Gold Crown Fuels Reduction Project

Wildlife Report

Prepared by:

Joe Madison
Wildlife Biologist
IPNF North Zone, Sandpoint Ranger District

April 17, 2008

Wildlife

Abstract

This report analyzes the effects of the Gold Crown 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 Gold Crown Fuels Reduction Project Environmental Assessment.

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 below for 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 A	Alternative B
Threatened and Endangered Species		
Grizzly Bear	No effect	No effect
Woodland Caribou	No effect	No effect
Canada Lynx	No effect	No effect
Sensitive Species		
Bald Eagle	No impact	No impact
Gray Wolf	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
Fringed Moytis	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

Species	Alternative A	Alternative B
Coeur d'Alene Salamander	No impact	No impact
Boreal 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)
- 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 (USFWS) if a proposed activity may affect the population or habitat of a listed species. The USFWS has identified three listed terrestrial species that may occur on the Idaho Panhandle National Forests (USDI Fish and Wildlife Service 2008).

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 include woodland caribou (*Rangifer tarandus caribou*). Threatened species include grizzly bear (*Ursus arctos*) and Canada lynx (*Lynx canadensis*). This list no longer includes the gray wolf because as of March 28, 2008, it has been delisted by the U.S. Fish and Wildlife Service and consequently will be analyzed as a Forest sensitive species.

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.

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.

Species	Rationale for Elimination from Detailed Analysis	Preferred Habitat
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.
Sensitive Species		
Bald Eagle (*Haliaeetus leucocephalus*)	No known nests or winter roosts within the project area. Potential use of privately owned shoreline adjacent to the project area, but has limited value because it is highly developed.	Normally nest and forage near large bodies of water. Winter visitors or yearlong residents of northern Idaho.
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.
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*)	No suitable habitat is present within the project area.	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 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.
Townsend's Big-eared Bat (*Plecotus townsendii*)	No suitable habitat is present within the project area.	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 excluded from project activities by project design.	Springs, seeps, spray zones.

Species	Rationale for Elimination from Detailed Analysis	Preferred Habitat
Management Indicator Species and Others		
American Marten (*Martes americana*)	Project area does not contain the appropriate habitat characteristics to support fisher largely due to the lack 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 three 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.

Species	Rationale for Detailed Analysis	Preferred Habitat
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.
Boreal 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*)	Limited suitable habitat is present within the project area.	Forests with tall, large diameter dead or defective trees for nesting.
White-tailed Deer (*Odocoileus virginianus*)	Limited winter range 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)

Species	Status	Indicator
Fringed Myotis	Sensitive	Changes/trends in suitable habitat (acres)
Boreal 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 to critical winter range

Cumulative Effects Analysis

Present, ongoing, and reasonably foreseeable actions that could contribute to cumulative effects for species being analyzed are identified in Chapter 1 of the Gold Crown EA. Past road construction of currently open or restricted roads is considered to be irretrievable commitments in which potential habitat for various species has been irretrievably "lost". Road construction has removed approximately 24 acres of potential habitat on National Forest lands within the analysis area. These acres identified as irretrievably "lost" through past actions would not change as a result of the proposed action, other present actions or reasonably foreseeable future actions.

Cumulative Effects Analysis Areas

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. This area is referred to as the cumulative effects analysis area, and it may vary between resources. 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 analyzed in detail, the cumulative effects analysis area is the project area boundary, which encompasses approximately 8600 acres (see Figure 1). This represents the size of multiple home ranges for all species analyzed with the exception of goshawk, which this cumulative effects analysis area represents approximately one goshawk home range. The boundaries of the cumulative effects analysis area are drawn along natural topographic features, such as watershed delineations.

Adjacent Lands and Other Ownerships

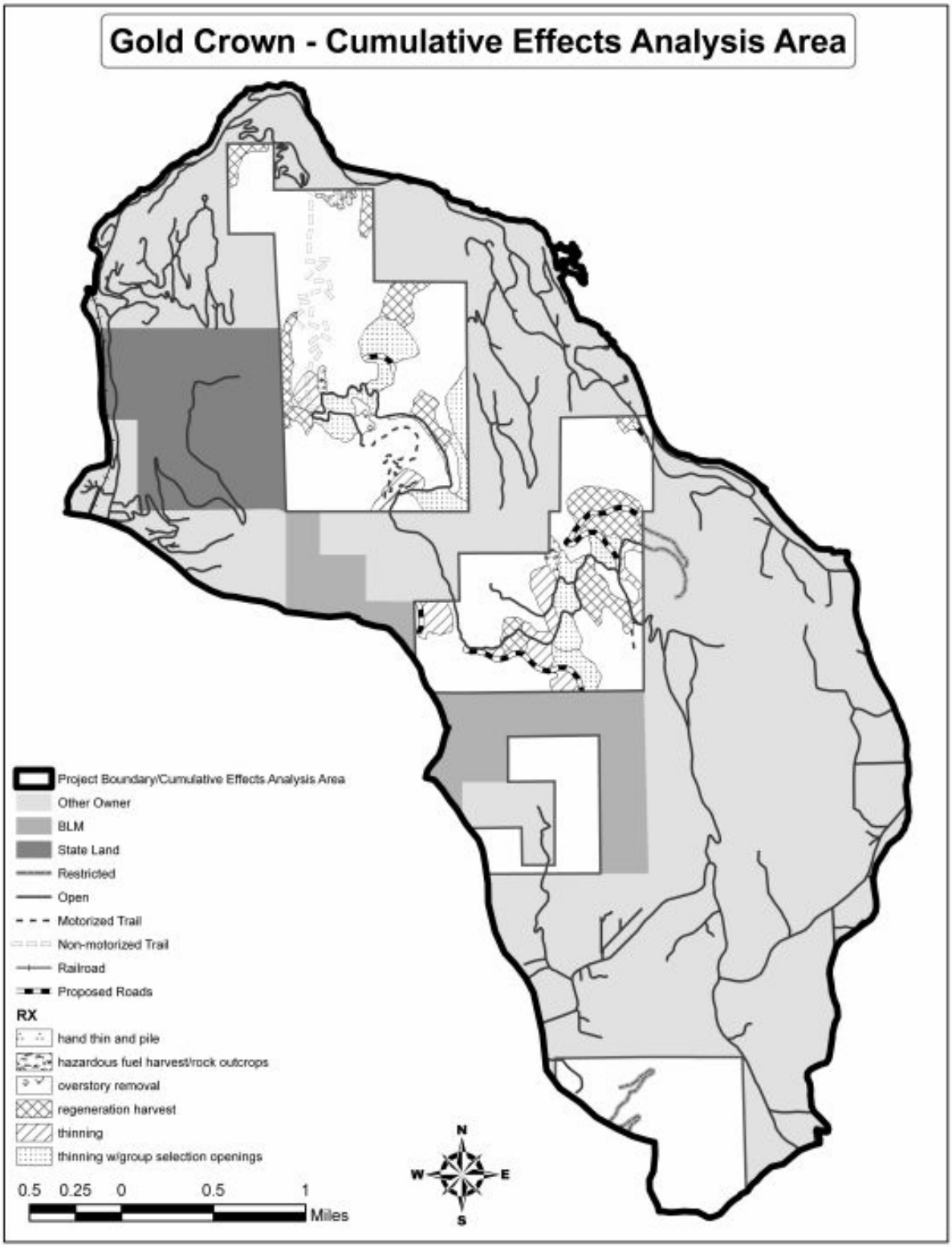
Approximately 6,173 acres or 72 percent of the cumulative effects analysis area is on private lands or other governmental agencies outside the IPNF administrative boundary, including approximately 565 acres administered by the State of Idaho and approximately 515 acres administered by the Bureau of Land Management. Information from these other agencies regarding the existing condition of their lands and any proposed activities on their portion of the cumulative effects analysis area has been incorporated into the analysis for this project in the appropriate locations.

Approximately 5,093 acres of private lands are within the cumulative effects area including several private residences with the number of residences continuing to increase. Activities associated with these residences include, but are not limited to, road construction, road maintenance and use, lot clearing, hazardous fuels reduction around homes, and conversion of once forested lands to grassy areas. As a

result, these ownerships are highly susceptible to adverse habitat modifications, and the presence of suitable habitat on these lands for the species analyzed cannot be relied upon over time.

Through aerial photograph interpretation, we can determine how many acres of private lands are currently forested, and roughly estimate overstory canopy cover on these properties. However, determining habitat suitability for species analyzed would be a dubious endeavor. Important structural habitat components such as tree diameter, the number of canopy layers, and the presence of snag and down woody material would not be discernable from aerial photos, along with other factors such as the extent of human use on some of these lands. The cost and difficulty of obtaining this information through field reviews on private property would be exorbitant and of limited value, given their strong propensity toward irretrievable habitat alterations. Therefore, although these lands may provide limited suitable habitat for some species analyzed, the assumption will be made that these lands are not contributing suitable habitat for species analyzed.

Figure 1. Gold Crown Wildlife Cumulative Effects Analysis Area



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). This has been an approximately 80 percent decline from historic conditions. Therefore, flammulated owls were probably more abundant in the past than they are today.

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 cumulative effects analysis area encompasses approximately 8,600 acres, with National Forest lands constituting approximately 2,427 acres or 28 percent. Of these acres, approximately 429 acres or 10 percent represent drier forest habitats associated with capable flammulated owl habitat. These drier habitats tend to produce older, single strata ponderosa pine/Douglas-fir communities, which in turn provide the necessary habitat attributes for flammulated owls. However, the change in forest tree species composition and structure from decades of fire suppression, insects and diseases, has caused a decline in habitat conditions favoring flammulated owls.

Currently, approximately 86 acres of the capable habitat exhibit the characteristics necessary to be considered suitable flammulated owl habitat. The lack of suitable habitat is due to the combination of

relatively young stands, insect and disease infestations and older stands that have a dense secondary canopy layer that may prohibit foraging by flammulated owls.

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. Recent bat surveys documented the presence of fringed myotis in adits on the Sandpoint Ranger District, but to date they have only been documented on the east side of Lake Pend Oreille. There are no known mine shafts or adits within the cumulative effects analysis area.

Environmental Consequences

Methodology

Flammulated owl habitat within the cumulative effects analysis area was evaluated using habitat data in the Forest timber stand database (TSMRS), in the habitat spreadsheet created for this project and the Vegetative Response Unit (VRU) information for State and BLM lands. 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 three 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 project wildlife biologist, together with the project forester, evaluated stands that met the above criteria on a stand-by-stand basis to assess the tree size and age class, species composition, stand structure, incidence of insect and disease, canopy closure and snag availability (see Project File – Wildlife). The *Dry Site Habitat Classification* system, created to evaluate habitat for flammulated owl and other dry site-associated wildlife species (such as pygmy nuthatch and fringed myotis), was then used to categorize the stands based on their existing attributes and the level of management that would be necessary to trend the stand toward suitability (see Project File – Wildlife).

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 A

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 Gold Crown EA, Chapter 3 – Vegetation). 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 Gold Crown EA, Chapter 3 – Fire and Fuels). 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 B

Alternative B would treat approximately 14 acres of capable flammulated owl habitat. There would be no project activities in suitable flammulated owl habitat. The proposed treatments under this alternative would affect less than 2 percent of the flammulated owl habitat within the cumulative effects analysis area.

Approximately 13 acres of capable habitat would be treated with a regeneration harvest (see Gold Crown EA, Chapter 2 for detailed definitions of treatments). Harvest activities would include the yarding of

unmerchantable material to reduce hazardous fuels and the planting of seral species. This treatment would result in a more open landscape with scattered individual and patches of trees. All of the acres receiving a regeneration harvest would remain capable after treatment. However, the canopy closure would be reduced below what is typically utilized by flammulated owls for nesting. The existence of advanced insect and disease in this stand facilitate the need for this type of treatment. In the long term (80 to 100 years), this treatment, along the planting of seral species, would alter the species composition and trend the stand toward longer lived, more disease-resistance species like ponderosa pine (see Gold Crown EA, Chapter 3 – Vegetation). This would promote the restoration of more open grown, older forests of ponderosa pine/Douglas-fir in these stands and promote the recruitment of larger diameter, longer-lived snags that would trend the acres toward suitable habitat and enhance the long-term stability of flammulated owls and other dry site associated species.

Less than an acre of capable habitat would be treated with a thinning prescription (see Gold Crown EA, Chapter 2 for detailed definitions of treatments). Harvest activities would be followed by grapple piling and burning to reduce hazardous fuels. The treated area would remain capable flammulated owl habitat following treatment because the proposed action 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.

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 - Wildlife Tree Retention). 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.

Cumulative Effects of Alternative B

Activities identified below from the lists in Chapter 1 of the Gold Crown EA are the past, present and reasonably foreseeable actions within the analysis area that are relevant to the flammulated owl cumulative effects analysis.

Wildfire Suppression – There is a history and ongoing policy of fire suppression within the analysis area over approximately the past 77 years, which has led to an increase in tree density caused by the encroachment of shade tolerant species within dry site habitat. This increase in tree density has decreased the availability of the more open ponderosa pine/Douglas-fir stands selected by flammulated owls and has therefore had a negative impact on the flammulated owls. The implementation of the action alternative would help decrease the negative effects on flammulated owl habitat from fire suppression.

Firewood Cutting and Gathering – Firewood cutting and gathering is anticipated to continue within 200 feet of open Forest roads and motorized trails within the analysis area. These areas are considered to be deficit in snags from past firewood gathering and therefore do not currently provide habitat for flammulated owls. The implementation of the action alternative would not increase the amount of open roads and consequently there would be no change in the potential removal of snags for firewood.

Timber Harvest on Other Government Lands – The State of Idaho is expected to harvest approximately 105 acres within the analysis area during the summer/fall of 2008. Their plan calls for an 82 acre commercial thin, a 15 acre seed tree regeneration and an 8 acre overstory removal of a previously thinned stand. As discussed in the introduction to the cumulative effects analysis, although state lands may contain capable flammulated owl habitat, due to the uncertainty of management actions and the lack of

detailed habitat data, this analysis assumes no contribution of suitable habitat for sensitive species. Consequently, National Forest lands have become an important source of habitat and the implementation of the action alternative would trend a small amount of acres toward dry site habitat used by flammulated owl habitat, pygmy nuthatch and fringed myotis in the long term (80 to 100 years).

Activities on Private Ownerships – The lands surrounding the project area are largely owned by private individuals or industry. Historically, portions of these lands likely represented suitable flammulated owl nesting habitat. However, the development of residences, construction of roads, timber harvesting and other activities associated with human presence have severely limited or eliminated the suitability of these lands as flammulated owl habitat. Consequently, National Forest lands have become an important source of habitat and the implementation of the action alternative would trend a small amount of acres toward dry site habitat used by flammulated owl habitat, pygmy nuthatch and fringed myotis in the long term (80 to 100 years).

Conclusion of Effects

In combination with past natural and human-caused events, the effect of the action alternative would help restore natural processes on approximately 13 acres of dry site habitat by favoring the tree species, composition and structure that is within the natural range of variability for dry site ecosystems (see Gold Crown EA, Chapter 3 – Vegetation). No currently suitable flammulated owl, pygmy nuthatch and fringed myotis habitat would be impacted by project activities.

Although disturbance to habitat would occur during project activities, the treatments have been designed to promote the habitat attributes necessary to support dry site species such as flammulated owl, pygmy nuthatch and fringed myotis. The implementation of the action alternative would meet the purpose and need of promoting the long-term persistence and stability of wildlife habitat diversity with respect to the flammulated owl, 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 (8,581 ha of 9,045,255 ha or 0.09% of the forested landscape) is insignificant.

Consequently, the implementation of the action alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions discussed above, would have an inconsequential or discountable negative effect on the species. Therefore, the implementation of Alternative B ***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***.

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 A 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 77 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 Gold Crown 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 A

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 Gold Crown EA, Chapter 3 – Fire and Fuels). 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 B

Alternative B would harvest trees on approximately 573 acres that contain some form of snag habitat (see Project File – Wildlife). In the long term (more than 80 years in regeneration units and 20 to 50 years in commercial thin units), Alternative B would increase the occurrence of quality snags (longer lived, seral tree species such as western larch and ponderosa pine) by converting areas at high risk of insect and disease (i.e., Douglas-fir and grand fir) to more resilient, longer-lived species.

However, the action alternative would likely represent an overall decrease in snags in the short term, 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 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 – Wildlife Tree Retention). 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 underburning, thereby creating additional snag habitat on approximately 269 acres.

Although the proposed action would reduce the quantity of available small snag habitat within the treatment areas, approximately 76 percent of the National Forest lands within the analysis area would remain untreated under the proposed harvest 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.

Cumulative Effects of Alternative B

Activities identified below from the list in Chapter 1 of the Gold Crown EA are the past, present and reasonably foreseeable actions within the analysis area that are relevant to the black-backed woodpecker cumulative effects analysis.

Wildfire Suppression – There is a history and ongoing policy of fire suppression within the analysis area over approximately the past 77 years, which has led to an increase in tree density caused by the encroachment of shade tolerant species within dry site habitat. This has resulted in a more homogenous vegetative species composition and structure that produces smaller, shorter-lived snags. Consequently, there is a lack of fire burned snags, which supports larger numbers of insects and black-backed woodpeckers than areas of insect infestation alone. The implementation of the action alternative would help decrease the negative effects on black-backed woodpecker habitat from fire suppression.

Timber Harvest on Other Government Lands – The State of Idaho is expected to harvest approximately 105 acres within the analysis area during the summer/fall of 2008. Their plan calls for an 82 acre commercial thin, a 15 acre seed tree regeneration and an 8 acre overstory removal of a previously thinned stand. As discussed in the introduction to the cumulative effects analysis, although state lands may contain capable black-backed woodpecker habitat, due to the uncertainty of management actions and the lack of detailed habitat data, this analysis assumes no contribution of suitable habitat for sensitive species. Consequently, National Forest lands have become an important source of habitat and the implementation the action alternative would maintain the ability of the cumulative analysis area to support the population at low levels, such as currently exists.

Activities on Other Ownerships – The lands surrounding the project area are entirely owned by private individuals or industry. Historically, portions of these lands likely represented suitable black-backed woodpecker habitat due to the presence of periodic fire. However, the development of residences, construction of roads, timber harvesting, firewood collecting, fire suppression and other activities associated with human presence have likely limited the availability of snags and the suitability of these lands as black-backed woodpecker habitat. Consequently, National Forest lands are an important source of black-backed woodpecker habitat and the implementation the action alternative would maintain the ability of the cumulative analysis area to support the population at low levels, such as currently exists.

Firewood Cutting and Gathering – Firewood cutting and gathering is anticipated to continue within 200 feet of open Forest roads and motorized trails within the analysis area. These areas are considered to be deficit in snags from past firewood gathering and therefore do not currently provide habitat for black-backed woodpeckers. The implementation of the action alternative would not increase the amount of open roads and consequently there would be no change in the potential removal of snags for firewood.

Conclusion of Effects

The proposed action, 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 close 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 the proposed action. In addition, there would 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 timber harvest in the Northern Region (in 2004, 1,210 ha of 2,276,588 ha or 0.05%) or overall timber harvest (in 2006 – 6,876 ha of 9,045,255 ha or 0.08% of the forested landscape) and IPNF (1397 ha of 999,733 forested ha or 0.14%) is insignificant.

Consequently, the implementation of the action alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions discussed above, ***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.

Boreal Toad

Existing Condition

Boreal 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). Boreal toads have been documented traveling more than four kilometers (approximately 2.5 miles) between terrestrial burrows and breeding sites (Maxell 2000). The diet of boreal toads includes insects, spiders, mites, millipedes, ants, and ground beetles. The boreal 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 boreal 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 boreal toads were absent from a large portion of their historic range and occupied only a small proportion of suitable habitat (Maxell 2000).

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 boreal toads.

Although there have been no documented observations of boreal toads within the analysis area, their presence is likely based on the widespread distribution of the species. Although the analysis area is

generally considered to be relatively dry, largely due to topography, potential boreal toad breeding habitat is scattered throughout the analysis area in the form of ponds and the shallow portions of a few lakes.

Environmental Consequences

Methodology

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

Direct, Indirect and Cumulative Effects of Alternative A

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 boreal toad from this alternative and since there would be no direct or indirect effects on boreal toad there would be no cumulative effects.

Direct and Indirect Effects of Alternative B

Implementation of the action alternative may result in the temporary disturbance of boreal toads and boreal toad terrestrial habitat within the treatment areas. Approximately 537 acres would be treated under Alternative B and approximately 264 acres would be logged using some form of tractor harvesting, which has the greatest potential to directly impact boreal toads. Of the remaining acres, approximately 238 acres would be harvested using a skyline system, approximately 65 acres would be helicopter logged and approximately 6 acres would be hand treated. Although skyline harvesting can directly impact boreal toads, there is a greatly reduced risk of ground disturbance from this method as compared to timber harvest using strictly ground-based equipment because of the decrease in skid trails. Helicopter logging and hand treatments substantially reduce the chances of direct disturbance to boreal toads because of the minimal use of roads, no skid trails and no ground-based equipment present within the stands.

There is a possibility that boreal toads could be temporarily displaced or killed due to vehicles, tree removal, skid trails, roads, fireline construction and underburning. This disturbance would be relatively short term in nature, lasting only as long as project activities and boreal toad activity would resume in the area following project completion. Boreal 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 boreal 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 Gold Crown EA, Chapter 3 - Aquatics and the appendix outlining the BMPs for Aquatic Resources) and the implementation of the proposed action would also be in compliance with Inland Native Fish Strategy (INFS) standards, which require that protective measures be implemented to protect waterways and wetlands (see the Gold Crown EA appendix detailing the INFS Standards and Guidelines). Per the project design, there would be no activities within RHCAs, other than the use of existing roads and stream crossings, and road maintenance activities. Therefore, the chance of project activities having an impact on potential breeding habitat would be negligible.

Cumulative Effects of Alternative B

Activities identified below from the list in Chapter 1 of the Gold Crown EA are the past, present and reasonably foreseeable actions within the analysis area that are relevant to the boreal toads cumulative effects analysis.

Timber Harvest on Other Government Lands – The State of Idaho is expected to harvest approximately 105 acres within the analysis area during the summer/fall of 2008. Their plan calls for an 82 acre commercial thin, a 15 acre seed tree regeneration and an 8 acre overstory removal of a previously thinned stand. As discussed in the introduction to the cumulative effects analysis, although state lands may contain capable boreal toad habitat, due to the uncertainty of management actions and the lack of detailed habitat data, this analysis assumes no contribution of suitable habitat for sensitive species.

Activities on Other Ownerships – The lands surrounding the project area are largely owned by private individuals or industry. Historically, portions of these lands likely contained suitable boreal toad habitat. However, the development of residences, construction of roads, timber harvesting and other activities associated with human presence have likely impacted, to some degree, the suitability of this area as boreal toad breeding habitat.

Noxious Weeds Monitoring and Treatment – This activity would follow the guidelines established in the Sandpoint Noxious Weeds Control Project EIS (USDA Forest Service 1998). Effects to the aquatic resource were analyzed in that document and its adaptive strategy. No additional effects to the aquatic resource are expected to occur.

Conclusion of Effects

There is a possibility of displacement and/or mortality to boreal toads as a result of the proposed action. However, all above ground water sources and consequently potential boreal toad breeding habitat would be protected (see Gold Crown EA, Chapter 2, Design Features – Aquatics).

Therefore, the implementation of the action alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions discussed above, ***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). However, based on research conducted in Montana and the subsequent recommendations from the Regional Office, nest stands within the Gold Crown project area will consist of a minimum of 40 acres in size (Clough 2000).

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, and 2) reducing herbaceous understory that supports potential prey species (Wisdom et al. 2000).

The cumulative effects analysis area encompasses approximately 8,600 acres, with National Forest lands constituting approximately 2,427 acres or 28 percent and lands managed by other governmental agencies (BLM and the State of Idaho) constituting an additional approximately 1080 acres or 13 percent. Approximately 36 percent of the cumulative effects analysis area is considered capable or suitable goshawk nesting habitat. Of these acres, approximately 3,127 acres are capable northern goshawk habitat, of which approximately 129 acres is considered to be currently in a suitable condition for goshawk nesting. See Table 5 for a breakdown of the current structural class of habitat within the analysis area.

Much of the habitat that is considered to be capable and suitable consists of relatively small blocks or peninsulas of National Forest lands surrounded by private and timber industry lands, which can decrease the suitability of the analysis area as goshawk nesting habitat. As discussed in the Vegetation and Fire and Fuels sections of the Gold Crown EA, fire exclusion, insects, and diseases have changed the species composition and structure of many stands, reducing their suitability for goshawk habitat. Much of the capable habitat within the analysis area consists of young, immature stands that do not contain larger diameter trees used by goshawks for nesting or they are mature stands that contain a high density of smaller stems in the understory. As the secondary canopy layer becomes more congested, these stands lose their effectiveness as goshawk foraging areas.

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 two stands of designated old growth within the project area and there are no activities proposed within them.

Forest changes have also adversely affected habitat suitability for goshawks by obstructing flight corridors used by goshawks to obtain prey, by suppressing tree growth that would produce large-diameter trees for nesting, and by reducing the herbaceous understory that supports potential prey species.

Surveys to locate goshawk nest territories within the Gold Crown analysis area were conducted during the 2005 and 2007 nesting seasons by qualified wildlife biologists and technicians (see Project File – Wildlife). Habitat information, slope, aerial photos, information on the historic use of the area by goshawks and sighting reports were used to determine the most appropriate areas to conduct goshawk nest surveys. Broadcast surveys were conducted from 30 calling stations within the project area. Additional point locations were site surveyed, but were determined to be not suitable for goshawk nesting. Consequently, broadcast surveys were not conducted at these points. A goshawk was observed in flight during one of the calling station surveys in 2007 and an active goshawk nest was subsequently located in the same general area. The stand with the active nest was being considered for treatment under the proposed action, but due to the existence of the nest it was eliminated from further consideration.

As recommended by research, an additional five nest areas of at least 40 acres each have been delineated representing the habitat that most closely matches suitable goshawk nesting habitat within the cumulative effects analysis area. These five nest areas have been eliminated from consideration for treatment under the Gold Crown project so that the recommended amount of nest sites and alternate sites would be maintained.

Environmental Consequences

Methodology

Northern goshawk habitat within the cumulative effects area was evaluated using habitat data in the Forest timber stand database (TSMRS), in the habitat spreadsheet created for this project and the Vegetative Response Unit (VRU) information for State and BLM lands (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.

Reynolds et al. (1992) recommends analyzing a goshawk's home range based on the availability of habitat within different vegetative structural classes. Within a goshawk home range, Reynolds et al. (1992) recommends maintaining or trending toward a VSS distribution of approximately 10 percent in grass/forb/shrub (VSS 1), 10 percent seedling/sapling (VSS 2), 20 percent young forest (VSS 3), 20 percent mid-aged forest (VSS 4), 20 percent in mature forest (VSS 5) and 20 percent in old forest (VSS 6). The existing condition and proposed post treatment VSS percentages are summarized in Table 5.

This analysis assumes that stands with a regeneration harvest without any proposed reforestation reverts stands to the grass/shrub stage and regeneration harvests in stands with reforestation activities reverts stands to a seedling/sapling stage , while a thinning or thinning with group selection harvest does not change the predominant size class of the stand. Although within each stand treated with a regeneration harvest the majority of area would be converted to the grass/shrub or seedling/sapling structural class, in some patches there would be enough trees remaining to potentially be categorized as VSS 3, VSS 4 or VSS 5. Consequently, this analysis will slightly underestimate the percent of the home range 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 could occur that are not accounted for in this analysis.

Table 5. VSS percentages for National Forest Lands within the Gold Crown Analysis Area

VSS	Size Class	Recommended Percentage per VSS[1]	Existing Condition	Alt A – No Action	Alt B – Proposed Action
1	Grass/Shrub	10%[1]	2%	2%	3%
2	Seedling/Sapling	10%[1]	6%	6%	14%
3	Immature/Pole	20%[1]	8%	8%	8%
4	Immature/Medium	20%[2]	73%	73%	64%
5	Mature/Large	20%[2]	9%	9%	9%
6	Old Growth	20%[2]	2%	2%	2%

[1]Based on Reynolds et al. 1992

Direct, Indirect and Cumulative Effects of Alternative A

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 A 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 A 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 B

Alternative B would treat approximately 573 acres of capable goshawk habitat. No suitable goshawk habitat would be treated. Of the acres that would be treated, approximately 269 acres would be

underburned following harvest, approximately 233 acres would be piled and burned, and approximately 44 acre would receive a yarding of unmerchantable fuels treatment. The proposed treatments under this alternative would affect approximately 18 percent of the capable goshawk habitat and none of the suitable goshawk habitat within the cumulative effects analysis area. Following treatment there would be no change in the amount of acres of capable or suitable goshawk habitat within the analysis area (see Table 6). None of the proposed road construction is within suitable goshawk habitat.

Approximately 207 acres of the capable habitat would be treated with a regeneration harvest (see Gold Crown EA, Chapter 2 for detailed description of treatments). The treatment would result in a more open landscape with scattered individual and patches of trees. Although these acres would remain capable habitat following treatment, the stand structure would be transitioned to an earlier successional stage. The need for this type of treatment on the acres is precipitated by the high incidence of insect and disease present within these stands. The impact of the insect and disease hinders the ability of these stands to advance toward suitable goshawk nesting habitat due to the accompanying loss of canopy closure and the congested understory. As a result, even without treatment it is unlikely these acres would continue to progress toward a forest structure suitable for goshawk nesting habitat. The proposed treatment would allow for the development of more ecologically stable stands over time, which would trend these stands more toward conditions within their natural range of variability.

Under this alternative, approximately 129 acres of capable habitat would be treated with a commercial thin and approximately 213 acres of capable habitat would be treated with a commercial thin with group selection (see Gold Crown EA, Chapter 2 for detailed descriptions of treatments). All of these acres are currently in an immature size class and consequently does not represent suitable goshawk nesting habitat. These treatments would result in a relatively closed forest landscape with some small openings interspersed throughout. Acres receiving the group selection treatment would have larger openings of between one and four acres in size where pockets of insect and disease currently exist. As a result of these treatments, 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. The reduction in competition for nutrients would accelerate the ability of these acres to trend toward suitable goshawk 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.

Of the remaining 24 acres of capable goshawk habitat being treated under this alternative, approximately 11 acres would be treated with a hazard fuels treatment on rock outcrops, 6 acres would receive an overstory removal treatment and six acres would receive a hand thinning. The 17 acres consisting of the rock outcrops and the overstory removal are currently in an immature size class with low canopy closures and only currently represent potential goshawk foraging habitat, which would remain the case following treatment. On the six acres receiving the hand thin, this stand is also currently in an immature size class, but has a higher canopy closure. The treatment would not reduce the canopy closure, but would slightly open up the understory, which would potentially allow for better foraging opportunities for goshawks due to a less congested flight path.

As displayed in Table 5, the existing condition of the analysis area is currently deficit in the grass/shrub, seedling/sapling, mature and old growth structural stages and is above the percentages noted in the research for immature/medium structural stages. Alternative B would trend the Gold Crown analysis area closer to achieving the recommended VSS proportions, particularly in comparison to the existing condition.

Table 6. Northern goshawk habitat comparison of existing condition and alternatives

	Existing Condition	Alternative A Acres Treated	Alternative A Post Project	Alternative B Acres Treated	Alternative B Post Project
Acres	2,998 capable 129 suitable	0 capable 0 suitable	2998 capable 129 suitable	573 capable 0 suitable	2998 capable 129 suitable

Similarly to the VSS analysis of the home range, Reynolds et al. (1992) and others recommend analyzing a post-fledgling family area (PFA) of approximately 420 acres roughly centered on suitable and alternative nest sites. Within this PFA various research recommends maintaining or trending toward the vegetative structural classes (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). Several of the research projects combined VSS 4, VSS 5 and VSS 6 for analysis purposes, so the analysis of this project will do the same, but will also compare those VSS classes separately with recommendations contained within Reynolds et al. 1992. An analysis of forest structure classes within the PFA surrounding the 2007 goshawk nest location was conducted and mapped using the best possible habitat within the PFA area as the alternate nest site (see Project File – Widlife). The acres included in the active and alternate nest areas were excluded from the PFA analysis as recommended by research (Reynolds et al. 1992). The same assumptions described previously in the analysis of the home range apply to the analysis of the PFA. The existing condition and proposed post treatment VSS percentages within the PFA are summarized in Table 7.

Based on the habitat percentages displayed in Table 7, the existing condition of the Gold Crown PFA is currently deficit in the grass/shrub, seedling/sapling, mature and old growth structural stages and is above the percentages noted in the research for immature/medium structural stages. Following treatment under the proposed action, the PFA would remain lacking in the mature and old growth structural classes, but the PFA would more closely match the recommendations for the grass/shrub and seedling/sapling structural classes. In addition, although the immature/medium structural stage would continue to be well above the recommended proportion, it would be reduced by approximately 107 acres or 25 percent. 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. Consequently, the proposed action would also trend the Gold Crown PFA closer to achieving the recommended VSS proportions, particularly in comparison to the existing condition.

Table 7. VSS percentages within the Gold Crown PFA

VSS	Size Class	Recommended Range per VSS	Existing Condition	Alternative B – Proposed Action
1	Grass/Shrub	7 to 11%[1]	0%	7%
2	Seedling/Sapling	4 to 17%[1]	0%	20%
3	Immature/Pole	6 to 66%[1]	22%	20%
4	Immature/Medium	20%[2]	78%	53%
5	Mature/Large	20%[2]	0%	0%
6	Old Growth	20%[2]	0%	0%
4,5,6	Medium/Mature/Old	11 to 66%[3]	78%	53%

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

To reduce the potential for disturbance or disruption of nesting goshawks within the analysis area, no project activities within half a mile of a known or discovered goshawk nest would occur during the nesting period of March 15 through August 15. In addition, a 40 acre year round no activity area centered around the 2007 nest has been designated to minimize or eliminate impacts on the nest site. See Design Features, Wildlife – Goshawk Protection for a more detailed description of the protective measures in place to limit the potential disturbance to goshawks from project activities.

Cumulative Effects of Alternative B

Activities identified below from the list in Chapter 1 of the Gold Crown EA are the past, present and reasonably foreseeable actions within the analysis area that are relevant to the northern goshawk cumulative effects analysis.

Timber Harvest on Other Government Lands – The State of Idaho is expected to harvest approximately 105 acres within the analysis area during the summer/fall of 2008. Their plan calls for an 82 acre commercial thin, a 15 acre seed tree regeneration and an 8 acre overstory removal of a previously thinned stand. As discussed in the introduction to the cumulative effects analysis, although state lands may contain capable northern goshawk habitat, due to the uncertainty of management actions and the lack of detailed habitat data, this analysis assumes no contribution of suitable habitat for MIS species. Consequently, National Forest lands have become an important source of habitat for northern goshawks.

Activities on Other Ownerships – The lands surrounding the project area are largely owned by private individuals or industry. Historically, portions of these lands likely represented suitable northern goshawk nesting habitat. However, the development of residences, construction of roads, timber harvesting and other activities associated with human presence have severely limited the suitability of these lands as suitable goshawk nesting habitat. Consequently, National Forest lands have become an even more important source of habitat for northern goshawks.

Wildfire Suppression – There is a history and an ongoing policy of fire suppression within the analysis area over approximately the past 77 years, which has led to an increase in tree density in stands that would have historically been reverted to an earlier successional stage by periodic wildfires. This increase in tree density has propagated understory overcrowding in goshawk habitat and decreased the ability of goshawk to forage due to the loss of flight paths. The implementation of the action alternative would help decrease the negative effects on goshawk habitat from fire suppression.

Conclusion of Effects

After implementation of this alternative, 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 proposed action 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 82 percent of goshawk habitat within the cumulative effects analysis area would not be impacted by project activities.

Based on the above analysis, the proposed action 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 (8,581 ha of 9,045,255 ha or 0.09% of the forested landscape) is insignificant.
- Suppression of natural ecological processes has increased and continues to increase amounts of northern goshawk habitat.

Consequently, the implementation of Alternative B, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions discussed above, would have a negligible effect on the species. Therefore, the implementation of Alternative B ***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, the proposed action would be in compliance with the Forest Plan.

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 1910, 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.

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 in the Gold Crown analysis area. Currently, only approximately 279 acres or less than 3% of the analysis area is in a mature size class, including approximately 48 acres of old growth. There are currently two blocks of contiguous mature forest habitat 50 to 100 acres in size within the cumulative effects analysis area with all other mature stands geographically separated from one another, which does not provide nesting habitat.

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, particularly on blocks of mature forest and the distribution and quality of large-diameter tree and snag habitat.

Direct, Indirect and Cumulative Effects for Alternative A

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 Gold Crown EA, Chapter 3 – Vegetation). 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 A 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 Alternatives B

Alternatives B would harvest trees on approximately 573 acres that contain some form of snag habitat (see Project File – Wildlife). Of the acres to be treated under this alternative, approximately 24 acres are currently mature forest habitat and approximately 531 acres are immature forested habitat. Of the mature stands, only approximately 13 of those acres are located within a block of contiguous, mature forest habitat of at least 50 to 100 acres, which is considered necessary for pileated woodpecker nesting habitat (see Project File – Wildlife). This alternative would leave one of the blocks of potential nesting habitat unaltered and overall approximately 91 percent of the acres of mature forest within the cumulative effects analysis area would be left untreated. None of the proposed road construction is within suitable pileated woodpecker nesting habitat.

The proposed action for the approximately 24 acres of mature habitat and approximately 183 acres of immature forested habitat to be treated under this alternative would be a regeneration harvest, which would result in a more open landscape with scattered individual and patches of trees. 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 these stands being dominated by shade-tolerant species that are more susceptible to disturbance and insects and disease at an earlier stage in their development than are seral species (see Gold Crown EA, Chapter 3 – Vegetation). 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 a regeneration harvest would continue to trend farther away from providing suitable nesting habitat for pileated woodpeckers.

Although the proposed action would revert the acres treated with a regeneration harvest back to an early succession stage and would reduce the number of mostly smaller diameter snags, in the long term (approximately 80 to 100 years), the acres receiving this harvest 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 348 acres would receive a thinning, thinning with group selection or hand thinning treatment. All of these acres are currently in an immature size class and consequently does not represent suitable pileated woodpecker nesting habitat. The treatment would result in a relatively closed forest landscape with some small openings interspersed throughout. Acres receiving the group selection treatment would have larger openings of between one and four acres in size where pockets of insect and disease currently exist. As a result of these treatments, 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. 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. This 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. In addition, the block of mature forest habitat containing 13 acres of treatment would continue to provide a sufficient amount of mature forest habitat to remain suitable pileated woodpecker nesting habitat after treatment.

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 Wildlife Design Features, Wildlife Tree Retention). 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.

Cumulative Effects of Alternative B

Activities identified below from the list in Chapter 1 of the Gold Crown EA are the past, present and reasonably foreseeable actions within the analysis area that are relevant to the pileated woodpecker cumulative effects analysis.

Wildfire Suppression – There has been a history and ongoing policy of fire suppression within the analysis area over the past approximately 77 years, which has led to an increase in tree density in stands that would have historically been reverted to an earlier successional stage by periodic wildfires. This has resulted in a more homogenous vegetative species composition and structure that produces smaller, shorter-lived snags, which has limited the ability of stands to produce larger, longer-lived snags utilized by pileated woodpeckers. The implementation of the action alternative would help decrease the negative effects on pileated woodpecker habitat from fire suppression by trending the habitat toward the production of larger, longer-lived trees and snags.

Timber Harvest on Other Government Lands – The State of Idaho is expected to harvest approximately 105 acres within the analysis area during the summer/fall of 2008. Their plan calls for an 82 acre commercial thin, a 15 acre seed tree regeneration and an 8 acre overstory removal of a previously thinned stand. As discussed in the introduction to the cumulative effects analysis, although state lands may contain capable pileated woodpecker habitat, due to the uncertainty of management actions and the lack of detailed habitat data, this analysis assumes no contribution of suitable habitat for MIS species. Consequently, National Forest lands have become an important source of habitat and the implementation of the action alternative would trend the project area toward improved habitat for pileated woodpeckers.

Activities on Other Ownerships – The lands surrounding the project area are largely owned by private individuals or industry. Historically, portions of these lands likely represented suitable pileated woodpecker nesting habitat. However, the development of residences, construction of roads, timber harvesting and other activities associated with human presence have likely limited the suitability of these lands for nesting pileated woodpeckers. Consequently, National Forest lands have become an even more important source of habitat for pileated woodpeckers and the implementation of the action alternative would trend the project area toward improved habitat for pileated woodpeckers.

Firewood Cutting and Gathering – Firewood cutting and gathering is anticipated to continue within 200 feet of open Forest roads and motorized trails within the analysis area. These areas are considered to be deficit in snags from past firewood gathering and therefore do not currently provide habitat for pileated woodpeckers. The implementation of the action alternative would not increase the amount of open roads and consequently there would be no change in the potential removal of snags for firewood.

Conclusion of Effects

Although 13 acres of mature habitat would be treated with a regeneration harvest, the implementation of the action alternative would maintain the two blocks of suitable pileated woodpecker nesting habitat within the cumulative effects analysis area such as currently exists. The current level of old growth within the cumulative effects analysis area would also be maintained as there would be no project

activities within designated old growth. The proposed action 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 (8,581 ha of 9,045,255 ha or 0.09% of the forested landscape) is insignificant.

Consequently, the implementation the action alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions discussed above, ***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 A, 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, the proposed actions 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). 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. Conversely, during summer, deer use a broader elevational range of habitats.

During winter, white-tailed deer are generally found on the valley bottoms and lower benches. Dense tree cover is probably the most critical component of winter. As winter temperatures decrease and snow depth increases, deer select habitats to minimize energy expenditure and maintain a positive energy balance.

Close-canopy stands reduce their heat loss and intercept snow, reducing the understory snow accumulation and increasing foraging opportunities.

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 Gold Crown analysis area is within Idaho Fish and Game's (IDFG) Game Management Unit 2. 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).

Approximately 2966 acres or 34 percent of the analysis area is considered to be capable white-tailed deer critical winter range (see Project File – Wildlife). However, only approximately 103 acres or 3 percent of the capable winter range is located on National Forest lands. The majority of the remaining acres of capable winter range are located on private land at lower elevations, which has been highly roaded and developed with residential structures. These private lands provide a highly fragmented forest cover and as a result, the value of these lands as critical winter range vary greatly and change frequently based on how they are managed by the private land owners.

Environmental Consequences

Methodology

Capable white-tailed deer winter range within the cumulative effects analysis area was determined by using elevation, aspect, slope and habitat groups to assess which areas provided the habitat characteristics necessary to be considered capable critical winter range. The effects of the project on white-tailed deer will be determined by analyzing any changes to critical winter range habitat.

Direct, Indirect and Cumulative Effects for Alternative A

The No Action Alternative would not result in an immediate change to critical winter range. 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 A 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 Alternatives B

Of the approximately 103 acres of suitable winter range habitat on National Forest Lands, approximately 14 acres or less than one percent of the winter range within the analysis area would be treated under this alternative. Approximately 13 acres would be treated with a regeneration harvest and less than one acre would be treated with a hand thinning harvest. The acres treated with a hand thinning prescription would remain suitable following treatment because the canopy closure would remain well above the level necessary to support wintering deer (≥60 percent). However, on the acres being treated with a regeneration harvest, the canopy closure would be reduced below what would be considered suitable winter range. Over 99 percent of the capable critical winter range within the cumulative effects analysis area would be left untreated by the proposed action. None of the proposed permanent road construction is within white-tailed deer winter range, but the proposed tenth of a mile of temporary road construction is within winter range. However, this road segment would not be constructed during the winter months,

would be closed to the public during project activities and would be removed following project activities (see Design Features – Road and Skid Trail Access).

Cumulative Effects of Alternative B

Activities identified below from the list in Chapter 1 of the Gold Crown EA are the past, present and reasonably foreseeable actions within the analysis area that are relevant to the white-tailed deer cumulative effects analysis.

Timber Harvest on Other Government Lands – The State of Idaho is expected to harvest approximately 105 acres within the analysis area during the summer/fall of 2008. Their plan calls for an 82 acre commercial thin, a 15 acre seed tree regeneration and an 8 acre overstory removal of a previously thinned stand. As discussed in the introduction to the cumulative effects analysis, although state lands contain capable white-tailed deer winter range, due to the uncertainty of management actions and the lack of detailed habitat data, this analysis assumes no contribution of suitable habitat for this species.

Activities on Other Ownerships – The lands surrounding the project area are largely owned by private individuals or industry. The lower elevation portions of these lands are utilized by white-tailed deer, particularly during severe winters. Although the development of residences, construction of roads, timber harvesting and other activities associated with human presence have reduced the suitability of these lands as winter range, because white-tailed deer adapt to such conditions, these areas continue to support a high deer population.

Wildfire Suppression – There has been a history and ongoing policy of fire suppression within the analysis area over the past approximately 77 years, which has led to an increase in tree density in stands that would have historically been reverted to an earlier successional stage by periodic wildfires. The lack of periodic wildfire has kept these stands in a more advanced successional state, which has decreased the availability of forage for deer. The implementation of the action alternative would help decrease the negative effects from fire suppression by increasing the quality and quantity of forage.

Hunting – White-tailed deer are found throughout cumulative effects analysis area and are commonly hunted by the public. The Idaho Department of Fish and Game regulates the legal hunting of deer and systematically determines the number and type of deer permits available to the public in order to maintain a healthy and productive deer population. The Gold Crown project would not increase access and is unlikely to have a meaningful or detectable change on hunting within the cumulative effects analysis area.

Noxious Weeds Monitoring and Treatment – This activity would follow the guidelines established in the Sandpoint Noxious Weeds Control Project EIS (USDA Forest Service 1998). Effects to white-tailed deer were analyzed in that document and its adaptive strategy. No additional effects to white-tailed deer are expected to occur.

Conclusion of Effects

The small degree to which winter range is expected to be impacted by the proposed action would be undetectable at the landscape scale along with the ability of white-tailed deer to prosper under a variety of conditions would lead to a negligible effect on white-tailed deer from project activities.

Consequently, the implementation the action alternative, in conjunction with the past actions, ongoing activities and reasonably foreseeable actions discussed above, ***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). White-tailed deer critical winter range would be maintained.

Wildlife Design Features

Wildlife Tree Retention – 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.

Estimated Effectiveness: Moderate; this measure would be implemented using project layout, contract provisions, compliance monitoring and fuels treatment, and would have a moderate chance of avoiding and/or reducing adverse effects on snag-associated wildlife. It would not be the intent of this project to willfully remove the high-hazard snags and snags in the advanced stages of decay ("soft" snags). Some of these "soft" snags would survive and remain standing during the life of the project.

Past monitoring has demonstrated that tree harvesting and subsequent burning removes a large portion of existing snags, especially "soft" snags. However, through strategic placement of leave patches or clumps, adequate numbers of snags within these areas should be relatively protected. In addition, prescribed burning would recruit "new" snags by fire-killing residual green trees. The project would be effective in meeting and exceeding live tree replacement criteria because the vegetative prescriptions are designed to leave ample green trees scattered in patches, individually or uniformly depending on the harvest treatment. Consequently, this measure should provide more than the minimum number of snags and live tree replacements.

Retention of Broadleaf, Deciduous Trees – To maintain forest species diversity and wildlife habitat, 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. Selected merchantable conifers in and around aspen patches would be removed to reduce competition for water, nutrients and sunlight.

Estimated Effectiveness: High; this measure has a high potential for being implemented. These measures would be implemented through contract provisions and compliance monitoring. Effectiveness is high because regardless of whether broadleaf trees remain standing or felled for safety reasons, they remain on site and provide benefits to various wildlife species. Trees such as aspen and birch will re-sprout if felled or killed by burning.

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

Estimated Effectiveness: High; leaving slash piles unburned would provide replacement habitat for small mammals and land birds in the form of coarse woody debris during the first few years post-treatment.

Dry Forest Ecosystems – Because there are fewer ponderosa pine trees in the northern Rocky Mountains than were here historically, it is necessary to retain large Douglas-fir trees in addition to the large ponderosa pine trees, to achieve suitable habitat conditions for species associated with drier habitats (e.g., flammulated owls, white-breasted nuthatch, Cassin's finch). For stands associated with the dry forest ecosystem, harvest prescriptions would be designed to maintain or promote the persistence of a mature ponderosa pine/Douglas-fir community by:

- Maintaining or creating a relatively open landscape of ponderosa pine/Douglas-fir that is structurally complex with non-uniform spacing of trees and scattered patches of denser vegetation (greater than ¼ acre)
- Promoting the persistence of large snag habitat
- Retaining an overstory canopy closure of 35 to 65 percent
- Fashioning a landscape to accommodate a relatively frequent fire regime

*Estimated Effectiveness***:** High; using silvicultural prescriptions, marking guides, contract inspections and appropriate fuel treatment methods, this feature would have a high likelihood of avoiding or reducing adverse effects to flammulated owl habitat.

Goshawk Protection – Goshawk nest searches would be conducted during project layout and implementation. A no activity area of 40-acres would be placed around any newly discovered goshawk nest or any nest that has been active in the past five years. If the nest tree is not centered within the 40-acre no activity area, an additional no activity distance of at least 745 feet (the radius of a 40-acre circle) may be implemented between the nest tree and harvest units to reduce impacts to habitat around the nest site from project activities. The District Wildlife Biologist would determine if this additional no activity distance would be implemented based on factors such as topography, the location of the nest tree within the 40-acre nest area and the distance of the nest tree from private ownership and/or existing roads.

Project activities would be suspended within half a mile of active nest areas from March 15 to August 15 to promote nesting success and provide forage opportunities for adults and fledgling goshawks during the fledgling dependency period. Activity restrictions would be removed after June 30 if the District Wildlife Biologist determines the nest site is inactive or unsuccessful.

Estimated Effectiveness: Moderate to High; protection measures would allow continued nesting and successful rearing during and after project implementation (Reynolds et al. 1992). The 40-acre no-activity area has been shown to provide an adequate post-harvest nest stand for goshawks. The seasonal restrictions are likely to minimize disturbance to active nests.

Road Design, Skid Trails and Cable Corridors– To maintain habitat for snag-dependent species and species dependent on large diameter trees, the location of proposed new roads, skid trails and cable corridors will ensure, wherever practical, that veteran and relic fire survivor trees would not be removed.

Estimated Effectiveness: Low to Moderate; road location is determined to a large degree by FS road construction standards and the local terrain. Cost is also an important consideration. The sale administrator has the authority under the timber sale contract provisions to approve all skid trail and cable corridor locations. However, there are many factors when choosing their location on the ground. Consequently, it is not possible to expect that all veteran and relic trees would be protected by this measure.

Protection of Seeps, Bogs, Wallows and Springs – All known or discovered seeps, bogs, elk wallows and springs less than one acre in size would be protected with a “no activity” buffer approximately 100 feet.

Estimated Effectiveness: High; this practice would be implemented because it would be incorporated into the project design.

Vegetation Screens – Vegetation buffers would be left along the open roads in Units 4, 7, 8c, 10, 12a, 18, 19 and 22 to provide security screening for wildlife and minimize unauthorized access into these stands. 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.

Estimated Effectiveness: Moderate; using specific silvicultural prescriptions and marking guides, this feature would have a high likelihood of being implemented to achieve desired objectives where creating buffers is feasible.

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. Timber sale contract provision, Protection of Threatened, Endangered and Sensitive Species, would be included in any timber sale contract.

Estimated Effectiveness: High; using contract provisions, this feature would have a high likelihood of achieving the desired objectives.

Road and Skid Trail Access – To prevent establishment of motorized public use patterns on temporary roads, new permanent roads to be placed into storage after project activities, and existing, undrivable roads that are opened for project activities:

- When roads are first constructed or reopened prior to use for the project, they would be closed to public motorized use with a gate or other effective closure device.
- Once project activities start, the roads would remain closed to public use with a gate. Gates would be closed at the end of each day's use, during periods of inactivity, on weekends and on holidays.
- After completion of project activities, the roads would remain closed to public motorized use with a gate or other effective closure device until the road is decommissioned or put into storage.
- Decommissioning or storage activities would occur as soon as possible after completion of project activities including planting and fuels treatment.

All existing and created skid trails that might provide motorized access from open roads would be closed with an effective closure of natural materials (e.g. rocks, coarse woody debris, dirt) to help reduce the attraction to use of these trails.

Estimated Effectiveness: High; these measures would eliminate or reduce adverse impacts to wildlife by controlling motorized access on roads. Under contract provisions, administration of contract provisions and compliance monitoring these measures would be implemented.

Wildlife Literature Cited

Balda, R. P., W. S. Gaud and J. D. Brawn. 1983. Predictive models for snag nesting birds. In Snag Habitat Management. General Technical Report RM-GTR-99. USDA Forest Service, Rocky Mountain Range and Experiment Station. *In* Ghalambor, C. 2003. Conservation assessment of the pygmy nuthatch in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mountain Region.

Bull, E. L., R. S. Holthausen and M. G. Henjum. 1990. Techniques for monitoring pileated woodpeckers. General Technical Report PNW-GTR-269. USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon. 13 pp.

Bull, E. L., C. G. Parks and T. R. Torgersen. 1997. Trees and logs important to wildlife in the Interior Columbia River Basin. General Technical Report PNW-GTR-391. USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon. 28 pp.

Clough, L. T. 2000. Nesting habitat selection and productivity of northern goshawks in west-central Montana. Missoula, MT. University of Montana. M.S. Thesis. 87 pp.

Desimone, S. M. 1997. Occupancy rates and habitat relationships of northern goshawks in historic nesting areas in Oregon. Thesis, Oregon State University, Corvallis, Oregon, USA.

Ellison, L. E., M. B. Wunder, C. A. Jones, C. Mosch, K. W. Navo, K. Peckham, J. E. Burghardt, J. Annear, R. West, J. Siemers, R. A. Adams and E. Brekke. 2004. Colorado bat conservation plan. Colorado Committee of the Western Bat Working Group.

Engle, J. C. and C. E. Harris. 2001. Idaho species of special concern element state rankings reviews. Non-game and endangered wildlife program, Conservation Data Center, Idaho Department of Fish and Game. Boise, Idaho.

Ghalambor, C. 2003. Conservation assessment of the pygmy nuthatch in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mountain Region.

Graham, R. T., R. L. Rodgriquez, K. M. Paulin, R. L. Player, A. P. Heap and R. Williams. 1999. The northern goshawk in Utah: habitat assessment and management recommendations. General Technical Report RMRS-GTR-22. USDA Forest Service. Rocky Mountain Research Station. Ogden, Utah. 48 pp.

Hayward, G. D. and R. E. Escano. 1989. Goshawk nest-site characteristics in western Montana and northern Idaho. *In*: The Condor. 91:476-479.

Hutto, R. L. 1995. USDA Forest Service Northern Region Songbird Monitoring Program Distribution and Habitat Relationships. USDA Forest Service contract #R1-95-05. Second Report. Division of Biological Sciences. University of Montana. Missoula, Montana. 21 pp.

Idaho Department of Fish and Game (IDFG). 2004. Progress Report: white-tailed deer. Project W-170-R-28. B. Compton, ed. Boise, Idaho.

Intermountain Forest Industry Association in cooperation with Montana Logging Association, Idaho Logging Safety, Associated Logging Contractors, Inc., Plum Creek, USDA Forest Service, Montana Department of State Lands and Idaho Department of Lands. 1995. Risk assessment for identifying reserve trees.

Keinath, D. A. 2004. Fringed myotis (*Myotis thysanodes*): a technical conservation assessment. USDA Forest Service Rocky Mountain Region.

Keller, B. 2000. *Myotis thysanodes* (Fringed Myotis): Digital Atlas of Idaho. Available online at http://imnh.isu.edu/digitalatlas/bio/mammal/mamfram.htm (last accessed June 5, 2006).

Kingery, H. and C. K. Ghalambor. 2001. Pygmy nuthatch (Sitta pygmaea). *In* The birds of North America, Number 567. A. Poole and F. Gill, eds. Philadelphia, Pennsylvania.

Maxell, B. E. 2000. Management of Montana's amphibians: a review of risk factors to population viability; species accounts: identification, distribution, taxonomy, habitat use/ natural history, and status and conservation. Report to USDA Forest Service Region One, Contract number: 43-0343-0-0224. University of Montana, Wildlife Biology Program. Missoula, Montana. 161 pp.

McEllin, S. M. 1979. Nest sites and population demographies of white-breasted and pigmy (sic) nuthatches in Colorado. *In*: Condor. 90(3):348-352.

McGrath, M. T., T. S. DeStefano, R. A. Riggs, L. L. Irwin and G. J. Roloff. 2003. Spatially explicit influences on northern goshawk nesting habitat in the interior Pacific Northwest. Wildlife Monographs 154:1-63.

Montana Fish, Wildlife and Parks. 2004. Montana Animal Field Guide: Fringed Myotis. Online. Available online at http://fwp.mt.gov/fieldguide/detail_AMACC01090.aspx (last accessed on June 5, 2006).

Montana Partners in Flight. 2000. Montana Bird Conservation Plan, Version 1.0: Black-backed woodpecker. Available online at http://biology.dbs.umt.edu/landbird/mbcp/mtpif/mtbbwo.htm (last accessed on June 5, 2006).

Norris, R. A. 1958. Comparative Biosystematics and Life History of the Nuthatches *Sitta pygmaea* and *Sitta pusilla*. University of California Publishing in Zoology 56, pp. 119-300. Quoted in Ghalambor, C. 2003. Conservation Assessment of the Pygmy Nuthatch in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mountain Region, Black Hills National Forest.

O'Conner, T. and M. Hillis. 2001. Conservation of post-fire habitat, black-backed woodpeckers and other woodpecker species on the Lolo National Forest. USDA Forest Service, Missoula, Montana.

O'Farrell, M. J. and E. H. Studier. 1980. *Myotis thysanodes*. *In*: Mammalian Species. 137:1-5.

Oliver, C. 1992. A landscape approach: Achieving and maintaining biodiversity and economic productivity. Journal of Forestry. pages 20-25.

Patla S. 1997. Nesting ecology and habitat use of the Northern Goshawk in undisturbed and timber harvest areas on the Targhee National Forest, Greater Yellowstone Ecosystem. M.Sc. thesis, Idaho State University, Pocatello, ID. 178 pp.

Pfingsten, B. 1983. Evaluating wild ungulate habitat: use of forage quality asa relative index. Western Wildlands. 9:24-27.

Pilliod, D. S., E. L. Bull, J. L. Hayes and B. C. Wales. 2006. Wildlife and invertebrate response to fuel reduction treatments in dry coniferous forests of the Western United States: a synthesis. General Technical Report RMRS-GTR-173. Fort Collins, CO. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 34 pp.

Powell, H. D. W. 2000. The influence of prey density on post-fire habitat use of the black-backed woodpecker. University of Montana. Missoula, Montana. 105 pp.

Quigley, T. M. and S. J. Arbelbide, tech eds. 1997. An assessment for ecosystem components in the Interior Columbia Basin and portions of the Klamath and Great Basins. Volume III. USDA Forest Service General Technical Report PNW-GTR-405. Pacific Northwest Research Station. Portland, Oregon.

Rabe, M. J., T. E. Morrell, H. Green, J. C. deVos, Jr. and C. R. Miller. 1998. Characteristics of ponderosa pine snag roosts used by reproductive bats in northern Arizona. Journal of Wildlife Management. 62:612-621.

Rasheed, S. A., P. F. J. Garcia and S. L. Holroyd. 1995. Status of fringed myotis in British Columbia. Wildlife Working Report WR-73. pages 1-17.

Reynolds, R. T., R. T. Graham, M. H. Reiser, R. L. Bassett, P. L. Kennedy, D. A. Boyce, Jr., G. Goodwin, R. Smith and E. L. Fisher. 1992. Management recommendations for the northern goshawk in the southwestern United States. USDA Forest Service, Southwestern Region. 184 pp.

Reynolds, R. T. and B. D. Linkhart. 1992. Flammulated owls in ponderosa pine. In: Old-growth forests in the southwest and Rocky Mountain regions; proceedings of a workshop. USDA Forest Service General Technical Report RM-213

Saab, V., R. Brannon, J. Dudley, L. Donohoo, D. Vanderzanden, V. Johnson and H. Lachowski. 2002. Selection of fire-created snags at two spatial scales by cavity-nesting birds. In: Proceedings of the symposium on the ecology and management of dead wood in western forests, November 2-4, 1999, Reno, Nevada. W. F. Laundenslayer, P. J. Shea, B. E. Valentine, C. P. Weatherspoon and T. E. Lisle, tech. eds. General Technical Report PSW-GTR-181. Albany, California: Pacific Southwest Research Station, USDA Forest Service. 949 pp.

Samson, F. B. 2006. A conservation assessment of the northern goshawk, black-backed woodpecker, flammulated owl and pileated woodpecker in the Northern Region, USDA Forest Service. Unpublished report on file. Forest Service Northern Region, Missoula, Montana.

Scott. V. E. 1979. Bird responses to snag removal in ponderosa pine. Journal of Forestry 77:26-28. Quoted in Ghalambor, C. 2003. Conservation assessment of the pygmy nuthatch in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service, Rocky Mountain Region.

Squires, J. R. and R. T. Reynolds. 1997. Northern goshawk (Accipter gentiles). *In* The birds of North America, Number 298. A. Poole and F. Gill, eds. Philadelphia, Pennsylvania.

Sydeman, W. J., M. Guntert and R. P. Balda. 1988. Annual reproductive yield in the cooperative pygmy nuthatch (*Sitta pygmaea*). Auk 105, pp. 70-77.

USDA Forest Service. 1987. Idaho Panhandle National Forests Forest Plan. Coeur d'Alene, Idaho.

USDA Forest Service. 1998. Sandpoint Noxious Weed Control Project Environmental Impact Statement. Idaho Panhandle National Forests, Sandpoint Ranger District.

USDA Forest Service. 2005. Region One sensitive species list update. Missoula, Montana.

USDA Forest Service. Unpublished Report1. Geographic Assessment of the Pend Oreille River Basin. USDA Forest Service, Idaho Panhandle National Forests, Coeur d'Alene, Idaho.

USDA Forest Service. Unpublished Report2. Black-backed woodpecker Northern Region Overview: Key Findings and Project Considerations. USDA Forest Service, Northern Region Office, Missoula, MT.

USDI Fish and Wildlife Service. 2008. Biannual Species List for the Idaho Panhandle National Forests, FWS Reference No. 1-9-08-SP-0067 (105.0100). Upper Columbia Fish and Wildlife Office. Spokane, WA.

Warren, N., tech. ed. 1990. Old growth habitats and associated wildlife species in the northern Rocky Mountains. Northern Region Report #R1-90-42. USDA Forest Service. Missoula, Montana. 47 pp.

Weller, T. J. and C. J. Zabel. 2001. Characteristics of fringed myotis day roosts in northern California. Journal of Wildlife Management. 65:489-497.

Wisdom, M. J., R. S. Holthausen, B. C. Wales, C. D. Hargis, V. A. Staab, D. C. Lee, W. J. Hann, T. D. Rich, M. M. Rowland, W. J. Murphy and M. R. Earnes. 2000. Source habitats for terrestrial vertebrates of focus in the Interior Columbia River Basin: broad-scale trends and management implications. Volume 2 – Group Level Results. General Technical Report PNW-GTR-485. USDA Forest Service, Pacific Northwest Research Station.