or regional change in habitat quality or population status*** **for** northern goshawk.

**Consistency with Forest Plan and Other Regulations**

Since no activities would occur within designated old growth, the project area would continue to be managed for old growth characteristics and associated old growth species. This is consistent with Forest Plan direction for old growth habitat management. Therefore, these actions would also be consistent with

the National Forest Management Act requirements to provide for a diversity of plant and animal communities.

The goshawk was selected as a MIS because of their need for old growth habitat. The Forest Plan (USDA Forest Service 1987) directs that approximately 10 percent of the Forest be maintained in old growth as needed to provide for viable populations of old growth MIS. Since no old growth stands would be affected by project activities within the analysis area, either alternative would be in compliance with the Forest Plan. However, Alternative 1 would likely result in a trend toward a decline in habitat quality over time.

## *Pileated Woodpecker*

### *Existing Condition*

Pileated woodpeckers are relatively common in both cut and uncut mid-elevation forests. They appear to do well in a matrix of forest types (Hutto 1995). However, since foraging habitat represents a wider ecological range of forest age structure, nesting habitat is considered the most critical and limiting element for pileated woodpeckers.

The pileated woodpecker was designated as a management indicator species (MIS) because its highest densities occur in old-growth forests due to their need for larger dead trees for nesting (Bull et al. 1990). For nesting, they have specific requirements of large trees in relatively uncut stands. Nest cavities are usually located in large diameter trees more than 30 feet above the ground, level with the canopy of the surrounding forest. (Warren 1990). Nesting habitat for pileated woodpeckers in the northern Rocky Mountains most commonly occurs in forest stands with live or dead western larch, Douglas-fir, ponderosa pine and cottonwoods greater than 20 inches in diameter. New nest cavities are excavated each year in stands of approximately 50 to 100 acres of mature/old forest habitat with a relatively closed canopy (Warren 1990).

Snag habitat within the project area has been strongly influenced by vegetation succession, fire suppression and insect and disease, along with natural fire events to a lesser degree. Most of the snags created by past wildfires have since fallen. Since the 1920s, much of the landscape has progressed and is now dominated by a high density of Douglas-fir, which are more susceptible to insect and disease at a younger age and therefore do not create larger, longer-lived snags.

Primary risk factors include a reduction in the amount of old forests and its associated structures (e.g., large-diameter snags and logs) along with the transition of older forests from being dominated by shade-intolerant tree species to being dominated by a dense structure of shade-tolerant tree species, primarily due to fire exclusion (Wisdom et al. 2000).

The IPNF Forest Plan (USDA Forest Service 1987) selected the pileated woodpecker as a management indicator species for old growth habitats and established guidance for managing old growth to provide for viable populations of this species. It states, "*Approximately 10 percent of the Forest will be maintained in old growth as needed to provide for viable populations of old growth dependent and indicator management species*." To obtain the desired distribution, each designated old growth unit would be managed to maintain approximately five percent old growth where it exists. There is no allocated old growth within the project area and therefore no old growth would be entered or impacted by this project.

The change in species composition resulting from fire exclusion has slowly and methodically replaced such species as ponderosa pine, white pine and western larch, trending stands toward smaller and younger size and age classes that are more susceptible to insects and disease before reaching maturity. Consequently, snag production is shifting from the larger, longer-lived species to smaller, shorter-lived

species. This condition is affecting the long-term stability and persistence of large snag habitat within the analysis area.

### *Environmental Consequences*

**Methodology**

As discussed previously, snag habitat for nesting is considered more limiting than foraging habitat. Nesting habitat is dependent on the age and size of trees, which makes pileated woodpeckers a good indicator of older, larger-diameter trees and late-successional forests. The effect of project activities will be analyzed by assessing the alternatives as they relate to their potential effects on nesting habitat and the distribution and quality of large-diameter tree and snag habitat.

**Direct, Indirect and Cumulative Effects for Alternative 1**

The No Action Alternative would not result in an immediate change in snags or suitable habitat. However, stands in the project areas would continue to decline in health and vigor, and would become increasingly crowded with immature trees, ultimately resulting in an increased risk of a large-scale, stand-replacing wildfire that could potentially hinder the development of mature forests utilized by pileated woodpeckers (see Vegetation Report). Consequently, habitat potential within the project area would remain relatively poor in quality.

The continued shift in species composition toward more shade-tolerant species would trend most stands toward a smaller size class and younger age class of trees. Consequently, snag production would shift away from the larger, longer-lived tree species, affecting the long-term stability and persistence of large snag habitat in the project area. Habitat for species associated with large snags, such as pileated woodpeckers, would continue to decline. Therefore, Alternative 1 may impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status.

**Direct and Indirect Effects of Alternative 2**

Due to the influences of fire suppression, and insects and disease, there has been a shift in much of the project area toward smaller diameter, shorter-lived, dense stands of shade-tolerant tree species. Consequently, the production of larger diameter, longer-lived snags has been limited. However, Alternative 2 would trend the treated areas toward stands that are more ecologically stable in the face of potential disturbances and more likely to produce quality snags like those that are typically utilized by pileated woodpeckers. The project design also incorporates features to maintain a minimum number of snags within harvest units, promote the retention of large, longer-lived snags and promote live tree replacements as future snags (see Design Features).

Alternative 2 would harvest trees on approximately 671 acres that contain some form of snag habitat. Of the acres to be treated under this alternative, approximately 236 acres are currently mature forested habitat and approximately 531 acres are immature forested habitat.

Under this alternative, approximately 193 acres of the mature habitat would be treated with an irregular shelterwood or irregular shelterwood with a commercial thin harvest, which would result in a more open landscape with scattered individual and patches of trees (see the Tumbledown EA for a more detailed description of the harvest and treatment types). These acres are currently experiencing advanced insect and disease and are producing mostly smaller diameter snags with faster decomposition rates that are much less effective at providing pileated woodpecker nesting habitat. This is due to stands being dominated by shade-tolerant species that are more susceptible to disturbance and insect and disease at an earlier stage in development than are seral species (see Vegetation Report). Consequently, it is likely that the mature acres receiving this treatment are currently providing little to no opportunities as nesting

habitat and without treatment the mature and immature stands being proposed for an irregular shelterwood harvest would continue to trend farther away from providing suitable nesting habitat for pileated woodpeckers.

Although this alternative would revert the acres treated with an irregular shelterwood back to an early succession stage and would likely reduce the number of mostly smaller diameter snags, in the long term (approximately 80 to 100 years), the acres receiving this treatment would trend toward stands of longer-lived seral species and encourage the persistence and sustainability of large snag habitat. In addition, no project activities are proposed within old growth stands.

Under this alternative, approximately 35 acres would receive a commercial thin treatment. All of these acres are currently in a mature size class and the treatment is designed to favor the larger trees by removing smaller, understory trees. As a result of the treatment, there would be a reduction in canopy closure as trees in the lower crown classes would be removed to reduce competition and ladder fuels to the larger, seral species such as ponderosa pine and western larch. However, the treatment areas would maintain a relatively closed forest landscape. The reduction in competition for nutrients would accelerate the ability of these acres to trend toward suitable pileated woodpecker nesting habitat because it would increase the growth potential of the remaining trees. The result would be forest stands that are more ecologically stable in the face of potential disturbance, longer-lived and less susceptible to stand-replacing wildfires that would produce longer-lived, larger diameter snags.

Consequently, the proposed treatments would have a minor immediate effect on pileated woodpecker habitat and would trend the area toward more favorable habitat conditions.

Wildlife tree retention guidelines would also mitigate potential impacts of proposed activities by retaining trees and snags that represent the largest diameter class available in the stand. This would simulate what would be expected under periodic fire regimes or insect/disease occurrences that were within the natural range of variation (see Design Features). In addition, although prescribed burning activities are designed to allow for a minimal amount of live tree mortality, some additional snags are likely to be created as a result of the burns. Tree mortality would also continue to persist in and adjacent to the treated areas and would continue to provide snags for pileated woodpeckers.

**Conclusion of Effects**

The current level of old growth within the cumulative effects analysis area would be maintained as there would be no project activities within designated old growth. Alternative 2 would meet the purpose and need of promoting the long term persistence and stability of wildlife habitat diversity with respect to pileated woodpeckers, because it would trend the treated acres toward the species composition and structure that would produce larger, longer-lived snags necessary for pileated woodpecker nesting habitat in the long term (80 to 100 years).

In addition, Samson (2006) concluded the following with regard to the short-term viability of the pileated woodpecker in the Northern Region of the Forest Service:

- No scientific evidence exists that the pileated woodpecker is decreasing in numbers.
- Increases in the extent and connectivity of forested habitat have occurred since European settlement.
- Well-distributed and abundant pileated woodpecker habitat exists on today’s landscape.
- Level of timber harvest in the Northern Region is insignificant.

Consequently, the implementation of either alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions, ***may impact individuals or habitat, but would not indicate a local or regional change in habitat quality or population status.***

**Consistency with Forest Plan and Other Regulations**

Both alternatives would meet or exceed Forest Plan goals and objectives for managing snag habitat (USDA Forest Service 1987). Since no activities would occur within designated old growth, the project area would continue to be managed for old growth characteristics and associated old growth species. This is consistent with Forest Plan direction for old growth habitat management. Actions are designed to promote the persistence and sustainability of large snag habitat, and would not affect abundance and distribution of the species. Therefore, these actions would also be consistent with the National Forest Management Act requirements to provide for a diversity of plant and animal communities. However, under Alternative 1 stand conditions would likely continue to deteriorate, which could adversely affect habitat suitability over time.

The pileated woodpecker was selected as a MIS because of their need for old growth habitat. The Forest Plan (1987) directs that approximately 10 percent of the Forest be maintained in old growth as needed to provide for viable populations of old growth MIS. Since there are no old growth stands in the analysis area that would be adversely affected by project activities, either alternative would not likely indicate a local or regional change in population status or distribution.

## *White-tailed Deer*

### *Existing Condition*

White-tailed deer are distributed throughout the Idaho Panhandle National Forests, traditionally associated with a mixture of seral stages of vegetation. Climatic factors affect the seasonal variation of forage quality and quantity, accessibility to foraging areas and their thermal requirements (Pfingsten 1983). Throughout much of north Idaho, an abundance of vegetation provides excellent concealment, security cover and thermal cover for white-tailed deer. Consequently, the effects of timber harvest on the population tend to be negligible.

Winter range is the most critical feature of their habitat with winter being the most stressful period because of the harsh weather conditions and a limited food supply. During winter, white-tailed deer are forced by increasing snow depths to travel downslope and concentrate on smaller, restricted winter ranges. During winter, white-tailed deer are generally found on the valley bottoms and lower benches. Conversely, during summer, deer use a broader elevational range of habitats.

White-tailed deer flourished in the 1800s, but by the early 1900s their populations were reduced to low numbers due to over exploitation by trappers, miners and settlers. White-tailed deer populations have since rebounded to being the most abundant big game species in northern Idaho.

The Tumbledown analysis area is within Idaho Fish and Game's (IDFG) Game Management Unit 4A. In the 1990, IDFG changed their statewide goals for white-tailed deer from emphasizing increases in population to maintaining populations, harvest and recreational opportunities. Deer populations in this game management unit are considered to be high (IDFG 2004).

### *Environmental Consequences*

**Methodology**

The effects of the project on white-tailed deer will be determined by analyzing changes to general characteristics of white-tailed deer habitat.

### Direct, Indirect and Cumulative Effects for Alternative 1

The No Action Alternative would not result in an immediate change to habitat. However, stands in the project areas would continue to decline in health and vigor, and would become increasingly crowded with immature trees, ultimately resulting in an increased risk of a large-scale, stand-replacing wildfire or insect and disease outbreaks that would potentially open up the forest canopy to a level below what provides sufficient thermal cover for wintering deer. Therefore, Alternative 1 may impact individuals and habitat, but would not indicate a local or regional change in habitat quality or population status.

### Direct and Indirect Effects of Alternative 2

Within the treated areas, this alternative would reduce the overall canopy cover to varying degrees depending on the treatment for each stand. The openings created through timber harvest would facilitate the growth of forage for white-tailed deer. However, within the treated areas there are moist swales and pockets of trees not showing signs of insect and disease, which would be left untreated (see Design features). These areas would continue to provide thermal cover for white-tailed deer in winter. In addition, approximately 89 percent of the analysis would remain untreated by this alternative and would therefore continue to provide a sufficient amount of thermal cover and forage throughout the project area. In addition, there would be a buffer of trees left along the large meadow complex along the east side of Units 25 and 26 to act as security cover for white-tailed deer (see Design Features).

### Conclusion of Effects

Based on the above discussion and the ability of white-tailed deer to thrive under a variety of habitat conditions, the project area would continue to be able to support the same general distribution and population numbers of white-tailed deer, such as currently exists. In addition, the small degree to which winter range is expected to be impacted by Alternative 2 would be undetectable at the landscape scale. As a result, there would be a negligible effect on white-tailed deer from project activities.

Consequently, the implementation of either alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions, ***may impact individuals or habitat, but would not indicate a local or regional change in habitat quality or population status.***

### Consistency with Forest Plan and Other Regulations

Both alternatives would comply with the Forest Plan regarding big game (USDA Forest Service 1987). However, Alternative 1 may result in a trend toward a decline in habitat quality over time.

## *Design Features*

**Wildlife Tree Management** – Large diameter snags are sparse within the project area, which is likely due to past fire, timber harvest and firewood cutting activity. Design features for the project were developed to ensure the retention and selection of snags at a level and distribution that have been shown to support viable populations of snag associated species.

Snags and live tree replacements would be retained where opportunities exist in treatment units at levels recommended by scientific literature (Bull et al. 1997). Retention objectives are consistent with published data that suggests that populations of cavity nesters were viable in stands of ponderosa pine and mixed conifer forests that contained about four snags per acre (Bull et al. 1997). While these recommendations attempt to emulate historically available snag densities under pre-settlement conditions, it is recognized that current conditions (e.g., long-term fire suppression that has interrupted the persistence of long-lived seral tree species and the subsequent recruitment of larger-diameter snags) may not make it possible to meet these recommendations.

To following minimum amounts of snags and live tree replacements are to be retained within applicable cutting areas:

- Dry forest habitats: 4 snags and 8 live tree replacements per acre from the largest trees
- Moist forest habitats: 6 snags and 12 live tree replacements per acre from the largest trees

Selection of snags would emphasize practices that assure a diversity of snag structural classes and the highest probability of long-term retention (Bull et al. 1997). The high hazard snags and snags in the advanced stages of decay would not be used to meet retention objectives (Intermountain Forest and Industry Association et al. 1995). Retention practices would focus on ponderosa pine, western larch, Douglas-fir and western red cedar, especially veteran or relic ponderosa pine and western larch trees. Trees killed by root disease would be avoided, where possible, to meet retention objectives because of their rapid deterioration and fall-down rate.

While retention objectives are accounted for on a treatment-level scale, some snags would be represented on every ten acres of treatment, in clusters or clumps where feasible, to promote good distribution of snags. Large diameter snags not designated for removal (greater than 15 inches dbh) that are felled for safety reasons would remain on site to provide for large woody debris recruitment and long-term site productivity.

Criterion for silvicultural prescriptions would include retention of some larger diameter defective or broken-top trees as live trees for future recruitment. Tree designation guidelines for live tree replacements would favor retention of large diameter trees, particularly hollow and broomed trees except when they pose a safety concern. Western larch, ponderosa pine, and western red cedar greater than 20 inches dbh would be designated as first choices for live tree replacements.

Slash would be pulled back from veteran or relic ponderosa pine and western larch live trees and snags where needed to protect them from the adverse effects of prescribed burning. Grapple piling would be considered to treat fuels on moderate slopes where residual snags would be at risk from broadcast burning.

**Retention of Hardwoods** – Other than in the fuel break units, aspen and birch trees would not be harvested. If these species need to be cut for safety reasons, they would remain on site for coarse woody debris and long-term site productivity. Merchantable and submerchantable conifers would be harvested or slashed, respectively, in and around the aspen patch in Unit 14 and any other aspen patches discovered during project layout to reduce competition for water, nutrients and sunlight.

**Marking Guides** – Since treatments units exhibit a variety of stand conditions, harvest prescriptions and tree marking should reflect this variation. Throughout the layout and design, maintain the natural, irregular spacing of leave trees, given existing stand conditions. Even though the treatment prescriptions focus on removing over-topped, suppressed, poorly formed individuals, it is desirable to leave some crown overlap.

**Swales** – Within all treatment units, small inclusions of moist pockets or swales of western red cedar would be left untreated and would not be impacted by project activities.

**Unit 12** – No project activities within the patch of late successional western red cedar in Unit 12.

**Unit 1 Cutting Boundaries** – The cutting boundaries for Unit 1 should be off-set to provide a leave strip and cover patches associated with old Barton Hump Timber Sale units.

**Grapple Piling** – In areas where grapple piling is prescribed for fuels reduction, leave approximately two slash piles per acre unburned to provide habitat for small forest mammals (snowshoe hare) and forest land birds, except in areas designated as fuelbreaks.

**Goshawk Protection** – If an active goshawk nest is located within the project area during marking or implementation, a 30 acre year round no activity buffer would be placed around the nest and a 420 acre no activity buffer would be implemented from April 15 to August 15, to protect the goshawk pair and young from disturbance during the breeding season. Activity restrictions would be removed after June 30 if the District Wildlife Biologist determines the nest site is inactive or unsuccessful.

**Bald Eagle Nest Protection** – To avoid potential disturbance or conflicts with the Whiskey Rock bald eagle nest, no project activities would occur in Unit 1 from February 1 through August 15, unless the nest is determined to be inactive by wildlife personnel.

**Bat Protection** – If mines are found to be utilized by Townsend's big-eared bats or fringed myotis, the timber harvest recommendations from the Species Conservation Assessment and Conservation Strategy for the Townsend's Big-eared Bat (Pierson et al. 1999) would be implemented. This strategy delineates a 0.25 mile radius "no activity" buffer around mines to avoid disturbance during critical time periods (e.g. maternity roosting, hibernacula). Since it is inconclusive what the critical time periods are, the "no activity" buffer would be year round. "Bat-friendly" closures would be installed, where feasible, on abandoned mines found to support Townsend's big-eared bats or fringed myotis.

Any other mine adits found in the project area that potentially provide habitat for bats would be buffered by a 500-foot no harvest buffer around the entrance, so as not to alter the air flow and thermal regimes in the mine.

**Vegetation Screens** – Vegetation buffers would be left along the eastern boundary of Units 25 and 26 to provide security screening for wildlife and minimize unauthorized access along the meadow complex. Buffers would be approximately 100 to 200 feet, depending on the type of cover and topography and would transition from a no-cut zone along the road into the treatment prescription.

**Threatened, Endangered and Sensitive Wildlife Species Management** – If any threatened, endangered, or sensitive species were located during project layout or implementation, management activities would be altered, if necessary, so that proper protection measures can be taken. The timber sale contract provision, *Protection of Threatened, Endangered and Sensitive Species*, would be included in any timber sale contract.

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| **Biological Assessment** | **USDA Forest Service** | **Idaho Panhandle National Forests** | **Sandpoint Ranger District 1500 Highway 2, Suite 110 Sandpoint, ID 83864-9509 (208) 263-5111** |
|---|---|---|---|

**File Code:** 2670 **Date:** October 28 , 2008

**Subject:** Biological Assessment, *wildlife*, Tumbledown Hazardous Fuels Reduction Project

**To:** Dick Kramer, Sandpoint District Ranger

## Introduction

Threatened and Endangered species are managed under authority of the Federal Endangered Species Act (36 U.S.C. 1531-1544) and the National Forest Management Act (16 U.S.C. 1600-1614). In accordance with Section 7 of the Endangered Species Act, federal agencies are required to make certain that all actions they "authorize, fund, or carry out" will not likely jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of designated critical habitat.

USDA Forest Service Policy (FSM 2670) requires a review of programs and activities, through a biological assessment, to determine whether any threatened or endangered species is likely to be affected by the purposed action(s). The purpose of this biological assessment is to evaluate the potential effects to threatened or endangered wildlife from the proposed action.

## Proposed Action

Small diameter trees and brush would be removed over approximately 700 acres in order to decrease fuel loadings and disrupt fuel continuity, thereby reducing the risk of wildfire spreading to adjacent land, and increasing the chance of successful suppression efforts. Fuel reduction treatments would employ a combination of mechanical methods to remove saplings, brush, and primarily small diameter (i.e. 4" to 14" diameter) mixed conifer species in areas of mortality attributed to insect attack, competition, and/or root disease. These treatments would result in long-term reduction of ladder fuels as well as reduction in live and dead fuel loadings. Priority would be given to retaining cedar-dominated riparian areas and large, healthy larch, ponderosa pine, and white pine. Openings created by fuels reduction treatments would be planted with white pine, western larch and ponderosa pine.

Prescribed fire would be used to reduce hazardous fuels and recycle forest nutrients. In areas where slopes permit, an excavator would be used to pile woody debris. These piles would then be burned in late fall during periods of low fire danger.

Based upon field review of fuel conditions in the project area, approximately 671 acres is proposed for treatment. Individual treatment areas would range in size from 5-93 acres. Fuels treatments are described with the silvicultural diagnosis and prescriptions listed below.

**Treatment Areas 1-6, 10-14, 16, 20, 25-32 (505acres)** – Are a combination of **Irregular Shelterwood** and **Commercial Thinning**. Irregular shelterwood is a silvicultural term that describes a variable spatial arrangement of dominant and codominant trees of desired species (such as western white pine, ponderosa pine, and western larch) to provide seed and shade. This method would be applied where there is a lack of desirable trees to allow for a commercial thinning. Areas with a greater density of desired trees would receive a commercial thinning. Harvest will focus on leaving good form, full crowned, healthy trees (in the upper crown classes) in the following order of preference: western white pine, western larch, ponderosa pine and western redcedar as well as some healthy Douglas-fir. Additional fuel treatments would be machine grapple piling of created activity fuels and the burning of these piles. Underburning would generally take place on slopes steeper than 35%. Some tree planting would follow timber harvest in order to establish more early seral fire resistant species such as ponderosa pine and western larch.

**Treatment Areas 8, and 21 (35 acres) -** Are **Commercial thinning** with a focus on "low thinning" to remove trees in the lower crown classes which provide ladder fuels to the larger surrounding trees. The larger trees with higher crowns would be favored to leave. Some spot grapple piling would be needed in small areas with concentrations of activity fuels. No planting would be needed.

**Treatment Areas 7, 9, 15, 17,18,22,23 (95 acres) -** Are **Irregular Shelterwood (See previous description above).** Some grapple piling on slopes up to 35% and underburning on steeper slopes. Tree planting of western white pine, larch and ponderosa pine would follow to establish these early seral fire resistant species.

**Treatment Area 19 (25 acres) – Liberation cut** is a release harvest in a stand not past the sapling stage to free the favored trees from competition with older overtopping trees. This unit has thousands of sapling-sized western hemlock, larch, western redcedar, lodgepole pine and Douglas-fir per acre in need of precommercial thinning and release from poor formed overstory trees. No planting would be needed.

**Treatment Area 99 (11acres) –** Is a **Fuel break.** The fuel break would consist of felling hardwoods and brush species, precommercial thinning of conifers, and hand piling and burning of piles in an approximately two chain (132 foot) strip along strategic areas (primarily adjacent to private land).

Table 1. Treatment Summary

| Unit | Proposed Treatment Acres | Harvest System* | | | Underburn Acres | Grapple/Hand Pile Acres | Reforestation Acres |
|---|---|---|---|---|---|---|---|
| | | CTL | T | S | | | |
| 1 | 22 | 22 | | | | 22 | 16 |
| 2 | 39 | | 39 | | | 39 | 33 |
| 3 | 93 | | | 93 | 93 | | 40 |
| 5 | 5 | | 5 | | | 5 | |
| 6 | 40 | | | 40 | 40 | | 27 |
| 7 | 22 | | 22 | | 22 | | 22 |
| 8 | 18 | | 18 | | 18 | | |
| 9 | 14 | | | 14 | 14 | | 14 |
| 10 | 11 | | 11 | | | 11 | 9 |
| 12 | 49 | | 49 | | | 49 | 40 |
| 14 | 18 | | 18 | | 18 | | 8 |
| 15 | 21 | | 21 | | | 21 | 21 |
| 16 | 33 | 33 | | | | 33 | 23 |
| 17 | 14 | 14 | | | | 14 | 14 |
| 18 | 11 | | | 11 | 11 | | 11 |
| 19 | 25 | | 25 | | | 25 | |
| 20 | 56 | | 56 | | 56 | | 28 |
| 21 | 17 | | 17 | | 17 | 17 | |
| 22 | 7 | | | 7 | | 7 | 7 |
| 23 | 6 | | 6 | | | 6 | 6 |
| 25 | 33 | 33 | | | 11 | 33 | 22 |
| 26 | 28 | 28 | | | 11 | 28 | 17 |
| 30 | 44 | 44 | | | 10 | 44 | 34 |
| 31 | 9 | 9 | | | 3 | 9 | 6 |
| 32 | 25 | 25 | | | 12 | 25 | 13 |
| Fuel Break | 11 | | | | | 11 | |
| **Total** | **671** | **208** | **287** | **165** | **272** | **399** | **411** |

* Cut to Length (CTL), Tractor (T), Skyline (S)

## Mechanical Cutting

Mechanical fuel reduction treatments completed prior to prescribed burning or grapple piling allows us to redeem the beneficial effects of fire in the ecosystem in a setting of reduced risk to firefighter and public safety. Removal of excessive hazardous fuels prior to the ignition of a prescribed burn increases our opportunities to preserve unique ecosystem components (snags, old growth trees, riparian habitat, etc.) that may otherwise be consumed in a wildfire. Table 2 below summarizes mechanical treatment acres by harvest method.

Table 2. Mechanical Treatments Summary

| Sum of Acres | |
|---|---|
| **Mechanical Cutting** | **Total** |
| Harvester/Forwarder | 208 |
| Fuel Break | 11 |
| Skyline | 165 |
| Conventional Tractor | 287 |
| **Grand Total** | **671** |

**Prescribed Burning:**

Prescribed fire would be used to reduce hazardous fuels and recycle forest nutrients. In areas where slopes permit, an excavator would be used to pile woody debris, otherwise underburning would be used to reduce hazardous fuels and recycle forest nutrients.

Some areas in the project are not conducive to broadcast burning or mechanized activity. In an effort to reduce hazardous fuel loadings and construct fuel breaks, hand crews would be used to:

- Thin small diameter trees
- Reduce shrub cover
- Remove ladder fuels
- Construct and burn slash piles

Table 3 below summarizes fuels treatment acres.

Table 3. Fuels Treatments

| Sum of Acres | |
|---|---|
| **Fuels Treatment** | **Total** |
| Grapple Pile | 388 |
| Hand Pile | 11 |
| Underburn | 272 |
| **Grand Total** | **671** |

**Road Construction and Maintenance:**

A complete roads analysis plan for this project area was prepared through an interdisciplinary team process. No new permanent roads will be constructed. Treatment areas will be accessed using existing classified roads, existing unclassified roads, and new temporary roads. Approximately 1.87 miles of road that is currently impassible and needed for this project will be opened during project activities, and closed after treatment activities are completed.

The proposal would require approximately construction of 0.71 miles of new temporary roads. Temporary road construction is necessary to access National Forest System (NFS) land adjacent to private property and NFS Road #278 in the project area. Each new temporary road constructed would not exceed one half mile in length, and the combined distance of all new temporary road constructed in the project would not exceed one mile.

Traffic on newly constructed temporary roads and on roads opened for the project would be limited to project related activities. Newly constructed temporary roads and roads opened for the project would be gated during the project and decommissioned or placed back in storage after project activities are completed.

ROAD DEFINITIONS
(From FSM 7705)

**Temporary Road** – Road constructed but not necessary for long-term resource management.

**Decommissioning** – Activities that result in the stabilization and restoration of unneeded roads to a more natural state. Includes removal of all stream crossings and full recontour of the entire road prism, introduction of woody debris, and revegetation as needed.

**Storage** – A method of retaining a permanent road for future use but removing features to eliminate hydrologic risks. Includes, recontour of unstable fill slopes, cutslope stabilization, ripping the road tread, installation of no-maintenance cross ditches, and revegetation. Also includes some kind of road closure method such as with a guard rail barrier, gate, an earthen berm, or a short section of full recontour.

**Road Maintenance** – The upkeep of a road necessary to retain or restore the road to the approved road management objective.

**Reconditioning --** Maintenance activities performed prior to use, such as; removal of barricades, clearing trees and brush, general road blading, and construction of drain dips.

**Classified Road** – Road determined to be needed for long-term motor vehicle access.

**Unclassified Road** – Roads on National Forest lands that are not managed in the forest transportation system. Examples include abandoned roads, unplanned roads, and roads constructed previously but not included in the system for maintenance or regular upkeep.

Table 4. Project Area Affected Roads

| ROAD NUMBER | TREATMENT | Miles | Current Status | Status After Project |
|---|---|---|---|---|
| FSR 1050 | Road Maintenance | 3.70 | Classified / Open | Classified / Open |
| FSR 278 | Road Maintenance | 12.80 | Classified / Open | Classified / Open |
| FSR 278H | Road Maintenance | 2.60 | Classified / Open | Classified / Open |
| FSR 278HUC | Recondition | 0.50 | Classified / Open | Classified / Open |
| FSR 278HUD | Recondition | 0.15 | Classified / Open | Classified / Open |
| FSR 278K | Road Maintenance | 1.50 | Classified / Open | Classified / Open |
| FSR 278KA | Recondition | 0.20 | Classified / Open | Classified / Open |
| FSR 278L | Recondition | 0.38 | Classified / Storage | Classified / Storage |
| FSR 278LUA | Recondition | 0.10 | Classified / Impassible | Classified / Decommission |
| FSR 278LUB | Recondition | 0.20 | Classified / Open | Classified / Open |
| FSR 278P | Recondition | 0.11 | Classified / Impassible | Classified / Decommission |
| FSR 278UG | Recondition | 0.51 | Unclassified / Impassible | Unclassified / Decommission |
| FSR 278UGAG | Recondition | 0.11 | Unclassified / Impassible | Unclassified / Decommission |
| FSR 278UKAP | Recondition | 0.20 | Private Road | Private Road |
| FSR 278UKAQ | Recondition | 0.10 | Unclassified / Open | Unclassified / Open |
| FSR 278UKAR | Recondition | 0.32 | Unclassified / Impassible | Unclassified / Decommission |
| FSR 278Z | Recondition | 0.34 | Classified / Storage | Classified / Storage |
| Temporary Road 1 | New Construction | 0.14 | N/A | Decommission |
| Temporary Road 2 | New Construction | 0.21 | N/A | Decommission |
| Temporary Road 3 | New Construction | 0.12 | N/A | Decommission |
| Temporary Road 4 | New Construction | 0.09 | N/A | Decommission |
| Temporary Road 5a | New Construction | 0.05 | N/A | Decommission |
| Temporary Road 5b | New Construction | 0.04 | N/A | Decommission |
| Temporary Road 6 | New Construction | 0.06 | N/A | Decommission |

Table 5. Transportation Activity Summary

| Action | Miles |
|---|---|
| Road Maintenance | 20.60 |
| Reconditioning of Open Roads | 1.35 |
| Reconditioning of Closed Roads | 1.87 |
| Temp Road Construction | 0.71 |
| **Grand Total** | **24.53** |

In addition to the aforementioned activities, the interdisciplinary team has identified the following opportunities to improve stream quality and/or fish habitat:

- Remove an undersized culvert where FSR 278 crosses Tumbledown Creek and install a larger culvert.

- Apply crushed rock and improve surface and ditch drainage where FSR 278 crosses Tumbledown Creek, Gold Creek, Branch North Gold Creek, Kickbush Gulch and Granite Creek.

## Location

The project area is located within the Sandpoint Ranger District on the east side of Lake Pend Oreille at the lower elevations of the Coeur d'Alene Mountains. The project area lies adjacent to private property and homes along Forest Service Road 278 in the North Gold, North Twin, South Twin, Tumbledown, Cedar, Canyon and Brush Creek drainages. The project area is in T53N, R1W, Sections 1, 2 and 3, and T54N, R1W, Sections 10, 11, 14, 15, 22, 23, 25, 26 and 35.

## Field Review

A number of field reviews of the proposed action area were conducted in 2004, 2005, 2006 and 2007 by wildlife biologists and a wildlife technician, along with the project silviculturalist and the project leader, to assess the current habitat conditions, discuss the proposed activities and to identify possible wildlife issues and the potential use of the area by threatened or endangered species. Notes from the field reviews and spreadsheets summarizing this information are located in the project file for wildlife and vegetation.

## Affected Environment

The project area is mostly made up of dense mixed conifer stands in the 70 to 90 year old range with some stands containing a birch and aspen component. The understory in the heavily overstocked stands is nearly depauperate and in more open stands there is a high coverage of ocean-spray and ninebark. The stands within the project area have regenerated naturally after large fires in the 1920s and are now dominated by Douglas-fir, grand fir, western red cedar and western larch, with lesser amounts of western white pine, western hemlock and lodgepole pine. Although variable, many of the stands are overstocked and dominated by pole size trees in the 8 to 16 inch dbh range and contain smaller, sapling size understories of Douglas-fir, grand fir or western red cedar. Some stands contain scattered, large, older western larch and western red cedar fire survivors.

Current canopy closure is generally between 60 and 70 percent. Down fuels are very heavy in most of the stands, particularly along Forest Road 278. The combination of ground fuels and dense forest canopies has created a high fire hazard. Although health and growth of these stands varies from area to area, insect and disease is common to prevalent throughout the project area stands. Shade tolerant species are impacting seral species and decreasing the health and vigor of the stands. Spreadsheets outlining the existing condition of individual units are located in the project file for wildlife and vegetation.

Some stands within the project area that are proposed for treatment have been affected by past timber harvest. Stands receiving a regeneration harvest were opened up, which initiated a trend toward a species composition that is more ecologically stable and within the natural range of variability. Stands receiving a commercial thin or thin from below harvest retained their general structure and species composition, but continue to be impacted by insect and disease and in some stands have regenerated a dense understory of shade-tolerant tree species. Stands receiving an intermediate harvest (e.g. sanitation/salvage, improvement cut) were impacted to varying degrees depending on the condition of the vegetation within each area of the stand at the time of harvest, but generally received a lighter harvest that trended these stands more towards healthy stands of desired tree species.

It is likely that past timber harvest activities removed some of the dead and dying tree components, thereby affecting the availability of snags within harvested areas over time. In some cases, past treatments likely trended stands toward the production of larger diameter, longer-lived snags, while in others it likely reduced snag densities and resulted in an abundance of smaller diameter, shorter-lived snags. Because the effects of past timber harvest are an important component in determining the habitat suitability for wildlife species analyzed, the effects on the environmental baseline from these past activities has been incorporated into the analysis. See the project file for vegetation for a more detailed summary of past timber harvest activities.

The project area is in Management Area 4, which is defined as lands designated for timber production within big game winter range with a goal of managing for big game winter range to provide sufficient forage to support projected big game habitat needs through scheduled timber harvest and permanent forage areas.

## Listed Species

On April 9, 2008, the U.S. Fish and Wildlife Service issue a list of threatened and endangered species that may be present on the Idaho Panhandle National Forests within the evaluation area (USDI Fish and Wildlife Service 2008). Endangered species on the list only include woodland caribou (*Rangifer tarandus caribou*). Threatened species include grizzly bear (*Ursus arctos*) and Canada lynx (*Lynx canadensis*). Although the gray wolf (*Canis lupus*) was removed from the endangered species list in March 2008, a court ruling on July 18, 2008, imposed a preliminary injunction on the delisting of wolves. Consequently, the gray wolf has been re-listed as endangered north of Interstate 90.

Table 6. Threatened and Endangered Species Summary of Conclusion of Effects

| Species | Species or Habitat Present?[1] | Species or Habitat Affected? | Likelihood of Adverse Effects? | Determination of Effects |
|---|---|---|---|---|
| Woodland Caribou | No | No | None | No Effect |
| Canada Lynx | No | No | None | No Effect |
| Grizzly Bear | No | No | None | No Effect |
| Gray Wolf | Yes | No | None | No Effect |

## Rationale for Effects Determination

**Woodland Caribou –** Woodland caribou are generally found above 4,000 feet elevation in the Selkirk Mountains in northeast Washington, southern British Columbia and northern Idaho (USDI Fish and Wildlife Service 1993). They are highly adapted to upper elevation boreal forests and do not occur in drier low elevation habitats except as rare transients.

[1] Species presumed to be present within the affected area based on the distribution of the species, habitat conditions required by the species and the current habitat conditions of the action area.

The project area is located at the lower elevations of the Coeur d'Alene Mountains, on the east side of Lake Pend Oreille, well beyond the bounds of the recovery area and activity patterns of the woodland caribou.

Therefore, the woodland caribou is removed from further consideration because the proposed action area lies outside of designated recovery zones, areas with the appropriate habitat characteristics, and areas with documented use. Consequently, the proposed action would have ***no effect*** on woodland caribou.

**Canada Lynx –** Canada lynx are considered to be a low density species with their distribution closely tied with that of the snowshoe hare, which is their primary prey. In northern Idaho and northwestern Montana, lynx generally occur in moist, cold habitat types above 4,000 feet elevation (Koehler and Brittell 1990). As a specialized predator, lynx have distinguished themselves from other competitors by unique adaptations. Their large feet and long legs permit them to move easily over the snow, enabling them to find a niche at higher elevations where snow persists much of the year.

The Canada Lynx Conservation Assessment and Strategy (LCAS) was developed to provide a consistent approach to conserve Canada lynx on federal lands in the conterminous United States (Ruediger et al. 2000). The LCAS outlines the conservation measures and guidelines for management within delineated Lynx Analysis Units (LAUs), which are the principle unit for evaluating and analyzing potential effects on lynx and lynx habitat. In 2007, the Forest Service completed the Northern Rockies Lynx Management Direction (NRLMD), which adopted many of the recommendations from the LCAS, but incorporated more recent research findings to develop standards and guidelines to protect lynx and their habitat within designated LAUs and linkage zones (USDA Forest Service 2007). Based on the NRLMD and in cooperation with the Canada Lynx Biology Team, the IPNF remapped LAU boundaries to more closely match research findings on what constitutes lynx habitat.

The project area is not within an original or remapped LAU and is located at the lower elevations of the Coeur d'Alene Mountains with the highest elevation of the units proposed for treatment approximately 3400 feet.

Therefore, the Canada lynx was removed from further consideration because the proposed action area lies outside of an established LAU and does not represent a corridor necessary for maintaining connectivity between lynx habitat. Consequently, the proposed would have ***no effect*** on Canada lynx.

**Grizzly Bear –** Grizzly bears are considered habitat generalists, using a broad spectrum of habitats. Populations of grizzly bears persist in areas where large expanses of relatively secure habitat exist and where human-caused mortality is low. Use patterns are usually dictated by food distribution and availability combined with a secure environment. Grizzly bears commonly choose low elevation riparian areas and wet meadows during the spring and are generally found at higher elevation meadows, ridges and open brush fields during the summer. Fall habitats are generally associated with timbered and riparian habitats.

Grizzly Bear Management Units (BMUs) were created by the Forest Service in the early 1980s and later adopted by the U.S. Fish and Wildlife Service to roughly represent the size of a female grizzly bear's home range containing all of the necessary habitat components. These BMUs are the principle unit for evaluating and analyzing potential effects on grizzly bears.

The grizzly bear was removed from further consideration because the project area does not fall within a designated BMU, an area considered to be supporting grizzly bears outside of the established recovery zone, or an area with documented use by the species. In addition, the project area does not represent a corridor that maintains connectivity between grizzly bear habitat. Consequently, the proposed action would have ***no effect*** on grizzly bear.

**Gray Wolf –** Currently gray wolves are listed as endangered north of Interstate 90. Periodic wolf sightings are reported throughout northern Idaho, including the Sandpoint Ranger District. There are three confirmed packs in Idaho north of Interstate 90 (Calder Mountain, Boundary, Solomon Mountain), with none of those occurring within close proximity to the project area (Nadeau et al. 2008). The closest known pack to the project area is the Calder Mountain pack located approximately 33 air miles to the northeast.

Gray wolves occupy a variety of habitat types in response to the abundance and diversity of available ungulate prey. The most important criteria for gray wolf management and recovery is reducing illegal mortality by humans and managing for an abundant prey base.

There would be no detrimental modification of habitat for gray wolves or their prey species resulting from the proposed action. The proposed action would not increase the exposure of wolves to humans and it would not decrease the abundance of prey species available to wolves. In addition, due to the ability of gray wolves to thrive under a variety of land uses, the U.S. Fish and Wildlife Service concluded that successful wolf recovery in the northern Rocky Mountains does not depend on land-use restrictions, with the possible exception of temporary restrictions around active den sites on federally managed lands (USDI Fish and Wildlife Service 2003). Therefore, the proposed action would have ***no effect*** on the gray wolf.

## Cumulative Effects

Since this project would have no effect on any threatened or endangered species, there is no need to consider the impacts from cumulative effects because the proposed action would not be an additional impact on these species.

## Conservation Measures

The following conservation measures would be included to remove or reduce any questionable conflicts. These measures are non-discretionary and are necessary to achieve the current determination of effects.

1. If any endangered, threatened, or sensitive species are located within the areas affected by the proposed action, project activities would be altered, as necessary, in order for the proper protection measures to be taken.

**Statement of Findings**

Based on the above analysis, I conclude that the proposed action would have ***no effect*** on the woodland caribou, Canada lynx, grizzly bear and gray wolf.

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