

Threatened and Endangered Wildlife Species

Introduction

There are three threatened and endangered species (TES) that may be found in the Cooney McKay Project Area and throughout the upper Swan Valley: Canada lynx, gray wolf, and grizzly bear. Life history information on these species can be found in the reference document “Distribution, Life History, and Recovery Objectives For Region One Threatened and Endangered Terrestrial Wildlife Species Occurring on the Flathead National Forest” (Project File Exhibit F-4). The bald eagle was recently delisted, effective August 8, 2007. Effects analysis for the bald eagle is described in the Sensitive Species Section of this document.

**TABLE 3-41.
 THREATENED, ENDANGERED, AND PROPOSED SPECIES KNOWN OR SUSPECTED TO OCCUR WITHIN
 THE INFLUENCE AREA OF THE PROPOSED ACTION**

Species	Status	Occurrence
Canada Lynx (<i>Lynx canadensis</i>)	Threatened	Resident
Gray Wolf (<i>Canis lupus</i>)	Endangered	Resident
Grizzly Bear (<i>Ursus arctos</i>)	Threatened	Resident

Analysis Area

Spatial Bounds

The effects analysis area for direct and indirect effects to the gray wolf is the Cooney McKay Project Area (approximately 38,031 acres), from approximately Cooney Creek on the south to Alder Creek on the north; and from the Swan River on the west to the upper slopes of the Swan Range on the east. The cumulative effects area includes the entire upper (southern) Swan Valley, from Van Lake in the north to Cooney Creek in the south, and east of the Swan River. This area is large enough to include portions of the home ranges of several individual wolves or a wolf pack and includes almost all of the white-tailed deer winter range in the Swan Valley. The area is representative of the effects of fire, natural tree mortality, timber harvest, road management, and other effects factors, across the landscape. The actions proposed that could directly or indirectly affect the gray wolf, are contained within this area.

The Lynx Conservation and Assessment Strategy (Project File Exhibit F-1) established Lynx Analysis Units (LAU's) as the basis for assessing the effects of proposed actions on lynx and lynx habitat. These units approximate the size of an area used by an individual lynx and encompass both lynx habitat and areas classified as non-habitat. The proposed Cooney McKay Project is located in the

Meadow and Buck Lynx Analysis Units. These LAU's will be the geographic area used to analyze direct, indirect, and cumulative effects for Canada lynx and are displayed on Map 3-6.

The Cooney McKay Forest Project is located in the Northern Continental Divide Grizzly Bear Ecosystem (NCDE), as identified in the Recovery Plan for grizzly bear. The NCDE has been divided into Bear Management Units (BMU's), Areas (BMA's), and Subunits. The BMU Subunits approximate the size of a female grizzly bear's home range. The Cooney McKay Project lies entirely within the Meadow Smith Grizzly Bear Subunit; the boundaries coincide. The Meadow Smith Grizzly Bear Subunit was used to analyze direct, indirect, and cumulative effects to the grizzly bear. Cumulative effects were also analyzed at larger scales, and conservation measures for the grizzly bear, including standards and guidelines, have been addressed at the subunit, BMA, and BMU scale (e.g., Interagency Grizzly Bear Guidelines, Amendment 19 to the Forest Plan, and the Swan Valley Grizzly Bear Conservation Agreement).

Temporal Bounds

The length of time for effects analysis is approximately 5 years for the roads and forest health/fuel reduction portions of this project. This is based on the probable contract length for the proposed project, the timeframes for related activities, and the reasonably foreseeable actions identified. Upland burning proposed in the Condon, Cooney, and Smith Creek drainages might occur during the next 10 years, dependent on the availability of burning windows, funding, and equipment needed to achieve the desired results. When conditions are favorable the actual burning would only take a day or less for each project, but this time frame provides a conservative margin for all these elements to come together.

Affected Environment

Historic Condition

Canada lynx are known to have been residents in the Swan Valley in the past. There would have been ample denning habitat for lynx; forage opportunities would have been dependent on vegetative patterns across the landscape at the time (e.g., snowshoe hare habitat). The gray wolf was a resident of the Swan Valley in the past, as was the grizzly bear. Both the gray wolf and the grizzly bear would have moved freely throughout the valley in the absence of human development. As human activity levels in the Swan Valley increased, mortality risk for the lynx, wolf, and grizzly bear increased as well.

It is likely that the first non-Indians to visit the upper Swan Valley were French-Canadian trappers, in the mid-1800s (Project File Exhibit Q-4). With the Homestead Act of 1862, the way was paved for human development in the valley. In 1864, the Federal government granted land to the Great Northern Railroad for rail right-of-way development. The checkerboard ownership pattern found in the upper Swan Valley today is largely the result of this rail development and later land exchanges. In the early 1900s, people began to move into the Swan Valley in greater numbers and active forest management began. By the mid-1900s aggressive fire suppression was already changing the landscape, as was active timber management and a recreating public.

Existing Condition

The existing condition in the upper Swan Valley and within the Cooney McKay Project Area is discussed individually, by species, prior to the effects analysis for that particular species.

Environmental Consequences

The Cooney McKay Project consists of three action alternatives and a No Action Alternative. The alternatives are described in detail in Chapter 2 of this DEIS. The Cumulative Effects Worksheet, located in the Wildlife Project File (Project File Exhibits F-7 and F-8) considers and describes proposed activities in addition to the past, current, and reasonably foreseeable activities listed at the beginning of this chapter in Tables 3-1 and 3-2. Those activities that cumulatively contribute indiscernible effects to threatened, endangered, and proposed species are not included in this section. Those activities that cumulatively affect these species are listed below.

Cumulative Effects

The Cooney McKay Project Area is located near the community of Condon, Montana. There are part-year and yearlong residences in the area, as well as other established human activities, including residential development, recreational residences, a Forest Service administrative site, an airstrip, picnic areas, nature trails, and a major highway. The level of human activity in the area increases the chance for disturbance or displacement of wildlife species. Other human activity in the area includes firewood cutting, hunting, various road use permits and easements, building rentals, and on-going outfitter and guide permits.

Timber harvest activities on PCTC lands and on NFS lands in the Cooney McKay Project Area peaked during the mid- to late-1980s, although lower levels of timber harvest continue up to the present on all ownership lands. There is another forest health timber harvest project on NFS lands in the Cooney McKay Area called the Meadow Smith Project. Cumulative effects in the Cooney McKay Analysis Area would include the effects of the Meadow Smith Project on NFS lands, as well as on-going and proposed timber harvest on PCTC lands. It should be noted that the Meadow Smith Project included the proposed Cooney McKay Project in its cumulative effects analysis.

Recently, PCTC has offered up tracts of land in the southern portion of the Swan Valley for sale to the Forest Service, conservation buyers, or other private individuals. Between 1997 and 2007, an estimated 480 acres of PCTC lands have been purchased by the State of Montana and 549 acres purchased by conservation buyers with limited development covenants. In addition, about 3,667 acres (20 parcels) of PCTC lands have been sold with development limited by the regulations of Missoula and Lake Counties (Project File Exhibits Q-1 and Q-10). Deed restrictions on the land sales include set-back standards for streams and sanitation guidelines (e.g., no outdoor barbecue pits, no birdfeeders within reach of bears, and fenced gardens). In Missoula County, a subdivision review is required if parties propose to subdivide 160 acres or more. Despite these provisions, there is a concern that an increase in private parcels of land in the Swan Valley may further fragment wildlife habitat and increase human-bear encounters. As stated above, many of the land sales by PCTC have been to conservation buyers, which should help mitigate the risks associated with private land development. The Forest Service has acquired approximately 11,489 acres from PCTC between 1997 and 2007. The acquisition of lands by the Forest Service has helped to maintain natural landscape linkages and to reduce the risk of private land development. A more detailed analysis of

the history and potential of changes in landownership patterns is found in the Lands Section of this chapter.

Past land management activities in the area, including timber management, road construction, residential development, and agricultural conversion, have decreased and/or fragmented hiding cover and forage. With increased human activity, have come decreased security levels for most wildlife species, including the bald eagle, Canada lynx, gray wolf, and grizzly bear.

Fire suppression has contributed to increased understory growth, increased fuel loadings, and denser mid-canopy trees (Lesica 1996) in many forest stands that were historically open-grown. The risk of stand-replacing fire is greater in many portions of the valley.

Canada Lynx

Existing Condition

Canada lynx habitat is widespread across the Flathead National Forest. A Regional, multi-scale lynx habitat assessment by Hillis et al.. (2002) derived estimates of the proportions of foraging and unsuitable habitat components at the forest-scale and compared them to forage and unsuitable habitat estimates at larger scales as show in Table 3-42. The following table summarizes the situation for potential Canada lynx habitat across the region, and at the forest level.

**TABLE 3-42.
 LYNX HABITAT COMPONENTS ON THE FLATHEAD NATIONAL FOREST COMPARED WITH LARGER
 SCALES**

Habitat Component	HRV*	LCAS/NRLMD** Standard	Flathead National Forest	Region One
Unsuitable	9.5%	30% Max	10%	9.2%
Foraging	19%	---	5%	5.4%
Denning	10%	10% Min	---	15.1%

* HRV (Historic Range of Variability) reflects average conditions before fire suppression or logging substantially changed vegetative pattern.

** Northern Rockies Lynx Management Direction and old LCAS standard. Used as a recommendation for assessing effects.

Lynx productivity is highly dependent on the quantity and quality of winter snowshoe hare habitat. Winter snowshoe hare habitat may be found in dense young regenerating forests, where the young trees protrude above the snowline, and in multi-storied forests where limbs of the overstory touch the snowline and there is a shorter understory that provides significant horizontal cover.

Note that at the Region One scale, foraging habitat is described as being 5.4 percent of lynx habitat, below the historic average. This figure is based on dense young regenerating forests as foraging habitat (sapling stands). The figure is undoubtedly conservative because it does not include multi-storied forest stands that include an understory providing significant horizontal cover. Also, the fires of 1988, 2000, 2001, and 2003 have provided a substantial “pulse” of unsuitable habitat that will provide foraging habitat in 5 to 12 years. Large fires in the last decade, and recently in 2006 and 2007, will ultimately help to recruit foraging habitat.

Denning habitat appears to be surplus at the scale evaluated. Denning habitat has only been calculated at the Region One Scale. Since the Region One level (15.1 percent) exceeds the historic level (10 percent) and the LCAS standard (10 percent), denning habitat is probably not limiting at the broad scales.

Canada lynx are known to occur in the Swan Valley, especially in the southern portion of the valley (Seeley/Swan). They are usually found at higher elevations, where their distinctive physiology gives them an advantage over other predators (Project File Exhibit F-1). Lands within the Meadow and Buck LAUs (Cooney McKay Area) have been delineated into lynx habitat and non-lynx habitat. This delineation is based on both elevation and snow-depth, and on site characteristics. Dry site forest communities are not considered lynx habitat. The treatment units proposed in the lower valley are in non-lynx habitat. In the lower valley area the snow depth is shallow and the lynx loses its competitive edge over coyotes, bobcats, and mountain lions.

Environmental Consequences

Alternative 1 - No Action Direct and Indirect Effects

There would be no forest health / fuel reduction treatment, or associated activities, proposed with this alternative. There would be no direct effects to lynx or lynx habitat. It is possible that an indirect effect of Alternative 1 would be an increase in the potential for a larger, stand-replacing wildfire to occur in this area.

Alternative 1 - No Action Cumulative Effects

By not implementing the Cooney McKay Project, there may be an increase in the potential for a larger, stand-replacing wildfire to occur in the Cooney McKay Area. Historically, wildfire positively affected Canada lynx by providing large areas of potential forage in the form of sapling stands (snowshoe hare habitat). Unfortunately, a large intense wildfire would potentially decrease overall cover and potential denning habitat as well, at least in the short-term. Alternative 1 would not contribute cumulative effects to Canada lynx in the Cooney McKay Area.

Alternatives 2, 3, and 4 Direct and Indirect Effects

Mature Commercial Harvest/Immature Non-Commercial Treatment – In the Buck LAU, there are 81 acres of Commercial Thin, and 62 acres of Thin From Below treatments proposed in lynx habitat. In the Commercial Thin units (4-185 and 34-180) the mature tree canopy would be reduced from approximately 70 to 90 percent canopy closure to an average of 50 percent or greater canopy closure. Generally, all dominant and most co-dominant crown classes would be retained. This treatment simulates a low to moderate severity, mixed-lethal burn. The two stands where this treatment is proposed are in designated lynx habitat. The current stand characteristics do not provide quality lynx forage or denning habitat; however, the stands currently provide potential cover for lynx. Following the proposed treatment, the stands would still provide cover for lynx. Guidelines for snag and down woody retention (Forest Plan Amendment 21) would be met in these areas (see Design Criteria Table 2-14). The Thin From Below Units (4-86, 4-186, 34-178) are over 100 years old and do

not provide forage or denning habitat for lynx. They do currently provide hiding cover. The proposed Thin From Below treatments would retain the existing dominant and co-dominant canopies, removing primarily intermediate and suppressed trees in the understory. The stands would still function as habitat for lynx following the proposed vegetative treatment.

The remaining Cooney McKay forest health and fuel reduction treatments are located outside of designated lynx habitat.

Temporary Road Construction – There is no new road construction proposed in the Cooney McKay Project Area. Approximately 1.2 miles of temporary road would be needed to access treatment units under Alternatives 2 and 3; slightly less under Alternative 4 (1 mile). There is no temporary road proposed in lynx habitat in the Meadow LAU. There are approximately 0.3 miles of temporary road proposed in lynx habitat in the Buck LAU. Short-term effects to the lynx as a result of the temporary road would be displacement of any lynx in the immediate area. They would probably be displaced anyway due to associated activities in the area (e.g., vegetative treatments). There would be no public use of temporary roads and all temporary roads would be reclaimed following vegetative treatments.

Prescribed Fire - The Cooney McKay Project also includes approximately 1,833 acres of prescribed burning. Prescribed fire would be located on the mid to upper slopes of the Swan Range, in designated lynx habitat. There are approximately 1,126 acres of prescribed fire proposed in the Meadow LAU (Smith, Condon, and Cat drainages) and approximately 707 acres proposed in the Buck LAU (Cooney Creek drainage). The stands proposed for burning are a mix of shrub fields and conifer overstory. They do not exhibit the characteristics of lynx forage or denning habitat, but provide cover for lynx.

From experience, it is expected that the prescribed fire would burn in a mosaic pattern across the fire area, with the actual acreage burned being approximately 30 to 60 percent of the overall prescribed fire area. As a result of the proposed prescribed burning, mortality in scattered overstory trees would be approximately 20 percent or less; midstory mortality would be between 30 and 50 percent and understory mortality would be between 70 and 90 percent. All non-consumed material would be retained on site. No product removal would occur in the prescribed burn areas. In order to facilitate burning, slashing of fuel concentrations may occur within the burn area, as needed. Fuelbreaks would be constructed by hand along the perimeter of the prescribed burns as needed to contain the fire.

For the first few years after a burn, there appears to be a negative short-term correlation between lynx use and the burn area (Koehler and Brittell 1990). Broadleaf species quickly re-sprout (3 to 12 years), followed by an increase in conifer stems (15 to 30 years). Hare populations increase as the abundance of conifers and shrubs increase, eventually peaking, and then decreasing again, as the forest canopy develops and shades out the understory. Cover for lynx in either the Meadow LAU or the Buck LAU would not be significantly affected over the long term.

The following table summarizes the expected effects of the Cooney McKay Project. Permanent non-lynx habitat refers to areas that will probably never be lynx habitat due to dry forest types, low elevation (snow depth factor), or physical character (rock, water, etc.). Potential lynx habitat includes areas within an LAU that are suitable lynx habitat because they could potentially provide forage habitat, denning habitat, or cover for lynx. Foraging habitat includes sapling size stands or mature and multi-story stands with thick patches of saplings that would have a high probability of supporting snowshoe hare (USDA 1999, pp. 136-140, 184-195). Denning habitat includes older forest stands

where larger amounts of down woody material would be expected to occur or mature forest stands with large amounts of down woody or jack-strawed blowdown (USDA 1999, pp. 346-347). Unsuitable lynx habitat would be areas within an LAU that are potential lynx habitat (not permanent non-lynx habitat), but which do not presently provide forage or denning habitat, or cover for lynx.

**TABLE 3-43.
 POTENTIAL EFFECTS ON CANADA LYNX HABITAT**

Lynx Analysis Unit	Total Area	Permanent Non-lynx habitat	Potential Lynx Habitat	Potential Foraging Habitat	Potential Denning Habitat	Unsuitable Habitat
	Acres			% Pre and Post Treatment		
Meadow	30,132	22,206	7,926	Pre – 1% Post – 1%	Pre – 11% Post – 11%	Pre – 1% Post – 1%
Buck	24,693	7,979	16,714	Pre – 7% Post – 7%	Pre – 24% Post – 24%	Pre – 3% Post – 3%

Alternatives 2, 3, and 4 Cumulative Effects

There is a history of timber harvest and road building on all ownership lands in the Cooney McKay vicinity; it is anticipated that this would continue into the future. The effects of past timber harvest and road building on Federal lands within the Meadow and Buck LAUs have been accounted for in the existing information on forage, denning, and non-suitable habitat for lynx. There are also on-going activities in the Buck and Meadow LAUs that would be included in the cumulative effects analysis; these on-going activities include existing special use permits, road maintenance activities, noxious weed treatments, potential resource enhancement projects (culvert replacements), and planting of shrubs and trees. Most of these activities are concentrated in the lower valley area, outside of designated lynx habitat and would therefore have a low potential of affecting lynx. PCTC is in the process of offering some of their lands for sale to the Forest Service, to conservation buyers, and to other private individuals. The lands offered for sale have been located within several miles of Highway 83, in the lower valley area, outside of designated lynx habitat.

There would be no new over-the-snow routes created as part of the proposed Cooney McKay Project. It is possible that dispersed snowmobile use in the Cooney McKay Area could increase due to more open stand conditions. Dispersed recreation activities seldom result in a direct loss of habitat (Project File Exhibit F-1), but may indirectly increase competition for prey as a result of snow compaction. The possibility of increased snowmobile use would decline as vegetation grows in and stand conditions change.

The Cooney McKay Project would not increase potential lynx mortality. Cover for lynx would remain connected and continuous, occurring in a pattern that follows stream courses in the lower elevations and then more variably and continuous on upland tracts of land. Non-target trapping mortality may occur in the area, but it is outside the control of the proposed project.

The Cooney McKay Project is consistent with the standards and guidelines described in the previous Lynx Conservation Assessment Strategy (LCAS) and the standards and guidelines outlined in the more recent Northern Rockies Lynx Amendment (NRLA). This proposed project is also compatible

with recommendations in the Lynx Science Report. Implementation of the proposed project would not preclude lynx use of habitats in the area. There would be no increase in mortality risk. Adverse cumulative effects are not expected.

Regulatory Framework and Consistency

On July 8, 1998, the USFWS published a proposed rule to list the Canada lynx as a threatened species under the ESA, as amended. The normal 12-month rule-making process was extended for an additional 6 months to allow for consideration of new scientific information and additional public comments on the proposed rule. An interagency lynx coordination effort was initiated in March 1998. The USFWS, Forest Service, Bureau of Land Management (BLM), and the National Park Service participated in this effort. Three products important to the conservation of lynx on federally managed lands were produced:

1. "The Scientific Basis for Lynx Conservation – Ecology and Conservation of Lynx in the United States" (Ruggiero et.al. 2000),
2. The Lynx Conservation Assessment and Strategy (LCAS), and
3. The Lynx Conservation Agreement (CA).

The Canada lynx was classified as Threatened in Montana on March 24, 2000, and is currently protected under the ESA. A recovery plan for the Canada lynx has not yet been completed.

The FWS has estimated that more than 70 percent of the lynx habitat in the Northern Rockies is on NFS and BLM lands. Further, the USFWS determined that the existing land management plans for these two agencies allow actions that cumulatively could adversely affect lynx. Forest Service and BLM Biologists also analyzed the plans, and came to the same conclusion. Therefore, the plans are being amended to provide management direction for the conservation of lynx. In September 2001, the Northern Rockies Lynx Amendment (NRLA) was proposed for 18 National Forests (including the Flathead National Forest) and four BLM units. Subsequently, there has been an analysis and a decision. The NRLA would add management direction to land management plans that would conserve and promote recovery of the Canada lynx by reducing or eliminating adverse effects from land management activities.

The alternatives comply with Section 9, ESA of 1973 as amended. Conservation measures, including standards and guidelines outlined in the previous LCAS, have been followed. In addition, the Cooney McKay Project is consistent with the standards and guidelines outlined in the NRLA. A Biological Assessment (BA) for Threatened and Endangered Wildlife Species was prepared. The USFWS concurred with the "**May affect -- Not likely to adversely affect**" determination.

Gray Wolf

Existing Condition

The wolf population in the northern Rocky Mountains has generally increased over the last 7 years, with a notable increase in 2005 over 2004 (USFWS et al. 2006). There were a total of 46 packs (3 or more wolves) in 2005, resulting in an estimated minimum of 256 wolves in Montana. The average number of wolves per pack increased from about 4.5 wolves per pack in 2004 to 5.5 wolves per pack

in 2005. There were 19 breeding pairs statewide. In 2006, the minimum wolf population estimate increased about 19 percent from 256 to 316 wolves. The number of packs increased from 46 in 2005 to 60 in 2006, with 21 breeding pairs statewide. The Montana wolf population is secure but very dynamic (Sime et. al. 2007). Some packs do not persist from year to year for many reasons, including mortalities and poor pup production/survival due to parasites and disease, and lethal control to address conflicts with livestock.

Strategies to protect and recover populations in Montana are outlined in the Northern Rocky Mountain Wolf Recovery Plan (USFWS 1987) (Project File Exhibit F-3). The Flathead National Forest (Swan Lake Ranger District) is in the Northwestern Montana Wolf Recovery Area identified in the Northern Rocky Mountain Wolf Recovery Plan (USFWS 1987) and is included within the State of Montana Wolf Conservation and Management Plan.

Wolf population recovery numbers have been met and the process for de-listing will be initiated once satisfactory state management plans are in place; possibly as early as the end of 2007.

There is known use of the Swan Range, Mission Mountains, and Swan Valley by wolves. Attempts to confirm a pack in the Swan Valley were unsuccessful until 2006. By the end of December 2006, 4 wolves were documented in the Swan Valley. Members of the pack have been collared and monitored. There are no known depredations from this pack. The pack in the Swan Valley has not been documented in the Cooney McKay Area; however, wolf dispersal distances are large (average 60 miles), and it could be expected that the pack or individual wolves would move through the Cooney McKay Project Area at some time. There are no known current or historical rendezvous sites in the Cooney McKay Area.

Most of the Cooney McKay Project Area is designated as Zone 2 Gray Wolf Management and, by definition, serves as a travel corridor for colonizing animals and contains some key habitat components, but probably not in sufficient abundance and distribution to sustain a viable wolf population year long. Portions of the proposed prescribed burns, on the upper slopes of the Swan Range, are on lands designated as Zone 1 Gray Wolf Management. These areas, by definition, contain key habitat components in sufficient abundance and distribution on an annual basis to sustain a viable wolf population.

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

There would be no vegetation treatments or associated activities proposed with this alternative, so there would be no direct effects to gray wolf or gray wolf habitat because of proposed actions in the Cooney McKay Area. As natural vegetative succession occurs, ungulate use patterns would change and wolves would vary their use patterns as well. Indirectly, as a result of not implementing the proposed vegetation management, there may be an increased risk of stand replacement fire in the project area.

The effects of this increased risk of stand replacement fire under the No Action Alternative would be hard to measure. A large intense wildfire could potentially decrease overall cover for ungulate species, at least short-term. This would potentially cause a short-term decrease in wolf prey species. Much of the existing winter range areas for white-tailed deer in the Cooney McKay Area are located

adjacent to private corporate lands. Many of these lands have been heavily managed and do not currently carry heavy fuel loading. Alternative 1 would not contribute cumulative effects to the gray wolf in the Cooney McKay Area.

There is the potential for increased human occupancy of private lands near the project area due to sales of commercial timber lands. The conditions placed on lands sold to private individuals are highly variable. All development is regulated by State of Montana and County regulations specific to particular developmental activities. As previously stated, many acres of industrial forest lands have also been sold to public land management agencies. The cumulative effect of private land development in or near the project area coupled with previous land management projects are not likely to measurably affect the gray wolf on a population basis. There appears to be little risk of population loss, and species viability would be maintained (Project File Exhibit F-2).

Alternative 2 Direct and Indirect Effects

Key components of wolf habitat are: (1) a sufficient, year-round prey base of ungulates and alternate prey, (2) suitable and somewhat secluded denning and rendezvous sites, and (3) security; sufficient space with minimal exposure to humans (USFWS 1987, Sime et. al. 2007).

Prey Base – White-tailed deer make up the greatest proportion of the wolf diet in northwestern Montana, followed by elk and moose (Kunkel 1997). Mule deer and smaller mammals or birds may also be preyed upon opportunistically throughout the year. The Swan Valley has historically provided spring, summer, fall, and winter range for white-tailed deer, mule deer, and elk. White-tailed deer have probably always been the most numerous of the big game species occurring in the Cooney McKay Project Area and throughout the Swan Valley. White-tailed deer sightings are common and their numbers are thought to be stable. The 2003 Elk Annual Report (MDFWP 2003) discussed how total elk observed in the Swan Valley was 35 percent above the 10-year average (1993 to 2002), including the antler-less and bull segments. No estimates are available for the resident mule deer population size. However, Forest-wide population trends are thought to be stable, and a relatively constant total mule deer harvest has been observed (Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities, November 2006) (Project File Exhibit F-2).

The mature and immature forest stands where vegetative treatment is proposed currently provide hiding and/or thermal cover for wolf prey species, including deer and elk. Hiding cover for deer and elk would be retained in the Commercial Thin, Old Growth Maintenance, Salvage, and Pre-Commercial Thinning units. Hiding cover would not be retained in the Seed Tree units. There would be a short-term (5 to 15 years) decrease in hiding cover of 79 acres in the Cooney McKay Project Area under Alternative 2.

Implementation of Alternative 2 would decrease the existing amount of thermal cover on white-tailed deer winter range from 56 percent to approximately 55 percent. Forest Plan standards for white-tailed deer winter range would be adhered to; a minimum of at least 50 percent thermal cover would be maintained across the white-tailed deer winter range. Riparian zones are an important component of deer and elk habitat. There are no proposed treatments in riparian areas under Alternative 2. There would be no change expected in ungulate population numbers by implementing Alternative 2; an adequate prey base for wolves would be maintained across the southern end of the Swan Valley and any effects to the wolf ungulate prey base would be minimal.

The proposed prescribed burning under Alternative 2 would benefit the gray wolf by improving foraging habitat for ungulates on the upper slopes of the Swan Range.

Key Habitat Areas (denning sites, rendezvous areas, and whelping sites) – There are no known or historical den sites, rendezvous areas, or whelping sites in the proposed Cooney McKay Project Area. Wolves commonly den in undisturbed sites, usually within 400 yards of water. A wolf pack will move up to 6 miles to a number of rendezvous sites, typically meadows, until the pups can travel with the adults. Potential denning and rendezvous habitat sites are not considered limiting across the Swan Valley. There would be no direct or indirect effect on wolf security from disturbance to these key habitat areas because of implementing Alternative 2. It should be noted that, under any alternative, the contract for operations would include provisions to cease activity or otherwise protect any denning, rendezvous, or whelping site that may be discovered.

Security/Mortality Risk – Implementing Alternative 2 could displace wolves. In addition to the actual logging activity (vegetative treatments), approximately 1.2 miles of temporary road would be needed to access units. All temporary roads would be reclaimed and public use of temporary roads would be prohibited.

As stated previously, there are no proposed treatments in riparian areas under Alternative 2. This would include small wetlands, ponds, and streams. If these areas presently provide cover, forage, and security for gray wolf, they will continue to do so.

Because wolves are adaptable animals, the expected increase in activity level within the project area would only result in temporary displacement of wolves from habitats that they might otherwise use. Wolves occupying the project area would likely move to adjacent areas further from human development and disturbance. Implementing Alternative 2 would not significantly increase the mortality risk for the gray wolf. Any increased chance for an encounter between wolves and humans because of the proposed project would present a low risk of mortality for the wolf since the encounter would center around land management activities and not livestock depredation or other high risk activities commonly associated with wolf mortality.

Alternative 2 Cumulative Effects

The project proposal would not result in additional cumulative effects to the gray wolf, due, in large part, to its location in an area where wolves are already accustomed to human activity.

Under Alternative 2 the existing wolf prey base would be maintained. There are no livestock (cattle) grazing concerns associated with this project. Road closures in the Swan Valley that have been implemented to increase grizzly bear security have increased wolf security as well. There would be no increase in mortality risk as a result of implementation of the action alternatives.

The gray wolf population in Montana has seen a steady increase since the late 1970s. The Montana wolf population is secure but very dynamic (Sime, et. al. 2007). Some packs do not persist from year to year for a variety of reasons, including mortalities and poor pup production/survival due to parasites and disease, and lethal control to address conflicts with livestock. The larger packs tend to live in remote backcountry areas, Wilderness, or Glacier National Park. In response to the increasing population, the USFWS has proposed the gray wolf for delisting as a Federally endangered species. For additional information on the status of the gray wolf on the Flathead National Forest, and the status at broader scales, reference the document Flathead National Forest Evaluation and

Compliance with NFMA Requirements to Provide for Diversity of Animal Communities, November 2006 (Project File Exhibit F 2).

There is the potential for increased human occupancy of private lands near the project area due to sales of commercial timber lands. The conditions placed on lands sold to private individuals are highly variable. All development is regulated by State of Montana and County regulations specific to specific developmental activities. As previously stated, many acres of industrial forest lands have also been sold to public land management agencies. The cumulative effect of private land development in or near the project area with the project itself and coupled with previous land management projects are not likely to measurably affect the gray wolf on a population basis. There appears to be little risk of population loss, and species viability would be maintained (Project File Exhibit F-2).

Alternative 3 Direct and Indirect Effects

Alternative 3 is similar to Alternative 2, with the exception that no old growth maintenance treatments are proposed. All of the old growth maintenance treatments that were eliminated from this alternative are located in designated white-tailed deer winter range and presently provide thermal cover on the winter range.

Prey Base – Alternative 3 would have less potential for affecting the wolf prey base than Alternative 2, because there are fewer acres of winter range affected and the acres eliminated from Alternative 3 are old growth stands where deer use and use by other potential prey species (e.g., small mammals) may be greater. There are no proposed treatments in riparian areas under Alternative 3. There would be no change expected in ungulate population numbers as a result of implementing this alternative; an adequate prey base for wolves would be maintained and any effects to the wolf ungulate prey base would be minimal.

The proposed prescribed burning under Alternative 3 would improve ungulate habitat and benefit the gray wolf.

Key Habitat Areas (denning sites, rendezvous areas, and whelping sites) – There would be no direct or indirect effect on wolf security from disturbance to key wolf habitat areas as a result of implementing Alternative 3 since there are no known or historical den sites, rendezvous areas, or whelping sites in the proposed Cooney McKay Project Area.

Security/Mortality Risk – Some displacement of wolves may occur as a result of implementing Alternative 3. In addition to the actual vegetative treatments, approximately 1.2 miles of temporary road would be needed to access units under Alternative 3. All temporary roads would be reclaimed and public use of temporary roads would be prohibited. The expected increase in activity level within the project area would only result in temporary displacement of wolves from habitats that they might otherwise use. Under Alternative 3, there are no proposed treatments in riparian areas or in old growth habitat. If these areas presently provide cover, forage, and security for gray wolf, they would continue to do so.

The mortality risk for the gray wolf, as a result of implementing Alternative 3, would not be significantly increased.

Alternative 3 Cumulative Effects

Under Alternative 3, the existing wolf prey base would be maintained. There are no livestock (cattle) grazing concerns associated with this project. Road closures in the Swan Valley that have been implemented to increase grizzly bear security have increased wolf security as well. There would be no increase in mortality risk as a result of implementation of the action alternatives.

As described above, in the Alternative 2 discussion, the gray wolf population in Montana has seen a steady increase since the late 1970s and is secure but very dynamic (Sime, et. al. 2007). In response to the increasing population, the USFWS has proposed the gray wolf for delisting as a Federally endangered species.

There is the potential for increased human occupancy of private lands near the project area due to sales of commercial timber lands. As previously stated, many acres of industrial forest lands have also been sold to public land management agencies. The cumulative effect of private land development in or near the project area with the project itself and coupled with previous land management projects are not likely to measurably affect the gray wolf on a population basis.

Adverse cumulative effects are not expected. There appears to be little risk of population loss and species viability would be maintained (Project File Exhibit F-2).

Alternative 4 Direct and Indirect Effects

Prey Base – Under Alternative 4, Seed Tree harvest in stands that are designated as white-tailed deer winter range would not occur. Alternative 4 would have less potential for affecting the wolf prey base than Alternative 2 because there would be less acres of winter range disturbed. The treatments proposed would retain an average of 50 percent or greater canopy closure. Implementing Alternative 4 would not decrease the existing amount of thermal cover on white-tailed deer winter range. An adequate prey base for wolves would be maintained.

Key Habitat Areas (denning sites, rendezvous areas, and whelping sites) – There would be no direct or indirect effect on wolf security from disturbance to key wolf habitat areas as a result of implementing Alternative 4 since there are no known or historical den sites, rendezvous areas, or whelping sites in the proposed Cooney McKay Project Area.

Security/Mortality Risk – Some displacement of wolves may occur as a result of implementing Alternative 4. The least amount of temporary road would be needed to access units under Alternative 4. All temporary roads would be reclaimed and public use of temporary roads would be prohibited. Under Alternative 4, there are no proposed treatments in riparian areas and the mortality risk for the gray wolf would not be significantly increased.

Alternative 4 Cumulative Effects

The project proposal would not contribute cumulative effects to the gray wolf, due, in large part, to its location in an area where wolves are already accustomed to human activity. The existing wolf prey base would be maintained. There are no livestock (cattle) grazing concerns associated with this project. Road closures in the Swan Valley that have been implemented to increase grizzly bear

security have increased wolf security as well. There would be no increase in mortality risk as a result of implementation of the action alternatives.

As described under Alternatives 2 and 3, the cumulative effect of past activities, the proposed project, and future activities, would not preclude or negatively affect gray wolf use of habitats in the area. Adverse cumulative effects are not expected. There appears to be little risk of population loss and species viability would be maintained (Project File Exhibit F-2).

Regulatory Framework and Consistency

The gray wolf is currently classified as Threatened in Montana and is protected under the ESA. Strategies to protect and recover populations in Montana are outlined in the Northern Rocky Mountain Wolf Recovery Plan (USFWS 1987). The Recovery Plan identifies three recovery areas: Northwest Montana, Central Idaho, and the Greater Yellowstone Area. The Swan Valley lies within the Northwest Montana Recovery Area.

The biological requirements for wolf recovery in the northern Rocky Mountains of Montana, Idaho, and Wyoming were met in December 2002. Before the USFWS can propose to delist gray wolves, Federal managers must be confident that a secure, viable population of gray wolves will persist if protections of the ESA were removed. To provide that assurance, the states of Montana, Idaho, and Wyoming have developed wolf conservation and management plans and adopted other regulatory mechanisms in state law. In late 2003, Montana, Idaho, and Wyoming submitted wolf management plans to USFWS for review. The USFWS approved the Montana and Idaho management plans. Wyoming's plan was not approved. Since that time (2004 to 2006), the USFWS, and the states of Montana and Idaho, have been waiting on a proposed delisting of the gray wolf until Wyoming has an approved management plan. A cooperative agreement between the MDFW&P and the USFWS allows Montana to implement its approved state plan to the extent possible within the guidelines of Federal regulations.

Forest-wide management direction for gray wolf is included in the Forest Plan, including Amendments 8, 11, 12, and 21. The Northern Rocky Mountain Wolf Recovery Plan (1987) was adopted as Forest Plan Appendix PP.

The alternatives comply with Section 9, ESA of 1973, as amended, the Montana Gray Wolf Conservation and Management Plan, Forest Plan, as amended, and all finalized recovery documents. A BA for Threatened and Endangered Wildlife Species was prepared. The USFWS concurred with the "**May affect -- Not likely to adversely affect**" determination.

Grizzly Bear

Existing Condition

The proposed Cooney McKay Project lies within the Northern Continental Divide Grizzly Bear Ecosystem (NCDE). It appears that in the NCDE, grizzly bears are increasing their range and have a population beyond recovery plan levels (USFS 2002, USFS 2006). The Grizzly Bear Recovery Plan (USFWS 1993) identifies a minimum NCDE-wide grizzly bear population of 391. Grizzly bear population monitoring using a DNA sampling technique was carried out in 1998 and 2000 in approximately the northern third of the NCDE. The sample area included the North Fork of the

Flathead River. A provisional population point estimate of 381 (287 to 558, 95 percent CI) bears was derived from the 1998 work and 273 (234 to 339, 95 percent CI) from the 2000 data. The Flathead National Forest was an active participant in the 2004 Northern Divide Grizzly Bear Project, which was designed to derive a population estimate for grizzly bears in the entire NCDE based on DNA sampling techniques. At a recent Interagency Grizzly Bear Committee meeting, DNA analysis of the 2004 USGS study showed 507 individual bears with 92 percent of the samples completed (<http://www.fs.fed.us/r1/wildlife/igbc/>.)

The Cooney McKay Project is located in lands that have been designated as Management Situation 1 (MS 1), which is identified as an area needed for the survival and recovery of the species (LRMP). The Cooney McKay Project is also located within the Swan Valley Grizzly Bear Conservation Agreement (SVGBCA) Area.

The situation for grizzly bears in the Cooney McKay Area is summarized in the following Table 3-44.

Bear Mgmt Unit (BMU)	Subunit	Visual Sightings	Den Sites	Mortality
Big Salmon	Meadow Smith	Grizzly bear are known to use lands in this subunit. There have been reliable visual sightings and information on radio-collared grizzlies.	There are no known den sites in the vicinity of the proposed Cooney McKay Project.	In 2004, there were 5 mortalities in the Swan Valley. From fall 2003 thru winter 2005, there were 9 grizzly bear mortalities in the Swan Valley. Most of the mortalities were management actions as a result of conflicts near human dwellings.

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

Since there would be no vegetation treatments or associated activities proposed with this alternative, there would be no direct effects to grizzly bear as a result of implementing the No Action Alternative. Indirectly, not implementing the fuel reduction and forest health treatments may increase the risk of a wildfire burning more intensely in the Cooney McKay Project Area, which would result in a change in available forage and cover for grizzly bear over the short and long term. Fires have historically produced both positive and negative effects for grizzly bears. On the negative side, there could be a loss in hiding cover and security. On the positive side, forage habitat would be potentially increased.

Alternatives 2, 3, and 4 Direct and Indirect Effects

Denning Habitat - Denning habitat has been characterized as steep (> 45 percent slope), relatively inaccessible slopes with northern and western aspects at or above 5,900 feet in elevation (Mace 1997). Most of the proposed vegetation treatment area is outside of areas that would be expected to

provide potential denning habitat for grizzly bear. There is no proposed commercial harvest or non-commercial treatment in known or potential grizzly bear denning habitat under the action alternatives. There would be no direct or indirect effects to grizzly bear denning habitat as a result of proposed commercial or non-commercial vegetative treatments. There may, however, be potential grizzly bear denning habitat on the upper slopes of the Swan Range, in the location of the proposed prescribed burns. Prescribed fire treatments would occur outside of the denning period and outside of the early spring period. There would be minimal direct effects to potential grizzly bear denning habitat. Prescribed fire treatment would occur over a period of several years. Alternate, potential denning habitat occurs in abundance in adjacent drainages.

Food Production/Cover –The mature and immature forest stands where vegetative treatment is proposed currently provide hiding cover for grizzly bear. Hiding cover for grizzly bear would be retained in the Commercial Thin, Old Growth Maintenance, Salvage, and Pre-Commercial Thin units. Hiding cover would not be retained in the Seed Tree units. There would be an immediate decrease in hiding cover of 79 acres in the Meadow Smith Subunit under Alternatives 2 and 3. There would be a decrease in hiding cover of 14 acres in the Meadow Smith Subunit under Alternative 4. Currently, hiding cover is not a limiting factor in the subunit. There is approximately 67 percent hiding cover on NFS lands in the subunit and approximately 68 percent hiding cover on PCTC lands (SVGBCA Monitoring Report 2006). Hiding cover would take approximately 5 to 15 years to recover, depending on stand conditions. Vegetative screening would be retained along open roads in the project area and the seed tree units would retain hiding cover such that no point in the unit is more than 600 feet from hiding cover.

Grizzly bears are opportunistic feeders and will prey or scavenge on almost any available food. Plants with high crude protein content and animal matter are most important food items. The mature and immature stands where vegetative treatments are proposed offer foraging opportunities for grizzly bear, although vegetative forage may be limited due to thick canopy covers. Although proposed vegetative treatments would initially decrease the amount of available forage due to ground disturbance, forage opportunities would increase over existing conditions within 1-5 years as a greater amount of sunlight and moisture reach the forest floor. As with hiding cover, forage is not limited across the subunit.

Riparian zones, a basic component of suitable grizzly bear habitat, would not be included in the forest health or fuel reduction treatment area under any of the action alternatives. There are no proposed treatments in riparian areas. If these areas presently provide hiding cover and forage, they will continue to do so.

The proposed prescribed burning on mid to upper slopes would reduce available forage for grizzly bears in the short term but would be beneficial overall. Within 1 to 5 years, understory vegetation would increase over existing conditions and forage habitat would improve. Grizzly bears are known to make extensive use of forest openings such as meadows, shrub fields, and avalanche paths (Hamer et al. 1985). Studies have shown that many of these open communities were the result of past fire (Hamer et al. 1981). Grizzly bears have been known to use post-fire shrub fields disproportionately more than predicted from availability (Zager et al. 1983). The proposed prescribed burning has habitat improvement objectives, as well as forest health and fuels reduction objectives. The lower elevation portions of the prescribed burns would improve the conditions of important shrub fields and understory vegetation. The higher elevation portions of the proposed fire areas provides potentially important whitebark pine habitat. Re-introducing fire into these stands may improve the capability of the area in providing important whitebark pine habitat for the grizzly bear.

Hiding cover in the prescribed burn areas would not be decreased significantly. Shrub fields would grow back quickly. Mortality in scattered overstory trees would be approximately 20 percent or less; midstory mortality would be between 30 and 50 percent. The overstory canopy would remain largely unchanged in areas of underburning.

Displacement/Mortality Risk/Security – There is a potential for short-term displacement of bears from the immediate area during forest health and fuels reduction operations proposed under the action alternatives. Implementation of the Cooney McKay Project may begin in 2009 with sale layout and preparation. Harvest operations are expected to begin in late 2010 and continue for approximately 3 years, through 2013. If harvest activity is not completed by 2011, proposed actions will comply with the SVGBCA guidelines for subunit rotation. According to the rotation schedule set up in the SVGBCA, the grizzly bear subunit where the forest health / fuels reduction project is located (Meadow Smith Subunit) is “inactive” from 2006 thru 2008, becoming “active” again from 2009 through 2011. Commercial Use, defined as major forest management activities (including road construction and timber harvest), is not permitted in an “inactive” subunit except during the denning period (November 16 thru March 31). Consequently, all major forest management activities occurring as part of the Cooney McKay Project would be conducted from November 16 thru March 31, during the 2008 grizzly bear denning period. Minor activities (e.g., pre-commercial thinning, road maintenance, slash disposal, tree planting, jackpot and under-burning), that are less than two weeks in duration, may be conducted in an “inactive” subunit. In 2009, when the subunit is again “active,” major forest management activities may be conducted throughout the year, with few limitations. These Design Criteria would limit potential long-term displacement of grizzly bears, reduce the mortality risk as a result of project implementation, and would help provide for grizzly bear security. There is still a potential for short-term displacement of bears from the immediate area during the proposed activities (See Table 2-14).

In order to avoid the potential disturbance of grizzly bears in important spring habitat, management activities planned in spring habitat, which is defined as areas within designated linkage zones and below 5,200 feet (USFWS 1997), would not occur within the Spring Period (April 1 through June 15). This timing restriction would apply to more than half of the treatment units.

There would be no permanent road construction under any of the alternatives. Approximately 1.2 miles of temporary road would be needed to access treatment units under Alternatives 2 and 3. Alternative 4 would require slightly less (1.0 mile). Proposed temporary roads would be reclaimed following use. The reclamation work would include the removal of any culverts, water bar placement, seeding, re-contouring, and the placement of large woody debris on the reclaimed road.

Existing open roads and closed roads would be used to conduct the proposed vegetation management operations. Use of open roads would not be a change from the existing condition. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are utilized for timber management activities. Actions proposed under the action alternatives would not increase total road density in the subunit or decrease security core.

Existing areas that provide grizzly bear security are located outside of the Cooney McKay Project Area. There would be no increase in the mortality risk for grizzly bears as a direct result of project implementation. The contract for the Cooney McKay Project would include a clause for the temporary suspension or cessation of activities, if needed, to resolve any grizzly bear/human conflict.

A Special Order is in effect that requires all users of NFS lands within the NCDE to store food, garbage, and other bear attractants in a bear resistant manner. Contractors, and others implementing the proposed project, would be required to comply with this order.

Alternatives 2, 3, and 4 Cumulative Effects

As described previously, the Cooney McKay Project Area is located near the community of Condon, Montana, and has part-year and yearlong residences in the area, as well as other established human activities. In addition to timber management on NFS lands, there has been a history of timber management and road building on other ownership lands, including PCTC, which has a checkerboard ownership in the Swan Valley. Timber harvest activities on PCTC lands and on NFS lands in the Cooney McKay Project Area peaked during the mid- to late-1980s, although lower levels of timber harvest continue up to the present on all ownership lands.

Recently, PCTC has offered up tracts of land in the southern portion of the Swan Valley for sale to the Forest Service, conservation buyers, or other private individuals. Between 1997 and 2007, an estimated 480 acres of PCTC lands have been purchased by the State of Montana and 549 acres purchased by conservation buyers with limited development covenants. In addition, about 3,667 acres (20 parcels) of PCTC lands have been sold with development limited by the regulations of Missoula and Lake Counties (Project File Exhibit Q-1 and Q-10). Deed restrictions on the land sales include set-back standards for streams and sanitation guidelines (e.g., no outdoor barbecue pits, no birdfeeders within reach of bears, and fenced gardens). In Missoula County a subdivision review is required if parties propose to subdivide 160 acres or more. Despite these provisions, there is a concern that an increase in private parcels of land in the Swan Valley may further fragment wildlife habitat and increase human-bear encounters. As stated above, many of the land sales by PCTC have been to conservation buyers, which should help mitigate the risks associated with private land development. The Forest Service has acquired approximately 11,489 acres from PCTC between 1997 and 2007. The acquisition of lands by the Forest Service has helped to maintain natural landscape linkages and to reduce the risk of private land development. The activities proposed in Alternatives 2, 3, or 4 would not contribute to or significantly affect the landownership pattern or population density in the Swan Valley. Please refer to the Lands Section of this document for further discussion on land development in the Swan Valley.

In 1995, a Conservation Agreement was entered into by PCTC, DNRC, the Forest Service, and the USFWS. The purpose of the agreement has been to adopt an adaptive management approach to manage the integrated pattern of ownership and development in such a way as to reduce the impact of activities on the grizzly bear in the Swan Valley. Since 1995 the different timberland managers have adhered to the agreement. Adherence to the agreement has helped to ensure that negative cumulative impacts to the grizzly bear do not occur.

Recently, the primary cause of grizzly bear mortality in the Swan Valley has been human related. Grizzly bear mortalities have occurred as a result of food conditioning and habituation and the ultimate removal from the population due to human safety concerns or as a result of poaching or other illegal actions. Occasionally, grizzly bear mortalities have occurred in the Swan Valley as a result of livestock depredation, but those instances have been rare. To minimize the risk of human-grizzly conflicts in the Swan Valley, and in the Cooney McKay Project Area, the Forest Service and local residents have become very active in providing information and educational programs on living in grizzly bear country and on food storage techniques. In addition, the Flathead National Forest and

local partners have provided bear-proof storage containers and employed a Bear Ranger to educate and enforce a Forest Food Storage Order. There is currently an effort among the cooperating parties in the SVGBCA to employ a Bear Management Specialist in the Swan Valley to help mitigate human caused grizzly bear mortality.

Security for the grizzly bear would not be reduced as a result of project implementation. The Meadow Smith Subunit currently meets Forest Plan Amendment 19 objectives for open and total road density, and for security core. There would be no net loss of habitat security or increases in motorized access density. The Cooney McKay Forest Health and Fuels Reduction Project would not contribute cumulative effects to the grizzly bear.

Regulatory Framework and Consistency _____

The grizzly bear is currently classified as Threatened in Montana and is protected under the ESA. The Cooney McKay Project is located in lands that have been designated as MS 1, which is identified as an area needed for the survival and recovery of the species (Forest Plan). The Cooney McKay Project is also located within the SVGBCA Area.

Forest-wide management direction for grizzly bear is included in the Forest Plan, including Amendments 8, 9, 11, and 19. Interagency Grizzly Bear Guidelines (1986) were adopted as Forest Plan Appendix OO.

The alternatives comply with Section 9, ESA of 1973 as amended, Forest Plan, as amended, the Interagency Grizzly Bear Guidelines, and the SVGBCA. A BA for Threatened and Endangered Wildlife Species was prepared. The USFWS concurred with the “**May affect -- Not likely to adversely affect**” determination.

Old Growth Associated Wildlife Species

Introduction _____

Old growth is defined in Amendment 21 of the Forest Plan as “a community of forest vegetation that has reached a late stage of plant succession.” The generic description is as follows:

- The age of the dominant cohort of trees is significantly older than the average time interval between natural disturbances (interval will vary depending upon forest cover type and habitat type);
- The dominant trees are approaching their average life expectancy on the site;
- Forest composition and structure are different from younger stands;
- Rates of change in composition and structure of the stand are slow relative to younger forests;

- There is a significant showing of decadence (wide range of defect and breakage in both live and dead trees).

In The Dictionary of Forestry (Helms 1998), old growth forests are described as having:

- Large trees for the species and site;
- Accumulations of large dead standing and fallen trees;
- Decay or breakage of tree tops, boles, or roots;
- Multiple canopy layers;
- A wide variation in tree size and spacing; and
- Canopy gaps and understory patchiness.

The characteristics of old growth forest described above provide habitat for many plant and animal species. For the purpose of this discussion, old growth associated species include any wildlife species that use the various attributes of old growth forests for some or all of their ecological needs. These needs may include nesting, denning, security, or foraging habitat. For some species, closed canopy old growth provides snow capture and reduces snow depths, insulates the animals from cold winds, and provides protection from predators. Some species, such as the fisher, are strongly tied to canopy cover and mature forest structure for the majority of their habitat needs. More open canopies, or open understories, provide foraging opportunities for prey and predator species alike. Wildlife may use interior old growth habitat as shelter from sun, heat, dryness, or wind, and may provide protection from predators. Some old growth associated wildlife species need only a portion of their home range to be in old growth. Examples include the Canada lynx, northern goshawk, American marten, pileated woodpecker, and bald eagle. Other species such as southern red-backed voles, chestnut-backed chickadee, Swainson's thrush, and northern flying squirrels, have relatively small home range sizes (less than 100 acres), with the necessary proportion of this home range being in old growth unknown.

The following table displays 31 old growth associated species designated in the Forest Plan's Amendment 21 that may be found in the Swan Valley, along with their associations with various habitat elements.

Stands across the analysis area were screened for old growth characteristics. The Western Montana Zone Old Growth Type Characteristics were used to classify old growth forests (Green et al. 1992 [updated 2005]). The Western Montana Zone definition uses certain criteria, including forest type, tree age and diameter, trees per acre, number and diameter of snags, amount of down woody debris, and tree canopy layer structure. Field surveys were done for every stand which appeared to be close to the minimum criteria and for all stands where stand replacement treatment was proposed (e.g. Seed Tree Harvest).

TABLE 3-45.
HABITAT REQUIREMENTS OF OLD GROWTH ASSOCIATED WILDLIFE SPECIES
 (Based On Warren 1998 And Lrmp Amendment 21 Feis)

Species	Cover Type in Affected Area	Canopy	Edge	Larger Patches	Snag	Down Log	Occurrence
American Marten	Mixed mesic, lodgepole, spruce/fir forests	Closed	-	+	X	X	Known current
Bald Eagle (S)	Mixed mesic forests, near large lake or river	Open		+	X		Known current
Black-backed Woodpecker (S)	Lower Montane & Montane; post-fire or insect-epidemic forests	Open			X		Known current
Boreal Owl	Mixed mesic and spruce/fir forest mosaic	Closed			X	X	Known current
Brown Creeper	Mixed mesic, lodgepole, and spruce/fir forests	Closed	-		X		Known current
Canada Lynx (T ^a)	Mixed mesic, lodgepole, and spruce/fir forests; gentle terrain		+ ^b	+	X ^c	X	Known current
Chestnut-Backed Chickadee	Mixed mesic and spruce/fir forests, especially cedar-hemlock	Closed	- ^d		X		Known current
Fisher (S ^e)	Mixed mesic and lodgepole forests	Closed				X	Known current
Flammulated Owl (S, F ^f)	Lower Montane and Montane, single-story.	Open			X		Known current
Golden-crowned Kinglet	Mixed mesic, lodgepole, and spruce/fir forests	Closed		+	X		Known current
Hairy Woodpecker	Mixed mesic, lodgepole, and spruce/fir forests	Open			X	X	Known current
Hammond's Flycatcher (F)	Mixed mesic and spruce/fir forests	Closed					Known current
Harlequin Duck (S)	Swift mountain streams, riparian old growth (weak association)	Open				X	Known current
Hermit Thrush	Dry mixed mesic and spruce/fir forests	Open		+			Known current
Lewis' Woodpecker	Lower Montane ponderosa pine and old burns	Open			X		Known current
Northern Flying Squirrel	Mixed mesic and lodgepole forests			+	X	X	Known current
Northern Goshawk (S)	Single or multistory old growth; clear forest floor	Closed		+	X		Known current
Pileated Woodpecker	Mixed mesic forests	Closed		+	X	X	Known current
Pine Grosbeak	Mixed mesic, lodgepole, and spruce/fir forests						Known current

**TABLE 3-45.
HABITAT REQUIREMENTS OF OLD GROWTH ASSOCIATED WILDLIFE SPECIES
(Based On Warren 1998 And Lrmp Amendment 21 Feis)**

Species	Cover Type in Affected Area	Canopy	Edge	Larger Patches	Snag	Down Log	Occurrence
Pygmy Nuthatch	Large single-story ponderosa pine and mixed mesic forests	Open			X		Known current
Red-Breasted Nuthatch	Mixed mesic, lodgepole, and spruce/fir; relatively dry	Open		+	X		Known current
Silver-haired Bat	Mixed mesic and lodgepole forests; caves and snags				X		Suspected
Southern Red-backed Vole	Mixed mesic, lodgepole, and spruce-fir forest				X	X	Known current
Swainson's Thrush (F)	Mixed mesic and lodgepole forest with shrub understory			+			Known current
Tailed Frog	Cold, high gradient headwater streams					X	Known current
Three-toed Woodpecker	Mixed mesic, lodgepole, and spruce/fir forests; post-fire				X		Known current
Townsend's Warbler	Mixed mesic and lodgepole forest; dense understory	Closed	-	+			Known current
Varied Thrush	Mixed mesic and spruce/fir forests, especially cedar-hemlock	Closed		+			Known current
Vaux's Swift (F)	Mixed mesic and spruce/fir forests; large hollow snags				X		Known current
White-breasted Nuthatch	Large single-story ponderosa pine	Open			X		Known current
Winter Wren	Mixed mesic and spruce/fir forests, especially cedar-hemlock		-	+	X		Known current

^a T = Threatened

^b + = positive correlation (where known)

^c X = important habitat component;

^d - = negative correlation (where known)

^e S = Sensitive

^f F = Forest-dwelling Neo-tropical migrant with apparently declining populations.

Analysis Area

Spatial Bounds

The effects analysis area for direct, indirect, and cumulative effects to old growth associated wildlife species is the Cooney McKay Project Area (approximately 38,031 acres), from Cooney Creek on the south to Alder Creek on the north; and from the Swan River on the west to the upper slopes of the Swan Range on the east. This old growth analysis area is large enough to include the home ranges

of old growth associated species, and is representative of the effects of fire, natural tree mortality, timber harvest, and road management, across the landscape. At the same time, this analysis area is small enough to not obscure the effects of the alternatives. A multi-scale assessment has also been conducted to address habitat diversity concerns.

Temporal Bounds

The length of time for effects analysis is approximately 5 years for the roads and forest health/fuel reduction portions of this project. This is based on the probable contract length for the proposed project, the timeframes for related activities, and the reasonably foreseeable actions identified. Upland burning proposed in the Condon, Cooney, and Smith Creek drainages might occur during the next 10 years, dependent on the availability of burning windows, funding, and equipment needed to achieve the desired results. When conditions are favorable the actual burning would only take a day or less for each project, but this time frame provides a conservative margin for all these elements to come together.

Affected Environment

Historic Condition

Historically, old growth forests in the Swan Valley ranged from open, patchy stands, maintained by frequent low-severity fire, to a mosaic of dense and open stands maintained by mixed-severity fires (Freedman and Habeck 1985; Arno et al. 1995). Old growth structure and composition, and the amount of old growth in a watershed, varied strongly with topography and elevation, and were shaped by a complex disturbance regime of fire, insects, and disease. Historically, old growth was most likely to develop in the valley bottoms and along streams, where fires burned less frequently and usually with less intensity. Drier site old growth, with ponderosa pine as the dominant tree species, occurred on more well drained soils, often on the flats between stream bottoms. These stands were maintained by lower intensity ground fires that were not lethal to the ponderosa pine, but which inhibited the growth of less fire tolerant species beneath the ponderosa pine. Because severe, stand-replacing fires burn at irregular intervals in response to weather patterns and fuel accumulations, variations in the amount of old growth in a local area could be expected over time. Based on various information sources, the amount of old growth on the Flathead National Forest historically would have been on the order of 15 to 60 percent (USDA 1999). Generally, across the Flathead National Forest and the entire Columbia River Basin, there was a higher percentage of old forest across the landscape than there is currently. For more information on old growth habitat conditions across the Flathead National Forest, see the Final EIS for the Forest Plan, Amendment 21 (USDA 1999).

Existing Condition

Over the last 100 years, old forests in the Interior Columbia Basin have declined by 27 to 60 percent and large residual trees and snags have decreased by 20 percent (Quigley et al. 1996). These changes have contributed to declining habitat conditions for numerous species of wildlife associated with old growth forests. This decrease in old growth forest has occurred within all sub-basins of the Flathead National Forest (LRMP, Amendment 21). Based on a broad Regional Review using Forest Inventory and Analysis (FIA) data, approximately 10.1 percent of the Flathead National Forest is old growth forest, with a range from 8.2 to 12.0 percent (USDA 2006). Although there are no detailed records that compare exact changes in old forest across the Swan Valley, the overall trend findings

are consistent among various analyses (Freedman and Habeck 1985, Hart 1994, USFS 1994, Swan Ecosystem Center 2004).

In the upper Swan Valley, the major differences today from historical conditions are that the total amount of old growth forest habitat covers less land area, the patches of old growth forest are smaller in size, and remaining old growth forest habitat has changed both structurally and in distribution (Hart 1994). This translates into smaller blocks of older forest that are not as “secure” as larger blocks of old growth forest with more interior area, and a decline in drier site old growth forest where the large tree component is dominated by ponderosa pine and western larch trees. Part of the decline can be largely attributed to land clearing in the valleys, road construction, and timber harvest. Another threat to open-grown, drier site old growth ponderosa pine and western larch forests is the fire suppression policy of the last 100 years. Before the advent of aggressive fire suppression, the older ponderosa pine/western larch forests on drier sites experienced frequent low intensity ground fires. Since the early 1900s, effective fire suppression has allowed many of the remaining mature stands of ponderosa pine and western larch to become densely overgrown with mid-story and understory Douglas-fir, subalpine fir, spruce, and grand fir trees. These shade-tolerant species are growing into the crowns of the older ponderosa pine and western larch forests and creating “fuel ladders” that put the ponderosa pine and western larch trees at increased risk should a fire occur.

Old growth forest was identified within the Cooney McKay Area (38,031 acres), using “The Western Montana Zone Old Growth Type Characteristics” (Green et al. 1992 [updated 2005]). Approximately 10 percent of the capable area is old growth forest if individual private lands and PCTC timberlands are included in the base acres. Approximately 14 percent of the capable area is old growth forest if PCTC timberlands, but not individual private lands, are included in the base acres. In both cases, only forests meeting old growth characteristics on NFS lands have been included in the overall percentage of old growth. Please refer to Map 3-7 for a display of old growth forest within the Cooney McKay Area. Old growth on individual private lands and on PCTC lands were not included in the existing old growth figures because the availability of old growth on these lands is uncertain.

Patch size of old growth forest is an important characteristic in its function as habitat. As mentioned previously, one of the changes from historical conditions is the fragmentation, or disruption of continuity, of old growth forest patches that are presently available across the Swan Valley. Old growth associated wildlife species use other habitats as well, but rely on old growth for at least a portion of their habitat needs. Many of these species are sensitive to fragmentation. For example, the northern goshawk is thought to require approximately 20 percent of its home range to be in an old growth condition (Reynolds et. al. 1992); research suggests that 250 to 500 acres of old growth is required for the pine marten, and approximately 100 to 250 acres for the pileated woodpecker (McClelland 1999). The average patch size (uninterrupted continuity) of old growth in the Cooney McKay Project Area is 87 acres. There are approximately 37 “patches”, ranging from 10 acres to 305 acres. The old growth forests in the upper Swan Valley are a mix of drier habitat sites and moister habitat conditions. Approximately 4 percent of the existing old growth forest in the Swan Valley would be considered drier site old growth, with ponderosa pine and lesser amounts of western larch being the dominant species. When considering just the Cooney McKay Project Area, approximately 25 percent of the existing old growth is in drier habitat types with ponderosa pine or larch as the dominant species. Approximately 24 percent of the old growth is lower elevation and approximately 76 percent is upper elevation old growth. Historically, logging of old growth forests was greater on the more accessible valley floor, leaving less low elevation old growth in most drainages.

Environmental Consequences

The Cooney McKay Project consists of three action alternatives and a No Action Alternative. The alternatives are described in detail in Chapter 2 of this DEIS. The Cumulative Effects Worksheet, located in the Wildlife Project File (Project File Exhibit F-9) considers and describes proposed activities in addition to the past, current, and reasonably foreseeable activities listed at the beginning of this chapter in Tables 3-1 and 3-2. Those activities that cumulatively contribute indiscernible effects to Old Growth Associated Species are not included in this section. Those activities that cumulatively affect these species are listed below.

Alternative 1 - No Action Direct and Indirect Effects

There would be no forest health/fuel reduction treatment, or associated activities, proposed with this alternative. There would be no direct effects to old growth habitats on NFS lands or to old growth associated wildlife species utilizing these lands. This alternative would sustain habitat for old growth associated species, at least over the short term.

It is possible that an indirect effect of Alternative 1 would be an increased likelihood of a larger and more intense wildfire event in the Cooney McKay Area. Indirectly, taking no action to reduce fuel buildups throughout the area, and specifically understory vegetation in historically open-grown stands where ponderosa pine and western larch are the dominant old growth species, could increase the potential for a loss of old growth forest in this area. The level of effects would depend on the size and intensity of the wildfire. Even in the absence of fire, over the long-term, an indirect effect would be the loss of the ponderosa pine and western larch old growth type as the number of shade-tolerant species increases; there would be little to no potential for regeneration of larch or ponderosa pine, which are preferred by numerous wildlife species.

Alternative 1 - No Action Cumulative Effects

Alternative 1 would contribute to cumulative effects to the degree that it does not alter current and ongoing increases in fuel buildup and ladder fuels within and immediately adjacent to some old growth stands where, historically, fuel build up and ladder fuels would have been periodically removed in less intense wildfire events. The specific cumulative effects of the No Action Alternative are not possible to predict, however, as they would depend on the actual location, intensity, moisture and weather conditions associated with a presently unknown future fire event. Increased risk of larger more intense fires may be foreseeable, but specific affects are not.

Natural vegetative processes would continue on NFS lands in the Cooney McKay Area. Older mature forest stands would become old growth stands. Existing old growth forest would experience increased tree mortality in the overstory, with younger trees growing into the natural openings. Replacement of the older trees would take many decades and the stands would take on an uneven-aged character. The amount of old growth habitat across the landscape would fluctuate as older trees are replaced by younger trees and as younger forests grow into future old growth.

Cumulative affects from existing and possible future changes in land ownership are reflected in the old growth analysis. Old growth and mature forests on private lands are not assumed to contribute to present or future old growth in the analysis area. Possible cumulative effects of the potential for

increased human occupancy related to changes in land ownership and or increased development of existing private lands do not have a foreseeable effect on the amount or distribution of old growth on the NFS lands. On private lands it is assumed, for cumulative effects purposes, that old growth does not exist.

Alternative 2 Direct and Indirect Effects

For all cutting units in Alternative 2, proposed activities may temporarily displace old growth habitat associated wildlife species if treatments are occurring in old growth stands or in stands adjacent to old growth.

Commercial Harvest - In the Commercial Thinning treatments (561 acres) the existing tree canopy closure would be reduced from 70 to 90 percent to an average of 50 percent or greater canopy closure. Generally, all dominant and most co-dominant trees would be retained. The purpose of this treatment is to enlarge the growing space for desirable trees by reducing excessive tree competition for limited site resources. Salvage harvest treatments (69 acres) would reduce the existing mature tree canopy from 70 to 80 percent to approximately 50 to 60 percent, removing trees primarily in the intermediate (lodgepole pine) and co-dominant (Douglas-fir) canopy. In the Commercial Thin From Below Units (93 acres) the existing dominant and co-dominant trees would be retained; primarily intermediate and suppressed trees in the understory would be removed. The proposed Commercial Thinning, Salvage, and Thin From Below treatments are not proposed in existing old growth stands; however, the proposed treatments would keep the stands on a trajectory towards providing old growth habitat conditions for old growth associated wildlife species in the future.

The Seed Tree harvest (79 acres) would retain western larch and ponderosa pine trees as seed trees. The majority of the Douglas-fir, and all of the lodgepole pine, would be removed. Seed tree cutting is a regeneration treatment; the stand would not be potential old growth habitat for a very long time (100 to 200 years).

In Alternative 2, timber harvest is also proposed in 5 old growth stands (119 acres). The old growth stands provide drier site old growth habitat conditions, with the dominant old growth species being ponderosa pine and western larch. The purpose of the "Old Growth Maintenance" treatment is to protect and sustain the ponderosa pine and western larch large-tree, open-grown old growth character of the stand. The existing overstory would be retained, removing only trees in the intermediate and suppressed canopy layers to reduce fuels and ladder fuels. Lodgepole pine and Douglas-fir would be the primary species removed to sustain the health and vigor of the old growth larch and ponderosa pine. Opening up the understory in existing old growth stands would have positive effects on some old growth associated species and negative effects on others. As an example, there would be short-term negative effects to Townsend's warbler or the golden-crowned kinglet, which prefer closed canopy conditions. Opening up the understory, however, would produce positive effects for the white-breasted nuthatch and probably the flammulated owl. In the Cooney McKay Project, only old growth stands that have been historically open-grown, with a ponderosa pine overstory component, would be treated. There are many moister site old growth stands with closed canopies that would continue to be available as habitat throughout the upper Swan Valley.

Reducing the amount of snags or down woody material in old growth stands can remove habitat features that are essential or very important to many old growth associated species, particularly the marten, fisher, and pileated woodpecker (Bull et al. 2005). Research suggests that retaining the bulk

of the largest material may decrease these effects (Bull and Blumton 1999, Porter et al. 2005). In order to maintain sufficient snags in the existing old growth units, all snags greater than 18 inches at diameter breast height (DBH) would be retained and 6 snags per acre 12 to 18 inches DBH would be retained. In addition, all hardwood trees would be designated to be left and all standing dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater may be left on site. To maintain appropriate coarse woody material in these old growth stands, all pieces greater than 18 inches diameter would be retained as well as 15 pieces per acre that are 9 to 18 inches diameter (Table 2-14).

Interior Integrity of Existing Old Growth - New “edge” is created when stands adjacent to old growth habitat are converted from a late or mid-seral structural stage to an early seral structural stage. The creation of edge adjacent to old growth forest has two negative effects on old growth: It directly affects the adjacent old growth stand or old growth block by reducing the interior integrity of the stand or block, and it narrows or eventually severs the connection between different old growth patches. In Alternative 2, new edge would be created adjacent to existing old growth stands where seed tree harvest is proposed adjacent to old growth. Out of the 6 proposed Seed Tree Units, five are partially adjacent to old growth forest (Units 8-7, 8-8, 26-85, 26-91, and 30-56). In Alternative 2, high-contrast edge would be created adjacent to portions of three old growth patches for a total edge distance of approximately 1.6 miles (approximately 8,700 feet).

Non-Commercial Thin From Below and Pre-Commercial Thinning Treatments – Under Alternative 2 there would be 50 acres of Non-Commercial Thin From Below treatment and 105 acres of Pre-Commercial Thinning. There would be little to no short-term effects on old growth associated species as a result of implementing the proposed pre-commercial or thin-from-below treatments. In the long-term, the effects would be beneficial as the removal of excess trees at this stage in forest stand development reduces growth stagnation and enables the retained trees to grow vigorously. The trees to be retained would be (in order of preference) ponderosa pine, western larch, Douglas-fir, and lodgepole pine.

Temporary Road Construction – Under Alternative 2, the only temporary road construction proposed in or adjacent to old growth forest is in Unit 18-95, an Old Growth Maintenance unit. The temporary road is required to access this old growth unit. There is an existing bermed road which requires approximately 55 feet of temporary road to be constructed within the old growth stand. The temporary road would be reclaimed after use. During harvest activities, when the bermed road is being used for log haul, there would be a gate in place to restrict public use. This would reduce the risk of losing high quality snags to firewood cutters. The berm would be replaced following harvest activities.

Prescribed Fire - There is no prescribed fire proposed near or in any existing old growth stand. The areas proposed for prescribed burning are on the upper slopes of the Swan Range, in and adjacent to brush fields and natural openings. There would be no direct effects to old growth associated species as a result of the proposed prescribed fire. Indirectly, the proposed burning would decrease fuel accumulations on mid to upper elevation slopes in the Cooney McKay Area and may decrease the probability of a larger, more intense, stand replacement fire. This would be beneficial for old growth associated species.

Alternative 2 Cumulative Effects

Past land management activities in the area, including timber management, road construction, residential development, and agricultural conversion, have decreased the amount of available old growth forest and have fragmented the patches of old growth that are left into smaller blocks. Fire suppression has contributed to increased understory growth and denser mid-canopy trees (Lesica 1996), making foraging more difficult for species that apparently utilize a more open understory (e.g. flammulated owls and northern goshawks). The risk of stand-replacing fire in and adjacent to old growth stands has also increased. Alternative 2 would reduce the risk of stand replacement fire within those stands treated and would reduce the risk of stand replacement fire spreading to adjacent stands, including old growth stands.

Timber harvest activities on PCTC lands and on NFS lands in the Cooney McKay Area peaked during the mid to late 1980s, although lower levels of timber harvest continue up to the present on all ownership lands. There is another forest health timber harvest project on NFS lands in the Cooney McKay Area called the Meadow Smith Project. Cumulative effects in the Cooney McKay Analysis Area would include the effects of the Meadow Smith Project on NFS lands, as well as on-going and proposed timber harvest on PCTC lands. It should be noted that the Meadow Smith Project included the proposed Cooney McKay Project in its cumulative effects analysis.

Plum Creek Timber Company is in the process of selling some of their land to private individuals and to conservation buyers, including the Forest Service. The Lands Section of this chapter provides a detailed discussion of this change in land ownership. There are no State lands within the old growth analysis area. Harvest on State lands within the Swan Valley, such as the proposed Three Creeks Timber Sale on the Swan State Forest, are outside of the area and would be unlikely to cause foreseeable affects to old growth associated species within the Cooney McKay Project Area. The existing condition for old growth forest does not include any old growth on PCTC lands or State lands. Consequently, there would be no decrease within the analysis area in the existing amount of old growth forest, as described above, due to harvest activities on PCTC lands, State lands, or due to the sale of PCTC lands. Land sales, or timber harvest on other ownerships, may however break up the continuity of mature forest near and adjacent to old growth patches on NFS lands. The existing intermingled ownership pattern in the upper Swan Valley presents difficulties in managing old growth habitat connectivity with patch sizes that occurred historically.

The Cooney McKay Area is located near the community of Condon, Montana. There are part-year and yearlong residences in the area as well as many recreational opportunities. The level of human activity in the area increases the chance for disturbance or displacement of old growth associated species. There is also an increased risk for the removal of snags (firewood), an important component of old growth habitat. Other human activity in the area includes various road use permits and easements, building rentals, and on-going outfitter guide permits.

The direct and indirect effects discussed in Alternative 2 would be in addition to the cumulative effects described here. Significant negative cumulative affects to old growth habitat as a result of implementing Alternative 2, in combination with the potential changes in land ownership, and/or increases in human occupancy of private lands in or adjacent to the project area, are not anticipated. The rationale for this conclusion is, as in the discussion above, that old growth on private lands is not relied upon in this analysis and is modeled as if it did not exist.

As described above, the proposed treatments in mature forest stands (non old growth) is designed to leave the more vigorous, healthy trees, and the more wind-firm, fire-resistant and longer-lived species. This method of “thinning from below” is intended to increase the amount of old growth forest over the long-term, as mature forested stands are put on a trajectory where they should become future old growth habitat. The purpose of the “Old Growth Maintenance” treatments is to protect and sustain drier site old growth forest with a ponderosa pine and western larch component, which has greatly decreased from historical conditions. The amount of old growth forest that would be treated is approximately 4 percent of the current amount of old growth forest in the project area. Significant adverse cumulative effects to old growth associated species are not expected as a result of implementing Alternative 2.

Alternative 3 Direct and Indirect Effects

In Alternative 3, proposed activities may temporarily displace old growth habitat associated wildlife species if treatments are occurring adjacent to old growth.

Commercial Harvest - In Alternative 3, there would be no proposed treatment in old growth forest stands.

The proposed Commercial Thinning, Salvage, and Commercial Thin From Below treatments would move the existing stands toward an old growth condition.

As in Alternative 2, Alternative 3 proposes 79 acres of Seed Tree harvest. With this treatment, western larch and ponderosa pine trees would be retained as seed trees. The majority of the Douglas-fir, and all of the lodgepole pine, would be removed. Seed tree cutting is a regeneration treatment; the stand would not be potential old growth habitat for a very long time (100 to 200 years).

Interior Integrity of Existing Old Growth - In Alternative 3, new edge would be created adjacent to existing old growth stands where Seed Tree harvest is proposed adjacent to old growth. Out of the 6 proposed Seed Tree units, 5 are partially adjacent to old growth forest (Units 8-7, 8-8, 26-85, 26-91, and 30-56). In Alternative 3, as described in Alternative 2, high-contrast edge would be created adjacent to portions of 3 old growth patches for a total edge distance of approximately 1.6 miles (approximately 8,700 feet).

Non-Commercial Thin From Below and Pre-Commercial Thinning Treatments - Alternative 3 proposes 50 acres of Non Commercial Thin From Below treatment and 105 acres of Pre-Commercial Thinning. There would be little to no short-term effects on old growth associated species as a result of implementing the proposed Pre-Commercial or Thin From Below treatments; the tree sizes are small and the areas are not important habitat for old growth associated wildlife habitat. In the long-term, the effects would be beneficial as the removal of excess trees at this stage in forest stand development reduces growth stagnation and enables the retained trees to grow vigorously.

Temporary Road Construction – In Alternative 3, there is no temporary road construction proposed in or adjacent to old growth forest.

Prescribed Fire - There is no prescribed fire proposed near or in any existing old growth stand. There would be no direct effects to old growth associated species as a result of the proposed prescribed fire. Indirectly, the proposed burning would decrease fuel accumulations on mid to upper

elevation slopes in the Cooney McKay Area and may decrease the probability of a larger, more intense, stand replacement fire. This would be beneficial for old growth associated species.

Alternative 3 Cumulative Effects

As described previously, past land management activities in the area have decreased the amount of available old growth forest and have fragmented the patches of old growth forest that is left into smaller blocks. Fire suppression has contributed to increased understory growth and a denser mid-canopy, and the risk of stand-replacing fire in and adjacent to old growth stands has increased. In addition, the amount of open-grown, drier site old growth where ponderosa pine and western larch are the dominant species has declined.

Under Alternative 3, there would be no treatment in 5 drier site old growth stands. As discussed previously, this old growth habitat type is not common in the Swan Valley or throughout the Flathead National Forest. Without maintenance treatment these 5 old growth stands would continue to grow in; the species mix would change to Douglas-fir as ponderosa pine and western larch are unable to regenerate. The old growth stands would not provide open-grown habitat characteristics for old growth associated species that require that habitat characteristic. The current higher risk for an intense fire occurring in these drier site old growth stands would continue (See Fire Section of this EIS). The cumulative effects to old growth stand would be similar to that described for Alternative 1.

As described above, the proposed treatments in mature forest stands (non old growth) would increase the amount of old growth forest over the long-term, as mature forested stands are put on a trajectory where they could become future old growth habitat. Alternative 3 would reduce the risk of stand replacement fire in the stands proposed for treatment. This alternative would also reduce the risk of a stand replacement fire spreading into adjacent mature or old growth stands but not as much as in Alternatives 2 and 4 due to a lesser amount of acreage proposed for treatment in Alternative 3.

Timber harvest activities on PCTC lands, other private lands, and on NFS lands in the area continue up to the present. Cumulative effects in the Cooney McKay Analysis Area would include the effects of the Meadow Smith Project on NFS lands, as well as on-going and proposed timber harvest on PCTC lands.

Plum Creek Timber Company is in the process of selling some of their land to private individuals and to conservation buyers, including the Forest Service. There are no State lands within the old growth analysis area. Harvest on State lands within the Swan Valley would be unlikely to cause foreseeable affects to old growth associated species within the Cooney McKay Project Area. The existing condition for old growth forest does not include any old growth on PCTC lands or State lands. Consequently, there would be no decrease within the analysis area in the existing amount of old growth forest, as described above, due to harvest activities on PCTC lands, State lands, or due to the sale of PCTC lands. Land sales, or timber harvest on other ownerships, may however break up the continuity of mature forest near and adjacent to old growth patches on NFS lands.

Despite the risk of stand replacement fire being greater in the drier site old growth stands that would not be treated under this alternative, significant negative cumulative affects to old growth habitat as a result of implementing Alternative 3, in combination with the potential changes in land ownership, and/or increases in human occupancy of private lands in or adjacent to the project area, are not

anticipated and adverse cumulative effects to old growth associated wildlife species are not expected as a result of implementing Alternative 3.

Alternative 4 Direct and Indirect Effects

Activities proposed under Alternative 4 may temporarily displace old growth habitat associated wildlife species if treatments are occurring in old growth stands or in stands adjacent to old growth. There would be no long-term impact from this kind of displacement.

Commercial Harvest - In Alternative 4 there would be no harvest treatments on designated white-tailed deer winter range that reduces thermal cover. Seed Tree treatments that were proposed under Alternative 2 within white-tailed deer winter range have been dropped. In Alternative 4 there is only one Seed Tree harvest proposed (Unit 8-7; 14 acres). Seed Tree harvest is a regeneration treatment; the stand would not be potential old growth habitat for 100 to 200 years.

In Alternative 4, there is less Commercial Thinning proposed than in Alternatives 2 or 3. Units 26-20, and 26-20A have been dropped from Alternative 4 because they provide important white-tailed deer winter range habitat. The amount of proposed Commercial Thin From Below and Salvage harvest under Alternative 4 is the same as that proposed in Alternatives 2 and 3. The proposed Commercial Thin, Salvage, and Commercial Thin From Below treatments would keep the stands on a trajectory towards providing old growth habitat conditions for old growth associated wildlife species in the future.

Under Alternative 4, timber harvest is proposed in 5 old growth stands (119 acres). As described under Alternative 2, the old growth stands provide drier site old growth habitat conditions, with the dominant old growth species being ponderosa pine and western larch. The purpose of the 'Old Growth Maintenance' treatment is to protect and sustain the ponderosa pine and western larch large-tree, open-grown old growth character of the stand. The existing overstory would be retained, removing only trees in the intermediate and suppressed canopy layers to reduce fuels and ladder fuels. Lodgepole pine and Douglas-fir would be the primary species removed to sustain the health and vigor of the old growth larch and ponderosa pine. Opening up the understory in existing old growth stands would have positive effects on some old growth associated species and negative effects on others.

Reducing the amount of snags or down woody material in old growth stands can remove habitat features that are essential or very important to many old growth associated species. In order to maintain sufficient snags in the existing old growth units proposed for treatment, all snags greater than 18 inches DBH would be retained and 6 snags per acre 12 to 18 inches DBH would be retained. In addition, all hardwood trees would be designated to be left and all standing dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater may be left on site. To maintain appropriate coarse woody material in these old growth stands, all pieces greater than 18 inches diameter would be retained as well as 15 pieces per acre that are 9 to 18 inches diameter (Table 2-14).

Interior Integrity of Existing Old Growth - In Alternative 4, new edge would be created where the one proposed Seed Tree Unit (Unit 8-7) is adjacent to existing old growth forest. New edge would be created adjacent to a portion of a 266 acre old growth patch, for a total edge distance of approximately 0.8 miles (4,468 feet). Where the proposed Seed Tree Unit is adjacent to old growth,

the distance to “interior forest” would be less and the overall integrity of the old growth stand may be diminished.

Non-Commercial Thin From Below and Pre-Commercial Thinning Treatments - Alternative 4 proposes 50 acres of Non-Commercial Thin From Below treatment and 105 acres of Pre-Commercial Thinning. There would be little to no short-term effects on old growth associated species as a result of implementing the proposed Pre-Commercial or Thin From Below treatments; the tree sizes are small and the areas are not important habitat for old growth associated wildlife habitat. In the long-term, the effects would be beneficial as the removal of excess trees at this stage in forest stand development reduces growth stagnation and enables the retained trees to grow vigorously.

Temporary Road Construction - The only temporary road construction proposed in or adjacent to old growth forest is in Unit 18-95, an Old Growth Maintenance Unit. The temporary road would be reclaimed after use and the road would be bermed. During harvest activities, when the bermed road is being used for log haul, there would be a gate in place to restrict public use.

Prescribed Fire - There is no prescribed fire proposed near or in any existing old growth stand. There would be no direct, indirect, or cumulative effects to old growth associated species as a result of the proposed prescribed fire.

Alternative 4 Cumulative Effects

Past land management activities in the area, including timber management, road construction, residential development, and agricultural conversion, have decreased the amount of available old growth forest and have fragmented the patches of old growth that are left into smaller blocks. Fire suppression has contributed to increased understory growth and denser mid-canopy trees (Lesica 1996), making foraging more difficult for species that apparently utilize a more open understory (e.g. flammulated owls and northern goshawks). The risk of stand-replacing fire in and adjacent to old growth stands has also increased. Alternative 4 would reduce the risk of stand replacement fire within those stands treated and would reduce the risk of stand replacement fire spreading to adjacent stands, including old growth stands.

Timber harvest activities on PCTC lands and on NFS lands in the Cooney McKay Area peaked during the mid to late 1980s, although lower levels of timber harvest continue up to the present on all ownership lands. There is another forest health timber harvest project on NFS lands in the Cooney McKay area called the Meadow Smith Project. Cumulative effects in the Cooney McKay Analysis Area would include the effects of the Meadow Smith Project on NFS lands, as well as on-going and proposed timber harvest on PCTC lands. It should be noted that the Meadow Smith Project included the proposed Cooney McKay Project in its cumulative effects analysis.

Plum Creek Timber Company is in the process of selling some of their land to private individuals and to conservation buyers, including the Forest Service. The Lands Section of this chapter provides a detailed discussion of this change in land ownership. There are no State lands within the old growth analysis area. Harvest on State lands within the Swan Valley, such as the proposed Three Creeks Timber Sale on the Swan State Forest, are outside of the area and would be unlikely to cause foreseeable affects to old growth associated species within the Cooney McKay Project Area. The existing condition for old growth forest does not include any old growth on PCTC lands or State lands. Consequently, there would be no decrease within the analysis area in the existing amount of old

growth forest, as described above, due to harvest activities on PCTC lands, State lands, or due to the sale of PCTC lands. Land sales, or timber harvest on other ownerships, may however break up the continuity of mature forest near and adjacent to old growth patches on NFS lands. The existing intermingled ownership pattern in the upper Swan Valley presents difficulties in managing old growth habitat connectivity with patch sizes that occurred historically.

The Cooney McKay Area is located near the community of Condon, Montana. There are part-year and yearlong residences in the area as well as many recreational opportunities. The level of human activity in the area increases the chance for disturbance or displacement of old growth associated species. There is also an increased risk for the removal of snags (firewood), an important component of old growth habitat. Other human activity in the area includes various road use permits and easements, building rentals, and on-going outfitter guide permits.

The proposed treatments in non-old growth forest stands is intended to increase the amount of old growth forest over the long-term, as mature forested stands are put on a trajectory where they should become future old growth habitat. The purpose of the Old Growth Maintenance treatments is to protect and sustain drier site old growth forest with a ponderosa pine and/or western larch component, which has greatly decreased from historical conditions. As discussed in Alternative 2, the amount of old growth forest that is proposed for treatment in Alternative 4 is approximately 4 percent of the existing old growth forest in the Cooney McKay Project Area.

Alternative 4 would result in less risk of a stand replacement fire within the 5 old growth stands treated as well as within the non-old growth stands proposed for treatment.

Significant negative cumulative affects to old growth habitat as a result of implementing Alternative 4, in combination with the potential changes in land ownership, and/or increases in human occupancy of private lands in or adjacent to the project area, are not anticipated. The rationale for this conclusion is, as in the discussion above, that old growth on private lands is not relied upon in this analysis and is modeled as if it did not exist.

Regulatory Framework and Consistency_____

The NFMA requires that the Forest Service “provide for 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.” In addition, NFMA regulations state that “the overall goal of the ecological element of sustainability is to provide a framework to contribute to sustaining native ecological systems by providing ecological conditions to support diversity of native plant and animal species in the plan area.” According to NFMA; “This will satisfy the statutory requirement to provide for diversity of plant and animal communities based on suitability and capability of the specific land area in order to meet multiple use objectives.”

Amendment 21 to the Forest Plan was signed in January 1999. It has a goal to “maintain and recruit old growth forests to an amount and distribution that is within the 75 percent range around the median of the historical range of variability. Where current conditions are below this amount, actively manage to recruit additional old growth.” Amendment 21 further states that management actions within old growth stands should be limited to those actions that “maintain or restore old growth composition and structure consistent with native disturbance and succession regimes, or reduce risks to sustaining old growth composition and structure.”

Implementation of all alternatives would comply with the standards contained in the Forest Plan relative to old growth. Alternatives 2 and 4 would seek maintain the historical, open-grown old growth condition of 5 drier site old growth stands and to reduce fuel loadings and ladder fuels within these stands that are at levels which are greater than would likely have occurred under natural conditions. This would have an effect consistent with Amendment 21 of reducing the risk of loss of all or portions of these stands to fires, which are likely to burn more intensely than they would have under conditions more within the natural range of variability. Old growth characteristics would be maintained.

Sensitive Wildlife Species

Introduction

Sensitive wildlife species are those species that may show evidence of a current or predicted downward trend in population numbers or in habitat suitability that could substantially reduce species distribution. The Regional Forester has identified 13 wildlife species as sensitive, including the recently de-listed bald eagle. The bald eagle was de-listed as a threatened species on August 8, 2007. Upon delisting, the bald eagle became a sensitive species on the Flathead National Forest.

The common loon, harlequin duck, northern bog lemming, northern leopard frog, and peregrine falcon are sensitive wildlife species that have been determined to not be affected by this project and will not be discussed further in this report.

Analysis Area

Spatial Bounds

The Cooney McKay Project Area, approximately 38,031 acres, was the area considered for the evaluation of direct, indirect, and cumulative effects on sensitive wildlife species. This project area is large enough to include the home ranges of several individuals or pairs of a species, and is representative of the effects of fire, natural tree mortality, timber harvest, road management, and other potential effects, across the landscape. The actions proposed that could directly, indirectly, or cumulatively affect sensitive species are contained within this area. The larger upper Swan Valley was also considered in the cumulative effects analysis. A multi-scale assessment was conducted to address diversity concerns (Project File Exhibit F-2).

Temporal Bounds

The length of time for effects analysis is approximately 5 years for the roads and forest health/fuel reduction portions of this project. This is based on the probable contract length for the proposed project, the timeframes for related activities, and the reasonably foreseeable actions identified. Upland burning proposed in the Condon, Cooney, and Smith Creek drainages might occur during the next 10 years, dependent on the availability of burning windows, funding, and equipment needed to achieve the desired results. When conditions are favorable the actual burning would only take a day or less for each project, but this time frame provides a conservative margin for all these elements to come together.

Cumulative Effects

The Cooney McKay Project consists of three action alternatives and a No Action Alternative. The alternatives are described in detail in Chapter 2 of this DEIS. The Cumulative Effects Worksheet, located in the Wildlife Project File (Project File Exhibit F-8) considers and describes proposed activities in addition to the past, current, and reasonably foreseeable activities listed at the beginning of this chapter in Tables 3-1 and 3-2. Those activities that cumulatively contribute indiscernible effects to Sensitive Wildlife Species are not included in this section. Those activities that cumulatively affect these species are listed below.

Past actions on NFS lands and PCTC timberlands in the Cooney McKay Area and the upper Swan Valley include timber harvest and road management. On NFS lands, there has been an estimated 3300 acres of regeneration harvest that has occurred over the past six decades (See Table 3-8, Past Harvest Activities in the Vegetation Section). None of this management on NFS ownership has been recent and through natural regeneration or planting the acres are now in various stages of regeneration, from sapling to immature size classes. Over the past several decades, an estimated 60 miles of road construction has occurred in the Swan Valley on NFS lands. On many of these roads public access has been restricted through seasonal or yearlong road closures or by reclaiming the road. A large portion of the forested land in the upper Swan Valley is owned by PCTC. Timber harvest (approximately 9000 acres) and road building (approximately 60 miles) has occurred on many of these forested lands as well over the last four decades.

Forest management on NFS lands has also included the use of prescribed fire for habitat improvement. Prescribed burns adjacent to and in natural openings along the mid and upper elevational slopes of the Swan Range have occurred in several drainages. There have been no noticeable negative effects from burning. Monitoring has indicated that shrubs were rejuvenated and natural open areas maintained.

In the summer of 2003, there was a large wildfire, the Crazy Horse Fire, in the upper Swan Valley, northwest of Lindbergh Lake. The fire burned over 11,000 acres of NFS and PCTC lands. Following fire suppression activities, salvage harvest occurred on PCTC and NFS lands in the fire area. In the summer of 2006, there was a smaller wildfire (approximately 1,800 acres), east of Highway 83, on the mid to upper slopes of the Swan Range, below Holland Peak.

Administrative sites, airstrips, picnic areas, and nature trails that were constructed in the past on NFS lands in the Cooney McKay Area would continue to be maintained; use is expected to remain constant or increase over time.

Existing special use permits authorized on NFS lands in the Cooney McKay Area include outfitter guide permits, building rentals, various road use permits and cable, phone line, and waterline easements.

In addition to activities on NFS lands in the Cooney McKay Area there are other established human activities and developments in the area, including a high density of year-round residents in the Condon Area and various developments on private lands.

Recently, PCTC has offered up tracts of land in the southern portion of the Swan Valley for sale to the Forest Service, conservation buyers, or other private individuals. Between 1997 and 2007, an estimated 480 acres of PCTC lands have been purchased by the State of Montana and 549 acres

purchased by conservation buyers with limited development covenants. In addition, about 3667 acres (20 parcels) of PCTC lands have been sold with development limited by the regulations of Missoula and Lake Counties (Project File Exhibits Q-1 and Q-10). Deed restrictions on the land sales include set-back standards for streams and sanitation guidelines (e.g., no outdoor barbecue pits, no birdfeeders within reach of bears, and fenced gardens). In Missoula County a subdivision review is required if parties propose to subdivide 160 acres or more. Despite these provisions, there is a concern that an increase in private parcels of land in the Swan Valley may further fragment wildlife habitat and increase human-bear encounters. As stated above, many of the land sales by PCTC have been to conservation buyers, which should help mitigate the risks associated with private land development. The Forest Service has acquired approximately 11,489 acres from PCTC between 1997 and 2007. The acquisition of lands by the Forest Service has helped to maintain natural landscape linkages and to reduce the risk of private land development. A more detailed analysis of the history and potential of changes in landownership patterns is found in the Lands Section of Chapter 3 of this EIS.

In addition to the land ownership changes described above, future land ownership changes in the Cooney McKay Area, and throughout the Swan Valley, are anticipated. The sensitive species analysis for each of the species does not include private lands as providing important habitat because the assumption made in the cumulative effects analysis is that private lands may be developed, to the extent allowed under State and County development regulations. Regarding sensitive species, nothing about such existing or potential development interacts with the effects of Alternative 2, 3, or 4 in such a way as to produce a cumulative effect that is different than the effect of private land development in Alternative 1.

Bald Eagle

Historical Condition

Bald eagles are known to have been residents in the Swan Valley in the past. It was probably rare for any territory to not encompass some nesting habitat within one mile of its associated water body. There would have been potential nesting habitat along the shores of many lakes in the valley and along portions of the Swan River. Forage for bald eagles would have been abundant due to the availability of fish from larger lakes and rivers that do not freeze, and from a year-round supply of carrion.

Existing Condition

Bald eagles are commonly observed flying through the Swan Valley, or perched along the Swan River or along the perimeter of small lakes in the valley. There are no known current or historical nesting sites in the vicinity of the proposed Cooney McKay Project. Although there are no known concentrated roosting or feeding sites, bald eagles are frequently seen perching along the state highway, feeding on road-killed deer.

The greatest change for bald eagle, from historical to existing condition, is the amount of human activity now found along lakeshores in the valley and along the Swan River. This has probably caused a decrease in the amount of potential nesting habitat.

Bald eagle populations and productivity continue to increase across the state. In 2005, there were at least 395 known bald eagle territories, with an approximate success rate of 80 percent. Population growth has been attributed to the substantial reduction of environmental contaminants.

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

There would be no vegetation treatments, or associated activities, proposed with this alternative. There would be no direct effects to the bald eagle. Natural vegetative processes would continue on NFS lands in the Cooney McKay Area. Indirectly, there would be an expected increase in fuel loading, understory growth, and canopy density over time. This could result in an increase in the likelihood of larger, more intense fires than would have occurred under historic conditions (See Fire Section in this chapter). It is possible that such fires might affect potential roosting or nesting trees. Significant negative cumulative effects to the bald eagle are not expected with implementation of the No Action Alternative.

Alternatives 2, 3, and 4 Direct and Indirect Effects

Nesting Habitat - There are no known nesting sites in the Cooney McKay Project Area. Due to this, there would be no direct or indirect effect to bald eagle nesting habitat due to implementation of the proposed Cooney McKay Project.

Feeding/Roosting Habitat - Bald eagles in the Swan Valley feed primarily on various fish species throughout the year, and make significant use of natural mortality (winter-killed and predator-killed animals) during the autumn and winter. They are known to feed along the Highway 83 corridor (road-kill deer). There are no known concentrated feeding sites or roosting sites in the vicinity of the Cooney McKay Project. The proposed forest health and fuel reduction treatments are designed to thin the tree canopy from below, generally leaving all dominant and most co-dominant trees. Typically, bald eagles select the larger, more dominant trees as individual roost trees. Implementation of the proposed project would not significantly alter the number or availability of potential roost trees in the Condon Area. Direct or indirect effects to bald eagle roosting or feeding sites would be minor.

Mortality Risk – Possible mortality factors include hazardous structures such as power lines, disturbance during incubation and nesting periods, illegal killing, use of certain pesticides that can cause reproductive failure, and collision with vehicles.

Vegetative treatments that include log haul have the potential to increase road-kill along highways, which in turn increases the chance for bald eagle mortality as a result of collision with vehicles while they feed on the road-kill. There would be log haul of commercial products with implementation of any of the action alternatives. Although a significant increase in road kills along the highway corridor as a result of project implementation is not expected, there is the possibility that implementation of the proposed project could increase the risk of mortality for individual bald eagles.

Alternatives 2, 3, and 4 Cumulative Effects

There is a history of timber harvest and road building on all ownership lands in the Swan Valley; it is anticipated that this would continue in the future (See Tables 3-1 and 3-2). This area has high human use levels; human occurrence is common in the project area and wildlife disturbance is expected.

The project proposal would not increase cumulative effects to the bald eagle, due, in large part, to its location away from nesting areas, primary use areas, and home range bald eagle habitats.

There is the potential for increased human occupancy of private lands near the project area due to sales of commercial timber lands. The conditions placed on lands sold to private individuals are highly variable. All development is regulated by State of Montana and County regulations specific to specific developmental activities. As previously stated many acres of industrial forest lands have also been sold to public land management agencies. The cumulative effect of private land development in or near the project area with the project itself and coupled with previous land management projects are not likely to measurably affect nesting, feeding or roosting habitat and the cumulative effects to mortality are not significant on a population basis. There appears to be little risk of population loss, and species viability would be maintained.

As described previously, the bald eagle population in Montana, and in the lower 48 States, has seen a steady increase since the late 1960s. In response to the increasing population, the FWS delisted bald eagle as a Federally threatened species. The best scientific and commercial data available indicates that the bald eagle has recovered. For additional information on the status of the bald eagle on the Flathead National Forest, and the status at broader scales, reference the document Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities, November 2006 (Project File Exhibit F-2).

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed might have on sensitive species. Based on available information on the bald eagle's distribution, presence/absence from the project area, habitat requirements, and management strategies, as well as project design and location, the determination for each of the alternatives is "**No Impact**".

Black-Backed Woodpecker

Historical Condition

Black-backed woodpeckers forage in areas with concentrations of dead or decaying trees and logs, often in recently burned forests. The trees in which they feed have frequently only been dead for 2 to 3 years, since these trees harbor the most insects. They use live or dead trees (usually 8 to 12 inches DBH) for nesting. Black-backed woodpecker populations have always been transitory. When an epidemic, windstorm, or fire occurred in the past, black-backed woodpeckers would move into that area. As time went on and the insect numbers decreased, the woodpeckers would move on to another area. There was probably more feeding habitat historically. Fire suppression efforts and salvage of fire-killed or insect-infested trees has reduced the habitat potential for black-backed woodpeckers in the Swan Valley and across northwest Montana.

Existing Condition

Habitat for the black-backed woodpecker is abundant and well distributed across the Northern Region and by Forest (Samson 2005, USDA 2007). In addition, habitat amounts are expected to increase as fires and insect outbreaks continue to increase in size and in a pattern distinctly different from that evident historically (Gallant 2003, Hessburg and Agee 2003 and others). No scientific evidence exists that the black-backed woodpecker population is decreasing in numbers (Samson 2005).

Black-backed woodpeckers are known to occur throughout the Swan Valley, usually in low numbers. Mature and old growth forest stands in the Cooney McKay Area provide potential habitat conditions for a low-density population. Black-backed woodpeckers have been observed recently in the Crazy Horse Fire Area, due to the recent increase in dead or decaying trees. For additional information on the status of the black-backed woodpecker on the Flathead National Forest, and the status at broader scales, reference the document Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities (Project File Exhibit F-4).

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

Alternative 1 would maintain the existing situation. There would be no direct physical change to the landscape and no direct effect on black-backed woodpeckers. Indirectly, if a wildfire occurs in the future and spreads to become a large fire on the landscape because of fuel buildup in the Cooney McKay Area (i.e., no forest health or fuel reduction treatment), it would not be a negative circumstance for the black-backed woodpecker since this woodpecker responds positively to wildfire events. The probability of this condition occurring is somewhat increased under the No Action Alternative.

Timber harvest on NFS lands and on private and State lands in the Swan Valley would continue, probably salvaging a portion of the potential feeder and nesting trees for black-backed woodpeckers. High levels of human activity would continue, with the potential for potential feeder trees to be taken out as firewood. Although there may be an increase in firewood cutting from open roads, no additional access for such activities would occur as a result of Alternative 1.

Fire suppression efforts would continue, and to the extent that they are successful, black-backed woodpecker population levels would remain low. Since 2001, there have been a number of large wildfires on the Flathead National Forest and throughout western Montana. For the next 2 to 3 years, and possibly longer, black-backed woodpecker numbers in the Flathead National Forest should remain high.

Alternative 1 would not contribute significantly to cumulative effects on black-backed woodpecker in the Cooney McKay Area.

Alternatives 2, 3, and 4 Direct and Indirect Effects

As a result of implementing the Cooney McKay Project, a direct effect to the black-backed woodpecker would be the reduction of potential feeder trees and nesting trees in the Commercial

Thin, Seed Tree, Old Growth Maintenance, Commercial Thin From Below, and Salvage units. A project Design Criteria common to all action alternatives to offset this impact is the requirement to retain snags and recruitment snags in sufficient numbers to meet the wildlife objectives of Amendment 21 of the Flathead Forest Plan. Amendment 21 Design Criteria for tree and snag retention were created to insure that project areas would retain sufficient trees and snags to meet the basic habitat requirements of many species including black-backed woodpecker (See Design Criteria, Table 2-14). The proposed Non-Commercial Thin From Below and Pre-Commercial Thin treatments would not have any measurable effects on the black-backed woodpecker due to the lack of black-backed woodpecker habitat characteristics (e.g., small trees).

In Alternative 3 there is no proposed treatment in designated old growth, which has a higher potential for providing both nesting and feeding habitat. This would help to mitigate potential direct effects to black-backed woodpecker habitat.

An indirect negative effect may be the decreased chance of a large stand-replacing wildfire. Larger wildfires on the landscape would be beneficial to black-backed woodpeckers since they increase potential feeding and nesting habitat.

There is temporary road construction proposed. Other roads that are managed as closed roads would be used for accessing units. An increase in public access increases the risk of losing high quality snags to firewood cutters. Public use of closed roads would not be permitted and temporary roads would be reclaimed following use. Reclaiming roads following use should help reduce the risk of snag loss over the long-term.

Proposed timber management operations and associated human activity may temporarily displace individual black-backed woodpeckers that are foraging in the area. Short-term displacement of individual birds would not be significant; there would be no long-term impact from this kind of displacement.

Alternatives 2, 3, and 4 Cumulative Effects

Fire suppression has been the greatest factor limiting the distribution of potential black-backed woodpecker habitat. Prior to 2001, there were few wildfires of considerable size since 1926. Then, across the Flathead National Forest and most of western Montana, large acreages of black-backed woodpecker habitat were created by wildfires. Between 2001 and 2004, approximately 200,000 acres in over 70 fires burned on the Flathead National Forest, creating a substantial amount of black-backed woodpecker habitat. Less than 5 percent of this habitat was salvage harvested, leaving the vast majority of potential black-backed woodpecker habitat intact. Within the Swan Valley, the 11,000 acre Crazy Horse Fire in 2003 created thousands of snags with only a portion of the snags removed through salvage on about 600 acres. In 2006, about 1,800 acres containing thousands of trees were burned in the Holland Peak Fire, south of the Cooney McKay Project Area. Most of these snags remain on site.

As discussed in Westerling et al. (2006), virtually all climate model projections indicate that warmer springs and summers will occur over the region in coming decades.

“These trends will reinforce the tendency toward early spring snowmelt and longer fire seasons. This will accentuate conditions favorable to the occurrence of large wildfires, amplifying the vulnerability the region has experienced since the mid-1980s.”

Furthermore, a recent state insect and disease condition report shows dramatic increases in acreages of tree mortality from 2002 to 2005 (USDA 2006).

Because the potential direct and indirect effects to black-backed woodpecker as a result of implementing the Cooney McKay Project are minimal, and because broad scale analysis has demonstrated that there appears to be little risk of population loss (Project File Exhibit F-4), it is unlikely that Alternatives 2, 3, or 4 would contribute significantly to cumulative effects on black-backed woodpeckers or black-backed habitat in the Swan Valley.

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed might have on sensitive species. Based on available information on the black-backed woodpecker's distribution, presence/absence from the project area, habitat requirements, and management strategies, as well as project design and location, the determination for Alternative 1 is "No Impact" and the determination for each of the action alternatives is **"May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species."**

Fisher

Historical Condition

Fishers are large, weasel-like predators that occupy a variety of upland and lowland forests, with an affinity for forested riparian habitats. Fishers have been found to prefer to rest in stands that exceed 60 percent canopy cover, and avoid stands with less than 40 percent canopy cover (Jones 1991). The highest quality fisher habitat is dense (60 to 80+ percent cover) coniferous and mixed coniferous/deciduous forest with an available water source (Ruggerio et. al. 1994). They very rarely stray far from streams (within 100 meters) or other wet sites (Powell and Zielinski 1994). Fishers need good snow interception in the winter months (Allen 1983). Sites used by the fisher for shelter or sleeping include hollow logs, tree cavities, brush piles, and used burrows and/or dens. In a study done in Idaho, the average diameter of trees used by fisher as resting sites was 22 inches (Jones 1991). Maternity dens tend to be hollow cavities high in trees. The fisher preys on small mammals (snowshoe hare, grouse, voles, squirrels, mice, etc.) and carrion.

In the Northern Rockies, fishers have existed under a disturbance regime that has created numerous openings in a matrix of mature forested habitats. The denser, coniferous stands near water, which are preferred by fisher, would have experienced longer intervals between fires than drier, more open forest lands. The increased pulse of large logs on the ground that would have followed a fire or insect event would have been beneficial.

During the late 19th and early 20th century, trapping, logging, and the conversion of forested areas to agricultural lands contributed to the fisher being extirpated from much of its range in the United States and eastern Canada. The fisher appeared to be eliminated from Montana at one time, as there were no trapping records in Montana from 1920 to 1960. Within Montana and Idaho, over a million acres of mature coniferous forest burned in the early part of the 20th century. This may have played a role in the decline of fisher populations.

Existing Condition

Fisher are common in the Northeastern and Midwestern portions of the United States, but rarer in the West. Restrictions on harvesting, and re-introduction programs in the late 1950s, have contributed to population recovery in portions of the fisher's historic range. In the Rocky Mountains, they occur in Idaho, Wyoming, and Montana. Since 1968, fisher occurrence has been verified in the Flathead, Mission, Swan, and Whitefish ranges (Vinkey 2003). Fisher are known to occur in the Cooney McKay Project Area, but probably at fairly low population densities. It is believed that fisher population density is usually low due to a relatively large home range which can vary from 16 to 32 square miles (USFS 1994).

The fisher habitat assessment in the Swan Valley (USDA 1994) described how, due to numerous wetlands in the Swan Valley and the availability of moist forest conditions, fisher habitat appeared to be extensive and well distributed in the valley's lower elevation zones. Although fisher in the Swan Valley are not likely to be restricted to stream course zones, riparian habitats in the valley are important and provide key travel and movement corridors in light of the intermingled land ownership. Riparian habitats in the Swan Valley are also more likely to provide the dense canopy cover and complex structure (e.g., snags, broken tops, down woody material) that fisher are associated with. Moist old growth habitats in the Swan Valley would also be very important for the fisher, for the same reasons. Within the Cooney McKay Project Area there are at least 4,500 acres of riparian habitat and approximately 3,200 acres of old growth habitat. This represents approximately 20 percent of the project area that is potentially higher quality fisher habitat (See Map 3-8).

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

No forest health or fuels reduction activities would be implemented in the Cooney McKay Area under this alternative. There would be no direct effect to canopy cover on NFS lands in the Cooney McKay Area, and any existing or potential den sites would be maintained. Human activity and associated disturbance would be less under this alternative.

Indirectly, under the No Action Alternative it could be anticipated that larger more intense fires could occur within the project area than would have occurred under more historic fire and fuel loading conditions (See Fire Section in Chapter 3 of this EIS). Though precise impacts of such fires is dependent on location and many other conditions, to the degree that such fires were stand replacing, they would tend to reduce the amount of fisher habitat available.

Alternative 2 Direct and Indirect Effects

Commercial Harvest - A direct effect to fisher from implementation of Alternative 2 would be the reduction of canopy cover in stands where Commercial Thin, Salvage, and Commercial Thin From Below treatments are proposed. Fisher would probably still use these stands for travel and perhaps for foraging, but they would not be as high quality as stands with denser canopy cover. There are 723 acres of Commercial Thin, Salvage, and Thin From Below treatments proposed in Alternative 2. Snags and down woody material are important components of fisher habitat and are used for resting,

denning, and shelter. They are also important components for fisher prey habitat. In the Commercial harvest units the following snag and down woody guidelines would be followed: 6 snags average per acre that are 12 to 20 inches DBH would be left. If existing snag densities are below these densities, live trees would be substituted. All snags greater than 20 inches DBH would be left, where available. In addition, all standing dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater may be retained, and all hardwood trees would be designated to be left. The minimum retention for down woody material would be, where available, 15 pieces average per acre that are 9 to 20 inches diameter and 10 pieces average per acre greater than 20 inches diameter. This amount of down woody material equates to 5 to 10 tons per acre (See Design Criteria, Table 2-14).

The stands where Seed Tree harvest is proposed, 79 acres in Alternative 2, would be unsuitable fisher habitat following the proposed treatment. Under Alternative 2 there is 119 acres of Old Growth Maintenance treatments (5 units) proposed in drier site old growth stands. Old growth habitats (typically moist coniferous forest) are very important to fisher. These habitats frequently have denser canopy cover and abundance of larger live trees, snags, and down woody material for shelter, sleeping, and denning. The old growth stands that are proposed for treatment provide drier site old growth habitat with the dominant old growth species being ponderosa pine and western larch. The purpose of the Old Growth Maintenance treatment is to protect and sustain the ponderosa pine and western larch large-tree, open-grown old growth characteristic, which would not have historically been high quality fisher habitat. The existing overstory would be retained, removing only trees in the intermediate and suppressed canopy layers to reduce fuels and ladder fuels. The drier site old growth stands proposed for treatment, due to their structure, probably did not historically contribute significantly to optimum fisher habitat. Current stand conditions however, created largely due to fire exclusion, have caused an increase in understory vegetation which has likely made these stands better fisher habitat than they would have been historically.

In order to maintain sufficient snags in the drier site old growth stands where maintenance treatment is proposed, all snags greater than 18 inches DBH would be retained and 6 snags per acre 12 to 18 inches DBH would be retained. In addition, all dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater, and all hardwood trees, would be left standing if they do not pose a safety risk to the operation. To maintain large down woody material in these drier site old growth stands, all pieces greater than 18 inches diameter would be retained as well as 15 pieces per acre that are 9 to 18 inches diameter (Table 2-14). Existing old growth, both within and outside of the project area, would continue to provide important habitat for fisher. There is no treatment in moist site old growth stands, which would provide high quality fisher habitat.

There is no treatment proposed in riparian habitats under Alternative 2. As described previously, riparian habitats have a high potential of providing quality fisher habitat.

Non-Commercial Treatments - In areas proposed for Thin From Below and Pre-Commercial Thinning treatments, the affects would be minimal; these stands are presently only marginal fisher habitat due to the size of the trees. They would still provide travel cover following treatment.

Temporary Road Construction - There are 1.2 miles of temporary road proposed under Alternative 2. Temporary roads would be reclaimed following use. Other roads that are managed as closed roads would be used for accessing treatment areas. Public use of closed roads or temporary roads would not be permitted, reducing the risk of losing high quality snags (denning habitat) to firewood cutters.

Prescribed Burning - Prescribed fire has been proposed on mid to upper elevation slopes. There is no prescribed burning proposed in riparian areas or old growth habitats. The prescribed fire areas are less likely habitat for fisher. There would be minimal effects from burning and the potential for displacing fisher would be low.

Alternative 3 Direct and Indirect Effects

Commercial Harvest - On 723 acres in Alternative 3, in stands where Commercial Thinning, Salvage harvest, and Commercial Thin From Below treatments are proposed, the canopy cover would be reduced as a result of proposed treatments. Fisher would probably still use these stands for travel and perhaps for foraging, but they would not be as high quality as stands with denser canopy cover. The same snag and down woody guidelines described under Alternative 2 would be implemented under Alternative 3.

Under Alternative 3, there is 79 acres of Seed Tree harvest proposed. These stands would be unsuitable fisher habitat following the proposed treatment.

There is no proposed treatment in old growth or riparian habitats under Alternative 3.

Non-Commercial Treatments - In stands proposed for Thin From Below and Pre-Commercial Thinning, the effects would be minimal; these stands are presently only marginal fisher habitat due to the size of the trees. They would still provide travel cover following treatment.

Temporary Road Construction - There are 1.2 miles of temporary road proposed under Alternative 3. Temporary roads would be reclaimed following use. Other roads that are managed as closed roads would be used for accessing treatment areas. Public use of closed roads or temporary roads would not be permitted, reducing the risk of losing high quality snags (denning habitat) to firewood cutters.

Prescribed Burning - Prescribed fire has been proposed on mid to upper elevation slopes. There is no prescribed burning proposed in riparian areas or old growth habitats. The prescribed fire areas are less likely habitat for fisher. There would be minimal effects from burning and the potential for displacing fisher would be low.

Alternative 4 Direct and Indirect Effects

Commercial Harvest – On 712 acres in Alternative 4, in stands where Commercial Thinning, Salvage harvest, and Commercial Thin From Below treatments are proposed, the canopy cover would be reduced as a result of proposed treatments. Fisher would probably still use these stands for travel and perhaps for foraging, but they would not be as high quality as stands with denser canopy cover. The same snag and down woody guidelines described under Alternative 2 and Alternative 3 would be implemented under Alternative 4.

Under Alternative 4, there is less Seed Tree harvest proposed than in Alternatives 2 and 3. The stands where Seed Tree harvest is proposed, 14 acres in Alternative 4, would be unsuitable fisher habitat following the proposed treatment.

Under Alternative 4, there is 119 acres of Old Growth Maintenance treatment (5 units) proposed in drier site old growth stands. The drier site old growth stands proposed for treatment, due to their

structure, probably did not historically contribute significantly to optimum fisher habitat. Current stand conditions however, created largely due to fire exclusion, have caused an increase in understory vegetation which has likely made these stands better fisher habitat than they would have been historically.

In order to maintain sufficient snags in the drier site old growth stands where maintenance treatment is proposed, all snags greater than 18 inches DBH would be retained and 6 snags per acre 12 to 18 inches DBH would be retained. In addition, all dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater, and all hardwood trees, would be left standing if they do not pose a safety risk to the operation. To maintain large down woody material in these drier site old growth stands, all pieces greater than 18 inches diameter would be retained as well as 15 pieces per acre that are 9 to 18 inches diameter. Existing old growth, both within and outside of the project area, would continue to provide important habitat for fisher. There is no treatment in moist site old growth stands, which would provide high quality fisher habitat.

There is no treatment proposed in riparian habitats under Alternative 4. As described previously, riparian habitats have a high potential of providing quality fisher habitat.

Non-Commercial Treatments - In stands proposed for Thin From Below and Pre-Commercial Thinning, the effects would be minimal; these stands are presently only marginal fisher habitat due to the size of the trees. They would still provide travel cover following treatment.

Temporary Road Construction - There is 1.0 mile of temporary road proposed under Alternative 4. Temporary roads would be reclaimed following use.

Prescribed Burning - Prescribed fire has been proposed on mid to upper elevation slopes. There is no prescribed burning proposed in riparian areas or old growth habitats. The prescribed fire areas are less likely habitat for fisher. There would be minimal effects from burning and the potential for displacing fisher would be low.

Alternatives 2, 3, and 4 Cumulative Effects

As described in the Upper Swan Valley Landscape Assessment (Project File Exhibit Q-4), the Swan Valley has a well-developed system of glacial potholes, wet meadows, seeps, and riparian connections throughout the valley floor along both sides of the Swan River. The ecological contribution that these wetland habitats contribute to various wildlife species, including fisher, is very important. There has been a loss of ecological integrity to many of these complexes as a result of residential development, forest management, permanent road construction, drought, and both fire suppression on the one hand and large-scale wildfire on the other. All of these factors combined have undoubtedly affected the amount and the connectivity of potential fisher habitat in the upper Swan Valley.

Hillis and Lockman (2003) mapped fisher habitat in Region One, where fishers are generally limited to west of the Continental Divide. Fisher habitat was defined as low-to-mid elevation, mesic, mature and old forests, within 100 meters of streams. To address patch size and habitat connectivity relevant for fishers, they excluded any patch of habitat that was less than 160 acres and more than 600 feet from the nearest patch of adjacent cover (Jones 1991, Ruggiero et al. 1994). That habitat was compared against levels of habitat that would have been available in pre-fire suppression/pre-logging periods. What they found was that fisher habitat occurs at historically normal levels at both the Flathead

National Forest and Region One scales. This should not be interpreted that management activities have not had adverse effects on fisher habitat. Rather, when fisher habitat was mapped, it clearly showed portions of Region One where timber harvest activities on both corporate and NFS lands had fragmented and reduced the acres of existing fisher habitat. Hillis and Lockman (2003), however, point out that even during the 1970s and 1980s, when timber harvest was intensive, riparian zones were generally avoided, which could explain why habitat loss and fragmentation were not greater. More recently, Samson (2006) showed that on the Forests and the Region as a whole, forested ecosystems are more extensive now than in historic times. Research on fisher is on-going. Multiple agencies and organizations, including the Forest Service, are currently conducting surveys to detect fisher in the Rocky Mountains. The goals of this current research are to:

- Delineate the geographic range of fisher;
- Determine which Rocky Mountain fisher populations have native genes; and
- Index the abundance of fisher in the different populations.

The proposed Design Criteria for the retention of large snags and coarse woody debris would help to mitigate negative effects to fisher. No treatment is proposed in riparian habitats or in moist, coniferous old growth habitats. Retaining these important habitats for fisher would also help to mitigate any negative impacts from implementation of the Cooney McKay Project. Extensive roadless and wilderness habitat reduces the risks of mortality attributed to humans such as vehicle collisions, trapping and predator control needs, and reduces the potential negative effects of fragmenting small populations. These attributes are present on the Flathead National Forest, in the Swan Valley, and in the Cooney McKay Project Area. Road closures for grizzly bear security have also benefited the fisher.

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed may have on sensitive species. Based on available information on the fisher's distribution, and on project design, Alternative 1 would have "No impact" on fisher. The action alternatives **"May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species."**

Flammulated Owl

Historical Condition

These small (6 to 7 inches) owls are found in older, more open, dry forests. The stands can be mixed conifer species, but there is usually a ponderosa pine component. The stands are typically open canopies (35 to 65 percent). Flammulated owl nests are generally located in mature to old growth stands, in live or dead trees from 12 to 25- inch DBH. The owl is a cavity nester, using either natural cavities or previously excavated woodpecker holes. The flammulated owl is insectivorous, and feeds in meadows or forests with an open understory in order to maneuver while catching moths, beetles, caterpillars, crickets, and other small insects.

Based on historical reference conditions, it is probable that mature, open grown, ponderosa pine stands were more abundant in the past than now. A Swan Valley timber inventory, dated from the

1930s, indicates that there were approximately 19,000 acres of open-grown mature forest. This inventory shows mature ponderosa pine, western larch, and Douglas-fir distributed in relatively large continuous forests, intermixed with lodgepole pine, Douglas-fir, spruce, and cottonwood trees. Today, about 3,000 acres of NFS lands support large diameter ponderosa pine forest in the Swan Valley. This represents about 15 percent of the 1930s inventory. The decline can be largely attributed to land clearing in the valleys, road construction, and timber harvest. In addition, a current threat to open-grown, drier site old growth is the fire suppression policy of the last 100 years. Before the advent of aggressive fire suppression, the older forests on drier sites experienced frequent low-intensity ground fires. Since the early 1900s, effective fire suppression has allowed many of the remaining mature stands of ponderosa pine and western larch to become densely overgrown with mid-story and understory Douglas-fir, subalpine fir, spruce, and grand fir trees. These shade-tolerant species are growing into the crowns of the older ponderosa pine and western larch forests; creating “fuel ladders” that put the ponderosa pine and western larch trees at increased risk should a fire occur. The increase in shade-tolerant species is also changing the open-grown forest character, which is beneficial to some species, but probably not beneficial to the flammulated owl.

Existing Condition

Forest stands where ponderosa pine is a dominant or co-dominant species occur in the Cooney McKay Area. Recent surveys for flammulated owls in the upper Swan Valley (2005) detected flammulated owl in ponderosa pine forest that had been underburned. Numerous surveys for flammulated owl were conducted throughout the Swan Valley in mixed forest types without a ponderosa pine component, but no flammulated owls were detected in these stand types.

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

No forest health or fuels reduction activities are proposed under Alternative 1. There would be no direct effects on flammulated owl as a result of implementing Alternative 1, and human activity and associated disturbance would be less under this alternative. Indirectly, by choosing not to conduct forest health and fuels reduction vegetative management in the Cooney McKay Area there may be an increased risk of a stand-replacing wildfire occurring in this area. Although it is not possible to quantify this risk, the effects would be negative to flammulated owl if large patches of mature or old growth ponderosa pine forest were burned. Natural vegetative succession, combined with fire suppression management, would indirectly affect flammulated owl habitat as other tree species grow into the understory and mid-story creating dense, mixed species stands. Cumulatively, as described in the Vegetation Section of this document, there is less available flammulated owl habitat than what existed historically.

Alternatives 2 and 4 Direct and Indirect Effects

During actual implementation of any of the activities associated with Alternatives 2 or 4 in the proposed Cooney McKay Project there is the potential to directly affect flammulated owls by disturbing them and displacing them short-term. Disturbance during the nesting period would have the most potential impact. Potential negative affects to nesting would be decreased by logging

restrictions in grizzly bear spring habitats (<5,200 feet) from April 1 to June 15 (Project File Exhibit F 6). Over half of the cutting units would be treated outside of the spring (April 1 to June 15) period. The forested stands where flammulated owls are most likely to occur would not be treated during the spring period. This would minimize the potential for disturbance of flammulated owls during nesting.

Commercial Harvest and Non-Commercial Treatments - Flammulated owl occurrence in the Cooney McKay Project Area would be uncommon. The likelihood of flammulated owls occupying most of the forest stands where commercial or non-commercial treatment is proposed is very low. Open grown, large diameter, ponderosa pine forests are considered optimal or preferred habitat for flammulated owl (Holt et al., 1990). The drier site old growth stands where Old Growth Maintenance treatment is proposed have the highest probability for flammulated owl occurrence, even though these stands are presently denser than expected historically. Alternatives 2 and 4 propose treatment in 5 old growth ponderosa pine stands (119 acres). The purpose of this treatment is to protect and sustain the large-tree, open-grown ponderosa pine forest characteristic. The proposed old growth maintenance treatment may improve habitat conditions for the flammulated owl by opening up the under-story, retaining the large dominant overstory, and creating more historical conditions in these ponderosa pine stands. Proposed Old Growth Maintenance treatments may reduce the existing number of snags in the treated stands, which would negatively impact flammulated owls by reducing the amount of available nesting habitat. Research suggests that retaining the bulk of the largest material may decrease these effects (Bull and Blumton 1999, Porter et al. 2005). In order to maintain sufficient snags in the existing old growth stands where treatment is proposed, all snags greater than 18 inches DBH would be retained and 6 snags per acre 12 to 18 inches DBH would be retained (See Design Criteria, Table 2-14).

Another potential negative effect to flammulated owl as a result of implementing the Old Growth Maintenance treatments in Alternatives 2 and 4 would be disturbance to owls during the nesting period. Potential negative effects to nesting would be decreased by logging restrictions in grizzly bear spring habitats (<5,200 feet) from April 1 to June 15 (Project File Exhibit F-6). None of the Old Growth Maintenance units would be treated during the spring period. This would minimize the potential for disturbance of flammulated owls during nesting.

Since flammulated owls have been found to prefer forested stands with open canopies of 35 to 65 percent (McCallum et al. 1994), treatments proposed in the Commercial Thin, Salvage, and Thin From Below Units would have a low potential of negatively affecting flammulated owls or owl habitat. Under any of these proposed treatments, an average of 50 percent or greater canopy closure would be retained. There is the possibility of negatively affecting the flammulated owl if snags that are potential nest trees are removed. However, as discussed previously, flammulated owl would not be expected to use the proposed Commercial Thin, Salvage, or Thin From Below treatment areas as nesting or foraging habitat, so the probability of negative effects would be low. Snag guidelines in place for the Commercial Thin, Salvage, and Thin From Below units would provide further mitigation for possible negative effects: 6 snags average per acre that are 12 to 20 inches DBH would be left. If existing snag densities are below these densities, live trees would be substituted. All snags greater than 20 inches DBH would be left, where available. In addition, all standing dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater may be retained, and all hardwood trees would be designated to be left.

Unlike the Commercial Thin, Salvage, and Commercial Thin From Below treatments, the proposed Seed Tree harvests in Alternative 2 (6 units; 79 acres) and Alternative 4 (1 unit; 14 acres) would not leave an adequate overstory to provide potential flammulated owl habitat. The Seed Tree harvests

are a regeneration treatment and would remove most of the forest overstory. Again though, flammulated owl would not be expected to use the proposed Seed Tree treatment areas as nesting or foraging habitat. These stands lack the large open-grown character and they do not contain ponderosa pine as a dominant overstory species. Consequently, potential negative effects would be minimal.

Proposed treatments in the Non-Commercial Thin From Below and Pre-Commercial Thinning units would have no direct effects on the flammulated owl; these areas do not provide flammulated owl habitat.

Temporary Road Construction - There is approximately 1.2 miles of temporary road construction proposed in Alternative 2 and 1.0 mile of temporary road proposed in Alternative 4. Temporary roads would be reclaimed following use. Other roads that are normally managed as closed roads would also be used for accessing treatment areas. Public use of temporary or closed roads would not be permitted, reducing the risk of losing high quality snags (nesting habitat) to firewood cutters.

Prescribed Burning - Prescribed fire has been proposed on mid to upper elevation slopes. There is no prescribed burning proposed in old growth habitats. Prescribed fire areas are less likely habitat for flammulated owl. The potential for displacing flammulated owls as a result of prescribed burning would be low.

Direct and Indirect Effects Alternative 3

Alternative 3 differs from Alternatives 2 and 4 in that there is no treatment proposed in any old growth stands. The five cutting units where Old Growth Maintenance is proposed have been deleted from this alternative. There would be no potential direct effects to flammulated owls that may be utilizing these old growth stands as nesting or feeding habitat. However, it should be noted that the current stand condition is trending toward more canopy closure, increased ladder fuels, and increased fuel loadings compared to historic conditions. These conditions could be expected to continue and may lead to an increased risk of stand replacement fire, which, if it occurred within these stands, would eliminate them as optimum flammulated owl habitat. If fires did not occur, the current trend would continue to move these stands to denser canopies with more understory development than is thought to be typical habitat for flammulated owls.

During actual implementation of any of the activities associated with Alternative 3 there is the potential to directly affect flammulated owls by disturbing them and displacing them short-term. Disturbance during the nesting period would have the most potential impact. Potential negative effects to nesting would be decreased by logging restrictions in grizzly bear spring habitats (<5,200 feet) from April 1 to June 15 (Project File Exhibit F-6). Over half of the harvest units would be treated outside of the spring (April 1 to June 15) period. This would minimize the potential for disturbance of flammulated owls during the nesting period.

Commercial Harvest and Non-Commercial Treatments - Since flammulated owls have been found to prefer forested stands with open canopies of 35 to 65 percent (McCallum et al. 1994), treatments proposed in the Commercial Thin, Salvage, and Thin From Below units would have a low potential of negatively affecting flammulated owls or owl habitat. Under any of these proposed treatments, an average of 50 percent or greater canopy closure would be retained. There is the possibility of negatively affecting the flammulated owl if snags that are potential nest trees are removed. However,

as discussed previously, flammulated owl would not be expected to use the proposed Commercial Thin, Salvage, or Thin From Below treatment areas as nesting or foraging habitat, so the probability of negative effects would be low. Snag guidelines in place for the Commercial Thin, Salvage, and Thin From Below units would provide further mitigation for possible negative effects: 6 snags average per acre that are 12 to 20 inches DBH would be left. If existing snag densities are below these densities, live trees would be substituted. All snags greater than 20 inches DBH would be left, where available. In addition, all standing dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater may be retained, and all hardwood trees would be designated to be left (See Design Criteria, Table 2-14).

Unlike the Commercial Thin, Salvage, and Commercial Thin From Below treatments, the proposed Seed Tree treatments in Alternative 3 (6 units; 79 acres) would not leave an adequate overstory to provide potential flammulated owl habitat. The Seed Tree treatments are a regeneration treatment and would remove most of the forest overstory. Again though, flammulated owl would not be expected to use the proposed Seed Tree treatment areas as nesting or foraging habitat. These stands lack the large open-grown character and they do not contain ponderosa pine as a dominant overstory species. Consequently, potential negative effects would be minimal.

Proposed treatments in the Non-Commercial Thin From Below and Pre-Commercial Thinning units would have no direct effects on the flammulated owl; these areas do not provide flammulated owl habitat.

Temporary Road Construction - There is approximately 1.2 miles of temporary road construction proposed in Alternative 3. Temporary roads would be reclaimed following use. Other roads that are normally managed as closed roads would also be used for accessing treatment areas. Public use of temporary or closed roads would not be permitted, reducing the risk of losing high quality snags (nesting habitat) to firewood cutters.

Prescribed Burning - Prescribed fire has been proposed on mid to upper elevation slopes. There is no prescribed burning proposed in old growth habitats. Prescribed fire areas are less likely habitat for flammulated owl. The potential for displacing flammulated owls as a result of prescribed burning would be low.

Alternatives 2, 3, and 4 Cumulative Effects

The ponderosa pine forest communities that are utilized by flammulated owls have probably experienced more disturbance than other forest communities due to the accessibility of the lower elevation dry forests and their dependence on relatively frequent, lower intensity fire to maintain their condition. Grazing, agricultural conversion, housing development, logging, and fire suppression are examples of human actions that have significantly affected ponderosa pine communities, and consequently flammulated owl habitat, throughout their range.

The proposed Cooney McKay Project would not contribute significantly to cumulative effects on the flammulated owl in the upper Swan Valley. Flammulated owl occurrence in the Cooney McKay Project Area is uncommon. The likelihood of flammulated owls occupying most of the forest stands where commercial or non-commercial treatment is proposed is low. Potential displacement of flammulated owls would be short-term in proposed Commercial Thin, Salvage, Commercial Thin From Below and Old Growth Maintenance units. Over the long-term, these forest stands would retain

sufficient canopy cover for flammulated owls; standards and guidelines for retaining snags would be followed. The effects of implementing Alternatives 2, 3, or 4 that are described above are not significant in scale and would not contribute significantly to overall cumulative effects on flammulated owl in the Swan Valley.

Short-term viability of the flammulated owl in the Forest Service's Northern Region is not an issue (Samson 2005). There is no scientific evidence that the flammulated owl is decreasing in numbers and habitat estimates show that flammulated owl habitat is well distributed and abundant throughout the Region (Project File Exhibit F-4). Survey work done in 2005 and 2006 detected flammulated owls on 9 out of the 12 forests around the Region.

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed may have on sensitive species. Based on available information on the flammulated owl's distribution, presence/absence from the project area, habitat requirements, and project design and location, Alternative 1 would have "No impact" on flammulated owl. The action alternatives **"May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species."**

Northern Goshawk

Northern goshawks nest in a variety of forest types throughout their range, with nest area vegetation described as mature forest with larger trees. The overstory canopy is usually a relatively closed-canopy (50 to 90 percent), with a more open understory for foraging (Squires and Reynolds 1997, USFWS 1998, Samson 2005, Squires and Kennedy 2006, Beier and Drennan 1997). The average patch size of core nesting areas appears to be somewhat dependent on available habitat conditions; 30 acres recommended in the southwestern United States (Reynolds et al. 1992), 40 acres found by Clough (2000) in west central Montana, 148 acres found by McGrath et al. (2003) in Oregon and Washington, and approximately 80 acres found by Patla (1997) in Idaho. Live trees large enough to support a large platform nest are required. Hayward and Escano (1989) found that nest sites in northwest Montana were often located in older stands that support widely spaced large trees, and which had water and large forest openings within 0.3 miles of the nest.

Adjacent to the nest site, there is a post-fledging area (approximately 200 to 500 acres), which is, along with the nesting area, usually defended by an adult pair. The post-fledging area (PFA) is defined as the area used by the family group from the time the young fledge until they are no longer dependent on the adults for food (Reynolds et al. 1992, Kenward et al. 1993). Although the exact purpose of the post-fledging area is unknown, it is thought to provide protection from predation and serve as an area where young birds can develop flying and hunting skills (Reynolds et al. 1992, Kennedy et al. 1994). The size, shape, and habitat composition of these areas varies with local conditions, but is generally in pole-sized or larger forest with closed (50 percent to greater than 70 percent) canopies.

Northern goshawk foraging areas are heterogeneous, with goshawks preying on a variety of medium-sized forest birds and mammals, and hunting forest edges and openings as well as forest cover.

Historical Condition

Historically, the Swan Valley may have provided more high quality potential nesting habitat for the goshawk. Mature forest stand conditions were not necessarily more abundant historically, but the pattern of older forest on the landscape was different. Wildfires periodically replaced mature forest, but the fires burned mosaically and larger patches of mature and older forest remained across the landscape, interspersed with various successional stages. Periodic underburns would have occurred in some of the dry site forest stands, keeping the understories more open. Historically, the mosaic pattern of forest would have provided abundant fledging areas and forage habitat for the northern goshawk.

Existing Condition

The amount of mature, closed-canopy forest in the Swan Valley is within the expected historic range of variability (although on the low end of the range) for areas with similar vegetation types and fire history (USDA 1999). However, mature forest patch sizes have decreased over time and there are more patches per unit area. In other words, the current landscape has a higher density of patches than historically. There are more patches of smaller size, closer together. This is probably due to the difference of effects between fire and other natural disturbances versus the effects of timber management, especially timber management in a mixed ownership environment. What this means for mature and old forest associated species, is that the “blocks” of mature forest are not as large and probably not as “secure” as in the past. Although there is potential nesting habitat for the northern goshawk throughout the Swan Valley, the potential habitat is more fragmented than historically, with smaller patch sizes available for nesting habitat and a greater distance between blocks of potentially suitable nesting habitat (Project File Exhibit Q-4). Forage habitat for the goshawk is not limiting in the Swan Valley.

The Flathead National Forest examined the amount and distribution of goshawk habitat found on NFS lands within the Flathead National Forest (USDA 2000). Goshawk habitat was summarized for individual sub-basins; in the 469,280 acre Swan Valley sub-basin, approximately 203,972 acres of suitable habitat were identified. The recent Meadow Smith Analysis (USDA 2003) described 5 potential goshawk territories on the east side of the Swan Valley (east of the Swan River), from the Swan River State Forest on the northern end to Rumble Creek in the south. This description assumed no overlap in home ranges, an average goshawk home range size of 6,000 acres, and even distribution across the landscape. The analysis for northern goshawk in the Cooney McKay Project Area also looked at these potential goshawk territory blocks. Private lands, both corporate and individual, were included as foraging habitat. However, due to the uncertainty of conditions on private lands, potential nesting and post-fledging habitat were only identified on NFS lands. The forest stands within the potential territory blocks were identified as potentially providing nesting, post-fledging, or forage habitat. Each territory block has several different “patches” that represent a potential nesting and post-fledging area (PFA) site. Nesting habitat consists of mature forest stands with larger trees that have closed canopies (>60 percent) and make up a contiguous block of at least 40 acres. Post-fledging areas include forest stands with greater than 50 percent canopy cover. A broad range of habitats were considered as potential foraging areas. Of the five previously identified territory blocks, three are located within the Cooney McKay Project Area. Additional patches of nesting and post-fledging habitat were included in the two southern blocks in order to overlap the Cooney McKay Project Area.

Northern goshawks are known to occur in the Swan Valley, and have been observed in the Cooney McKay Project Area during the nesting season. There are no known nest sites in any of the proposed Cooney McKay treatment units.

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

No forest health or fuels reduction treatments would occur with Alternative 1. There would be no direct effects on northern goshawk nesting, post-fledging, or forage habitat as a result of project implementation.

Indirectly, as a result of not implementing the Cooney McKay Project, there may be an increased risk of more intense, stand replacing fires than would have occurred under historic conditions with less fuel loading and ladder fuels. To the extent that there is an increased risk of such fires under the No Action Alternative, there is an increased potential to reduce the existing amount of mature or old growth forest in the project area. The specific effects of such events would depend on the location and extent of such fires. Loss or reductions in mature or old growth forest would reduce the amount of potential nesting, and post-fledging areas available to goshawks in the Cooney McKay Area. In the absence of fire, Alternative 1 would have the effect of continuing the trend toward increased canopy closure. Immature stands would slowly mature and become old growth.

The northern goshawk is considered globally secure. In Montana, the population is considered stable; moderately vulnerable to threats to habitat or population (MNHP 2006). Based on habitat and goshawk detection estimates, breeding goshawks and their habitat appear abundant and well distributed across the Northern Region of the Forest Service (Kowalski 2006, Samson 2006). No significant adverse cumulative effects are anticipated with Alternative 1.

Alternative 2 Direct and Indirect Effects

Proposed mechanical treatment under Alternative 2 includes 561 acres of Commercial Thinning, 69 acres of Salvage harvest, 79 acres of Seed Tree harvest, and 119 acres of Old Growth Maintenance. Alternative 2 also includes 93 acres of proposed Commercial Thin From Below treatment, 50 acres of Non-Commercial Thin From Below, and 105 acres of Pre-Commercial Thinning. There is also approximately 1,833 acres of proposed prescribed burning. During actual implementation of these treatments, there is the potential to directly affect northern goshawks by disturbing them and displacing them short-term. Disturbance during the nesting period would have the most potential impact. Potential negative affects to nesting would be decreased by logging restrictions in grizzly bear spring habitats (<5,200 feet) from April 1 to June 15 (Project File Exhibit F-5). Over half of the harvest units would be treated outside of the spring (April 1 to June15) period, when goshawks would most likely be sitting on a nest or defending a nesting territory.

Nesting Sites – Treatments that open up the overstory in closed canopy stands would directly affect the amount of potential goshawk nesting habitat in an area. In addition, removing nest trees or altering the number of large trees in a stand, can alter the structure and functionality of potential goshawk nesting sites. For this analysis, it was assumed that any of the commercial harvest treatments that are proposed in stands that are potential goshawk nesting habitat, would render the

habitat unsuitable for goshawk nesting. Proposed Non-Commercial Thin From Below treatments, Pre-Commercial thinning, and prescribed burning would have minimal effects on the northern goshawk; these treatments are not in habitats that provide potential nesting habitat.

In Alternative 2, potential goshawk nesting habitat would be reduced by 32 acres in two old growth maintenance units (Units 18-97 and 25-72). Unit 18-97 would reduce a potential nesting patch of 155 acres to a patch of 135 acres. Unit 25-72 would reduce a patch of 151 acres to 139 acres. The number of potential nesting patches in the Cooney McKay Area would remain the same; two of the patches would be smaller, but still large enough to function as northern goshawk nesting habitat.

It should be noted that the description of effects to potential goshawk nesting habitat may be conservative. Hayward and Escano (1989) found that nest sites in northwest Montana were often located in older stands that supported widely spaced large trees. In this case, a light thin of the overstory would not necessarily render the treatment area unsuitable for goshawk nesting, and might even improve conditions. In addition, thinning the overstory in some stands may help increase the availability of future large tree habitat. Reynolds et al. (1992) and Graham et al. (1999) have also suggested that the use of thinning may improve habitat for goshawks by creating favorable habitat conditions (e.g. promoting diameter growth in overstory trees and/or creating open understories). Although this inference can be made, based on current knowledge of goshawk habitat, empirical data is lacking. Likewise, lack of disturbance (e.g., in-grown ponderosa pine stands), may result in increased densities of trees above a threshold that could render habitats unsuitable for nesting or PFA's.

Post-fledging Areas – For this analysis, it was assumed that Seed Tree treatments proposed in stands that are potential PFA's would render those potential PFA stands unsuitable as habitat. Since the prescriptions for Commercial Thinning, Salvage, Commercial Thin From Below, and Old Growth Maintenance describe a remaining canopy cover of 50 percent or greater, it was assumed that these stands would still provide potential post-fledging habitat, although they may be lesser in quality. Non-Commercial Thin From Below treatments, Pre-Commercial Thinning, and prescribed burning would have minimal effects on the northern goshawk; these treatments are not in areas that provide potential post-fledging habitat. Under Alternative 2, there would be a reduction of 54 acres of potential PFA habitat (Units 26-20, 26-85, 26-91, and 30-56). The current acreage of forest that could provide potential post-fledging areas adjacent to potential nesting sites would be decreased. This reduction would not limit the number of available PFA patches in each territory block; just decrease their size. The territory blocks would remain intact.

Foraging Habitat – None of the treatments proposed under Alternative 2 would significantly affect potential foraging habitat in the Cooney McKay Project Area. Goshawks hunt openings, forest edges, open forest, and closed forest with an open understory. The proposed prescribed burning would be in stands that may currently provide foraging habitat; there would be no significant negative effects to these stands from prescribed fire.

Alternative 3 Direct and Indirect Effects

Alternative 3 differs from Alternatives 2 and 4 in that there is no treatment proposed in any old growth stands. The five cutting units where old growth maintenance is proposed have been taken out of this alternative.

As described in Alternative 2, during actual implementation of the proposed treatments there is the potential to directly affect northern goshawks by disturbing them and displacing them from active nests. Spring logging restrictions would help to mitigate potential negative affects to nesting goshawks.

Nesting Sites – There would be no reduction in potential nesting habitat for northern goshawk under Alternative 3. The number and acres of potential nesting patches within the territory blocks would remain the same. There would be no temporary disturbance or habitat disruption in these old growth habitats as a result of project implementation.

Post-fledging Areas – Under Alternative 3, there would be a reduction of 54 acres of potential PFA habitat (Units 26-20, 26-85, 26-91, and 30-56). This reduction would not limit the number of available PFA patches in each territory block; just decrease their size. The territory blocks would remain intact.

Foraging Habitat – As described in Alternative 2, proposed treatments would not significantly affect potential northern goshawk foraging habitat in the Cooney McKay Project Area.

Alternative 4 Direct and Indirect Effects

The main difference between Alternative 4 and the other action alternatives is that there is less regeneration harvest proposed (less Seed Tree Units). The only Seed Tree harvest proposed under Alternative 4 is Unit 8-7 (14 acres). This alternative does propose Old Growth Maintenance treatments (5 units; 119 acres).

Nesting Sites – In Alternative 4, potential goshawk nesting habitat would be reduced by 32 acres in two old growth maintenance units (Units 18-97 and 25-72). Unit 18-97 would reduce a potential nesting patch of 155 acres to a patch of 135 acres. Unit 25-72 would reduce a patch of 151 acres to 139 acres. The number of potential nesting patches in the Cooney McKay Area would remain the same; two of the patches would be smaller, but still large enough to function as northern goshawk nesting habitat.

Post-fledging Areas – Under Alternative 4, there would be no reduction in post-fledging habitat.

Foraging Habitat – Proposed commercial and non-commercial harvest treatments would not significantly affect potential foraging habitat in the Cooney McKay Project Area. The proposed prescribed burning would be in stands that may currently provide foraging habitat; there would be no significant negative effects to these stands from prescribed fire.

**TABLE 3-46.
COMPARISON OF EFFECTS ON NORTHERN GOSHAWK BY ALTERNATIVE**

	Existing	ALT. 1	ALT. 2	ALT. 3	ALT. 4
Potential Territory Blocks in Cooney McKay Cumulative Effects Area.	3 (Blocks 3, 4, & 5)	3	3	3	3
Loss of Potential Nesting Habitat (Acres).	-----	0	32	0	32
Loss of Potential PFA Habitat (Acres).	-----	0	54	54	0
Potential Nest/PFA Patches in Cooney McKay Project Area.	17	17	17	17	17

Alternatives 2, 3, and 4 Cumulative Effects

The northern goshawk is associated with mature and older forest. Although there is potential foraging and nesting habitat for the northern goshawk throughout the Swan Valley, due to the mixed ownership pattern in the Swan Valley, and the associated logging and road building on NFS, PCTC, and State lands, as well as forest management on smaller private tracts, the potential habitat is more fragmented, with smaller patch sizes available for nesting habitat and a greater distance between blocks of potentially suitable nesting habitat. In addition to activities associated with forest management, there are other established human activities and developments in the area, including roads, agricultural and residential development, recreational use (hiking, fishing, camping, hunting), and firewood gathering.

In the spring and summer of 2005, the Forest Service's Region One conducted field surveys of goshawks across the accessible portions of the Region (Kowalski 2006). The results of the 1-year estimate suggest that during the nesting period goshawks were fairly common and well distributed in the roaded (more managed) portions of NFS lands in Region One (Kowalski 2006).

No demographic information exists to suggest a decline in goshawk numbers (USFWS 1998, Anderson et al. 2004, Squires and Kennedy 2006). Goshawk habitat in Region One is abundant and well distributed where it occurs naturally, and more forest, and therefore potential nesting habitat, exists on today's landscape than what occurred historically (Samson 2005).

Activities proposed under any of the action alternatives are not expected to contribute significantly to negative cumulative effects in the area. Although there would be decreases in the amount of nesting and PFA habitat under each of the action alternatives, the decrease in acreage would not be significant at the project scale or at broader scales. There would be no decrease in the amount of potential goshawk territories in the upper Swan Valley and no significant decrease in the amount of nesting, post-fledging, or foraging habitat for northern goshawk. As described previously, private lands were not counted towards contributing nesting or PFA habitat. Changes in land ownership or management of private lands would not affect the well-distributed northern goshawk territories described above.

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed might have on sensitive species. Based on available information on the northern goshawk's distribution, presence/absence from the project area, habitat requirements, and management strategies, as well as project design and location, Alternative 1 would have "No impact" on the goshawk although, as discussed previously, this alternative would carry increased risk of more intense fires which would have the potential to reduce the amount of mature, older forest in the project area. Alternatives 2, 3, or 4, "**May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species.**"

Western (Townsend's) Big-Eared Bat

Historical Condition

Western big-eared bats may be found in a variety of habitats and have a wide distribution, but they are uncommon or rare. The current range extends throughout western North America with isolated populations further east. A notable decline has been reported in the western United States (Dobkin et al. 1995). Western big-eared bats are very sensitive to human disturbance, with probably the most serious factor leading to population decline being the loss and disturbance of suitable roosting habitat (Genter and Jurist 1995).

This species uses a variety of roosts for different purposes. They spend winters roosting communally (hibernacula) in caves, abandoned mine tunnels, rock outcrops, lava tubes, bridges, and abandoned buildings. In the summer the female bats roost with their young in nursery colonies, using the roosts for whelping and raising the young. During the summer period, the males and non-reproductive females roost alone. There are smaller roosts used during the day by individuals for sleeping and resting that provide security from predators and prevent exposure to sunlight. Smaller roosts are also used at night when resting from hunting and for feeding on captured prey. Nursery colonies disband in August (USDA 1989).

Western big-eared bats do not migrate long distances, but may move from roost site to roost site. They are insectivores, foraging after dark, and capturing insects in flight. Occasionally they glean insects from leaves. They feed almost exclusively on small moths (Dobkin et al. 1995). Foraging habitat is typically level riparian sites.

The relatively large maternity roosts and hibernacula are the habitats of primary importance. The amount of natural potential big-eared bat maternity roost and hibernacula habitat on the Flathead National Forest and throughout northwest Montana has probably not changed significantly over time since they tend to be geologic features (e.g. cave habitats). However, many cave habitats which once provided suitable bat habitat now have high levels of human activity and do not provide secure bat habitat. The loss of cave habitat may have been compensated for by the increase in artificial maternity roost and hibernacula habitat, including mine tunnels and buildings. However, artificial roost/hibernacula habitat is often not secure from human activity.

Existing Condition

There are no known natural sites for big-eared bat maternity or over-wintering roosts (caves, rock outcrops, lava tubes) in the Cooney McKay Area. There are also no known suitable artificial sites for large maternity roosts or hibernacula (e.g. mine tunnels, large bridges). There are probably abandoned buildings that may be suitable but these would be located mostly on private property and could not be considered secure maternity or over-wintering habitat.

There are potential individual day/night roost sites (snag habitat) in the Cooney McKay Area and throughout the upper Swan Valley.

Surveys for the western big-eared bat are on-going on NFS lands in Montana and Idaho. There have been no reports of western big-eared bats in the Cooney McKay Project Area, and surveys for these bats (2005) did not detect any in the Swan Valley.

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

Under this alternative there would be no project implementation. There would be no direct affects to potential roosting or hibernacula sites and no direct disturbance of western big-eared bats in the Cooney McKay Area. Indirectly, vegetative succession or a decrease or increase in wildfire potential would not significantly affect big-eared bats due to the nature of their important habitat characteristics (e.g. caves, rock outcrops, tunnels, bridges). Alternative 1 would not contribute significantly to cumulative effects on the western big-eared bat in the Swan Valley.

Alternatives 2, 3, and 4 Direct, Indirect, and Cumulative Effects

There would be no potential direct, indirect, or cumulative effects to important big-eared bat maternity roost or hibernacula habitat due to the lack of suitable habitat in the proposed project area. Although it is unlikely that big-eared bats occur in the Cooney McKay Area, the possibility exists that individual roosting bats may be disturbed from day/night roost sites due to activities associated with the proposed project. Disturbance of individual roost sites would only minimally affect big-eared bats because the bats commonly change day/roost sites and breeding or winter security would not be affected. Foraging sites for the western big-eared bat area usually associated with riparian features. There is no treatment proposed, under any of the action alternatives, in riparian areas.

Due to the low potential for negative direct or indirect effects to the big-eared bat, adverse cumulative effects as a result of project implementation are not expected.

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed may have on the western big-eared bat. The determination is "No impact" for Alternative 1 and "**May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species**" for Alternatives 2, 3, and 4.

Western (Boreal) Toad

Historical Condition

Adult western toads are largely terrestrial, will travel considerable distances from water, and are found in a variety of habitats from valley bottoms to high elevations. They breed in lakes, ponds, slow streams, and roadside ditches, where they prefer shallow areas with mud bottoms.

Historical data indicate that boreal toads were widely distributed and very common in Montana and other western states, but the species has apparently undergone severe population declines in the past 25 years (Currim 1996). Surveys in the late 1990s indicate that they are absent from many historic locations and that they now occupy less than 10 percent of suitable habitat (Maxell 2000). Factors associated with population declines range from natural population fluctuations to the effects

of human-induced factors such as pollution, pesticides, habitat destruction/alteration, increases in UV radiation, and the introduction of predators or competitors.

The Swan Valley has a well-developed system of glacial potholes, wet meadows, seeps, and riparian connections (Project File Exhibit F-6). Historically, there would have been abundant western toad habitat in the upper Swan Valley.

Existing Condition

Cumulative impacts related to forest management, residential development, and drought, have affected the hydrologic integrity of some of the riparian systems in the upper Swan Valley. Over time the overall abundance of potential breeding habitat across the Swan Valley may not have changed much, but pre-settlement riparian habitats were undoubtedly more secure for the western toad. Disturbance of wet areas that are important to the western toad, and lands adjacent to wet areas, has increased. Timber management, road building, livestock grazing, residential development, agriculture, and recreational activities have decreased the amount of functional breeding habitat for the western toad throughout the upper Swan Valley. Roads can be obstacles for toads as they are slow moving and vulnerable to being run over by vehicles and may be more susceptible to predation when crossing roads.

Western toads were once common and widespread in western Montana, but are now becoming uncommon and local. Amphibian surveys have documented the occurrence of western toads in the upper Swan Valley and the Cooney McKay Area. The ponds, wetlands, and streams occurring in or adjacent to the proposed project area provide potential breeding habitat for the western toad.

Environmental Consequences

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

Under the No Action Alternative there would be no forest health or fuel reduction activity. There would be no direct effects on the western toad and less overall human disturbance in the Cooney McKay Area as a result of project implementation.

Indirectly, there would probably be an increased risk (compared to historic conditions) of more stand replacement fires in the project area. Depending on the specific location and extent of such fires, there is the possibility that such fires could change vegetation enough to trigger hydrologic effects that may affect boreal toad habitat. However, specific effects are not possible to predict.

Alternatives 2, 3, and 4 Direct and Indirect Effects

There are no vegetative treatments, or associated activities, proposed in riparian areas under any of the action alternatives. There would be no direct or indirect effects to important toad breeding habitat associated with streams, ponds, or other natural wetland areas. Protection of breeding and nursery habitat would occur through a combination of protective measures in the Montana Streamside Management Zone Law, Montana Water Quality Act, and INFS standards. Roadside ditches that hold water long enough into the summer to provide breeding sites would not be protected unless they were associated with streams or other protected sites.

The proposed commercial and non-commercial treatments, the prescribed burning, and the associated temporary road construction, are likely to alter existing non-breeding habitat for the western toad. Based on this species' ability to occupy a wide variety of habitats, western toad use would probably still occur in the treatment area, although at lower population levels until vegetation recovers. If adult western toads are present during actual logging or road building activity or during temporary road construction, individual mortality could occur.

Alternatives 2, 3, and 4 Cumulative Effects

In addition to activities associated with the proposed Cooney McKay Project, there are other established human activities and developments in the area, including timber management, road building and maintenance, livestock grazing, residential development, agricultural use, and recreational activities, that have decreased the amount of functional breeding habitat and have decreased the security on non-breeding habitat in the Cooney McKay Area and throughout the upper Swan Valley.

The action alternatives (Alternatives 2, 3, and 4) would not contribute significantly to these cumulative effects because there would be no additional cumulative effects to breeding habitat as a result of the proposed project, and individual western toad mortality would be infrequent; not affecting the species at the population level.

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed might have on sensitive species. Based on available information on the western toad's distribution, habitat requirements, and project design and location, Alternative 1 would have "No impact" on the western toad. Alternatives 2, 3, and 4 **"May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species."**

Wolverine

Historical Condition

Wolverines occur in Montana in coniferous forest and alpine tundra. Wolverine habitat typically encompasses large areas of rugged, remote terrain, and populations naturally exist at relatively sparse densities. Wolverines are generally associated with remote wilderness areas, and are considered sensitive to human development, especially with respect to selection of denning sites (Banci 1994). Wolverines are solitary except during breeding. Wolverine home ranges are very large relative to other species their size, more on the order with that required by larger carnivores. Wolverine home ranges vary from less than 37 square miles to greater than 347 square miles (Banci 1994). Denning occurs at high elevations, frequently above 8,000 feet, in cirque basins and other high elevation, steep slope habitats. Wolverine dens are usually associated with large accumulations of snow around log jams, rocks, or boulders. Den site elevations are generally found at higher elevations well away from development or human activity.

Wolverine do not "hunt" in the usual sense, but are opportunistic, eating anything edible they can catch, find, or steal. Ungulate carrion seems to be particularly important to wolverine in the winter and

movements to lower elevations during the winter months probably occur so wolverine can take advantage of ungulate mortalities on winter ranges. Additionally, the wolverine is a proficient predator capable of killing large ungulates, primarily in deep snow. More commonly they prey on smaller species such as snowshoe hares, cottontails, ground squirrels, porcupines, marmots, skunks, and weasels (Banci 1994). They also opportunistically consume berries, insects, fish, birds, and eggs.

Historically, the upper slopes of both the Swan Range and the Mission Mountains provided wolverine denning habitat. The Swan Valley has historically provided winter range for white-tailed deer. A sufficient prey base for wolverine was available.

Existing Condition

Probably the greatest change for wolverine has been the increase in human activity levels in potential denning habitat. This increase in activity may limit reproduction in some areas (Banci 1994). Female wolverines appear to be extremely sensitive to human disturbance at the natal den site and have been known to move kits in response to disturbance, potentially increasing kit mortality. Given the wolverine's low fecundity, any reproductive losses could be significant.

Hillis and Kennedy (2002) mapped wolverine natal den habitat in Region One using three criteria; minimum elevation, degree of concavity, and degree of slope. The minimum elevation west of the continental divide used was 6,200 feet. Slope concavity is a feature unique to glaciated landscapes and thus a good predictor of cirque basins. Maximum slope was limited to 30 percent. Cirque basins identified by this method were then buffered for 2 miles above 6,200 feet. The result revealed a mix of potentially suitable natal den habitat (cirques and avalanche chutes) across the landscape. Nearly 75 percent of the identified natal den habitat on the Flathead National Forest was protected by designated wilderness. The Flathead Forest Plan was reviewed to identify those MAs (not designated wilderness) that precluded snowmobiles. When those restrictions were considered, the percentage of natal den habitat protected increased from 73.1 percent to approximately 90 percent (Hillis and Kennedy 2002).

High elevation cirque basins have traditionally received little human activity in late winter with the exception of downhill ski areas. Kennedy, however, demonstrated that the recent popularity of backcountry snowmobiling, and the advent of more powerful snowmobiles, has resulted in substantially increased late winter disturbance into areas suitable for denning female wolverines. Trapping may also be a threat to wolverines as they are easily trapped (Ruggiero et al. 1994).

Even in areas that have not been subjected to human encroachment, wolverines naturally exist at very low densities. It is known that wolverine occur in low densities in the upper Swan Valley.

Isolation from human impacts and activities, a diverse prey base, ungulate carrion, and natal security seem to be the primary factors associated with effective wolverine habitat.

Environmental Effects

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

Under Alternative 1, there would be no forest health or fuel reduction activity on NFS lands in the Cooney McKay Area. There would be no negative direct effects to the wolverine associated with this

alternative. Effective wolverine habitat is not associated with a specific vegetative type. In the absence of the proposed forest health or fuel reduction treatments, natural vegetative succession or an increase in wildfire potential would not produce significant indirect effects on the wolverine or wolverine habitat. Alternative 1 would not contribute significantly to cumulative effects on wolverine in the Cooney McKay or upper Swan Valley Area.

Alternatives 2, 3, and 4 Direct and Indirect Effects

Natal Security - Denning occurs at high elevations, frequently above 8,000 feet. There would be no commercial or non-commercial treatments, and no temporary road construction, in potential natal den areas. Proposed prescribed fire locations may overlap with potential wolverine denning locations, but would not occur when wolverine are utilizing the natal dens. There would be no negative direct or indirect effects to wolverine natal denning security.

Prey Base - The average understory canopy closure and the overstory tree canopies would be reduced to varying degrees as a result of proposed commercial and non-commercial treatments. There would be no change expected in ungulate population numbers as a result of the proposed project, however these vegetative treatments may alter white-tailed deer and elk use patterns as the ungulates adjust their behavior to avoid human presence or disturbance in the short-term, and as they adjust to changes in forage availability over the long-term. Forest Plan standards for winter range would be adhered to; a minimum of at least 50 percent thermal cover would be maintained. There would be no measurable effect on potential wolverine prey base.

One of the objectives of the prescribed burns is to improve ungulate habitat. In the long-term, wolverine would be expected to benefit from the proposed prescribed burning as habitat improves for ungulates, an important part of the wolverine's diverse prey base.

Security - Wolverines are generally associated with remote, isolated areas away from human development. Many of the proposed treatment units are in the lower valley, adjacent to private property and in high human use areas. Wolverine use of these areas would be uncommon. It is still possible that short-term displacement of wolverine could occur in the valleys or in treatment areas on the mid to upper slopes. This short-term displacement would not be significant.

Temporary road construction is proposed under the action alternatives. The temporary roads would be closed to the public during use and would be reclaimed following use.

Alternatives 2, 3, and 4 Cumulative Effects

Historically, prior to settlement of the Swan Valley, wolverine had unlimited access to a variety of habitats and most likely traveled from high elevation summer habitats to low elevation winter big game ranges. Management actions such as road building, and other human developments such as residential development, winter recreational activities (e.g. snowmobiling), campgrounds, hiking trails, and trapping, have had far reaching effects by increasing human presence in once remote areas. This increase in human activity levels in once remote areas has fragmented wolverine habitat and probably created barriers to travel.

Future road building, snowmobile use, and other human activities in the area will have cumulative effects on the effectiveness of wolverine habitat. Management for grizzly bear security core areas in the upper Swan Valley on NFS lands undoubtedly benefits wolverine, as does the increases in public land ownership through land acquisition. Road closures designed for grizzly bear security (Project File F-6) on NFS and PCTC lands, also provides wolverine security.

Wolverine is probably little affected by vegetation management on the forest and in the region (Project File Exhibit F-4). The Cooney McKay Project would not contribute significantly to cumulative effects for wolverine in the Cooney McKay Area. The greatest potential threats to wolverine are the increase in human activity levels in potential denning habitat (e.g., snowmobiling in high elevation cirque basins) and the threat from trapping. Within the project area, high elevation areas are within proposed wilderness under the Flathead Forest Plan and snowmobiling is not permitted. Secure habitat for wolverine also occurs in other portions of the upper Swan Valley in adjacent wilderness areas. Adverse cumulative effects are not expected as a result of the proposed project.

Determination

In accordance with FSM 2673.42, a determination has been made as to the degree of impact the activities proposed might have on sensitive species. Based on available information on the wolverine's distribution, presence/absence from the project area, habitat requirements, and project design and location, Alternative 1 would have "No impact" on the wolverine. Alternatives 2, 3, and 4 **"May impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species."**

Regulatory Framework and Consistency_____

The USDA Forest Service is bound by Federal statutes (ESA, NFMA), regulation (USDA 9500-4), and agency policy (FSM 2670) to conserve biological diversity on NFS lands. Federal laws and direction applicable to sensitive species include the NFMA and FSM direction 2670. Amendment 21 to the Flathead's Forest Plan has standards to conduct analyses to review programs and activities, to determine their potential effect on sensitive species, and to prepare a biological evaluation. The Flathead Forest Plan also states that "adverse impacts to sensitive species or their habitats should be avoided." A goal in Forest Plan Amendment 21 is to "ensure that Forest Service actions do not contribute to the loss of viability of native species."

In accordance with FSM 2673.42, determinations have been made as to the degree of impact the proposed activities may have on sensitive species.

Snag and Down Woody Dependent Species

Introduction_____

Snags, broken-topped live trees, downed logs, and other woody material are required by a wide variety of species for nesting, denning, roosting, perching, feeding, and cover (Bull et al. 1997). Snags and down, dead, material are also used for communication purposes: singing, (songbirds),

drumming (grouse and woodpeckers), calling (squirrels, jays, birds of prey), and sight recognition posts. Small mammals and birds use standing and down dead material for food storage and for hunting. Downed logs and stumps are important for travel, both below the snow in the winter, and as travel cover throughout the year. It is estimated that about one-third of the bird and one third of the mammal species that live in the forests of the Rocky Mountains use snags for nesting or denning, foraging, roosting, cover, communication, or perching. On the Flathead National Forest, at least 42 species of birds and 10 species of mammals are dependent on dead wood habitat for nesting, feeding, or shelter (USDA 1999). The more mobile species that depend on dead wood habitat include black bears, Canada lynx, wolverines, marten, fisher, bats, woodpeckers, and small owls. Less mobile species that depend on dead wood include snowshoe hares (the primary prey of Canada lynx), red-backed voles (the primary prey of marten, fisher, boreal owl, and several other species), shrews, bryophytes, lichen, fungi, and protozoa. As down woody material further decays, it plays an important role in nutrient cycling, soil fertility, and erosion control.

Snags and their management have become a major conservation issue in managed forests across the western United States. Biologists have recognized for a long time that snags and down woody material provide important wildlife habitat, but only in the last decade or so have managers begun to understand that not only is tree decay an important ecological process that affects wildlife habitat (Bull et al. 1997), but snags and dead wood are an essential, important part of the larger ecosystem. An insufficient number of suitable snags may limit or eliminate populations of cavity-using species (Thomas et al. 1979, Saab 1998).

Although various sizes of snags and down woody are used, larger birds and mammals require larger dead trees. The larger-diameter downed trees provide stable and lasting structure and offer better protection from weather extremes (Bull 2002). Longer down woody pieces provide better runways, shelter, and under-snow access.

Analysis Area

Spatial Bounds

All lands in the Cooney McKay Project Area were considered for the evaluation of direct and indirect effects on snag and down woody associated species. This approximately 38,031 acre area is large enough to include the home ranges of several individuals or pairs of a species, and is representative of the effects of fire, natural tree mortality, timber harvest, and road management across the landscape. The actions proposed in the alternatives that could directly or indirectly affect snag or down woody associated wildlife species are contained within this area. The upper Swan Valley was considered in the cumulative effects analysis. A multi-scale assessment was also conducted to address habitat diversity concerns for dead tree dependent species (Project File Exhibit F-4).

Temporal Bounds

The length of time for effects analysis is approximately 5 years for the roads and forest health/fuel reduction portions of this project. This is based on the probable contract length for the proposed project, the timeframes for related activities, and the reasonably foreseeable actions identified. Upland burning proposed in the Condon, Cooney, and Smith Creek drainages might occur during the next 10 years, dependent on the availability of burning windows, funding, and equipment needed to achieve the desired results. When conditions are favorable the actual burning would only take a day

or less for each project, but this time frame provides a conservative margin for all these elements to come together.

Affected Environment

Historic Condition

Forest ecosystems in the western United States have adapted in response to disturbances such as wildfire, insects, disease, windstorms, etc. Snags and down woody material have always occurred on the landscape, a direct result of these disturbance factors, either on a large scale, or on a very small scale, as individual trees grow old and die. Ritter and others have described snag populations as occurring in either “pulses” of snags following a large disturbance event, or as “continuous” populations of scattered individuals (Ritter et al. 2000).

In the Swan Valley, historically, snag habitat and down woody material, though always present in varying amounts, experienced greater “pulses” across the landscape and in localized areas as a result of natural disturbances. Warmer and drier areas historically underwent more frequent, lower-intensity fires, and typically supported fewer snags and large downed logs than cooler and moister environments, where the stands reached climax conditions before experiencing stand-replacing fire. In the Swan Valley, western larch, ponderosa pine, and cottonwood snags appear to receive the most use by wildlife, with lesser use of Douglas fir, other true fir species, spruce, and lodgepole pine trees. Wildlife populations have historically adapted to these natural fluctuations in the availability of snag and down woody habitat.

Existing Condition

Hillis, Pengeroth, and Leach (2003) assessed the status of snag habitat and snag-dependent species across the Forest Service’s Region One. West of the continental divide, the analysis was designed to address the habitat needs of the pileated woodpecker, a keystone species, whose needs meet or exceed those of other cavity nesters, with very few exceptions. Hillis, Pengeroth, and Leach (2003) concluded that:

1. The distribution of mature/old forest that provides nesting habitat for pileated woodpeckers has not changed substantially since pre-fire-suppression/pre-logging periods;
2. The ratio of mature to old forest has changed substantially on low elevation forests west of the continental divide;
3. Partial removal timber harvest and woodcutting (as facilitated by road access) accounted for an additional loss of 28 percent of the snags across Region One lands; and
4. Fire exclusion, particularly as it affects the occurrence of low-to-moderate severity fires, has severely threatened the recruitment and durability of snags.

The following table compares the status of snags at both the Forest and Regional scales.

**TABLE 3-47.
LEVELS OF MATURE AND OLD FOREST AT THE FOREST AND REGIONAL (WEST OF THE
CONTINENTAL DIVIDE) SCALES RELATIVE TO THE HISTORIC RANGE OF VARIABILITY**

Mature Old Forest	Flathead National Forest	Region One
Acres of potential habitat	1,455,982 acres	10,520,384 acres
Acres of existing habitat	720,062 acres	5,128,766 acres
Existing – potential	49.5%	48.8%
Historic Range of Variability	24.7 to 72.1%	24.7 to 72.1%

Table 3-47 suggests that there has been no substantial departure in snag densities from historic levels at either the Forest or Regional scale.

Recently, large fires in Montana have created a “pulse” of snag habitat across the landscape. The Crazy Horse Fire (over 11,000 acres), which burned in the upper Swan Valley in late summer 2003, created a large amount of snags. In 2006, the Holland Peak Fire burned over 1,800 acres just south of the project area. Most of this acreage was heavily forested. As the dead standing trees continue to fall to the ground within the Crazy Horse Fire Area and Holland Peak Area, there will be an increase in down woody material.

Environmental Consequences

The Cooney McKay Project consists of three action alternatives and a No Action Alternative. The alternatives are described in detail in Chapter 2 of this DEIS. The Cumulative Effects Worksheet, located in the Wildlife Project File (Project File Exhibit F-10) considers and describes proposed activities in addition to the past, current, and reasonably foreseeable activities listed at the beginning of this chapter in Tables 3-1 and 3-2. Those activities that cumulatively contribute indiscernible effects to Snag and Down Woody Dependent Species are not included in this section. Those activities that cumulatively affect these species are listed below.

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

Under this alternative there would be no reduction of snags as a result of proposed management activities. Snags would eventually fall over and add to the down woody material in the Cooney McKay Area. There would be less potential displacement of wildlife species from snag/down woody habitat under this alternative.

No direct effects to wildlife that depend on snag or down woody material for all or part of their habitat needs are anticipated as a result of implementing Alternative 1. Indirectly, there may be an increased likelihood under the No Action Alternative of more intense, stand replacing fires in some habitats within the project area due to the increased risk compared to historic conditions. Such fires would have the effect of increasing the amount of snag habitat and reducing the amount of down woody debris (at least short-term) compared to current conditions.

Alternatives 2, 3, and 4 Direct and Indirect Effects

These alternatives are discussed together due to the similarity of their effects on snag and down woody associated wildlife species.

Commercial Harvest – Commercial harvest activities proposed under Alternatives 2, 3, or 4 would reduce the amount of snags and down woody material in the cutting units. Although snags are not usually targeted for removal, they are sometimes removed inadvertently to increase logging efficiency, or if they are deemed a hazard to the woods workers, they are removed for safety reasons. If snags are recently dead, they may be removed for commercial reasons. In harvest units near private property, where the main purpose is fuel reduction, snags may be removed to meet the objective of reducing the potential fuels in an area. Down woody material suitable for wildlife use is usually reduced during logging activity as a result of heavy equipment use, removed to reduce fuels, or removed to facilitate reforestation. The effect to snag and down woody associated species would be a potential decrease in available habitat.

Effects to snag and down woody associated species would be the least in the Commercial Thin, Salvage, Old Growth Maintenance, and Commercial Thin From Below treatment units because less overstory trees would be removed and there is less potential for disturbing existing snag and down woody habitat. The proposed Seed tree harvests would have the greatest effect on snag/down woody associated species because they are regeneration harvests; most of the overstory would be removed and there is a higher potential for disturbing snag and down woody habitat.

Old growth habitats and riparian habitats are very important to snag and down woody associated wildlife species. These habitats frequently have an abundance of larger snags and down woody material. There would be no vegetation treatments in riparian habitats under any of the alternatives. There would be no treatment in old growth stands under Alternative 3. There is, however, proposed treatment in 5 stands that currently provide old growth habitat under Alternatives 2 and 4 (5 units; 119 acres). Reducing the amount of snags or down woody material in old growth stands can remove habitat features that are essential or very important to many wildlife species (Bull et al. 2005). Research suggests that retaining the bulk of the largest material may decrease these effects (Bull and Blumton 1999, Porter et al. 2005). To maintain appropriate snag densities in old growth treatment units (Alternatives 2 and 4), all snags greater than 18 inches DBH would be retained and 6 snags per acre 12-18 inches DBH would be retained. In addition, all dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater, and all hardwood trees, would be left standing. To maintain appropriate down woody material in the existing old growth stands, all pieces greater than 18 inches diameter would be retained as well as 15 pieces per acre that are 9 to 18 inches diameter (Table 2-14).

This snag/down woody retention guideline would be modified for the Commercial Thin, Salvage, Commercial Thin From Below, and Seed tree treatments. In these harvest units, 6 snags average per acre that are 12 to 20 inches DBH would be left. If existing snag densities are below these densities, live trees would be substituted. All snags greater than 20 inches DBH would be left, where available. In addition, all standing dead cull western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater may be retained, and all hardwood trees would be designated to be left. In the Commercial Thin, Salvage, Commercial Thin From Below, and Seed Tree treatment units the minimum retention for down woody material would be, where available, 15 pieces average per acre that are 9 to 20

inches diameter and 10 pieces average per acre greater than 20 inches diameter (Table 2-14). This amount of down woody material equates to 5 to 10 tons per acre.

Alternative 3 has no proposed treatment in old growth stands and would be the least impactful alternative relative to snag/down woody related wildlife species because old growth forest has abundant snag and down woody habitat and these habitats would not be disturbed. Alternative 4 would have less potential negative impacts to snag and down woody associated species than Alternative 2 because there is less proposed Seed Tree harvest (14 acres compared to 79 acres) and because there is less proposed treatment overall. Alternative 2 has the most potential to impact snag and down woody associated wildlife species because it has the most regeneration harvest (Seed Tree) and the most acreage treatment overall.

Non-Commercial Treatments - Direct and indirect effects from the proposed non-commercial treatments would be minimal. The trees in these stands, and the available down woody material, are small and do not currently provide quality snag/down woody habitat. In the long-term, the effects of the proposed treatment would be beneficial to wildlife species associated with snag and down woody habitats because the removal of excess trees at this stage in forest stand development reduces growth stagnation and enables the retained trees to grow more vigorously. The amount of proposed non-commercial treatment is the same in Alternatives 2, 3, and 4.

Temporary Roads - There would be no new permanent road construction with implementation of the proposed Cooney McKay Project. Approximately 1.2 miles of temporary road would be needed to access treatment units under Alternatives 2 and 3; slightly less under Alternative 4 (1.0 mile). Some snags may be cut down to put in the temporary roads. They would be left on the ground as down woody. The roads would be reclaimed following vegetative treatments. Public use of closed roads would not be permitted, reducing the risk of losing potential snag tree habitat to firewood cutters.

Prescribed Fire - In each of the action alternatives, there is prescribed burning proposed. The areas proposed for prescribed burning are on the upper slopes of the Swan Range, in and adjacent to brush fields and natural openings. Mortality in scattered overstory trees would be approximately 20 percent or less; midstory mortality would be between 30 to 50 percent. The overstory canopy would remain largely unchanged, with little loss in available snag habitat. There would be no removal of fire-killed trees. The proposed prescribed burning would increase snag habitat. Down woody habitat would be decreased short-term by ground fire. As fire-killed trees fall over, down woody material would increase over time.

Security/Mortality Risk - For each of the action alternatives, it is possible that project implementation would directly affect snag or down woody associated wildlife species through disturbance or incidental mortality.

Alternatives 2, 3, and 4 Cumulative Effects

Human caused threats to snag and down woody associated species include activities that reduce the availability or use of snag/down woody habitat. Activities that have reduced dead tree habitat in the Cooney McKay Area, and throughout the Swan Valley, are timber management, road building, agricultural conversion, residential development, firewood cutting, fire suppression, and disease control.

On many of the roads in the Cooney McKay Area, public access has been restricted through seasonal or yearlong road closures. This has helped to reduce the loss of important snag habitat to firewood cutters.

Recently, PCTC has offered up tracts of land in the southern portion of the Swan Valley for sale to the Forest Service, conservation buyers, or other private individuals (See the Lands Section of Chapter 3 for more detail analysis of land ownership). There is a concern that an increase in private parcels of land in the Swan Valley may further fragment wildlife habitat and reduce the availability of snag and down woody habitat. Many of the land sales by PCTC have been to conservation buyers, which should help mitigate the risks associated with private land development. The acquisition of lands by the Forest Service has helped to maintain natural landscape linkages and to reduce the risk of private land development.

When the emphasis on managing old growth forests (USDA 1999) is considered, and the large number, acreage, and distribution of recent fires on the Flathead National Forest in 1988, 1994, 2000, 2001, 2003, 2006, and 2007 that recruited large numbers of snags, it can be concluded that at the Flathead National Forest scale, snag habitat is being both recruited and retained. At the Flathead National Forest scale, fires within the last 6 years within stands greater than 9 inches (trees large enough to provide a potentially suitable snag) occurred at 125.5 percent of the average historic conditions (Hillis, Pengeroth, and Leach 2003).

Each of the action alternatives would reduce the risk of more intense wildfires through reduction in ground fuels and ladder fuels. This would, in turn, reduce the potential for increased snag creation.

Unharvested, live trees would be available to provide fairly uniformly distributed future snags and would provide recruitment of future down wood habitat. Site preparation prescriptions would be designed to maintain as much of the larger down material as possible and practicable, given other resource objectives such as fire hazard reduction and reforestation.

Alternatives 2, 3, and 4, would not contribute significantly to negative cumulative effects on snag or down woody habitats, or associated wildlife species, in the Swan Valley. Existing old growth forest and riparian habitat, both within and outside of the project area, would continue to provide important dead tree habitat for a large suite of wildlife species. Adverse cumulative effects are not expected.

Regulatory Framework and Consistency

The Forest Service is required by the NFMA, to “provide for 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.” A wide variety of wildlife species are dependent on the existence of standing snags and downed woody material. The Forest Plan’s Amendment 21 (USDA 1999) provides the current direction for snags and down woody material. Sufficient vegetation structure is to be retained, including large diameter trees, in timber harvest areas. To comply with Amendment 21, the retention amount must be consistent with native disturbance and succession regimes and provide for long-term snag and coarse woody debris recruitment, essential soil processes, species habitat (including feeding and dispersal habitat for small mammals and birds), and long-term structural diversity of forest stands. In the absence of a site-specific landscape analysis to derive snag retention levels, minimum retention levels have been established as the standard.

All of the Cooney McKay alternatives would comply with standards in the Forest Plan for wildlife snag and down woody habitat and associated wildlife species.

Management Indicator Species Commonly Hunted Big Game

Introduction

White-tailed deer, mule deer, and elk are Management Indicator Species (MIS) for commonly hunted big game species on the Flathead National Forest (USDA 1985). Meeting the habitat needs for white-tailed deer, mule deer, and elk would indicate that the habitat needs for other commonly hunted big game species, such as black bear, mountain lion, and moose, would also be met. Habitat needs that each of these species has in common would include cover (hiding and thermal), forage, and security (Witmer et al. 1998).

Natural disturbances such as fire or major insect infestations, and man-caused disturbances, including timber harvest, road construction, agricultural conversion, or residential development, alter the landscape, changing the amount and juxtaposition of cover and forage. These changes affect big game use patterns as they search out forage and cover, and can also affect habitat security.

Analysis Area

Spatial Bounds

The effects analysis area for direct, indirect, and cumulative effects to white-tailed deer, mule deer, and elk is the upper (southern) Swan Valley, from Van Lake in the north to Cooney Creek in the south, and east of the Swan River. This area is large enough to include almost all of the white-tailed deer winter range in the Swan Valley (approximately 65,000 acres) and is representative of the effects of fire, natural tree mortality, timber harvest, and road management across the landscape. The actions proposed that could affect white-tailed deer, mule deer, or elk, are contained within this area. In addition, the area is sufficiently large enough to evaluate the ability of the habitat to support other big game species considered under the MIS umbrella.

Temporal Bounds

The length of time for effects analysis is approximately 5 years for the roads and forest health/fuel reduction portions of this project. This is based on the probable contract length for the proposed project, the timeframes for related activities, and the reasonably foreseeable actions identified. Upland burning proposed in the Condon, Cooney, and Smith Creek drainages might occur during the next 10 years, dependent on the availability of burning windows, funding, and equipment needed to achieve the desired results. When conditions are favorable the actual burning would only take a day or less for each project, but this time frame provides a conservative margin for all these elements to come together.

Affected Environment

Historic Condition

The Swan Valley has historically provided year-round habitat for deer and elk, as well as for other big game species covered under the MIS umbrella. White-tailed deer habitat consists of a mixture of various forested communities that provide cover, foraging habitat, and water within a reasonable distance. While elk and mule deer use similar habitats, white-tailed deer are more closely associated with riparian features than elk or mule deer. White-tailed deer exhibit a broad range of summer and fall habitat use but are commonly associated with warm and moist mixed-species coniferous forest and lowlands interspersed with aquatic wetlands, meadows, and stream bottoms. The wetland complexes in the upper Swan Valley, including river and stream riparian zones, fens or peat lands, marshes, vernal pools, ponds and lakes, are quite extensive (Project File Exhibit Q-4). Habitats favored by elk during the summer months include moist parks, meadows, and riparian areas, offering succulent forage and bedding sites. Elk remain on higher elevation summer ranges until forced down to lower elevations by snow and severe weather. Both elk and mule deer are also commonly associated with shrub, seedling, and sapling habitats. Mule deer have similar seasonal habitat and elevational range preference as elk. Like elk, mule deer elevational range is dictated by food availability and weather conditions.

In the past, ungulate populations undoubtedly fluctuated between mild winter years and hard winter years. The use patterns of deer and elk have also undoubtedly shifted as a result of natural disturbances such as wildfire, windfall, and insect infestations, which typically remove or alter hiding cover, thermal cover, and forage. Thermal cover describes the ability of a forested stand to intercept snow and provide winter protection for deer or elk (e.g., shallow snow depths, warmth). Winter thermal cover is very important to white-tailed deer populations. Hiding cover for both deer and elk refers to trees of sufficient size and density to conceal an animal from view at approximately 200 feet. Forage areas, as the name implies, are habitats that provide food for deer and elk.

Historically, there were large patch sizes of thermal and hiding cover, interspersed with patches of forage. As mentioned previously, the pattern across the landscape of cover and forage naturally fluctuated in response to winter severity, wildfire, insect and disease, windstorms, etc. Early surveys indicate that the white-tailed deer population in the Swan Valley ranged from approximately 4,000 to 8,000 animals in the 1930s, when surveys were first initiated, up to the 1990s. There are few reliable estimates for elk or mule deer. It was believed that white-tailed deer reached a population high in 1900 to 1915. Large scale logging was at its peak in 1917 (on private land holdings), and it was the opinion of the local people that this reduced cover to such an extent that the deer population suffered (Studies 1976, Freedman 1983, Munding 1982). Munding (1981) described the Swan Valley white-tailed deer population as one that is characterized by low and stable annual turnover and recruitment. He concluded that the population was stable, with an annual recruitment rate of 29 percent, and an annual survival rate of approximately 70 percent.

The Cooney McKay Area has historically provided spring, summer, fall, and winter range for white-tailed deer, mule deer, elk, and other big game species. White-tailed deer have probably always been the most numerous of the big game species occurring in the Cooney McKay Area and throughout the Swan Valley.

Existing Condition

The greatest change from historic to current conditions for deer and elk, throughout the Swan Valley, has been the change in human activity. The level of human activity in the Swan Valley has obviously increased over early settlement and pre-settlement conditions. The result of increased human activity has been an increase in the amount of timber harvest, road construction, recreational use, residential development, grazing, and agriculture. Residential and agricultural developments have permanently altered potential deer and elk habitats. Timber harvest across the valley has altered the amount and juxtaposition of thermal cover, hiding cover, and forage. Timber harvest typically removes big game cover and creates foraging areas by reverting forest succession to its earliest stage. As these foraging areas go through succession and become reforested, they again begin to provide cover; first hiding and then thermal cover. Where cover exceeds forage by a wide margin, removal of cover may enhance deer and elk habitat by increasing edge, increasing diversity, and increasing forage. In contrast, when an adequate distribution of cover is not present, additional removal of cover can reduce habitat values for deer and elk. The blocks of cover were more connected in the absence of timber management and residential development (Project File Exhibit Q-4).

The increase in miles of road, largely a result of land management activities, has resulted in a decrease in security for deer and elk, especially during hunting season. Security was higher in the absence of extensive road building and recreational hunting. Road closures for grizzly bear in the Swan Valley, in recent years, have undoubtedly benefited both deer and elk. Currently, in the Cooney McKay Project Area, only 22 percent of the area exceeds 1 mile/square mile open motorized access. Approximately 40 percent of the area is free from motorized access and is at least 2,500 acres in size.

Historically, prior to fire suppression management, many forested stands experienced frequent underburns, and shrubs and grasses grew up under more open canopies. This was especially true in some of the drier habitat types found in the Cooney McKay Area (e.g., ponderosa pine habitats). Under existing conditions, many of these historically open stands have become ingrown with smaller tree species, especially Douglas fir, and stand conditions are no longer open; shrubs and other forage vegetation have declined and any wildfire at this point would probably be stand replacing instead of a lower intensity underburn.

In 1986, the Flathead Forest Plan allocated approximately 12,000 acres of NFS land in the upper Swan Valley as white-tailed deer winter range (MA 9). These lands are to be managed with an emphasis on providing cover and forage areas suitable for white-tailed deer winter habitat. The management standard for winter range areas (MA 9) is to maintain thermal cover on at least 50 percent of the designated winter range area. In the Cooney McKay Project cumulative effects analysis area, from Van Lake in the north to Cooney Creek in the south, there are approximately 10,000 acres of designated white-tailed deer winter range (See Map 3-9). On this winter range, the existing amount of thermal cover is approximately 63 percent (See Map 3-10). This figure does not include the proposed treatment in the Meadow Smith Project. When calculating existing thermal cover on the winter range and assuming that the Meadow Smith Project has been completed, the amount of thermal cover on white-tailed deer winter range would be approximately 56 percent.

The Forest Plan has also allocated lands in the Swan Valley as elk and mule deer winter range areas (MA 13). There are approximately 3,500 acres of designated elk and mule deer winter range in the Cooney McKay Project Area (See Map 3-9). The management emphasis on these lands is to provide cover and forage areas suitable for mule deer and elk winter habitat. The Forest Plan standard on MA

13 lands is to maintain 30 percent thermal cover. The existing amount of thermal cover on designated elk and mule deer winter range habitat in the Cooney McKay Area is at least 50 percent or greater (See Map 3-10).

As stated previously, exact numbers of deer and elk using the Cooney McKay Area, or the upper Swan Valley, are not known. White-tailed deer sightings are common and their numbers are thought to be stable (MDFW&P 2006). Based on 2006 post-hunting season data, MDFW&P estimates that there were between 4,000 to 6,000 white-tailed deer in the Swan Valley (Hunting District 130) as of 2003 (MDFW&P 2006). They estimated mule deer populations in the Swan at 200 to 300 for the same time period. The population size estimates were generated using a population reconstruction model based on bucks and does harvested. The range represents a 20 percent confidence interval. The estimates for Region One (northwestern Montana) were 8,500 to 12,500 mule deer and approximately 48,000 to 72,000 white-tailed deer. Elk numbers in the Swan Valley were estimated at between 200 to 250 individuals (10 percent confidence interval). The estimates for Region One were approximately 10,000 to 12,400 elk. The elk population estimate was generated by MDFW&P based on ground and aerial survey information, anecdotal reports, and professional judgment.

Environmental Consequences

The Cooney McKay Project consists of three action alternatives and a No Action Alternative. The alternatives are described in detail in Chapter 2 of this DEIS. The Cumulative Effects Worksheet, located in the Wildlife Project File (Project File Exhibit F-11) considers and describes proposed activities in addition to the past, current, and reasonably foreseeable activities listed at the beginning of this chapter in Tables 3-1 and 3-2. Those activities that cumulatively contribute indiscernible effects to Management Indicator Species are not included in this section. Those activities that cumulatively affect these species are listed below.

Cumulative Effects

The Cooney McKay Project Area is located near the community of Condon, Montana. There are part-year and yearlong residences in the area, as well as other established human activities, including residential development, recreational residences, a Forest Service administrative site, an airstrip, picnic areas, nature trails, and a major highway. The level of human activity in the area increases the chance for disturbance or displacement of wildlife species. Other human activity in the area includes firewood cutting, hunting, various road use permits and easements, building rentals, and on-going outfitter guide permits.

Timber harvest activities on PCTC lands and on NFS lands in the Cooney McKay area peaked during the mid to late 1980s, although lower levels of timber harvest continue up to the present on all ownership lands. There is another forest health timber harvest project on NFS lands in the Cooney McKay Area called the Meadow Smith Project. Cumulative effects in the Cooney McKay Analysis Area would include the effects of the Meadow Smith Project on NFS lands, as well as on-going and proposed timber harvest on PCTC lands. It should be noted that the Meadow Smith Project included the proposed Cooney McKay Project in its cumulative effects analysis.

Recently, PCTC has offered up tracts of land in the southern portion of the Swan Valley for sale to the Forest Service, conservation buyers, or other private individuals. Between 1997 and 2007, an estimated 480 acres of PCTC lands have been purchased by the State of Montana and 549 acres purchased by conservation buyers with limited development covenants. In addition, about 3667 acres

(20 parcels) of PCTC lands have been sold with development limited by the regulations of Missoula and Lake Counties (Project File Exhibits Q-1 and Q-10). Deed restrictions on the land sales include set-back standards for streams and sanitation guidelines (e.g., no outdoor barbecue pits, no birdfeeders within reach of bears, and fenced gardens). In Missoula County a subdivision review is required if parties propose to subdivide 160 acres or more. Despite these provisions, there is a concern that an increase in private parcels of land in the Swan Valley may further fragment wildlife habitat and increase human-bear encounters. As stated above, many of the land sales by PCTC have been to conservation buyers, which should help mitigate the risks associated with private land development. The Forest Service has acquired approximately 11,489 acres from PCTC between 1997 and 2007. The acquisition of lands by the Forest Service has helped to maintain natural landscape linkages and to reduce the risk of private land development. A more detailed analysis of the history and potential of changes in landownership patterns is found in the Lands Section of Chapter 3 of this EIS.

Past land management activities in the area, including timber management, road construction, residential development, and agricultural conversion, have decreased and/or fragmented hiding cover, thermal cover, and forage. With increased human activity, have come decreased security levels for most wildlife species, including white-tailed deer, mule deer, and elk. Fire suppression activities in the past decade have caused an increase in fuel loadings and ladder fuels within many stands. This situation has, in turn, increased the risk of high intensity, stand replacement fires, as compared to historic conditions.

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

There would be no proposed activities under this alternative. The occurrence and abundance of forage and cover would fluctuate and change over time as the area progresses through various successional stages. There would be no direct effects to existing hiding cover and thermal cover; no direct effects to white-tailed deer or elk/mule deer winter range as a result of implementing the No Action Alternative. Security for white-tailed deer and elk/mule deer would remain the same. There would be no changes in the level of general motorized access, or hunting access.

The likelihood of stand replacement fires may be increased under Alternative 1 as compared to the action alternatives, with increased risk of cumulative effects to hiding and thermal cover.

Changes in landownership and continued likely increases in human occupancy of private lands in the Swan Valley are likely to lead to more human use and possible associated disturbance of deer and elk, even under the No Action Alternative. However, nothing about the No Action Alternative is likely to interact with these in such a way as to cumulatively increase impact beyond that which would intrinsically exist independent of any of the alternatives considered, including the No Action Alternative.

Alternative 2 Direct and Indirect Effects

Alternative 2 proposes 921 acres of commercial harvest in mostly mature forest stands, 155 acres of non-commercial treatment, and 1,833 acres of prescribed ecosystem burning. In Alternative 2, approximately 832 acres of the commercial and non-commercial treatments (77 percent) are located in areas that have been mapped in the Forest Plan as white-tailed deer winter range. Approximately

244 acres (23 percent) of the proposed treatment is planned in areas that are mapped as elk winter range in the Forest Plan. The commercial treatments include Commercial Thinning, Seed Tree, Old Growth Maintenance, Salvage, and Thin From Below treatments. Non-Commercial treatments include Thin From Below treatments and Pre-Commercial Thinning.

Thermal Cover - Maintenance of thermal cover is very important in winter range areas. In stands where proposed treatment would open the tree canopy (e.g. seed tree cutting), there is the potential that thermal cover could be reduced to a level where the stand does not function as winter thermal cover for white-tailed deer, or other big game species. A 70 percent and greater canopy coverage value is commonly used in the literature as a description for thermal cover (Thomas 1979, Munding 1981, Lyon et al. 1992). However, Johnson (1991, page 82) sampled 360 plots on three study sites on the Swan Valley winter range and found none that attained the 70 percent canopy closure. The average canopy cover in her study ranged from 46 to 50 percent. Thermal cover for the cumulative effects analysis area was inventoried. Aerial photos, stand level maps, and field surveys were used to identify thermal cover. A 50 percent crown closure was determined to provide the minimal amount of thermal cover necessary for a forest stand to function as white-tailed deer winter range. This value was selected over the 70 percent figure because it more closely approximates conditions found on known, confirmed, winter range in the Swan Valley. The proposed Commercial Thinning, Salvage, Old Growth Maintenance, and Thin From Below treatments would retain enough canopy closure (>50 percent) to maintain thermal cover conditions. The proposed Seed Tree harvests would not maintain thermal cover on white-tailed deer or elk winter range. Implementation of Alternative 2 would decrease the existing amount of thermal cover on white-tailed deer winter range by 65 acres. It should also be noted that recent surveys by MDFW&P have established the importance of the Alder Creek area in the winter months to white-tailed deer in the Swan Valley (Litchfield 2007). Proposed Units 26-20, 26-85, and 26-91 (46 acres) are located in this area. Proposed Seed Tree harvests in these units would make them unsuitable for white-tailed deer winter range for decades. Under Alternative 2 there is also 193 acres of Commercial Thinning proposed in the Alder Creek Area (Units 26-20a, 26-72, 26-75, 26-89, and 26-105). There would be short-term disturbance to white-tailed deer during proposed activities in this area, but the 193 acres would still function as white-tailed deer winter range. Forest Plan standards for white-tailed deer winter range would be adhered to; a minimum of at least 50 percent thermal cover would be maintained across the white-tailed deer winter range in the Swan Valley.

Under Alternative 2, there is also proposed treatment in designated mule deer/elk winter range (MA 13). Approximately 244 acres, or 23 percent of the proposed treatment area, is located in areas that have been mapped in the Forest Plan as mule deer or elk winter range. Most of the proposed treatments would still provide winter thermal cover following treatment, however implementation of Alternative 2 would decrease the existing amount of thermal cover on mule deer/elk winter range by 14 acres, due to proposed Seed Tree harvest. Forest Plan standards for mule deer/elk winter range would be adhered to; a minimum of at least 30 percent of the mule deer/elk winter range would retain thermal cover.

The proposed prescribed burning would not have a significant effect on thermal cover. The upper elevation slopes where the burning is proposed do not currently provide quality deer or elk thermal cover.

Hiding Cover – Most of the mature and immature forest stands where vegetative treatment is proposed currently provide hiding cover for big game species, including deer and elk. Hiding cover for deer and elk would be retained in the Commercial Thin, Old Growth Maintenance, Salvage, Thin

From Below, and Pre-Commercial Thinning units. Hiding cover would not be retained in the Seed Tree units. There would be a short-term (5 to 15 years) decrease in hiding cover of 79 acres in the Cooney McKay Project Area under Alternative 2. Currently, hiding cover is not a limiting factor in the Cooney McKay Area. There is approximately 67 percent hiding cover on NFS lands in the project area and approximately 68 percent hiding cover on PCTC lands (SVGBCA Monitoring Report, 2006). Hiding cover would take approximately 5 to 15 years to recover, depending on stand conditions. Vegetative screening would be retained along open roads in the project area and the Seed Tree Units would retain hiding cover such that no point in the unit is more than 600 feet from hiding cover (Table 2-14).

The proposed prescribed burning would decrease hiding cover in the burn area for a short time. Shrub fields would grow back quickly (approximately 3 to 5 years). Mortality in scattered overstory trees would be approximately 20 percent or less; midstory mortality would be between 30 to 50 percent. The overstory canopy would remain largely unchanged in areas of underburning.

Forage - The mature and immature stands where vegetative treatments are proposed offer foraging opportunities for deer and elk, although vegetative forage may be limited where thick canopy cover occurs. Although proposed vegetative treatments would initially decrease the amount of available forage due to ground disturbance, forage opportunities would increase over existing conditions within 1 to 5 years as a greater amount of sunlight and moisture reach the forest floor. As with hiding cover, forage is not limiting across the project area.

The proposed prescribed burning would reduce available forage for deer and elk in the short term but would be beneficial overall. Within 1 to 5 years, understory vegetation would increase over existing conditions and forage habitat would improve. The proposed prescribed burning has habitat improvement objectives for many wildlife species, as well as forest health and fuels reduction objectives.

Habitat Security – There is a potential for short-term displacement of deer and elk from the immediate area during the proposed activities. It is expected that deer and elk use patterns would change slightly as the animals avoid areas of high human activity. There are large blocks of unroaded land and wilderness adjacent to the proposed project that could provide secure habitat for deer and elk. In addition, Design Criteria identified for grizzly bear protection would benefit deer and elk, and other big game species. For instance, in order to avoid the potential disturbance of grizzly bears in important spring habitat, management activities that are planned in spring habitat, which is generally defined as areas below 5,200 feet, would not occur within the Spring Period (April 1 through June 15), (Table 2-14). This timing restriction would apply to more than half of the treatment units and would be beneficial to deer and elk. Road closures in effect for grizzly bear in the Cooney McKay Area would provide security for deer and elk. Under the Cooney McKay Forest Health and Fuels Reduction Project there would be no permanent road construction. Approximately 1.2 miles of temporary road would be needed to access treatment units under Alternative 2. Proposed temporary roads would be reclaimed following use.

Existing open roads and closed roads would be used to conduct the proposed vegetation management operations. Use of open roads would not be a change from the existing condition. Vegetative screening would be maintained along open roads. This would help to provide habitat security for deer and elk, especially during hunting season. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are used for timber management activities.

Riparian zones, an important component of deer and elk habitat, would not be included in the treatment area. There are no proposed treatments in riparian areas. This would include small wetlands, ponds, and streams. If these areas presently provide cover, forage, and security, they will continue to do so.

Alternative 3 Direct and Indirect Effects

Alternative 3 is similar to Alternative 2, except the Old Growth Maintenance units have been dropped from Alternative 3. All of the Old Growth Maintenance units are located in designated white-tailed deer winter range, so there is less treatment proposed in white-tailed deer winter range under Alternative 3 than under Alternative 2.

Alternative 3 proposes 802 acres of commercial harvest in mostly mature forest stands, 155 acres of non-commercial treatment, and 1,833 acres of prescribed ecosystem burning. In Alternative 3, approximately 713 acres of the commercial and non-commercial treatments are located in areas that have been mapped in the Forest Plan as white-tailed deer winter range (75 percent). Approximately 244 acres (25 percent) of the proposed treatment is planned in areas that are mapped as elk winter range in the Forest Plan. The commercial treatments include Commercial Thinning, Seed Tree, Salvage, and Thin From Below treatments. Non-commercial treatments include Thin From Below treatments and Pre-Commercial Thinning.

Thermal Cover - In stands where proposed treatment would open the tree canopy there is the potential that thermal cover could be reduced to a level where the stand does not function as winter thermal cover for white-tailed deer, or other big game species. The proposed Commercial Thinning, Salvage, and Thin From Below treatments would retain enough canopy closure (>50 percent) to maintain thermal cover conditions. The proposed Seed Tree harvests would not maintain thermal cover on white-tailed deer or elk winter range. Implementation of Alternative 3 would decrease the existing amount of thermal cover on white-tailed deer winter range by 65 acres. FWP surveys have demonstrated that the Alder Creek area is important white-tailed deer winter range. Proposed units 26-20, 26-85, and 26-91 (46 acres) are located in this area. Proposed Seed Tree harvest in these units would make them unsuitable for white-tailed deer winter range for decades. Under Alternative 3 there is also 193 acres of proposed Commercial Thinning in the Alder Creek Area (Units 26-20a, 26-72, 26-75, 26-89, and 26-105). There would be short-term disturbance to white-tailed deer during proposed activities in this area, but the 193 acres would still function as white-tailed deer winter range. Forest Plan standards for white-tailed deer winter range would be adhered to; a minimum of at least 50 percent thermal cover would be maintained across the white-tailed deer winter range in the Swan Valley.

Under Alternative 3, there is also proposed treatment in designated mule deer/elk winter range (MA 13). Approximately 244 acres, or 25 percent of the proposed treatment area, is located in areas that have been mapped in the Forest Plan as mule deer or elk winter range. Most of the proposed treatments would still provide winter thermal cover following treatment; however implementation of Alternative 3 would decrease the existing amount of thermal cover on mule deer/elk winter range by 14 acres, due to proposed Seed Tree harvest. Forest Plan standards for mule deer/elk winter range would be adhered to; a minimum of at least 30 percent of the mule deer/elk winter range would retain thermal cover.

The proposed prescribed burning would not have a significant effect on thermal cover. The upper elevation slopes where the burning is proposed do not currently provide quality deer or elk thermal cover.

Hiding Cover - Hiding cover for deer and elk would be retained in the Commercial Thin, Salvage, Thin From Below, and the Pre-Commercial Thinning units. Hiding cover would not be retained in the Seed Tree harvests. There would be a short-term (5 to 15 years) decrease in hiding cover of 79 acres in the Cooney McKay Project Area under Alternative 3. Currently, hiding cover is not a limiting factor in the Cooney McKay Area. There is approximately 67 percent hiding cover on NFS lands in the project area and approximately 68 percent hiding cover on PCTC lands (SVGBCA Monitoring Report, 2006). Hiding cover would take approximately 5 to 15 years to recover, depending on stand conditions. Vegetative screening would be retained along open roads in the project area and the seed tree units would retain hiding cover such that no point in the unit is more than 600 feet from hiding cover (Table 2-14).

The proposed prescribed burning would decrease hiding cover in the burn area for a short time. Shrub fields would grow back quickly (approximately 3 to 5 years).

Forage - The mature and immature stands where vegetative treatments are proposed offer foraging opportunities for deer and elk, although vegetative forage may be limited where thick canopy cover occurs. Although proposed vegetative treatments would initially decrease the amount of available forage due to ground disturbance, forage opportunities would increase over existing conditions within 1 to 5 years as a greater amount of sunlight and moisture reach the forest floor. As with hiding cover, forage is not limiting across the project area.

The proposed prescribed burning would reduce available forage for deer and elk in the short term but would be beneficial overall. Within 1 to 5 years, understory vegetation would increase over existing conditions and forage habitat would improve. The proposed prescribed burning has habitat improvement objectives for many wildlife species, as well as forest health and fuels reduction objectives.

Habitat Security – There is a potential for short-term displacement of deer and elk from the immediate area during the proposed activities. It is expected that deer and elk use patterns would change slightly as the animals avoid areas of high human activity. There are large blocks of unroaded land and wilderness adjacent to the proposed project that could provide secure habitat for deer and elk. In addition, Design Criteria identified in place for grizzly bear protection would benefit deer and elk, and other big game species. Approximately 1.2 miles of temporary road would be needed to access treatment units under Alternative 3. Proposed temporary roads would be reclaimed following use.

Existing open roads and closed roads would be used to conduct the proposed vegetation management operations. Use of open roads would not be a change from the existing condition. Vegetative screening would be maintained along open roads. This would help to provide habitat security for deer and elk, especially during hunting season. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are used for timber management activities.

Riparian zones, an important component of deer and elk habitat, would not be included in the treatment area. There are no proposed treatments in riparian areas. This would include small

wetlands, ponds, and streams. If these areas presently provide cover, forage, and security, they would continue to do so.

Alternative 4 Direct and Indirect Effects

The main difference between Alternative 4 and the other action alternatives is that there is no Seed Tree harvest proposed in white-tailed deer winter range under Alternative 4. There would be no decrease in available thermal cover on the white-tailed deer winter range under Alternative 4.

Alternative 4 proposes 845 acres of commercial harvest, 155 acres of non-commercial treatment, and 1,833 acres of prescribed ecosystem burning. In Alternative 4, approximately 756 acres of the commercial and non-commercial treatments (76 percent) are located in areas that have been mapped in the Forest Plan as white-tailed deer winter range. Approximately 244 acres (24 percent) of the proposed treatment is planned in areas that are mapped as elk winter range in the Forest Plan. The commercial treatments include Commercial Thin, Seed Tree, Old Growth Maintenance, Salvage, and Thin From Below treatments. Non-commercial treatments include Thin From Below treatments and Pre-Commercial Thinning.

Thermal Cover - Maintenance of thermal cover is very important in winter range areas. In stands where proposed treatment would open the tree canopy, there is the potential that thermal cover could be reduced to a level where the stand does not function as winter thermal cover for white-tailed deer, or other big game species. The proposed Commercial Thinning, Salvage, Old Growth Maintenance, and Thin From Below treatments would retain enough canopy closure (>50 percent) to maintain thermal cover conditions. There is no regeneration harvest proposed in white-tailed deer winter range under Alternative 4; there would be no reduction in thermal cover on white-tailed deer winter range. There would be no loss of thermal cover in the important Alder Creek Area. Under Alternative 4 there is 182 acres of Commercial Thinning proposed in the Alder Creek Area (Units 26-72, 26-75, 26-89, and 26-105). There would be short-term disturbance to white-tailed deer during proposed activities in this area, but the 182 acres would still function as white-tailed deer winter range following treatment. Forest Plan standards for white-tailed deer winter range would be adhered to; a minimum of at least 50 percent thermal cover would be maintained across the white-tailed deer winter range in the Swan Valley.

Under Alternative 4, there is also proposed treatment in designated mule deer/elk winter range (MA 13). Approximately 244 acres, or 24 percent of the proposed treatment area, is located in areas that have been mapped in the Forest Plan as mule deer or elk winter range. Implementation of Alternative 4 would decrease the existing amount of thermal cover on mule deer/elk winter range by 14 acres, due to proposed Seed Tree harvest. Forest Plan standards for mule deer/elk winter range would be adhered to; a minimum of at least 30 percent of the mule deer/elk winter range would retain thermal cover.

The proposed prescribed burning would not have a significant effect on thermal cover. The upper elevation slopes where the burning is proposed do not currently provide quality deer or elk thermal cover.

Hiding Cover - Hiding cover for deer and elk would be retained in the Commercial Thin, Old Growth Maintenance, Salvage, Thin From Below, and Pre-Commercial Thinning units. There would be no loss of hiding cover on white-tailed deer winter range in the Cooney McKay Project Area under

Alternative 4. There is 14 acres of proposed Seed Tree harvest on mule deer / elk winter range (Unit 8-7). Hiding cover would be decreased short-term on this unit.

The proposed prescribed burning would decrease hiding cover in the burn area for a short time. Shrub fields would grow back quickly (approximately 3 to 5 years). Mortality in scattered overstory trees would be approximately 20 percent or less; midstory mortality would be between 30 to 50 percent. The overstory canopy would remain largely unchanged in areas of underburning.

Forage - The mature and immature stands where vegetative treatments are proposed offer foraging opportunities for deer and elk, although vegetative forage may be limited where thick canopy cover occurs. Although proposed vegetative treatments would initially decrease the amount of available forage due to ground disturbance, forage opportunities would increase over existing conditions within 1 to 5 years as a greater amount of sunlight and moisture reach the forest floor. As with hiding cover, forage is not limiting across the project area.

The proposed prescribed burning would reduce available forage for deer and elk in the short term but would be beneficial overall. Within 1 to 5 years, understory vegetation would increase over existing conditions and forage habitat would improve. The proposed prescribed burning has habitat improvement objectives for many wildlife species, as well as forest health and fuels reduction objectives.

Habitat Security – There is a potential for short-term displacement of deer and elk from the immediate area during the proposed activities. It is expected that deer and elk use patterns would change slightly as the animals avoid areas of high human activity. There are large blocks of unroaded land and wilderness adjacent to the proposed project that could provide secure habitat for deer and elk. In addition, Design Criteria identified for grizzly bear protection would benefit deer and elk, and other big game species. Under the Cooney McKay Forest Health and Fuels Reduction Project there would be no permanent road construction. Approximately 1.0 mile of temporary road would be needed to access treatment units under Alternative 4. Proposed temporary roads would be reclaimed following use.

Existing open roads and closed roads would be used to conduct the proposed vegetation management operations. Use of open roads would not be a change from the existing condition. Vegetative screening would be maintained along open roads. This would help to provide habitat security for deer and elk, especially during hunting season. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are used for timber management activities.

Riparian zones, an important component of deer and elk habitat, would not be included in the treatment area. There are no proposed treatments in riparian areas. This would include small wetlands, ponds, and streams. If these areas presently provide cover, forage, and security, they will continue to do so.

Alternatives 2, 3, and 4 Cumulative Effects

There is a history of timber harvest and road building on all ownership lands in the Swan Valley; it is anticipated that this would continue in the future. The project file for the Cooney McKay Project has a detailed list of past activities and known future activities, including timber harvest, road building, road maintenance, prescribed fire, special use permits, noxious weed spraying, dispersed recreation, and

PCTC land acquisition. The Cooney McKay Area has high human use levels; human occurrence is common in the project area and wildlife disturbance is expected. As previously discussed, for cumulative effects, it was assumed that private lands would not provide critical habitat components for deer or elk.

Under each of the action alternatives, the risk of higher intensity, stand replacement fires occurring in the stands proposed for treatment would be lower. Risk of such fires has increased due to increased fuel loadings and increased ladder fuels.

Big game habitat is quite diverse and widespread in the Swan Valley and across the Flathead National Forest. It is conserved by the Forest through various forest management standards, including access management, riparian guidelines, and forest management practices. The cumulative effect of past activities, the proposed forest health and fuel reduction project, and future activities, would not preclude deer or elk use of habitats in the area. There appears to be little risk of population loss, and species viability would be maintained. For additional information on the status of deer and elk on the Flathead National Forest, and the status at broader scales, reference the document Flathead National Forest Evaluation and Compliance with NFMA Requirements to Provide for Diversity of Animal Communities, November 2006 (Project File Exhibit F-4).

Regulatory Framework and Consistency

Amendment 21 to the LRMP establishes a Forest-wide goal to “provide appropriate habitat and access to maintain desired hunting, fishing, and viewing opportunities, in coordination with the Montana Department of Fish, Wildlife and Parks.” The Forest Plan has identified white-tailed deer, elk, and mule deer as Commonly Hunted Big Game Management Indicator Species (MIS) that use general forest habitat. Conditions favorable to these species would generally also benefit other big game species found within the project area, such as moose, black bear, and mountain lion, which are considered under the umbrella of MIS evaluation. Goals, objectives, and standards in the Forest Plan, specific to managing white-tailed deer, elk, and mule deer have been followed in the preparation and analysis of the Cooney McKay Project.

Migratory Birds

Introduction

Neotropical migratory birds (NTMB) are defined as those birds that regularly winter south of the Tropic of Cancer and summer in North America. In 1988, an amendment to the Fish and Wildlife Conservation Act mandated the USFWS to “identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973.” The report, “Birds of Conservation Concern 2002,” identified the migratory and non-migratory bird species (beyond those already designated as Federally threatened or endangered) that represent the highest conservation priority. In the report, the United States is broken down into Bird Conservation Regions (BCR’s), with bird species of conservation concern identified for each region. The Swan Valley is located in BCR 10. The bird species of conservation concern for the Cooney McKay Project Area are listed in Table 3-48. Table 3-49 lists other neotropical migrant birds with declining population trends. The bird species listed in Table 3-49 are associated with forest habitats.

**TABLE 3-48.
 NORTHERN ROCKIES “BIRDS OF CONSERVATION CONCERN”**

Bird Name	General Habitat Summary	Relative Abundance on FNF
Swainson’s Hawk	Plains, prairies; open pine-oak woodlands; cultivated lands.	Rare
Ferruginous Hawk	Semi-arid plains and arid intermountain regions; tall trees along creek bottoms.	Rare
Golden Eagle	Open country; open coniferous forests.	Uncommon
Peregrine Falcon*	Open country with rocky cliffs and ledges near water.	Rare
Prairie Falcon	Open country with canyons, cliffs; foothills.	Rare
Yellow Rail	Marshes, wet meadows; highly secretive.	Rare
Lesser (American) Golden-Plover	Dry, grassy tundra above treeline.	Rare
Snowy Plover	Sandy, coastal beaches; alkali ponds.	N/A
Mountain Plover	Short grass prairie / sagebrush; high plains and arid areas.	N/A
Solitary Sandpiper	Muskegs in coniferous forest belt of boreal and subarctic.	Rare
Upland Sandpiper	Open grasslands.	Rare
Whimbrel	Marshes, mudflats, shores, and prairies.	N/A
Long-billed Curlew	Moist to dry grasslands and meadows.	Uncommon
Marbled Godwit	Prairies, meadows, and pastures.	Rare
Sanderling	High arctic tundra.	N/A
Wilson’s Phalarope	Sloughs and ponds; prairies with small glacial potholes.	Uncommon
Yellow-billed Cuckoo	Woods and brush.	N/A
Flammulated Owl	Open ponderosa pine; mixed forest.	Occasional
Black Swift	Crevices or ledges on rocky cliffs; near waterfalls.	Rare
Lewis’s Woodpecker	Open or park-like ponderosa pine; areas w/ scattered trees.	Occasional
Williamson’s Sapsucker	Pine forests; higher elevations.	Uncommon
Red-naped (Yellow-bellied) Sapsucker	Coniferous forests; usually where aspen is present.	Common
White-headed Woodpecker	Pines and firs; open ponderosa pine forest; large trees with 40-70% canopy.	Rare
Loggerhead Shrike	Open country with scattered shrubs or small trees.	Occasional
Pygmy Nuthatch	Pine forests; open park-like conditions; ponderosa pine.	Common
Virginia’s Warbler	Arid, montane, woodlands; 6,000-9,000 feet;	N/A
Brewer’s Sparrow	Open, shrub-dominated habitats.	Uncommon
McCown’s Longspur	Dry, short grass prairie.	N/A

* Flathead National Forest Sensitive Species

TABLE 3-49.
NEOTROPICAL MIGRATORY BIRDS WITH DECLINING POPULATION TRENDS ASSOCIATED WITH FOREST HABITATS

Bird Name	General Habitat Summary	Old-Growth Associate	Snag Nester	Riparian Associate
Mourning Dove	Cottonwoods, edges, farmland			
Sharp-shinned Hawk	Dense forests			
Cooper's Hawk	Mature conifers/deciduous			
American Kestrel	Open ponderosa pine/cottonwood		X	
Flammulated Owl*	Open ponderosa pine/mixed forest	X	X	
Common Nighthawk	Open forests, grasslands			
Vaux's Swift	Forests of large trees with openings	X	X	
Eastern Kingbird	Farmland, riparian bottomlands			X
Olive-sided Flycatcher	Logged or burned forests		X	
Western Wood-pewee	Open conifer forests			
Hammond's Flycatcher	Tall trees with closed canopies	X		
Cordilleran Flycatcher	Conifers/deciduous			
Northern Oriole	Tall shrubs and trees near streams			X
Cassin's Finch	Conifer forests/early post-fire forest			
Chipping Sparrow	Open dry forests, edges			
Black-headed Grosbeak	Cut-over forests, riparian thickets/forests			X
Western Tanager	Dry, open mature conifers		X	
Red-eyed Vireo	Aspen, cottonwood, riparian habitat			X
Solitary Vireo	Young conifer forests, logged areas			
MacGillivray's Warbler	Moist conifer forests, dense shrubs			X
American Redstart	Riparian shrubs, aspen, cottonwood			X
Yellow-rumped Warbler	Young to mature open forest, edges			
Wilson's Warbler	Riparian thickets, willow			X
Gray Catbird	Dense riparian shrubs			X
Ruby-crowned Kinglet	Tall conifers with dense canopy			
Veery	Deciduous riparian forest			X
Swainson's Thrush	Conifer forests with dense shrubs	X		X
Western Bluebird	Open forests, edges, roadsides		X	

* Flathead National Forest Sensitive Species

Two habitats are especially important to bird species:

1. Riparian habitat, because of the availability of water and variety of plant communities, and
2. Old growth habitat, which has the highest density and diversity of birds nesting in tree cavities (McClelland and Schmidt 1995).

In addition, snags, broken-topped live trees, downed logs, and other woody material are required by a wide variety of these species for nesting, denning, roosting, perching, feeding, and cover.

Analysis Area

Spatial Bounds

All lands in the Cooney McKay Project Area were considered for the evaluation of direct and indirect effects on neo-tropical migratory birds (NTMB). This approximately 38,031 acre area is large enough to include the spring, summer, and fall home ranges of several individuals or pairs of a species, and is representative of the effects of fire, natural tree mortality, timber harvest, and road management across the landscape. The actions proposed in the alternatives that could directly or indirectly affect these species are contained within this area. The upper Swan Valley was considered in the cumulative effects analysis.

Temporal Bounds

The length of time for effects analysis is approximately 5 years for the roads and forest health/fuel reduction portions of this project. This is based on the probable contract length for the proposed project, the timeframes for related activities, and the reasonably foreseeable actions identified. Upland burning proposed in the Condon, Cooney, and Smith Creek drainages might occur during the next 10 years, dependent on the availability of burning windows, funding, and equipment needed to achieve the desired results. When conditions are favorable the actual burning would only take a day or less for each project, but this time frame provides a conservative margin for all these elements to come together.

Affected Environment

Historic Condition

Forest ecosystems in the western United States have adapted in response to disturbances such as wildfire, insects, disease, and windstorms. A wide diversity of habitats existed across the landscape, providing habitat for a diverse suite of NTMB.

Historically, some habitats may have occurred in greater abundance on the landscape than now (e.g., snag and down woody habitat and old growth habitat). Population trends for different bird species have generally followed the distribution and amounts of the different preferred habitats. For example, the olive-sided flycatcher and Cassin's finch are associated with post-fire habitats and would have been abundant in areas where there was a large, stand replacing fire event. Species associated with open forests, such as the western tanager, Vaux's swift, chipping sparrow, yellow-rumped warbler and western wood pewee, would have been found more in areas that experienced frequent, low-intensity fires that re-initiated the understory but did not consume all of the large trees. Birds

associated with dense forests, such as the sharp-shinned hawk, Cooper's hawk, or ruby-crowned kinglet, would have preferred older, closed canopy forest habitats.

Existing Condition

Generally, bird populations that breed in the western United States appear to be suffering from forest fragmentation in breeding habitat (Hejl et al. 1995). Timber harvest and excessive tree mortality may contribute to short-term fragmentation (Rotenberry et al. 1995, Hejl et al. 2002). Problems associated with forest fragmentation include overall habitat loss, an increase in edge habitat and edge effects, isolation effects, and increased vulnerability to predators (Finch 1991).

The Swan Valley provides a considerable diversity of habitats for NTMB, including riparian areas, old growth habitat, and snag habitat. The Cooney McKay Area also provides a wide diversity of habitats, including important riparian areas and old growth habitat. For more information on the existing condition of old growth habitats and snag habitat in the project area, refer to those separate sections.

Environmental Consequences

The Cooney McKay Project consists of three action alternatives and a No Action Alternative. The alternatives are described in detail in Chapter 2 of this DEIS. The Cumulative Effects Worksheet, located in the Wildlife Project File (Project File Exhibit F-12) considers and describes proposed activities in addition to the past, current, and reasonably foreseeable activities listed at the beginning of this chapter in Tables 3-1 and 3-2. Those activities that cumulatively contribute indiscernible effects to Migratory Birds are not included in this section. Those activities that cumulatively affect these species are listed below.

Alternative 1 - No Action Direct, Indirect, and Cumulative Effects

Under this alternative there would be no vegetation treatments. This alternative would leave habitats across the analysis area to continue with natural vegetative processes. Riparian areas and older forest stands would continue to provide important habitat for migratory birds, and there would be no direct reduction in the amount of snags as a result of management activities. A wide variety of habitats would be available across the upper Swan Valley to support multiple species of NTMB.

Current fuel loadings and ladder fuels, in many stands, would probably contribute to an increased risk of more intense, stand replacing fires in the Cooney McKay Area, compared to historic conditions. An increase in wildfire potential would benefit bird species that are associated with open conditions or snag habitat. On the other hand, an increase in the potential for large, stand replacement fires would be negative for bird species that are associated with mature forest or closed canopy conditions.

Fragmentation of forested habitats on private lands in the area would probably continue, though many of these lands are being acquired by the Forest Service and/or are being sold or managed under conservation easements with somewhat offsetting cumulative effects.

No significant cumulative effects to NTMB are anticipated as a result of implementing Alternative 1.

Alternatives 2, 3 and 4 Direct and Indirect Effects

Thinning the overstory, understory, or both, in forested stands, would have a negative effect on some bird species and a positive effect on other bird species. As an example, there would be short-term negative effects to the ruby-crowned kinglet, which prefers closed canopy conditions. Opening up the overstory, however, would produce positive effects for the yellow-rumped warbler, the western tanager, and the flammulated owl. Habitats shift over time with dynamics in age class, composition, and structure changing naturally. Bird populations in the Swan Valley have adapted to this change with numbers of different species increasing or decreasing, depending on the availability of open forest, dense cover, old growth, snags, riparian habitats, etc. If a variety of habitat conditions are maintained across the landscape, including old growth forest, riparian habitats, sufficient downed wood, understory trees, and windfirm live trees and snags, adequate habitat can be maintained with timber management. The proposed Cooney McKay Project would not significantly change the amount or juxtaposition of open forest/dense forest across the upper Swan Valley. There would be no treatments in riparian habitats. These habitats would remain in their current condition. Additional riparian habitat exists outside of the project area and throughout the Swan Valley. There would be no change in the amount of old growth forest habitat as a result of implementing the Cooney McKay Project, although there would be a slight change in the ratio of open-grown old growth habitat compared to closed understory old growth habitat. Existing old growth, both within and outside of the project area, would continue to provide important habitat for a large suite of bird species.

Direct and indirect effects from the proposed non-commercial treatments would be similar to those described above for commercial treatments. In the long-term, the effects would be beneficial to birds associated with forested habitats, as the removal of excess trees at this stage in forest stand development reduces growth stagnation and enables the retained trees to grow more vigorously.

Reducing the quantity of snags or down woody material, especially in old growth stands, can remove habitat features that are essential or very important to many bird species (Bull et al. 2005). Research suggests that retaining the bulk of the largest material may decrease these effects (Bull and Blumton 1999, Porter et al. 2005). In order to maintain sufficient snags in the existing old growth units, all snags greater than 18 inches DBH would be retained and 6 snags per acre 12 to 18 inches DBH would be retained. To maintain appropriate coarse woody material in the existing old growth stands, all pieces greater than 18 inches diameter would be retained as well as 15 pieces per acre that are 9 to 18 inches diameter. A proportion of snags would be retained in all of the proposed cutting units, with the number and size of the snags retained being dependent on the habitat type of the various stands (Table 2-14).

For all action alternatives, it is possible that project implementation would directly affect neo-tropical migratory birds through disturbance and/or occasional mortality associated with project activities. There is the potential that timber harvest activities (including temporary road construction) and prescribed fire activities occurring during the nesting period may disrupt nesting activity and foraging activity, or that proposed activities would directly contribute to nest failure. Potential negative affects to nesting would be decreased by logging restrictions in grizzly bear spring habitats (<5,200 feet) from April 1 to June 15 (Project File Exhibit F-6). Over half of the cutting units would be treated outside of the spring (April 1 to June15) period.

Existing open roads and closed roads would be used to conduct the proposed vegetation management operations. Use of open roads would not be a change from the existing condition.

Vegetative screening would be maintained along open roads. This would help to provide habitat security for a variety of wildlife species, including birds. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are utilized for timber management activities.

Alternatives 2, 3 and 4 Cumulative Effects

There is part-year and yearlong residences in the area as well as other established human activities. Timber harvest activities on PCTC lands and on NFS lands in the Cooney McKay Area peaked during the mid to late 1980s, although lower levels of timber harvest continue up to the present on all ownership lands. There is another forest health timber harvest project on NFS lands in the Cooney McKay Area called the Meadow Smith project. Cumulative effects in the Cooney McKay analysis area would include the effects of the Meadow Smith Project on NFS lands, as well as on-going and proposed timber harvest on PCTC lands. It should be noted that the Meadow Smith Project included the proposed Cooney McKay Project in its cumulative effects analysis.

Recently, PCTC has offered up tracts of land in the southern portion of the Swan Valley for sale to the Forest Service, conservation buyers, or other private individuals. Between 1997 and 2007, an estimated 480 acres of PCTC lands have been purchased by the State of Montana and 549 acres purchased by conservation buyers with limited development covenants. In addition, about 3667 acres (20 parcels) of PCTC lands have been sold with development limited by the regulations of Missoula and Lake Counties (Project File Exhibit Q-1 and Q-10). Deed restrictions on the land sales include set-back standards for streams and sanitation guidelines (e.g., no outdoor barbecue pits, no birdfeeders within reach of bears, and fenced gardens). In Missoula County a subdivision review is required if parties propose to subdivide 160 acres or more. Despite these provisions, there is a concern that an increase in private parcels of land in the Swan Valley may further fragment wildlife habitat and increase human-bear encounters. As stated above, many of the land sales by PCTC have been to conservation buyers, which should help mitigate the risks associated with private land development. The Forest Service has acquired approximately 11,489 acres from PCTC between 1997 and 2007. The acquisition of lands by the Forest Service has helped to maintain natural landscape linkages and to reduce the risk of private land development. A more detailed analysis of the history and potential of changes in landownership patterns is found in the Lands Section of Chapter 3 of this DEIS.

Fire suppression has contributed to increased understory growth and denser mid-canopy trees (Lesica 1996) in many forest stands that were historically open-grown. In many portions of the valley, the risk of stand-replacing fire is probably greater than what existed historically. This risk may be reduced under the action alternatives.

While factors outside of the Forest Service's control (e.g., deforestation of tropical wintering grounds, drought, exotic species, and parasitic species) may have negative effects on neo-tropical migrants, the actions taken in the Cooney McKay Project are not expected to contribute significantly to negative effects on migratory birds. Sufficient habitat for a broad suite of NTMBs would be maintained. For more information about wildlife habitat conditions across the Flathead National Forest, relevant to neotropical migrant birds, reference the FEIS for the Flathead's Forest Plan Amendment 21 (USFS1999), and the Flathead National Forest Evaluation and Compliance With NFMA Requirements/Diversity document (Project File Exhibit F-4).

Regulatory Framework and Consistency _____

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS to “identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the ESA of 1973.”

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the US, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds, including nests and eggs, is unlawful. A list of NTMB protected by the MBTA is provided in 50 CFR 10.13.

In January 2001, an executive order (EO) was signed outlining responsibilities of Federal agencies to protect migratory birds under the MBTA (EO 13186). The report, “Birds of Conservation Concern 2002,” is the USFWS’s most recent effort to carry out this mandate and to meet their responsibilities under the 1988 amendment. The overall goal of this report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as Federally threatened or endangered) that represent the highest conservation priority. In the report, the United States is broken down into Bird Conservation Regions (BCR’s), with bird species of conservation concern identified for each region. The Flathead National Forest is located in BCR 10. It is recommended that the Bird Conservation Regional lists, with bird species of conservation concern, be consulted in accordance with EO 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds.”

As a complimentary measure to EO 13186, the Forest Service and the USFWS entered into a Memorandum of Understanding (MOU). The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the agencies, in coordination with state, tribal, and local governments.

Some migratory birds are covered by state hunting regulations; others are protected by non-game status with the MDFW&P. There are currently no Flathead Forest Plan Standards specific to migratory birds. The flammulated owl and the peregrine falcon are Forest sensitive species, and are discussed in the BE for the Cooney McKay Project.

No substantial loss of migratory bird habitat is expected by implementing this project. The intent of the MBTA, the 2001 EO, and the MOU to conserve and protect NTMB, would be met under any of the Cooney McKay Project alternatives.