

3.6 WILDLIFE

3.6.1 Introduction

This section describes the wildlife and wildlife habitat within the White Pass Study Area. The adjoining areas are described for the more regional setting, to place the White Pass Study Area in context with the surrounding conditions, and to adequately describe wide-ranging species such as elk, mountain goat, gray wolf, and grizzly bear. A regional map of the White Pass Study Area, including the Upper Clear Fork Cowlitz River and Upper Tieton River Modified 5th Field Watersheds, is provided in Figure 1-1. Information on wildlife was derived from background literature, color aerial photographs, field studies, and discussions with state and federal resource agencies including the U.S. Forest Service (USFS) and U.S. Fish and Wildlife Service (USFWS).

The White Pass Study Area lies within the Cascade Mountains of southern Washington. Both the Upper Clear Fork Cowlitz and Upper Tieton watersheds occur within the White Pass Study Area. The White Pass Study Area is defined as the area for which project specific GIS data has been developed and in which potential ground disturbance under all Action Alternatives would occur (i.e., the existing SUP area and the proposed expansion area). The White Pass Study Area is shown in Figure 2-2. For the purposes of differentiating locations where proposed activities would occur the White Pass Study Area has been further broken down into two components: the Proposed Expansion Area which includes Hogback Basin, and the Existing Ski Area which is comprised of the current White Pass Ski Area SUP boundary. Field surveys were conducted in all areas where activities may occur under any or each of the Action Alternatives.

Biologists performed field surveys to document the occurrence of special status wildlife species or their habitats, including species federally listed as threatened or endangered under the Endangered Species Act (ESA), species proposed for listing under the ESA, U.S. Forest Service Survey and Manage species, U.S. Forest Service (USFS) sensitive species, USFS Species of Concern, as well as other 2001 Record of Decision (ROD) species, and management indicator species for the WNF and the GPNF. In addition to field surveys, background literature was reviewed, color aerial photographs were analyzed and interpreted and state and federal resource agencies were contacted to accumulate information on wildlife resources.

This section focuses on wildlife habitat associations, the likelihood that specific wildlife species occur within the White Pass Study Area, and specific habitat types that are used by wildlife species. In addition, a discussion of habitat connectivity within the context of the White Pass area is also presented. Many of the wildlife species that may occur within the White Pass Study Area, and the habitat characteristics of those species were based on species identified in the *WNF Forest Plan, as Amended* (USDA 1990b; USDA, USDI 1994, 2001, 2004a), and the *GP Forest Plan, as Amended*, and species listed under the Endangered Species Act (ESA). Additional sources of information include the WNF and GPNF Geographic Information System (GIS) and watershed database; *Clear Fork Watershed Analysis* (USDA 1998a) and *Upper Tieton Watershed Analysis* (USDA 1998b), and numerous technical studies.

The following management terms associated with wildlife species are used throughout this section:

- US Fish and Wildlife Service (USFWS) threatened and endangered and proposed species as designated under the ESA.
- USFS Survey and Manage Species per the 2001 Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and Other Mitigation Measures Standards and Guidelines (USDA, USDI 2001).³⁰
- USFS sensitive species, which are species for which there are viability concerns as determined by the 2004 Regional Forester’s Sensitive Animal List (USFS 2004b).
- USFWS Species of Concern. Species of concern is an informal term that refers to those species, which the USFWS believes, might be in need of concentrated conservation actions. Species of concern receive no legal protection and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species.
- USFS/WNF/GPNF Management Indicator Species (MIS); the Forest Plans (USDA 1990a and 1990b) identifies standards and guidelines to manage these species as representatives of a wide range of vertebrate species.

Vegetation communities, described in detail in Section 3.5 – Vegetation, are the basis for the descriptions of wildlife habitat in this section.

The Environmental Consequences portion of this wildlife section contains analysis of the potential impacts to wildlife species that may occur within the White Pass Study Area. A detailed analysis is presented in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* (Appendix H) and the results of that analysis are reported in this section. In brief, **short-term adverse effects to wildlife resulting from construction activities, such as avoidance of the White Pass Study Area, were identified for most species. No long-term adverse affects to wildlife from ski area operations and maintenance are expected to occur.**

³⁰ On January 9, 2006, the 2004 ROD to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (2004 ROD) was vacated and management direction for PETS and Survey and Manage species would be provided pursuant to the 2001 Record of Decision for management of these species. In this regard, the White Pass analysis area has been surveyed consistent with species identified in both the 2001 Record of Decision including any amendments or modifications to the 2001 ROD that were in effect as of March 21, 2004 (Table 1.1, December 2003), as well as, the 2004 ROD to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (2004 ROD).

Formal consultation under the ESA with USFWS for listed species was completed on November 9, 2006 with the issuance of a Biological Opinion for the *Biological Assessment for the White Pass Expansion Proposal* (refer to Appendix N).

3.6.2 Affected Environment

The 1,570-acre White Pass Study Area is comprised of a mosaic of wildlife habitats.³¹ Elevations within the White Pass Study Area range from approximately 4,900 feet to over 7,000 feet. Existing wildlife habitat conditions within the White Pass Study Area have been influenced by past natural and human-caused modifications including, timber harvest, wildfires, road construction, ski area development, other developed recreation, and existing human use of the facilities, including trails.

Wildlife resources are described for the White Pass Study Area and, where applicable, habitat is referenced and described outside of the White Pass Study Area to analyze for wide-ranging species, including elk, gray wolf, and wolverine, among others.

3.6.2.1 General Wildlife Habitat Associations

The *Clear Fork Watershed Analysis* reports approximately 271 species of wildlife potentially occurring within the watershed and the *Upper Tieton Watershed Analysis* reports approximately 256 known species within its boundaries (USFS 1998a; USFS 1998b). While some of these species may be restricted to either the lower elevations of these watersheds, or the drier eastern portions of the Upper Tieton watershed, the majority of the species have the potential to occur within the White Pass Study Area. Common species include deer, elk, and Neotropical migratory birds. Wildlife use throughout the area declines during the winter, with many birds and mammals migrating away from the area or retreating into hibernation.

The White Pass Study Area provides habitat for a variety of wildlife typically associated with late-seral mixed conifer and mountain hemlock forests, mountain hemlock parkland, as well as herbaceous communities. The White Pass Study Area contains habitat types primarily associated with forested cover and is dominated by approximately 654.4 acres of mountain hemlock parkland (42 percent of the White Pass Study Area) which makes up the majority of the proposed expansion area followed by approximately 528.5 acres of mixed conifer forest (34 percent of the White Pass Study Area) which comprises the majority of the existing White Pass Ski Area (refer to Table 3.5-1 in Section 3.5 – Vegetation). Other habitat types include mountain hemlock forest, modified herbaceous communities (i.e., ski trails), and rock/talus. In addition to forest community types, structural elements such as tree size, canopy closure, and canopy structure were used to determine habitat associations for wildlife species that may be present within the White Pass Study Area. Information for this analysis was derived from *Wildlife – Habitat*

³¹ The current SUP indicates that the permit area is 710 acres. However, GIS analysis indicates that the actual SUP area is approximately 805 acres. As a result of the NEPA process, of which this FEIS is a part, the acreage will be re-calculated based on the best available data.

Relationships in Oregon and Washington (Johnson and O’Neil 2001). These habitat communities and vegetation types are described in greater detail in Section 3.5 – Vegetation and the *Vegetation Technical Report and Biological Evaluation* in Appendix G.

3.6.2.2 Key Wildlife Habitats and Associated Species

The respective Gifford Pinchot and Wenatchee Forest Plans, as Amended, have defined unique habitats as those features that are generally limited in their occurrence across the landscape such as wetland and riparian areas, cliffs, rock outcrops, talus, mature forest, snags, and downed logs. Unique habitat features typically provide critical breeding sites, feeding areas, and roosting sites for cavity-nesting birds, bats, and denning mammals. The level of dependence on unique habitat features varies from species to species. The unique habitat types present in the White Pass Study Area are described below.

Vegetation communities are described in detail in Section 3.5 – Vegetation, and provide the basis for the descriptions and analysis of wildlife habitat throughout this section. The amount of each vegetation type within the White Pass Study Area is presented in Table 3.5-1, and the distribution of these vegetation types throughout the White Pass Study Area is shown in Figures 3-31 through 3-34.

Wetlands and Riparian Habitats

Wetland and riparian habitats include wet meadows, forested wetlands (coniferous and hardwood), shrub wetlands, stream-associated (riverine) wetlands, and riparian areas. Wetlands and riparian areas are recognized by the USFS as important wildlife habitats for reproduction and foraging, and as movement corridors (USDA, USDI 1994). It is important to note that functional riparian zones differ in habitat value from Riparian Reserves. Riparian Reserves are designated within the Forest Plans, as Amended and may contain land cover types that do not serve as important riparian habitats. Functional riparian zones are more indicative of riparian areas that provide reproductive, foraging, and connectivity habitat for wildlife.

Riparian zones are an important habitat component for many species. They provide cover, foraging, calving, or nesting sites for species such as the northern spotted owl, pine marten, California wolverine, and elk. These riparian areas provide habitat and connectivity between habitats for many wildlife species, ensure bank stability and stable fish habitat, moderate water temperature, and represent a source of large woody debris for streams.

Riparian habitat associated with streams and wetlands within the White Pass Study Area varies by elevation. Lower elevation riparian areas consist primarily of multi-story, closed canopy, late-seral forest and modified herbaceous open ski trails while higher elevations are comprised of small tree, single-story, moderate canopy mountain hemlock parkland.

In total, approximately 5.3 acres of wetlands and 632.3 acres of Riparian Reserves occur within the White Pass Study Area. These wetlands occur in both the proposed expansion area (Hogback Basin) and the existing ski area of the White Pass Study Area. Historic impacts to wetlands in the White Pass Study Area

include the construction of lift terminals, ski trails, and roads within the existing SUP. The ecological processes of the wetlands found in Hogback Basin are functioning normally and there has been little alteration of these areas by human activity. Section 3.3 – Watershed Resources contains a complete description of wetlands within the White Pass Study Area.

Refer to Section 3.3 – Watershed Resources for a more thorough description of existing riparian conditions within the White Pass Study Area.

Late-seral Forest

Late-seral forest communities provide shelter, denning, and foraging habitat for many species potentially occurring within the White Pass Study Area. Late-seral forests are defined as stands greater than 80 years in age. There are approximately 1,235.8 acres of late-seral forest within the White Pass Study Area.

Past management activities within the White Pass Study Area have resulted in fragmentation of late-seral forests which presents challenges to wildlife species that require dense cover for foraging, denning, or travel such as pine marten, pileated woodpecker, and northern spotted owl. These species require dense forest for protection from predators. In addition the complex structure typically associated with late-seral forest stands, such as multi-story layers of vegetation and a closed canopy (greater than 70 percent canopy cover) provide unique foraging and denning habitats. This dense forest of multi-storied, closed canopy habitat can be found within the existing White Pass Ski Area. There are approximately 195.5 acres of small tree late-seral mixed conifer forest with multi-story vegetation and a closed canopy, and approximately 252.7 acres of medium tree late-seral mixed conifer forest with multi-story vegetation and a closed canopy; all within the existing ski area (refer to Table 3.5-2 and Figure 3-35). These forest stands are fragmented by numerous ski trails, particularly in the eastern portion. Several distinctions are important to note regarding late-seral forest and the White Pass Study Area. First, late-seral forests do not necessarily qualify as old growth. In order for a forest to be considered as old growth it must contain specific structural elements and characteristics. There is no old growth forest officially classified within the White Pass Study Area. However, certain portions of the forest within the existing ski area contain some old growth characteristics. Therefore, while the area hasn't been officially labeled as old growth this does not preclude the possibility that some old growth dependent species, such as northern spotted owl and great grey owl may utilize the area from time to time.

It is equally important to note that not all late-seral forest within the White Pass Study Area provides these structural and habitat characteristics. The proposed expansion area, which is comprised primarily of late-seral mountain hemlock parkland, has a moderate canopy structure (40-69 percent cover of small trees) and consists of a single-story of forested vegetation interspersed with a mosaic of treeless openings.

Snags and Downed Logs

Many wildlife species depend on snags and downed logs. Snags are used by at least 100 vertebrate species in forests in western Washington and Oregon (Brown 1985; Johnson and O'Neil 2001). Some

species require snags in conjunction with early-seral habitat; others are generalist species that prefer mid- to late-seral habitats. Downed logs and woody debris are primary breeding areas for such species as the pine marten, and foraging habitat for the pileated woodpecker. In addition, these structures hold moisture during the dry summer months providing a cool, moist environment necessary for low-mobility species that depend on this unique microclimate habitat; and during the winter downed wood provides shelter from extreme temperatures. The Forest Plans, as amended, emphasize protection and management of large woody material (LWM) to ensure ecosystem functioning. Large woody material is defined as logs on the forest floor in pieces at least 24 inches in diameter at the large end (FEMAT 1993). Guidelines have been established for the maintenance of woody debris and snags for cavity-nesting species including pileated (and other) woodpeckers (USDA 1990a).

Snag and Coarse Woody Debris (CWD) generation within the White Pass Study Area was found to be primarily associated with vegetative communities below 5,500 feet elevation. This roughly correlates with the zone of mixed conifer in the existing ski area (refer to Figure 3-35). Snags created above this elevation are limited in size and number by the shorter growing season and location in the mountain hemlock parkland vegetation community, which makes up much of the proposed expansion area. Woody debris found within the expansion area is smaller, approximately 6-13 inches in diameter, and generally not large enough to be classified as LWM, as defined by the Forest Ecosystem Management Assessment Team (FEMAT). More to the point, woody debris of this size is not typically considered suitable denning and foraging habitat for cavity nesting birds, pine martens, and pileated woodpeckers; however, it does provide suitable habitat for smaller mammals and invertebrates. Based on field observations, the existing ski area portion of the White Pass Study Area contains sufficient amounts of CWD to support many different species (Forbes, personal communication 2004).

Numerous snags are present within White Pass Study Area. Snags in the existing ski area are composed primarily of medium and small trees set in dense forest with multiple stories and closed canopies. Snags are abundant within the existing White Pass Ski Area. Snags in the proposed expansion area are more scattered, composed of small trees, and set amongst a moderate canopy, single-story parkland.

3.6.2.3 Threatened, Endangered, and Proposed Species

Threatened and endangered terrestrial wildlife species and/or their habitats known to occur or potentially occur within the White Pass Study Area are listed in Table 3.6-1. The northern spotted owl (*Strix occidentalis caurina*) is listed as threatened and is the only federally listed species that is likely to occur in the White Pass Study Area. The species status, habitat requirements, ecology, potential to occur within the White Pass Study Area, and nature of occurrence are described below. Detailed information regarding these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-1:
 Federally Listed Threatened or Endangered Species
 Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Northern spotted owl ^a (<i>Strix occidentalis caurina</i>)	Occurs in all coniferous forest types at low to mid elevations of the Cascade Mountains in Oregon and Washington. Most abundant in late-seral and mature forests. Nests in cavities or platforms in trees or snags (Forsman 2003).	The lower portions of the White Pass Study Area contain forest types that provide nesting, roosting, and foraging habitat. The upper portions of the White Pass Study Area could provide some dispersal habitat. May disperse through White Pass Study Area.
Designated Critical Habitat for the Northern Spotted Owl	Habitat that provides the functional elements of habitat for the Northern Spotted Owl. This includes nesting, foraging, roosting, and dispersal habitat.	There are approximately 14 acres of CHU, WA-18 in the project area.
Canada Lynx ^a (<i>Felis Lynx canadensis</i>)	Requires early-successional forest for primary prey (snowshoe hare) and late-successional forest for denning (Ruediger et al. 2000). Forest types considered to be primary habitat are lodgepole pine and subalpine fir.	Primary habitat does not exist in the White Pass Study Area. Early successional forest is lacking in area. The area is identified as unoccupied by the USFS and USFWS (2006). Species not expected to occur within the White Pass Study Area.
Grizzly Bear ^a (<i>Ursus arctos</i>)	Vast areas of remote, undisturbed habitat; a variety of habitats including meadows, wet areas, open slopes with huckleberries (USFWS 1993).	Developments, such as highways, trails, campgrounds, and ski area have reduced the area of undisturbed habitat. Not expected to occur within the White Pass Study Area
Gray Wolf ^a (<i>Canis lupis</i>)	Vast areas of remote, undisturbed habitat; isolation from human disturbance for denning (Paradiso and Nowak 1982)	Developments, such as highways, trails, campgrounds, and ski area have reduced the area of undisturbed habitat. Not expected to occur within the White Pass Study Area
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Almost always found near large bodies of water where primary prey items of fish and waterfowl can be found (USFWS 1986).	Potential foraging by bald eagle likely occurs at Leech Lake
Marbled Murrelet (<i>Brachyrampus marmoratus</i>)	Mature and old-growth forest with trees having large-diameter branches for nesting (Hamer and Cummins 1991) within 50 miles of eastern Puget Sound, (Puget Sound Zone, USFWS 1997).	Project area is outside the Puget Sound Zone; therefore habitat for this species is not present in the White Pass Study Area. This species will not be discussed further.

^a Consultation with USFWS for these species was completed on November 9, 2006. A final Biological Assessment is published in Appendix N of this FEIS.

3.6.2.4 *U.S. Forest Service Survey and Manage Species*

Six species of wildlife on the USFS Survey and Manage Species list for the WNF and GPNF may occur within the White Pass Study Area. Where surveys were required and protocols exist surveys were conducted for terrestrial mollusks and amphibians. The species status, habitat requirements, ecology, potential to occur in the White Pass Study Area, and nature of occurrence are listed in Table 3.6-FEIS1 and described below. Detailed information regarding these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6 FEIS1:
Wenatchee and Gifford Pinchot National Forest Survey and Manage Species
Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Puget Oregonian (<i>Cryptomastix devia</i>)	Mature to late successional moist forest and riparian zones, under logs, in leaf litter, around seeps and springs, and often associated with hardwood debris and leaf litter and/or talus (BLM 1999).	Not expected to occur in White Pass Study Area. Potentially suitable habitat in White Pass Study Area surveyed to existing protocol (Furnish et al. 1997a), Species not found.
Warty jumping-slug (<i>Hemphillia glandulosa</i>)	Moist conifer forests. Associated with conifer logs and/ or heavy ground cover of low vegetation, litter, and debris (BLM 1999).	Not expected to occur in White Pass Study Area. Potentially suitable habitat in White Pass Study Area surveyed to existing protocol (Furnish et al. 1997a), Species not found.
Malone jumping slug (<i>Hemphillia malonei</i>)	Moist forests, associated with riparian habitat or wet areas (i.e., seeps), and large woody debris.	Not expected to occur in White Pass Study Area. Potentially suitable habitat in White Pass Study Area surveyed to existing protocol (Furnish et al. 1997a), Species not found.
Keeled jumping-slug (<i>Hemphillia burringtoni</i>)	Moist conifer forests. Associated with conifer logs and/ or heavy ground cover of low vegetation, litter, and debris (BLM 1999).	Not expected to occur in White Pass Study Area. Potentially suitable habitat in White Pass Study Area surveyed to existing protocol (Furnish et al. 1997a), Species not found.
Blue-gray tailedropper (<i>Prophyaon coeruleum</i>)	Rare in Washington; occurs in deep forest floor litter and/or associated with logs and other late successional forest components (Burke 1999).	Not expected to occur in White Pass Study Area. Potentially suitable habitat in White Pass Study Area surveyed to existing protocol (Furnish et al. 1997a), Species not found.

**Table 3.6 FEIS1:
Wenatchee and Gifford Pinchot National Forest Survey and Manage Species
Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Larch Mountain Salamander (<i>Plethodon larselli</i>)	Talus slopes within Douglas-fir forests. Talus may have covering of moss kept moist by forest overstory (Csuti et al. 2001).	Not detected in White Pass Study Area. Potentially suitable habitat in White Pass Study Area surveyed to existing protocol (Crisafulli 1999), Species not found.
Van Dyke's Salamander (<i>Plethodon vandykei</i>)	Usually among large, woody debris within the wetted edge of streams and seeps. Near the northernmost edge of known range (Leonard et al. 1993).	Potentially suitable habitat present near seeps and streams. No observations during 1998-2001 surveys.
Great Gray Owl (<i>Strix nebulosa</i>)	Mature forest stands with greater than 60 percent canopy cover within 1,000 feet of natural openings and meadows larger than 10 acres. (Regional Interagency Executive Committee 1995).	Potentially suitable habitat is present within the White Pass Study Area however there were no observations of this species during surveys.
Long-legged myotis (<i>Myotis volans</i>)	A variety of habitats including arid range lands, and humid coastal and montane forests. Summer day roosts are in buildings, rock crevices, fissures in the ground, and tree bark. Maternity colonies occur in attics, fissures in the ground, and under tree bark. Caves and mines are used for night roosts and hibernacula (Nagorsen and Brigham 1993).	May roost and forage in White Pass Study Area.
Long-eared myotis (<i>Myotis evotis</i>)	Forested habitat below the subalpine/parkland zone; roosts in trees, buildings, and caves and occurs in areas of low-density development (Johnson and Cassidy 1997).	May roost and forage in White Pass Study Area.
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	Prefer older Douglas-fir/western hemlock forest to younger forests. Choose trees larger and taller than average, dead or damaged trees that contain refuge (Christy and West 1993). Forage primarily in clearcuts (Erickson and West 1996).	May roost and forage in White Pass Study Area.
Fringed myotis (<i>Myotis thysanodes</i>)	Bunchgrass, interior Douglas-fir forest and ponderosa pine forest (Nagorsen and Brigham 1993).	No suitable habitat occurs within the White Pass Study Area. ^a

**Table 3.6 FEIS1:
Wenatchee and Gifford Pinchot National Forest Survey and Manage Species
Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Pallid bat (<i>Antrozous pallidus</i>)	Low elevation, dry shrub-steppe and ponderosa pine forest.	No suitable habitat occurs within the White Pass Study Area. ^a

^a As no suitable habitat for fringed myotis and pallid bat is present within the White Pass Study Area these species are not included in the following analysis.

3.6.2.5 U.S. Forest Service Sensitive Species

Three species of wildlife on the Regional Forester’s Sensitive Species List for the WNF and GPNF may occur within the White Pass Study Area. Where surveys were required and protocols existed, surveys were conducted (e.g., great gray owl). Species that have no survey protocol, presence was assumed based upon the occurrence of suitable habitat. The species status, habitat requirements, ecology, potential to occur in the White Pass Study Area, and nature of occurrence are listed in Table 3.6-2 and described below. Detailed information regarding these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-2:
Wenatchee and Gifford Pinchot National Forest Sensitive Species
Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
American peregrine falcon (<i>Falco peregrinus anatum</i>)	Nest on cliffs near large concentrations of waterfowl or flocking birds (Johnsgard 1990). Known eyrie east of Dog Lake.	May forage in general White Pass Study Area and may occur as occasional migrant.
California wolverine (<i>Gulo gulo luteus</i>)	Requires vast areas of remote, undisturbed habitat (Banci 1994). Sensitive to human disturbance.	Human use is seasonally high along the Pacific Crest Trail (summer) and in the ski area (winter). May occur in White Pass Study Area.
Pacific western (Townsend’s) big-eared bat (<i>Corynorhinus townsendii</i>)	Associated with caves, mines, rock crevices, and buildings which are used as both day and night roosts. Forested regions on both sides of the Cascades (Csuti et al. 2001).	Roost features limited in the White Pass Study Area. May use the White Pass Study Area for foraging.

3.6.2.6 U.S. Fish and Wildlife Service Species of Concern

Two species of wildlife have been identified by the USFWS as being of increased concern, although they are not listed under the ESA. Species in this category that are either suspected or documented within the White Pass Study Area are presented in Table 3.6-3. Detailed information regarding these species can be

found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-3:
USFWS Species of Concern
Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Cascades Frog (<i>Rana cascadae</i>)	Highly aquatic; closely associated with edges of seeps and other wetlands (Leonard et al. 1993).	Known to occur in White Pass Study Area.
Olive-sided flycatcher (<i>Contopus borealis</i>)	Northern and mountainous coniferous forests; perches on high dead branches (Stokes & Stokes 1995) or dead tops of trees (Ehrlich et al. 1988).	Known to occur in White Pass Study Area.

3.6.2.7 Management Indicator Species

Thirteen wildlife species are listed as WNF and/or GPNF management indicator species that may occur within the White Pass Study Area. The GPNF and WNF Land and Resource Management Plans (USDA 1990a; USDA 1990b) identify standards and guidelines to manage these species as representatives of a wide range of vertebrate species. The Northwest Forest Plan (USDA, USDI 1994) amended these individual Forest Plans and replaced the land allocations for pileated woodpecker and pine marten with Northwest Forest Plan Land Allocations. Additionally, mountain goat management areas were replaced by Northwest Forest Plan land allocations except where the standards and guidelines for mountain goat were more restrictive under the original Forest Plans. Although Northwest Forest Plan standards and guidelines have replaced the majority of those for MIS, these species were kept on the list of species to be included in this analysis because they are still recognized as species for which management is a concern. Management Indicator Species have been selected to coordinate habitat management planning between projects, Ranger Districts and Forests. The species status, habitat requirements, ecology, potential to occur within the White Pass Study Area, and type of occurrence are listed in Table 3.6-4. Detailed information regarding these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

Table 3.6-4:
WNF and GPNF Management Indicator Species
Potentially Occurring within the White Pass Study Area

Species	Habitat Association	Potential for Using White Pass Study Area
Black-backed woodpecker (<i>Picoides arcticus</i>) Primary Cavity Excavator	Inhabit mixed conifer forests, primarily those in the mature or old-growth age class, and prefer areas of either fire or insect damage (Rodrick and Milner 1991). There are reports of black-backed woodpecker occurrence in most conifer forests including those dominated by true fir and mountain hemlock (Powell 2003), such as those found in the White Pass Study Area	May occur in White Pass Study Area
Black-tailed deer (<i>Odocoileus hemionus columbianus</i>) and Mule deer (<i>O. h. hemionus</i>)	Variety of habitats including ecotone between forest and meadow; late-seral forest, or small patches of shrub or trees (Maser 1998).	Known to occur in White Pass Study Area.
Downy woodpecker (<i>Picoides pubescens</i>) Primary Cavity Excavator	Sometimes found in conifer forests after the breeding season and especially in burned areas. However, downy woodpeckers generally prefer deciduous environments (Audubon Birdwatch 2004).	Suitable habitat present in White Pass Study Area. May occur in White Pass Study Area.
Hairy woodpecker (<i>Picoides villosus</i>) Primary Cavity Excavator	In Washington, the typical habitat of hairy woodpeckers is mature coniferous forest, although they are common in hardwood and mixed forests in other parts of their range. In Washington, they also frequent burned forests, mixed forests, wooded parks, and conifer-lined streams and shorelines. They require areas with heavier, more mature tree cover than downy woodpeckers and are more dependent on the presence of large trees (Audubon Birdwatch 2004).	Suitable habitat present in White Pass Study Area. May occur in White Pass Study Area.

**Table 3.6-4:
 WNF and GPNF Management Indicator Species
 Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Mountain goat (<i>Oreamnos americanus</i>)	Closely associated with steep, rocky cliffs, pinnacles, ledges, and talus slopes. Dense conifer stands, including mature and old-growth, may be important in providing winter forage and thermal cover (USDA 1990a and 1990b; WDFW 1999).	Known to occur in White Pass Study Area.
Northern flicker (<i>Colaptes auratus</i>) Primary Cavity Excavator	Northern flickers can be found throughout most wooded regions of North America, and they are familiar birds in most suburban environments. They need some open area and do not nest in the middle of dense forests, but they breed in most other forest types. Outside of the breeding season, they also frequent other open areas, including suburban lawns and parks, grassland, sagebrush, and even sand dunes (Audubon Birdwatch 2004).	Suitable habitat present in White Pass Study Area. May occur in White Pass Study Area.
Pileated woodpecker (<i>Dryocopus pileatus</i>) Primary Cavity Excavator	Late-seral forest; may feed in early to mid-seral forests particularly those containing remnant patches of late-seral trees (Marshall et al. 1996).	Suitable habitat present in White Pass Study Area. May occur in White Pass Study Area.
Pine marten (<i>Martes americana</i>)	Dense coniferous forests, subalpine forests, areas above timberline (Maser 1998).	Known to occur in White Pass Study Area.
Rocky Mountain elk (<i>Cervus elephus nelsoni</i>) and Roosevelt Elk (<i>C. e. roosevelti</i>)	Combination of forest and open habitats. Seclusion from human disturbance important for calving (Thomas and Toweill 1982). Known to occur within White Pass Study Area; observed during field work for this analysis	Known to occur in White Pass Study Area.

**Table 3.6-4:
WNF and GPNF Management Indicator Species
Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Williamson’s sapsucker (<i>Sphyrapicus thyroideus</i>) Primary Cavity Excavator	Williamson’s sapsuckers breed in dry, open, conifer forests in mountainous regions, especially along rivers and in areas with western larch. They appear to be most successful in conifer forests with many different species of trees. During their migration they use a wide variety of habitats, and in winter they often use broadleaved forests, especially along rivers and streams (Audubon Birdwatch 2004).	Suitable habitat present in White Pass Study Area. May occur in White Pass Study Area.
Black-backed woodpecker (<i>Picoides arcticus</i>) Primary Cavity Excavator	Inhabit mixed conifer forests, primarily those in the mature or old-growth age class, and prefer areas of either fire or insect damage (Rodrick and Milner 1991). There are reports of black-backed woodpecker occurrence in most conifer forests including those dominated by true fir and mountain hemlock (Powell 2003), such as those found in the White Pass Study Area.	May occur in White Pass Study Area.

3.6.2.8 *Species of Local Concern*

Species of local concern are those species that have been deemed important to the local ecology by the USFS wildlife biologist. Species in this category that are discussed in this document are included in Table 3.6-5. Neotropical migratory birds are listed in Table 3.6-6. Detailed information regarding these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-5:
USFS Species of Local Concern
Potentially Occurring within the White Pass Study Area**

Species	Habitat Association	Potential for Using White Pass Study Area
Blue grouse (<i>Dendragapus obscurus</i>)	Breed in alpine or subalpine ecotones and forests bordering montane areas. In the fall, most Blue grouse migrate from open to more dense areas of conifers, typically at higher elevations.	Known to occur within the White Pass Study Area.
White-tailed ptarmigan (<i>Lagopus leucurus</i>)	Alpine meadows and open rocky areas above timberline. Engages in short migrations, moving down to the edge of the forest in the fall and back onto the alpine tundra in spring.	Known to occur within the White Pass Study Area.

**Table 3.6-6:
Neotropical Migratory Birds Potentially Occurring in the White Pass Study Area
Having a Primary Association With Forested Habitat^{a,b}**

Species	Old-Growth	Clearcut	Young Forest	Broad leaf Forest	Riparian	Meadow	Marshes	Subalpine	Cliff
Late-Successional Forest Associates (eastside and westside)									
Sharp-skinned hawk ^c	X		X		X				
Cooper's hawk ^c	X		X	X	X				
Northern goshawk	X								
Red-tailed hawk ^c	X		X	X	X	X			X
Vaux's swift ^c	X				X				
Northern flicker	X	X	X		X				
Olive-sided flycatcher ^c	X	X	X		X				
Western wood-pewee ^c	X		X	X					
Hammond's flycatcher ^c	X		X	X	X				
Golden-crowned kinglet ^d	X		X						
Hermit thrush ^c	X		X						
American robin ^c	X	X	X	X	X	X			
Solitary vireo ^{c,d}	X		X	X	X				
Yellow-rumped warbler ^c	X		X						
Townsend's warbler ^c	X		X						
Western tanager ^c	X		X	X	X				
Chipping sparrow ^{c,d}	X		X						
Dark-eyed junco	X	X	X	X					
Rufous hummingbird ^{c,d}	X	X	X	X	X	X			X
Red-breasted sapsucker	X		X	X					
Pacific-slope flycatcher ^c	X	X		X	X	X			
Swainson's thrush	X	X	X	X	X				
Wilson's warbler ^{c,d}	X		X	X	X				
Merlin ^c	X	X	X		X				

**Table 3.6-6:
 Neotropical Migratory Birds Potentially Occurring in the White Pass Study Area
 Having a Primary Association With Forested Habitat^{a,b}**

Species	Old-Growth	Clearcut	Young Forest	Broad leaf Forest	Riparian	Meadow	Marshes	Subalpine	Cliff
Late-Successional Forest Associates (westside only)									
Band-tailed pigeon	X		X						
Hermit warbler	X	X	X						
Late-Successional Forest Associates (eastside only)									
Flammulated owl	X								
Red-naped sapsucker	X		X	X					
Williamson's sapsucker	X		X	X					
Dusky flycatcher	X		X	X				X	
Early to Mid-Successional Forest Associates									
Turkey vulture ^c		X							X
MacGillivray's warbler ^c		X			X				
Brown-headed cowbird ^c		X		X	X				
Willow flycatcher ^c		X			X				
Cedar waxwing ^c		X		X	X				
Warbling vireo ^c		X		X	X				
Fox sparrow		X			X				
Orange-crowned warbler ^{c,d}		X		X	X				
Black-throated gray warbler ^c			X	X	X	X			
Rufous-sided towhee		X		X	X				
White-crowned sparrow ^c		X			X				

^a USFS, 1998

^b Table modified from USFS 1998 and Andelman and Stock 1994.

^c Included in Sharp (1992) list of species found in MBSNF.

^d Population trends declining based on data for species where population trends are known (Andelman and Stock 1994).

^e Species habitat association in this table was modified from its original association for this analysis.

3.6.3 Environmental Consequences

The physical actions associated with the White Pass MDP would result in impacts to wildlife and/or wildlife habitat and are referred to as *impact mechanisms*. Impacts can be classified and discussed in many different ways. For the purposes of this EIS, impacts to wildlife will be discussed in terms of direct versus indirect and short-term versus long-term as defined below. Finally, impacts associated with the Proposed Expansion will be evaluated at a larger scale (5th field watershed), incorporating the incremental impacts of other past, present, and reasonably foreseeable projects through a cumulative effects analysis.

Activities leading to direct and indirect impacts to wildlife, wildlife habitat, and wildlife habitat connectivity include the following:

Direct Impacts

Implementation of the Action Alternatives would result in direct impacts, both long-term and short-term, to wildlife and wildlife habitat. These impacts include permanent and temporary habitat loss, conversion of habitat from one type to another, habitat fragmentation, and disturbance to wildlife. Direct impacts to wildlife or wildlife habitat could result from the following proposed actions:

- Road and parking lot construction.
- Building construction.
- Chairlift terminal construction and tower placement.
- Clearing with grading for lifts and ski trails.
- Clearing without grading for lifts and ski trails.
- Bridge construction, particularly placement of footings.
- Utility line installation.
- Routine annual maintenance.

Direct beneficial impacts include those restoration projects that reduce habitat fragmentation such as decommissioning and revegetating roads or planting trees along streams to improve riparian conditions. Revegetating ski trails with clusters of trees may also provide some benefit to smaller wildlife species such as birds and small mammals as resting or foraging habitat. There would be some time lag before these benefits would occur due to the time needed for trees and other vegetation to grow at the revegetation sites. For some species, such as deer and elk, the conversion of forest to non-forest could create more forage.

Indirect Impacts

Indirect impacts to wildlife and wildlife habitat potentially occurring as a result of Action Alternative implementation include a potential increase in wind-throw leading to a potential increase in coarse woody debris (CWD) (depending on how wind-throw is treated) and a potential decrease in large mature trees, a decrease in the number of snags and dead or broken-topped trees; and a change in the species composition of native plant communities in the White Pass Study Area due to potential introduction of non-native plant species. Project components potentially causing these types of impacts include:

- Road and parking lot construction.
- Clearing with grading for lifts and ski trails.
- Clearing without grading for lifts and ski trails.
- Tree removal to create gladed ski trails.
- Utility line installation.
- Routine annual maintenance.

Short and long-term impacts to wildlife and wildlife habitat include the following:

Short-term Impacts

Short-term impacts include temporary habitat loss resulting from ground disturbing activities in areas, which would subsequently be allowed to revegetate. Short-term impacts would also include temporary noise disturbance from construction activities. All previously listed activities have the potential to cause temporary noise disturbance. Project components potentially resulting in short-term impacts to wildlife habitat include:

- Vegetation disturbance in buffer areas of road, parking lot, chairlift, and building construction.
- Clearing with grading for lifts and ski trails within areas containing modified herbaceous habitat.
- Clearing without grading for lifts and ski trails within areas containing modified herbaceous habitat.
- Utility line installation.

Long-term Impacts

Long-term impacts include: 1) the permanent loss or conversion of wildlife habitat, 2) fragmentation of wildlife habitat resulting in decreased connectivity and a decrease in travel habitat effectiveness; and 3) increased human use on a year round basis making the habitat in the area less suitable for species that are

sensitive to human presence. Long-term impacts on wildlife or wildlife habitat would result from the following proposed actions:

- Road and parking lot construction.
- Building construction.
- Chairlift terminal construction and tower placement.
- Clearing with grading for lifts and ski trails.
- Clearing without grading for lifts and ski trails.
- Bridge construction, particularly placement of footings.
- Utility line installation.
- Routine annual maintenance, such as vegetation mowing or brushing for lift and trail maintenance, and occasional felling of hazard trees.

Each Action Alternative (Alternatives 2, 6, 9 and Modified Alternative 4) would have potential impacts to wildlife resources. Information on wildlife habitats in this section is based on the vegetation communities and stand information developed for the White Pass Study Area as described in Section 3.5 – Vegetation and Appendix G, as shown in Figures 3-31 through 3-35 in the FEIS. Impacts to vegetation, as well as wildlife would vary, depending on the impact mechanism and alternative. Impacts are discussed individually for each species analyzed. Impacts to vegetation communities are listed in Table 3.5-5 and displayed in Figures 3-32 through 3-38.

A detailed analysis of impacts to wildlife is presented in Appendix H and the results of that analysis are reported in this section. **Short-term adverse effects to wildlife resulting from construction activities, such as avoidance of the White Pass Study Area, were identified for most species. No long-term adverse affects to wildlife from ski area operations and maintenance are expected to occur.**

3.6.3.1 Key Wildlife Habitats

Wetlands and Riparian Reserves

Wetlands and riparian areas provide important habitat functions, as discussed in Section 3.6.2. Potential impacts to riparian areas are identified in Section 3.3 – Watershed Resources (refer to Table 3.3-14). Impacts would result largely from changes in vegetation composition. Removal of vegetation or conversion from forest vegetation communities to modified herbaceous vegetation communities would lead to changes in species composition and structural diversity of riparian vegetation, thereby altering wildlife habitat quantity and quality. Effects of these changes would likely vary by wildlife species. These

changes could also fragment habitat for riparian-dependent animals of low mobility, such as small mammals and amphibians, and/or reduce the value of riparian areas as travel corridors for species such as pine marten, elk, and Neotropical migratory birds.

Impacts to wetland and stream habitat would result from clearing activities and grading associated with terminal/tower construction and utility installation. Refer to Section 3.3 – Watershed Resources for a detailed discussion of wetland impacts.

Table 3.6-7 identifies the area of riparian vegetation that would be eliminated or converted under each of the Action Alternatives. Elimination of vegetation would result from construction of lift terminals and towers. Conversion of habitat would result from clearing and/or grading for ski trails which would result in the conversion of forested vegetation communities to managed herbaceous/shrub communities.

**Table 3.6-7:
 Potential Direct Impacts to Riparian Reserves within the White Pass Study Area**

	Existing	Changes Per Alternative (Impacts)			
	Alt. 1	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9
Area of Riparian Reserves (acres)	632.3	632.3	632.3	632.3	632.3
Proposed Clearing in Riparian Reserves (acres)	0.0	13.5	15.0	8.6	15.7
Proposed Grading in Riparian Reserves (acres)	0.0	4.2	11.1	4.0	8.7
Landcover Types within Riparian Reserves					
Forested (acres)	522.7	19.1	24.8	12.6	24.3
Talus (acres)	4.8	0	0	0	0
Modified Herbaceous (acres)	67.5	0	1.3	0	0
Developed (acres)	10.5	0	0	0	0
Conversion to modified herbaceous (acres)	0.0	19.0	23.1	10.5	20.3
Conversion to developed (acres)	0.0	0.1	1.7	2.0	1.3

Operational impacts, such as noise disturbances, would occur as a result of ski trail and the chairlift maintenance. Ground disturbance associated with utility installation and grading activities could alter species habitat by increasing sediment delivery to streams, reducing shading, and increasing access by invasive plants. Construction impacts may include injuries and mortality to low-mobility species and nesting birds by construction equipment.

Alternative 2 represents the most impacts to Riparian Reserves in Hogback Basin, while Modified Alternative 4 has the highest acreage of impact to Riparian Reserves overall, as a result of clearing for ski trails, lifts and parking. Impacts under Modified Alternative 4 would be lower than Alternative 2 along the lifts and trails in Hogback Basin, yet higher overall than Alternative 2 due to the inclusion of a parking lot and trails within the existing SUP Area. Of all Action Alternatives, Alternative 6 would result

in the lowest overall disturbance to Riparian Reserves in the White Pass Study Area (refer to Section 3.3 – Watershed Resources). Mitigation Measures MM3 and MM10 would reduce impacts to Riparian Reserves under all Action Alternatives (refer to Table 2.4-4).

Late-seral Forest

The White Pass Study Area contains approximately 1,235.8 acres of late-seral forest which can be broken down into two major zones within the White Pass Study Area: the mixed conifer forest in the existing ski area and the mountain hemlock parkland that comprises most of the proposed expansion area (refer to Figure 3-31). A smaller piece of late-seral mountain hemlock forest is located on the protruding northwest portion of the proposed expansion area. Late-seral forest has been identified as the primary habitat type that would be impacted by any of the Action Alternatives. Late-seral forests provide abundant shade, moisture, and security for a number of species, including the Pacific fisher, northern spotted owl, pileated woodpecker, and great gray owl. Table 3.6 FEIS 2 below displays impacts to late-seral forest resulting from each alternative.

**Table 3.6 FEIS2:
Potential Direct Impacts to Late-seral Forest within the White Pass Study Area**

	Alt. 1	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9
Area of late-seral forest (acres)	1,236	1,236	1,236	1,236	1,236
Proposed Clearing and Grading (acres)	0.0	19.7	43.2	15.1	35.4

The greatest impacts to late-seral forest would occur under Modified Alternative 4 where approximately 43.2 acres would be impacted for the construction of lifts, ski trails, parking lot, and ticket booth (refer to Figure 3-33). The fewest impacts to late-seral forest would occur under Alternative 6 with 15.1 acres removed or modified. Alternative 2 impact approximately 19.7 acres of late-seral forest in the proposed expansion area (refer to Figure 3-32).

Permanent impacts would include complete removal of late-seral forest for development of chairlifts and their associated ski trails under all the Action Alternatives. The ski trails would be maintained in a managed shrub/herbaceous condition, and clearing for lifts and trails would result in similar linear openings that already exist in the mountain parkland habitat.

Construction of chairlifts and associated trails within late-seral forest has the potential to impact wildlife habitat connectivity by reducing the available connective habitat, increasing edge habitat, decreasing interior habitat, creating potential barrier effects, and increasing human activity, which in turn increases potential disturbance to animals moving through the area. As described in Table 2.4-4, Other Management Provision OMP7 would reduce impacts to wildlife due to increased human activity and presence by requiring animal-proof containers to be used for waste disposal to prevent habituation of wildlife to human food sources.

Full clearing would result in increased fragmentation of late-seral forest habitat within the White Pass Study Area as well as increased edge habitat. This would have the greatest potential effect on low mobility species and species dependent on interior forest conditions. For low mobility species, increased habitat fragmentation would increase the probability of population isolation. For organisms such as Cascade frogs, extensive fragmentation can represent a barrier to movement and individuals may become trapped in islands of remaining habitat, leading to a long-term effect of decreased genetic variability.

Habitat fragmentation and increased edge may also increase the risk of predation for animals moving through the area. Clearing of late-seral forest for ski trails and lift alignments would affect not only the area cleared but also a parallel band of remaining forest edge. For example, increased edge habitat may attract edge species, such as great horned owls, to the area that could result in an increased risk of predation for spotted owls potentially dispersing through the area, particularly when crossing openings in the forest. Clearing of late-seral forest would also result in increased edge habitat and may lead to indirect impacts of increased wind-throw.

Construction of the *Basin* and *Hogback Express* chairlifts (in Alternative 2 and Modified Alternative 4), the *Basin* chairlift (in Alternative 6), and *PCT* chairlift (in Alternative 9) would result in fragmentation of late-seral forest within the White Pass Study Area. The majority of trail clearing under Alternatives 2 and 6 would occur in the small tree, moderate canopy, single-story mountain hemlock parkland that comprises the majority of the proposed expansion area. Therefore, impacts to interior forest dependent species would not be as pronounced compared to Alternative 9 because this area already has a great deal of naturally occurring openings. Proposed ski trails have been designed to maximize these existing openings and minimize the amount of clearing necessary to meet standard trail requirements. Impacts to interior forest dependent species would be slightly greater under Modified Alternative 4 since there will be approximately 12 acres of clearing in the small tree, closed canopy, multi-story mixed conifer community. Chapter 2 contains a complete discussion of construction prescriptions.

Impacts to interior forest dependent species (such as northern spotted owl and pileated woodpecker) would be greater under Alternative 9 where fragmentation would occur within the medium tree, closed canopy, multi-story mixed conifer forest (refer to Appendix G). Fragmentation would indirectly impact forest dwelling wildlife species such as pine marten and pileated woodpecker by reducing overstory cover and snags and CWD, considered key habitat components for late-seral dependent species. Some forest dependent species are hesitant and/or unwilling to move across large, open areas, as they do not provide sufficient security cover. Since clearing of late-seral forests for ski trails and lifts would be maintained for the life of the ski area the impact of fragmentation would be permanent.

Periodic summertime maintenance of ski trails, utility lines, and lifts, including vegetation brushing, mowing, and facility repairs, would result in direct and indirect impacts to late-seral forests. Indirect impacts as a result of these activities would include the increase in human activity and noise, which could result in avoidance of the area by some wildlife species. These occasions are expected to be brief and the

impact of additional presence and noise is expected to cause only temporary and localized avoidance. Direct impacts resulting from off-season maintenance would occur during the denning, nesting, or breeding season of some species (e.g., marten, pileated woodpecker, etc.) in which case the additional presence and noise would potentially directly impact breeding individuals; causing den or nest abandonment and potential mortality of young.

Snags and Downed Logs

The White Pass Study Area contains approximately 1,235.8 acres of late-seral forest, most of which is capable of creating CWD (coarse woody debris) and snags. Trail clearing of late-seral forest would result in a long-term reduction of snags within the White Pass Study Area as the cleared trails would be maintained for the life of the ski area. Generation of snags and CWD through forest maturation would take several decades as a result of the low growth rates of forest vegetation at higher elevations. Reduction of existing snags would be greatest under Alternative 9 where trails and the *PCT* chairlift would be constructed in medium tree, closed canopy, multi-story forest.

Direct impacts to snag-dependent wildlife species would occur if snags containing nesting and denning sites are cleared for trail/lift construction. These impacts would include potential mortality of individuals within the snag and potential nest/den abandonment. In addition, increased human activity within the White Pass Study Area would lead to avoidance of the area in general and potential nest/den abandonment of snags located near construction activity. Since increased human activity in the White Pass Study Area would continue for the life of the ski area it is considered a long-term impact.

Clearing of mature forest for ski trails and lift corridors would not only impact the area being cleared but would also impact adjacent forest stands as hazard trees may be felled in the adjoining forest, indirectly impacting future snag recruitment. Other Management Provision OMP6 provides measures for retaining snags whenever possible to reduce the permanent loss of wildlife habitat incurred from their removal (refer to Table 2.4-4). All trees that are cleared for any of the Action Alternatives would be left on-site to provide additional downed wood (refer to clearing prescriptions, Chapter 2). Felling hazard trees would create more downed wood on the forest floor, which would be a beneficial impact for many species that utilize downed wood for foraging, breeding, and denning.

3.6.3.2 Threatened and Endangered Species

Table 3.6-8 presents the impacts to threatened and endangered species potentially occurring within the White Pass Study Area under all alternatives. A detailed analysis of potential impacts to these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-8:
 Available Habitat for Federally Listed Threatened or Endangered Species
 Potentially Occurring within the Project Area**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effect; All Alternatives
	(acres)	(acres)	(acres)	(acres)	(acres)	
Northern spotted owl (<i>Strix occidentalis caurina</i>) Dispersal Habitat	1235.9	1216.2	1192.7	1220.8	1200.6	May Affect, Likely to Adversely Affect
Northern spotted owl (<i>Strix occidentalis caurina</i>) NRF Habitat	216	216	202.3	212.3	191.1	May Affect, Likely to Adversely Affect
Designated Critical Habitat for the Northern Spotted Owl, WA-18	14	14	14	14	14	No Effect
Canada Lynx (<i>Felis Lynx canadensis</i>) Dispersal Habitat	1,507.3	1,487.6	1,476.0	1,492	1,471.9	No Effect
Grizzly Bear (<i>Ursus arctos</i>)	1,507.3	1,487.6	1,476.0	1,492	1,471.9	No Effect
Gray Wolf (<i>Canis lupis</i>)	1,454.8	1,435.1	1,423.5	1,439.7	1,419.5	May Affect, Not Likely to Adversely Affect
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	0	0	0	0	0	No Effect
Marbled Murrelet (<i>Brachyrampus marmoratus</i>)	0	0	0	0	0	No Effect

Clearing and grading would result in permanent removal of suitable dispersal and/or nesting, roosting, foraging (NRF) habitat for the northern spotted owl, as vegetation within the cleared areas would be maintained as a managed shrub/herbaceous condition for the life of the ski area under all Action Alternatives (refer to Table 3.6-8). As described in Table 2.4-3, Management Requirement MR10 would restrict helicopter use during northern spotted owl nesting season if surveys are not current at the time of construction.

3.6.3.3 U.S. Forest Service Survey and Manage Species

Table 3.6-FEIS3 presents the impacts to USFS Survey and Manage species potentially occurring within the White Pass Study Area. A detailed analysis of potential impacts to these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6 FEIS3:
Available Habitat for Okanogan and Wenatchee and Gifford Pinchot National Forest Survey and
Manage Species Potentially Occurring within the White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives
	(acres)	(acres)	(acres)	(acres)	(acres)	
Puget Oregonian (<i>Cryptomastix devia</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals but would not likely contribute to a trend toward federal listing
Warty jumping-slug (<i>Hemphillia glandulosa</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals but would not likely contribute to a trend toward federal listing
Keeled jumping-slug (<i>Hemphillia burringtoni</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals but would not likely contribute to a trend toward federal listing
Blue-gray tailed dropper (<i>Prophyaon coeruleum</i>)	569.7	550.2	548	565.9	534.4	May impact individuals but would not likely contribute to a trend toward federal listing
Larch Mountain Salamander (<i>Plethodon larselli</i>)	575.0	555.3	553.3	571.2	539.3	May impact individuals but would not likely contribute to a trend toward federal listing
Van Dyke's Salamander (<i>Plethodon vandykei</i>)	216.8	216.8	192.0	214.8	195.3	May impact individuals but would not likely contribute to a trend toward federal listing
Great Gray Owl (<i>Strix nebulosa</i>) Nesting habitat	510.7	510.7	489	506.9	475.4	No impacts to this species are expected to occur.
Great Gray Owl Foraging habitat	988.4	968.7	987.1	976.6	984.0	
Long-legged myotis (<i>Myotis volans</i>)	1,454.8	1,435.1	1,423.5	1,439.5	1,419.5	May impact individuals but would not likely contribute to a trend toward federal listing.
Long-eared myotis (<i>Myotis evotis</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals but would not likely contribute to a trend toward federal listing.

**Table 3.6 FEIS3:
 Available Habitat for Okanogan and Wenatchee and Gifford Pinchot National Forest Survey and
 Manage Species Potentially Occurring within the White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives
	(acres)	(acres)	(acres)	(acres)	(acres)	
Silver-haired bat (<i>Lasiodycteris noctivagans</i>)	327.0	327.0	317.4	323.3	301.8	May impact individuals but would not likely contribute to a trend toward federal listing

3.6.3.4 U.S. Forest Service Sensitive Species

Table 3.6-9 presents the impacts to USFS Sensitive Species potentially occurring within the White Pass Study Area. A detailed analysis of potential impacts to these species can be found in the Wildlife Technical Report and Biological Evaluation for the White Pass MDP located in Appendix H of this document.

**Table 3.6-9:
 Available Habitat for Okanogan and Wenatchee and Gifford Pinchot National Forest Sensitive
 Species Potentially Occurring within the White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives
	(acres)	(acres)	(acres)	(acres)	(acres)	
California wolverine (<i>Gulo gulo luteus</i>)	1,507.3	1,487.6	1,476.0	1492	1,471.9	May impact individuals but would not likely contribute to a trend toward federal listing
Pacific western (Townsend's) big-eared bat (<i>Corynorhinus townsendii</i>) Foraging habitat	988.4	968.7	987.1	976.6	984.0	May impact individuals but would not likely contribute to a trend toward federal listing

3.6.3.5 U.S. Fish and Wildlife Service Species of Concern

Table 3.6-10 presents the impacts to U.S. Fish and Wildlife Service Species of Concern potentially occurring within the White Pass Study Area. A detailed analysis of potential impacts to these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-10:
Available Habitat for USFWS Species of Concern
Potentially Occurring within the White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives ^a
	(acres)	(acres)	(acres)	(acres)	(acres)	
Cascades Frog (<i>Rana cascadae</i>)	5.3	5.1	5.2	5.2	5.2	May impact individuals but would not likely contribute to a trend toward federal listing.
Olive-sided flycatcher (<i>Contopus borealis</i>)	1,235.9	1,216.2	1,192.7	1,220.8	1,200.6	May impact individuals but would not likely contribute to a trend toward federal listing.

^a Based on analysis in the Biological Evaluation and Wildlife Report in Appendix H

3.6.3.6 USFS Management Indicator Species

Table 3.6-11 presents the impacts to USFS Management Indicator Species potentially occurring within the White Pass Study Area. A detailed analysis of potential impacts to these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-11:
Available Habitat for Okanogan and Wenatchee and Gifford Pinchot National Forest Management
Indicator Species Potentially Occurring within the White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives ^a
	(acres)	(acres)	(acres)	(acres)	(acres)	
Black-backed woodpecker (<i>Picoides arcticus</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals, but will not affect species viability in the project area
Black-tailed deer (<i>Odocoileus hemionus</i>), Mule deer (<i>O. h. hemionus</i>)	932.3 Foraging 315.2 Cover	912.6 315.2	909.4 293.6	924.1 311.5	932.2 280.0	May impact individuals, but will not affect species viability in the project area
Primary Cavity Excavators	522.5	522.5	500.8	518.7	487.2	May impact individuals, but will not affect species viability in the project area
Mountain goat (<i>Oreamnos americanus</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals, but will not affect species viability in the project area

**Table 3.6-11:
 Available Habitat for Okanogan and Wenatchee and Gifford Pinchot National Forest Management
 Indicator Species Potentially Occurring within the White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives ^a
	(acres)	(acres)	(acres)	(acres)	(acres)	
Pileated woodpecker (<i>Dryocopus pileatus</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals, but will not affect species viability in the project area
Pine marten (<i>Martes americana</i>)	522.5	522.5	500.8	518.7	487.2	May impact individuals, but will not affect species viability in the project area
Rocky Mountain elk (<i>Cervus elephus nelsoni</i>); Roosevelt Elk (<i>C. e. roosevelti</i>)	932.3 Foraging	912.6	909.4	924.1	932.2	May impact individuals, but will not affect species viability in the project area
	315.2 Cover	315.2	293.6	311.5	280.0	

^a Based on analysis in the Biological Evaluation and Wildlife Report in Appendix H

3.6.3.7 *Species of Local Concern*

Table 3.6-12 presents the impacts to Species of Local Interest potentially occurring within the White Pass Study Area. A detailed analysis of potential impacts to these species can be found in the *Wildlife Technical Report and Biological Evaluation for the White Pass MDP* located in Appendix H of this document.

**Table 3.6-12:
 Available Habitat for Species of Local Concern Potentially Occurring within the
 White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives
	(acres)	(acres)	(acres)	(acres)	(acres)	
Neotropical Migratory Birds ^a	1,507.3	1,487.6	1,466.1	1,492.0	1,468	May impact individuals, but will not affect species viability in the project area
Blue Grouse (<i>Dendragapus obscurus</i>)	1,454.8	1,435.1	1,423.5	1,439.5	1,419.5	May impact individuals, but will not affect species viability in the project area

**Table 3.6-12:
 Available Habitat for Species of Local Concern Potentially Occurring within the
 White Pass Study Area by Alternative**

Species	Alt. 1/ Existing	Alt. 2	Mod. Alt. 4	Alt. 6	Alt. 9	Determination of Effects; All Alternatives
	(acres)	(acres)	(acres)	(acres)	(acres)	
White-tailed ptarmigan (<i>Lagopus leucurus</i>)	654.4	634.7	632.9	643.1	654.4	May impact individuals, but will not affect species viability in the project area

^a Neotropical Migratory Birds occupy a variety of habitats; therefore the entire SUP, with the exception of developed areas, was considered to be habitat for this group as a whole.

Management Requirements MR8 and MR9 would reduce potential impacts to special status species in the White Pass Study Area (refer to Table 2.4-3). MR8 would require immediate notification of the Forest Service Biologist and alteration of management activities if special status species are present or new species are encountered during construction. MR9 would require surveys for species status species to be conducted in all areas where suitable habitat is determined by a Forest Service Biologist.

Habitat Connectivity

Habitat connectivity and fragmentation refer to the size, quality, and spatial arrangement of patches of a species’ habitat across the landscape, particularly the number and arrangement of these patches as they relate to the dispersal of organisms. All of the projects listed below in Table 3.6-13 and 3.6-14 would affect habitat connectivity to varying degrees. Ongoing and future projects occurring in and around previously developed areas that currently receive a high level of human activity would continue to limit the use of some portions of those areas by wildlife.

Late-seral forest habitat has been identified as an important area of habitat connectivity for wide-ranging species such as northern spotted owl, pine marten, and pileated woodpecker. Low mobility wildlife species, such as terrestrial mollusks, also depend on microhabitats provided by late-seral forest. Construction of a chairlift and ski trails within this type of forest has the potential to impact habitat connectivity by reducing the available connective habitat, increasing edge habitat, decreasing interior habitat, creating potential barrier affects, and increasing human activity, which in turn increases potential disturbance to animals moving through the area. Low mobility species would not be as able to move and avoid these impacts as high mobility species would be. Therefore, the impacts to connectivity would be greater for the low mobility species.

As mentioned in Section 3.6.2, the proposed expansion area represents previously undisturbed travel habitat (the mountain hemlock parkland community) that could provide connectivity for many wildlife species that occur in the WNF and GPNF. While the vegetation community may be undisturbed, existing human presence (e.g., PCT users and backcountry skiers) may deter the use of the area for some species

sensitive to human presence, such as gray wolf and wolverine. Construction of chairlifts and ski trails within this area has the potential to impact wildlife habitat connectivity by reducing the available connective habitat, creating potential barrier effects, and increasing human activity, which in turn increases potential disturbance to animals moving through the area. The re-routed PCNST would not increase recreational use along the trail, although users would pass through the area along the ridge rather than in the current alignment. Because the re-route would be built in parkland, the PCNST re-route would not measurably affect habitat connectivity. During construction of the re-routed PCNST, the presence of workers using hand tools would act as a disturbance to wildlife, potentially causing wildlife to avoid the area during construction.

Modified Alternative 4 would have the greatest potential impact to habitat connectivity of all the Action Alternatives because it would result in removal of the greatest amount of mountain hemlock parkland in the proposed expansion area as well as introduce development and increased recreational activity to a previously undisturbed area. However, because the nature of parkland habitat is to contain tree islands and treeless openings, the primary impact to habitat connectivity would occur as a result of the intrusion of seasonal recreational activity into this previously undisturbed habitat and not necessarily as a result of forested parkland removal. In addition, the majority of increased activity within the proposed expansion area would occur during the winter when most species are not present or dispersing through the area.

Alternative 9 would result in the greatest amount of fragmentation of dense forest of all the Action Alternatives as it occurs entirely within the existing ski area. Late-seral forest would be removed in order to create new ski trails and lift corridors. This fragmentation would potentially affect interior forest dwelling species that depend on forest cover for travel and safety. Species unwilling to cross open areas such as ski trails may find themselves limited to a small patch of forest within the ski area. Due to the current level of activity within the existing ski area it is expected that many species avoid passing through the area except on an occasional basis. However, human activity is generally limited to the winter months with summertime activity consisting primarily of ski area maintenance, such as vegetation mowing and brushing, and existing sources of human recreational activity (e.g., PCT trail, campgrounds, etc.). Therefore increased fragmentation within the existing ski area under Alternative 9 would most likely result in an alteration of travel direction as animals skirt around the area. Potential side effects of this alteration of travel direction could result in an increase of animals that move north toward US 12 thereby increasing the potential for vehicle collisions and mortality.

The construction of chairlifts and ski trails would reduce the overall amount of undisturbed habitat in the proposed expansion area. Increases in human activity associated with chairlift and ski trail development may reduce the effectiveness of the area as travel habitat, particularly for species sensitive to human activity. Short-term direct impacts include noise and activity associated with ski lift construction and ski trail clearing and grading. Noise associated with these activities and human presence may cause animals to avoid moving through the area. Potential long-term direct impacts (e.g., area avoidance) would result from increased winter recreational use of the area associated with *Basin* and *Hogback Express* chairlifts

and ski trails. In addition, ski trail grooming is often accomplished at night, and noise and light from this activity, particularly in the new proposed pods may alter use of the area by nocturnal species.

During the summer ski lift and trail maintenance activities may have direct impacts on animals potentially moving through the area, as the associated noise and activity may alter use of the area. These activities would be expected to be of short duration with lift maintenance occurring on an annual basis and ski trail maintenance occurring less frequently, as vegetation growth rates are slow.

3.6.4 Cumulative Effects

As described in Section 3.0 - Introduction, cumulative effects to wildlife are considered at the site scale (White Pass Study Area) and the Cumulative Effects Analysis Area (CEAA). The CEAA is comprised of two fifth field watersheds: the Upper Tieton watershed and the Upper Clear Fork Cowlitz watershed. A list of projects occurring within the Upper Clear Fork Cowlitz watersheds (refer to Table 3.6-13) and the Upper Tieton (refer to Table 3.6-14) and the impact to wildlife are presented below.

The alteration of vegetation communities described in Section 3.5 – Vegetation has the potential to impact wildlife habitat. For purposes of this analysis, cumulative impacts could result from both long-term and short-term losses of wildlife habitat. A long-term loss of wildlife habitat occurs when the native vegetation community is not easily replaced. For example, the removal of forested habitat is a long-term impact as the re-growth of the forest occurs on the order of decades. Similarly, the creation of new impervious surfaces in any community type results in the long-term loss of wildlife habitat. Short-term losses of habitat occur when herbaceous and shrub communities are disturbed, but are ultimately revegetated in a short (1-2 years) period of time. A second type of short-term cumulative impact occurs during construction phases of the various actions described in Tables 3.6-13 and 3.6-14. During this phase, noise generated by equipment and the increased human presence can impact wildlife in the vicinity of the action. This typically leads to avoidance behaviors by wildlife species and may disrupt normal behavioral patterns. This type of impact typically dissipates following the completion of construction activities as noise returns to background levels.

**Table 3.6-13:
 Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
 in the Upper Clear Fork Cowlitz Watershed on Wildlife**

Project Number	Project Name	Cumulative Effects
UCFC-3a	Palisades Scenic Viewpoint Project	Approximately 0.5 acre of trees, shrub, and herbaceous wildlife habitat associated with the project footprint was removed. Implementation of this project had no temporal overlap with the proposed White Pass expansion as the project site is assumed to be stabilized. As the project occurred within an existing area of high human activity and associated disturbance to wildlife, this project is not expected to have had any long-term impacts to wildlife.
UCFC-3b	Palisades Scenic Viewpoint Project Vegetation Management	Wildlife habitat would be impacted on approximately 1 acre where trees were felled. Wildlife may be displaced in the short-term during project implementation. There would be an overlap in time with the construction of the White Pass expansion. There is no spatial overlap with the White Pass Study Area. The effects to wildlife from this project would not be measurable at the 5th field scale. Implementation of the Action Alternatives, combined with the additional vegetation removal from this and other projects identified in this table, would cumulatively impact wildlife from additional loss of habitat and human activity at the 5th field watershed scale.
UCFC-4	Mt Rainier/Goat Rocks Scenic Viewpoint	Approximately 0.75 acre of stand treatment would be conducted along US 12. There would be an overlap in time with the construction of the White Pass expansion. There is no spatial overlap with the White Pass Study Area. The effects to wildlife from this project would not be measurable at the 5th field watershed scale. Implementation of the Action Alternatives, combined with the additional vegetation removal from this and other projects identified in this table, would cumulatively impact wildlife from additional loss of habitat and human activity at the 5th field watershed scale.
UCFC-5	White Pass Wildfire	The wildfire burned approximately 204 acres within the Upper Clear Fork Cowlitz watershed resulting in direct impacts to vegetation and associated wildlife habitat. In the eight years following the fire, it is expected that some natural regeneration has occurred. This project did not overlap the in space with the White Pass Study Area. Partial natural regeneration of the vegetation has occurred since the fire. In the long-term, the effects of the fire, coupled with the effects of the White Pass expansion and other project effects listed in this table, will contribute to a cumulative reduction in forest habitat at the 5th field watershed scale. With continued revegetation, the potential for long-term effects of this fire will be reduced.
UCFC-6	Knuppenberg Lake Bridge Removal	Beneficial effects to 0.24 acre of riparian habitat resulted from the removal of the bridge, improving riparian conditions in the long-term. Short-term impacts including disturbance of wildlife from human activity and noise associated with demolition did not overlap with the White Pass expansion. Long-term beneficial impact to wildlife from recovery of riparian areas would overlap with the effects of the White Pass expansion. While the project does not overlap in space with the White Pass Study Area, the beneficial impact to wildlife habitat would occur at the 5th field watershed scale.

Table 3.6-13:
Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
in the Upper Clear Fork Cowlitz Watershed on Wildlife

Project Number	Project Name	Cumulative Effects
UCFC-7	Wilderness Trail Maintenance	Short-term disturbance to wildlife would result from clearing and brushing, ground disturbance and structure maintenance. Short-term, seasonal increases in disturbance of wildlife along the trail would also result from improved human access. Trail maintenance effects on wildlife would overlap in time with the effects of the White Pass expansion as maintenance activities would occur during the summer months. While the effects of system trail maintenance do not overlap with the White Pass Study Area, noise from increased human presence during maintenance activities would impact wildlife within the White Pass Study Area and at the 5th field watershed scale.
UCFC-8	Ongoing Road Maintenance	Permanent direct impacts of up to 46.3 acres of forest and shrub wildlife habitat along the margins of existing roads would result from this project. During maintenance activity, human and equipment disturbance to wildlife from clearing, grading, and maintenance of stream crossings would directly affect wildlife. Long-term impacts are not expected to occur. Road maintenance would overlap in time with the construction of the White Pass expansion as construction activities would occur during the summer months. While the project does not overlap with the White Pass Study Area, increased noise from maintenance activities would cumulatively affect wildlife at the 5th field watershed scale.
UCFC-9	Camp Site Maintenance	Additional noise and human activity during maintenance activities within dispersed areas would lead to short-term avoidance of the area by wildlife. Campsite maintenance would overlap in time with the effects of the construction of the White Pass expansion as maintenance activities would occur during the summer months. Maintenance activities, including increased human presence, and associated noise at dispersed sites would impact wildlife within the White Pass Study Area and at the 5th field watershed scale.
UCFC-11	Air Quality Monitoring Building	Construction of this building resulted in a long-term loss of 0.02 acres of wildlife habitat. Implementation of this project had no temporal overlap with the proposed White Pass expansion as the project site is assumed to be stabilized. Spatially, this project occurred within the White Pass Study Area and results in a loss of wildlife habitat at the 5th field watershed scale combined with implementation of the Action Alternatives and other projects listed in this table.
UCFC-12	Rockfall Mitigation (between mileposts 143 and 149)	No long-term impacts to wildlife are expected to have resulted from this project as construction activities occurred within the US 12 right-of-way. Implementation of this project did not overlap in time with the proposed White Pass expansion. Spatially, this project occurs outside the White Pass Study Area, and did not contribute to a loss of wildlife habitat at the 5th field watershed scale because it is located within the previously modified US 12 corridor.

**Table 3.6-13:
 Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
 in the Upper Clear Fork Cowlitz Watershed on Wildlife**

Project Number	Project Name	Cumulative Effects
UCFC-14	Unstable Slope Repair Projects (between mileposts 145.61 and 145.77)	No long-term impacts to wildlife are expected to result from this project as construction activities will occur within the US 12 right-of-way. Implementation of this project will overlap in time with the proposed White Pass expansion. Spatially, this project occurs outside the White Pass Study Area, and will not contribute to a loss of wildlife habitat at the 5th field watershed scale because it is located within the previously modified US 12 corridor.
UCFC-15	Unstable Slope Repair Projects (between mileposts 141.8 and 144.4)	No long-term impacts to wildlife are expected to result from this project as construction activities occur within the US 12 right-of-way. Implementation of this project will not overlap in time with the White Pass expansion. Spatially, this project occurs outside the White Pass Study Area, and will not contribute to a loss of wildlife habitat at the 5th field watershed scale because it is located within the previously modified US 12 corridor.
UCFC-16	Highway 12 Hazard Tree Removal	Hazard tree removal will reduce or modify wildlife habitat for species dependant on snags and LWD. The effects of a portion of the project would overlap spatially with the effects of the White Pass expansion (i.e. US 12 at White Pass). As hazard tree removal would overlap in time with construction of the White Pass expansion, it would cumulatively add to the loss of wildlife habitat for species dependant on LWD and snags.
UCFC-17	White Pass Ski Area Yurt Construction	Long-term, direct impact to wildlife habitat resulted from approximately 0.01 acre of new impervious surfaces from construction of the yurt. Spatially, the effects of the yurt overlap with the White Pass expansion. The effects of the project had no temporal overlap with the White Pass expansion as the project site is assumed to be stabilized. As the project occurred within the White Pass Study Area, an existing disturbance to wildlife from human activity, this project is not expected to have had any long-term impacts to wildlife.
UCFC-18	Special Forest Product Permits	Short-term temporary impacts to wildlife (avoidance) would result from increased human presence during collection of boughs and beargrass. Spatially, this project would result in short-term disturbances to wildlife at the 5th field watershed scale when combined with construction activities (noise) for the White Pass expansion and other projects identified in this table. Temporally, annual collection of beargrass and boughs would overlap with construction of the White Pass expansion.
UCFC-20	Benton Rural Electric Association (REA) Power Line Maintenance	No new long-term impacts to wildlife habitat are expected to result from maintenance activities as the vegetation is maintained in a non-natural condition. Temporary noise impacts would potentially disturb wildlife during construction. Ongoing maintenance would overlap in time with the White Pass expansion and would cumulatively add to short-term noise disturbance to wildlife in the White Pass Study Area and at the 5th field watershed scale.

**Table 3.6-14:
 Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
 in the Upper Tieton Watershed on Wildlife**

Project Number	Project	Wildlife
UT-2	White Pass Ski Area Sewer Line Replacement	Approximately 0.73 acre of grading will occur, associated with the excavation of the trench and resulting in the loss of ground cover vegetation (habitat for wildlife) in the short-term. Also in the short-term, during construction, noise impacts may cause some wildlife to avoid the area. Project implementation and effects are expected to overlap in time and space with the effects of the White Pass expansion. No long-term effects to wildlife are expected because the disturbed soil areas will be immediately stabilized/ revegetated after construction and construction equipment will not be present upon completion of the project. Combined with the White Pass expansion and other projects identified in this table, this project would add to a cumulative, short-term loss of wildlife habitat within and outside of the White Pass Study Area within the 5th field watershed.
UT-3	White Pass Ski Area Generator Shed and Propane Tank	Approximately 0.004 acre of shrub and herbaceous wildlife habitat associated with the project footprint was removed. Implementation of this project had no temporal overlap with the proposed White Pass expansion as the project site is assumed to be stabilized. As the project occurred within the White Pass Study Area, an existing disturbance to wildlife from human activity, this project is not expected to have had any long-term impacts to wildlife.
UT-4	White Pass Ski Area Relocation of Chair 3 and Platter Lift	Approximately 0.01 acre of shrub and herbaceous wildlife habitat associated with the project footprint was removed. Implementation of this project had no temporal overlap with the proposed White Pass expansion as the project site is assumed to be stabilized. As the project occurred within the White Pass Study Area, an existing disturbance to wildlife from human activity, this project is not expected to have had any long-term impacts to wildlife.
UT-5	US Cellular Tower	Approximately 0.004 acre of shrub and herbaceous wildlife habitat associated with the project footprint was removed. Implementation of this project had no temporal overlap with the proposed White Pass expansion as the project site is assumed to be stabilized. As the project occurred within the White Pass Study Area, an existing disturbance to wildlife from human activity, this project is not expected to have had any long-term impacts to wildlife.
UT-6	White Pass Ski Area Restaurant/Condo Conversion	Approximately 0.25 acre of existing building footprint was removed and converted to condominiums. Spatially, the effects of the project overlap with the White Pass expansion. The effects of the project had no temporal overlap with the White Pass expansion as the project site is assumed to be stabilized. As the project occurred within the White Pass Study Area, an existing disturbance to wildlife from human activity, this project is not expected to have had any long-term impacts to wildlife.
UT-7	White Pass Ski Area Cross Country Yurt	Approximately 0.25 acre of existing disturbed area was redeveloped. Spatially, the effects of the yurt overlap with the White Pass expansion. The effects of the project had no temporal overlap with the White Pass expansion as the project site is assumed to be stabilized. As the project occurred within the White Pass Study Area, an area of existing disturbance to wildlife from human activity, this project is not expected to have had any long-term impacts to wildlife.

**Table 3.6-14:
 Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
 in the Upper Tieton Watershed on Wildlife**

Project Number	Project	Wildlife
UT-8	White Pass Ski Area Manager's Cabin	Approximately 0.25 acre of trees, shrub and herbaceous wildlife habitat associated with the project footprint was removed. Effects to wildlife from this project had no temporal overlap with the White Pass expansion as the project site is assumed to be stabilized. As the project occurred within the White Pass Study Area, an area of existing disturbance to wildlife from human activity, this project is not expected to have had any long-term impacts to wildlife.
UT-10	Dog Lake Campground/Four Trailhead Reconstruction	This project would impact approximately 1.0 acre of wildlife habitat, including Riparian Reserves within the 5th field watershed scale. As this project is anticipated to overlap in time with the proposed White Pass expansion, short-term impacts (avoidance) to wildlife would likely result from construction noise. No long-term impacts are expected to occur.
UT-11	Clear Creek Overlook Reconstruction	This project would impact approximately 1.0 acre of wildlife habitat through the reconstruction of an overlook and the addition of the interpretive trail. As this area is already heavily used by humans, this project would not result in an increase in disturbance to wildlife from increased human presence. The project effects do not overlap with the White Pass Study Area, however, it is anticipated that the loss of habitat would be realized at the 5th field watershed scale. As the effects of this project would overlap in time with effects of the White Pass expansion, there would be a cumulative short-term increase in construction noise disturbance to wildlife at the 5th field watershed scale.
UT-16	Trail 1106 Water Crossing	If a ford is constructed (instead of bridge replacement), up to 0.1 acre of vegetation will be removed to reroute the trail, resulting in the short-term loss of 0.1 acre of riparian wildlife habitat. In addition, short-term impacts to wildlife from increased human presence and associated noise during reconstruction activities may cause some wildlife to avoid the area. This project does not overlap spatially with the White Pass Study Area. Project implementation and effects are expected to overlap in time with the effects of the White Pass expansion. No long-term effects to wildlife are expected because the abandoned trail segment will be closed and allowed to revegetate. Combined with the White Pass expansion and other projects identified in this table, this project would add to a cumulative, short-term loss of wildlife habitat within the 5th field watershed.
UT-17	North Fork Tieton System Ski Trail Grooming	Trail grooming likely creates short-term noise disturbances to wildlife during winter months. Construction noise associated with the White Pass expansion would occur during summer months and would therefore not overlap in time or space with grooming noise. Following completion of the expansion, grooming of new ski trails would overlap in time with the North Fork Trail grooming and would likely add to short-term noise disturbance to wildlife during winter months.

Table 3.6-14:
Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
in the Upper Tieton Watershed on Wildlife

Project Number	Project	Wildlife
UT-18	Benton Rural Electric Association (REA) Power line Maintenance	Power line maintenance will spatially overlap with the White Pass Study Area and the 5th field watershed. No new long-term impacts to wildlife habitat are expected to result from maintenance activities as the vegetation is maintained in a non-natural condition. Temporary noise impacts would potentially disturb wildlife during construction. Ongoing maintenance would overlap in time with the White Pass expansion and would cumulatively add to short-term noise disturbance to wildlife within the White Pass Study Area and at the 5th field watershed scale.
UT-19	Highway 12 Hazard Tree Removal	Hazard tree removal will reduce or modify wildlife habitat for species dependant on snags and LWD. The effects of a portion of this project would overlap spatially with the effects of the White Pass expansion (i.e. US 12 at White Pass). As hazard tree removal would overlap in time with construction of the White Pass expansion, it would cumulatively add to the loss of wildlife habitat for species dependant on LWD and snags.
UT-20	Clear Lake Recreation Projects	This project would be constructed within the existing camp and would not result in the additional loss of wildlife habitat. Spatially, the effects of the project would not overlap with the effects of the White Pass expansion. It is expected that construction will result in short-term impacts to wildlife from construction related noise. It is expected that the effects of this project would overlap in time with the effects of the White Pass expansion resulting in a cumulative noise impact to wildlife in the 5th field.
UT-23	System Trail Maintenance	Short-term disturbance to wildlife would result from clearing and brushing, ground disturbance and structure maintenance. Short-term, seasonal increases in disturbance of wildlife along the trail would also result from improved human access. Trail maintenance effects on wildlife would overlap in time with the effects of the White Pass expansion as maintenance activities would occur during the summer months. While the effects of system trail maintenance do not overlap with the White Pass Study Area, noise from increased human presence during maintenance activities would impact wildlife within the White Pass Study Area and at the 5th field watershed scale.
UT-24	Snoqueen Mine	Ongoing mining operations are not expected to result in further impacts to habitat under the existing permit, but continuing operations would create ongoing noise disturbances to wildlife. There would be no overlap in space with construction of the White Pass expansion as the mine is located outside the White Pass Study Area. However, construction of the White Pass expansion would overlap in time with ongoing noise and cumulatively add to the noise disturbance to wildlife at the 5th field watershed scale.
UT-25	Zig Zag Nordic and Snowshoe Trails	Trail grooming likely creates short-term noise disturbances to wildlife during winter months. Construction noise associated the White Pass expansion would occur during summer months and would therefore not overlap in time or space with grooming noise. Following completion of the expansion, grooming of new ski trails would not overlap in time with grooming because use will have been discontinued on these trails.

**Table 3.6-14:
 Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
 in the Upper Tieton Watershed on Wildlife**

Project Number	Project	Wildlife
UT-26	Highway 12 Rock Stabilization (at Mile Post 155)	No long-term impacts to wildlife are expected to result from this project as construction activities will occur within the previously modified US 12 right-of-way. Implementation of this project would likely overlap in time with the proposed White Pass expansion. Spatially, this project occurs outside the White Pass Study Area, but is not expected to contribute to a loss of wildlife habitat at the 5th field watershed scale because it is located along US 12.
UT-27	Highway 12 Rock Stabilization (at Mile Post 155)	No long-term impacts to wildlife are expected to have resulted from this project as construction activities occurred within the previously modified US 12 right-of-way. Implementation of this project did not overlap in time with the proposed White Pass expansion. Spatially, this project occurs outside the White Pass Study Area, and did not contribute to a loss of wildlife habitat at the 5th field watershed scale because it is located along US 12.
UT-28	Camp Prime Time Accessible Trail, Wagon Ride Route and Tree House	This project would be constructed within the existing camp and would not result in the additional loss of wildlife habitat. It is expected that construction will result in short-term impacts to wildlife from construction related noise. It is expected that this project would overlap in time with the proposed White Pass expansion resulting in a cumulative noise impact to wildlife.
UT-29	Clear Lake Boat Launch Heavy Maintenance	This project would be constructed within the existing recreation area and would not result in the additional loss of wildlife habitat. It is expected that construction will result in short-term impacts to wildlife from construction related noise. It is expected that this project would overlap in time with the White Pass expansion resulting in a cumulative noise impact to wildlife.
UT-30	US Cellular Backup power at White Pass Communications Site	This project was implemented within the existing disturbed area and did not result in the additional loss of wildlife habitat. It is expected that this project would overlap in time with the White Pass expansion resulting in a cumulative noise impact to wildlife from occasional generator use.
UT-31	Cellular Phone Carrier Improvements at White Pass Communication Site	This project would be constructed within the existing disturbed area and would not result in the additional loss of wildlife habitat. It is expected that construction will result in short-term impacts to wildlife from construction related noise. It is expected that this project would overlap in time with the proposed White Pass expansion resulting in a cumulative noise impact to wildlife.
UT-32	Camp Site Maintenance	Additional noise and human activity during maintenance activities would lead to short-term avoidance of the areas. Camp maintenance would overlap in time with the construction of the White Pass expansion as maintenance activities would occur during the summer months. Maintenance activities, including increased human presence and associated noise, would impact wildlife within the White Pass Study Area and at the 5th field watershed scale.

**Table 3.6-14:
 Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects
 in the Upper Tieton Watershed on Wildlife**

Project Number	Project	Wildlife
UT-35	Unstable Slope Repair Projects (between Mile Posts 161.93 and 165.02)	No long-term impacts to wildlife are expected to result from this project as construction activities will occur within the previously modified US 12 right-of-way. The disturbance effects of this project do not overlap with the effects in the White Pass Study Area, but are expected to overlap in time with the effects of the White Pass expansion. The project will not contribute to a loss of wildlife habitat at the 5th field watershed scale because it is located along US 12.

As described in Tables 3.6-14 and 3.6-15, projects occurring within each 5th field watershed of the CEAA would cumulatively impact wildlife through short-term noise disruptions, increased human activity, and long-term losses of habitat. At the site scale, the projects described in the tables would cumulatively impact wildlife habitat over approximately 4.8 percent of the White Pass Study Area (refer to Table 3.6-15). Combined with the implementation of the White Pass Expansion, impacts to wildlife would occur over a maximum of 7.6 percent of the site scale. However, because the site scale includes an existing ski area development, major state highway, and human activity, no measurable cumulative impacts to wildlife are expected to occur.

Within the CEAA, cumulative impacts to wildlife habitat would occur over 0.37 percent of the area (refer to Table 3.6-15). As described previously, short-term impacts to wildlife would occur from short-term noise disruptions, increased human activity, and the loss of habitat. The maximum area of long-term, habitat-related cumulative impact from the White Pass expansion (Modified Alternative 4) and the projects described in Tables 3.6-13 and 3.6-14 would affect approximately 0.4 percent of the CEAA (refer to Table 3.6-15). The CEAA includes the existing ski area, US 12, and numerous other sources of human activity. As the cumulative impact from the White Pass expansion and other projects occurs over a small percentage of the CEAA and distributed throughout currently-developed areas within the CEAA, the cumulative effect to wildlife are not expected to be measurable.

Table 3.6-15
Cumulative Effects of Past, Present, and Reasonably Foreseeable Projects in the
Cumulative Effects Analysis Area^a on Wildlife

Impact Type	Alt. 1		Alt. 2		Mod. Alt. 4		Alt. 6		Alt. 9	
	Area (ac.)	Percent of Scale (%)	Area (ac.)	Percent of Scale (%)	Area (ac.)	Percent of Scale (%)	Area (ac.)	Percent of Scale (%)	Area (ac.)	Percent of Scale (%)
White Pass Study Area Scale										
White Pass Projects	0.00	0.00	19.70	1.25	44.51	2.84	15.10	0.96	35.30	2.25
Projects Not Associated with the White Pass Expansion	74.72	4.76	74.72	4.76	74.72	4.76	74.72	4.76	74.72	4.76
Cumulative Impacts	74.72	4.76	94.42	6.01	119.24	7.59	89.82	5.72	110.02	7.01
Fifth Field Scale										
White Pass Projects	0.00	0.00	19.70	0.01	44.51	0.02	15.10	0.01	35.30	0.02
Projects Not Associated with the White Pass Expansion	708.11	0.37	708.11	0.37	708.11	0.37	708.11	0.37	708.11	0.37
Cumulative Impacts	708.11	0.37	727.81	0.39	752.63	0.40	723.21	0.38	743.41	0.39

^aThe Cumulative Effects Analysis Area (CEAA) is the combined areas of the Upper Tieton and modified Upper Clear Fork Cowlitz watersheds.