3.0 ENVIRONMENTAL CONSEQUENCES
3.6 BIOLOGICAL RESOURCES

INTRODUCTION

This section analyzes and summarizes the applicable regulations and policies regarding biological resources and provides an analysis of direct and indirect impacts to biological resources. Information regarding the sensitive biological resources in the Ski Back Trail area is based on a literature review including a review of the California Natural Diversity Database (CNDDB) in 2007, survey data from two bike trail projects within the project area, information from the Original Ski Back Trail site review, and information from a reconnaissance of the study area. A *Management Indicator Species (MIS) for the Mammoth Mountain Ski Area, Ski Back Trail Project* (December 2008) and a *Biological Evaluation – Wildlife (BE) for the Mammoth Mountain Ski Area, Ski Back Trail Project* (December 2008), both prepared by PCR Services Corporation, are also incorporated by reference. The Floral and Faunal Compendium and Sensitive Plant Species Table are included in Appendix D of this Final EA.

3.6.1 REGULATORY FRAMEWORK

Any project must be in compliance with a number of laws, terms, provisions, and regulations required by Federal, State, and local agencies in regards to biological resources such as sensitive plants. Federal, State, and local agencies include the United States Fish and Wildlife Service (USFWS), United States Department of Agriculture Forest Service (Forest Service), and the California Department of Fish and Game (CDFG). The applicable regulations are discussed below.

a. Federal Level

(1) Federal Endangered Species Act, Section 10 and Section 7

Taking of a threatened or endangered species is prohibited under Federal law without a special permit. Section 10(a)(1)(B) of the Endangered Species Act (ESA) allows for take of a threatened or endangered species incidental to development activities once a Habitat Conservation Plan (HCP) has been prepared to the satisfaction of the USFWS. For Federal projects (including those involving Federal funding), Section 7 of the ESA allows for consultation between the affected agency and the USFWS to determine what measures may be necessary to compensate for the incidental take of a listed species. A "Federal" project is any

project that is proposed by a Federal agency or is at least partially funded or authorized by a Federal agency. If the listed species or federally designated "critical habitat" for that species occurs in a portion of the project subject to Federal jurisdiction or activity (such as "Waters of the United States"), then consultation under Section 7 of the Act is usually permissible and may be required.

(2) Forest Service

(a) Forest Service Sensitive Species

The National Forest Management Act (NFMA) of 1976, and its implementing regulations require the Forest Service to ensure a diversity of animal and plant communities and maintain viable populations of existing native species as part of their multiple use mandate. The Forest Service sensitive species program is a proactive approach to conserving species to ensure the continued existence of viable, well-distributed populations, and to maintain biodiversity of National Forest Service lands (Forest Service 2004). In addition, the Secretary of Agriculture's policy on fish and wildlife (Department Regulation 9500-4) directs the USFS to avoid actions "which may cause a species to become threatened or endangered."

The Forest Service defines sensitive species as those animal and plant species identified by a regional forester for which population viability is a concern. This may be a result of significant current or predicted downward trends in habitat that would reduce a species' existing distribution or significant current or predicted downward trends in density or population numbers (CNDDB 2005, Special Animals List).

The Forest Service, Pacific Southwest Region, maintains a Regional Forester's Sensitive Species List. This list was last updated in 2006 and consists of rare plants and animals which are given special management consideration to ensure their continued viability on the national forests. Species on the sensitive species list are considered sensitive for every forest where they occur in the region (U.S. Forest Service 2006).

(b) Inyo National Forest Land and Resource Management Plan

The Inyo National Forest Land and Resource Management Plan establishes the management, direction, and long-range goals for the Inyo National Forest (U.S. Forest Service 1988). Management goals for the Inyo National Forest include (but are not limited to) the following:

- Protect and improve riparian area-dependent resources while allowing for management of other compatible uses.

- Protect or improve the habitats of threatened or endangered species in cooperation with State and other Federal agencies.

- Protect sensitive plants to ensure they will not become threatened or endangered.

- Manage wildlife habitat to provide species diversity, ensure that viable populations of existing native wildlife are maintained, and that the habitats of management emphasis species are maintained or improved.

- Manage timber resources to provide a sustained yield of commercial sawtimber, public fuelwood, and wood products while maintaining other resource values.

Forest-wide standards and guidelines provide specific guidelines for the management of each resource to ensure its enhancement and protection. These include (but are not limited to) the following:

Riparian Areas

- Protect streams, streambanks, lakes, wetlands, and shorelines, and the plants and wildlife dependent on these areas.

- Prevent adverse riparian area changes in water temperature, sedimentation, chemistry, and water flow.

- Rehabilitate and/or fence riparian areas that consistently show resource damage.

- Allow new developments and surface disturbance in riparian areas only after on-site evaluations have determined that resources are not adversely affected, or mitigation of any adverse impacts is identified and incorporated into the project design.

Sensitive Plants

- Allow no new disturbance of identified sensitive plant habitat without direction from Interim Management Guidelines, Species Management Guides, or an environmental analysis.

- Complete inventories of project sites and areas of disturbance if there is potential habitat or known population locations identified.

Additional standards required by the Sierra Nevada Forest Plan Amendment (SNFPA) include: (1) conducting field surveys for threatened, endangered, proposed and sensitive (TEPS) plant species early enough in project planning process that the project can be designed to

conserve or enhance TEPS plants and their habitat; and (2) conducting surveys according to procedures outlined in the Forest Service Handbook (FSH 2609.25.11). If additional field surveys are to be conducted as part of project implementation, survey results must be documented in the project file.

Wildlife – Threatened, Endangered, and Sensitive Wildlife Species

- Cooperate with the USFWS and the CDFG in the management of threatened and endangered species.

- Submit proposals for actions that might affect the continued existence of a threatened or endangered species to the USFWS for formal consultation.

Wildlife – Management Indicator Species

- Carnivores (Sierra Nevada red fox, pine marten, fisher, and wolverine): Maintain the integrity of habitats required by these species. Inventory project areas where development could alter habitats required by these species.

- Mule Deer: Maintain or enhance the integrity of key winter ranges, holding areas, migration routes, and fawning areas. The goal is to maintain deer habitat to support deer populations consistent with herd management area objectives. Coordinate with the CDFG in implementing existing deer herd plans. Goals of the CDFG herd management plans for the Buttermilk and Sherwin Grade Herds (which now comprise the Round Valley Herd) include maintaining the population of the Buttermilk Herd near current levels (3,000 deer) and maintaining the Sherwin Grade Herd at the current population (2,300 to 2,400 deer).

- Bald Eagle: Maintain the integrity of existing wintering areas. Maintain and enhance prey-base populations within winter foraging areas. Implement the Pacific States Bald Eagle Recovery Plan, and prepare a local winter bald eagle management plan.

- Golden Eagle and Prairie Falcon: Maintain and enhance the integrity of nesting habitats.

- Tule Elk: Follow the guidelines of the Tule Elk Management Plan for the Owens Valley.

- Peregrine Falcon: Establish two nesting pairs of peregrine falcons and implement the Pacific Coast American Peregrine Falcon Recovery Plan prepared by the USFWS.

- Goshawk: Maintain a density of at least one goshawk territory per eighteen square miles within goshawk habitat range. Maintain at least one hundred acres of mature timber per territory. Exclude timber activities within occupied nest stands during the nesting period.

- Blue Grouse: Maintain or enhance blue grouse habitat by protecting vegetative diversity, riparian habitat, and down logs.

- Sage Grouse: Allow no vegetative treatment in sage grouse habitats that would have a significant negative impact on the species. Recognize the sensitivity of sage grouse leks during March 1 through April 30.

- Spotted Owl and Great Gray Owl: Conduct periodic inventories. If owls are located, maintain foraging and nesting habitat.

- Sierra Nevada Mountain Sheep and Nelson Mountain Sheep: Maintain existing sheep habitat, and maintain the health of established mountain sheep populations.

- Riparian Area-Dependant Species: Maintain the viability of the yellow warbler by implementing management direction for riparian habitats.

- Snag-Dependant Species: Maintain the habitat of the hairy woodpecker and Williamson sapsucker by implementing management direction for snags, down logs, and habitat diversity.

(c) Sierra Nevada Forest Plan Amendment

On January 21, 2004, a new Record of Decision (ROD) for the SNFPA was signed. The final Supplemental Environmental Impact Statement (SEIS) and ROD amended the existing Sierra Nevada Forest Plan to improve the protection of wildlife habitats, watersheds, old forests, and communities in the Sierra Nevada Mountains and Modoc Plateau. The SEIS evaluates new information available since the adoption of the SNFPA ROD and proposes to make changes in specific standards and guidelines. The SEIS, therefore, focuses on those management indicator species (MIS) that may be affected by changes in levels of activity or habitat as a result of the proposed alternatives.

MIS are identified in the Land and Resources Plans of each national forest. MIS are designated as such because they are sensitive to National Forest System management activities and/or they represent habitat types that occur within the national forest boundary. Federally listed threatened, endangered, or proposed species and Forest Service sensitive species were excluded from further evaluation in the SEIS because effects to those species are considered in more detail in the FEIS, SEIS, and other environmental documentation. The remaining MIS were

assigned to one or more primary habitat associations because lists of MIS for individual forest plans vary in terms of habitat representation or sensitivity to management activity.

Habitat classifications that correspond with each MIS include the following: Snag and Down Log; Meadow, Riparian (Wetlands); Aquatic (Lakes/Streams); Chaparral; Cliff, Caves, Talus, and Rock Outcrops; Hardwoods (Oaks, Aspen); Openings and Early Seral Stages; Pinyon Juniper; Eastside Pine; Ponderosa Pine; Grasslands and Shrub-Steppe; Mature Conifer; Multi-Habitat; and Mixed Conifer.

b. State Level

(1) California Endangered Species Act

The California Endangered Species Act (CESA) and the California Native Plant Protection Act of 1977 provide the framework for protection of California-listed rare and endangered plant species. The CDFG implements CESA and maintains the CNNDB, a computerized inventory of information on the general location and status of California's rare species and natural biological communities.

The Federal and State Endangered Species Acts operate in conjunction with NEPA to help protect the ecosystems upon which endangered and threatened species depend.

(2) State of California Fish and Game Code, Section 1602

Section 1602 of the California Fish and Game Code requires any entity (e.g., person, State or local government agency, or public utility) who proposes a project that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, to notify CDFG of the proposed project. In the course of this notification process, the CDFG will review the proposed project as it affects streambed habitats within the project site. The CDFG may then place conditions on the Section 1602 clearance to avoid, minimize, and mitigate the potentially significant adverse impacts within CDFG jurisdictional limits.

(3) California Native Plant Society - Native Plant Species List

The California Native Plant Society (CNPS) is a professional society that maintains a list of plant species native to California with indications of low numbers, limited distribution, or is otherwise threatened with extinction. The CNPS list does not afford legal status or protection for

the species; however, the Forest Service uses the CNPS lists in developing recommendations for species to include on the Regional Forester's sensitive species list.

(4) Timber Harvest

The removal of trees for commercial purposes is subject to regulations enforced by the CDFG and Fire Protection.

c. Local Level

As previously described in Section 1.0, Introduction/Purpose and Need, of this Final EA, the Town of Mammoth Lakes (Town) and the Mammoth Mountain Ski Area have a close relationship due to their physical land connection and economic dependency. As such, despite the fact that the Proposed Action does not require approval by the Town, it is necessary to ensure that the Proposed Action is consistent with the relevant Town's plans and policies.

(1) Town of Mammoth Lakes 2007 General Plan Update

The Habitat Resources policies of the *Town of Mammoth Lakes 2007 General Plan Update (General Plan Update)* include the following:

- **Policy R.1.A.** Be stewards of important wildlife and biological habitats within the Town's municipal boundary.
    - **R.1.A.1.** Action: Prepare species, habitat and natural community preservation and conservation strategies.
    - **R.1.A.1.** Action: Maintain an inventory of all Special Status Wildlife Species and Special Status Plants and Plant Communities within the Planning Area.
- **Policy R.1.B.** Development shall be stewards of Special Status plant and animal species and natural communities and habitats.
    - **Policy R.1.B.1.** Action: Plan development to minimize removal of native vegetation and trees and destruction of wildlife habitat.
    - **Policy R.1.B.2.** Action: Reflect the high value the community places on existing mature trees by updating the formula to calculate value in the tree replacement ordinance.

- **Policy R.1.C.** Prior to development, projects shall identify and mitigate potential impacts to site-specific sensitive habitats, including special status plant, animal species and mature trees.

- **Policy R.1.D.** Be stewards of primary wildlife habitats through public and/or private management programs. For example, construction of active and passive recreation and development areas away from the habitat.

3.6.2 AFFECTED ENVIRONMENT

a. Biological Survey Methods

The assessment of biological resources contained in this section is based on information compiled through previous documentation and appropriate reference materials. The study began with a review of relevant literature on the biological resources of the project site and the surrounding vicinity. Initially, the CNDDB, a CDFG sensitive resources account database, was reviewed for all pertinent information regarding the locations of known observations of sensitive species and habitats in the vicinity of the study area. Federal register listings, protocols, and species data provided by the USFWS and CDFG were reviewed in conjunction with anticipated federally and State listed species potentially occurring within the vicinity. Information pertaining to sensitive species provided by the Inyo National Forest was also reviewed. In addition, previous documentation relevant to the study area was reviewed to include the following:

- Northern Goshawk Survey Report, Ski Back Trail, prepared by Joel Ellis, 2005.

- Meso-Carnivore Survey Report, prepared by the USFS, dated spring 2005.

- Botanical Field Reconnaissance Report for the Ski Back Trail, prepared by Kathleen Nelson, dated 2004.

- Summary of California Spotted Owl Survey Results, Ski Back Tail, prepared by the USFS, 1999.

- Botanical Field Reconnaissance Report for the Mammoth Mountain Ski Area – Bicycle Trail, prepared by Sue Weis, dated 1998.

- Botanical Field Reconnaissance Report for the Mammoth Mountain Ski Area – Uptown Bike Trail, prepared by K. Nelson, dated 1996.

Plant community descriptions were based on the findings presented in the above documentation and descriptions contained in Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986). Scientific names are employed upon initial mention of each species; common names are employed thereafter. Appendix D, Floral and Faunal Compendium includes those plant species reported within the study area from Botanical Field Reconnaissance Reports prepared by the Forest Service (Nelson 2004, Weis 1998, and Nelson 1996).

Expected use of the study area by wildlife was derived from the analysis of habitats within the study area combined with known habitat preferences of regionally-occurring wildlife species. Wildlife taxonomy follows Stebbins (2003) for amphibians and reptiles, the American Ornithologists' Union (1998) for birds, and Jameson and Peeters (1988) for mammals. Scientific names are used during the first mention of a species; common names only are used in the remainder of the text. A list of those wildlife species detected within the study area from a northern goshawk survey, meso-carnivore surveys, and California spotted owl surveys conducted by the Forest Service (Ellis 2005, U.S. Department of Agriculture, Forest Service, 2005 and 1999) are included in Appendix D, Floral and Faunal Compendium. Wildlife species expected to occur within the study area based on habitat known to be present are also included in Appendix D.

b. Plant Communities

The study area supports red fir forest which is characteristically a dense forest with the narrow tree crowns often overlapping. The understory of this plant community typically lacks shrubs or herbs and contains needle litter and downed branches. The growing season is midsummer. This community occurs typically on north-facing slopes on coarse, well-drained, moist soils.

Within the study area, red fir (*Abies magnifica*) is the dominant species. Additional tree species reported as occurring within the study area include lodgepole pine (*Pinus contorta* ssp. *murrayana*), and mountain hemlock (*Tsuga mertensiana*). Much of the study area contains a sparse understory with openings supporting montane chaparral species and perennial forbs. Additional shrub and herb species reported as occurring within the study area include, but are not limited to, greenleaf manzanita (*Arctostaphylos patula*), chinquapin (*Chrysolepis sempervirens*), mountain pennyroyal (*Monardella odoratissima*), Douglas' chaenactis (*Chaenactis douglasii*), and bristly-leaved rockcress (*Arabis holboellii* var. *retrofracta*).

c. Existing Jurisdictional Waters

PCR did not conduct a jurisdictional delineation for the study area; however, based on information contained in the Botanical Field Reconnaissance Reports prepared by the Forest

Service (Nelson 2004, Weis 1998, and Nelson 1996), it does not appear that U.S. Army Corps of Engineers (ACOE) jurisdictional "waters of the U.S.," ACOE jurisdictional wetlands, or areas that would fall under the jurisdiction of the CDFG and RWQCB occur within the study area.

d. Wildlife Species

The plant community discussed above provides wildlife habitat; however, due to the fact that the Ski Back Trail area is adjacent to a well-traveled road and the eastern end of the trail is almost completely surrounded by development, wildlife diversity within the area is expected to be low. Following are discussions of wildlife populations within the Ski Back Trail area, segregated by taxonomic group. Representative examples of each taxonomic group expected within the study area are provided. Wildlife species observed during surveys conducted by the USFS (Ellis 2005, Forest Service, 2005 and 1999), as well as those expected to occur within the study area are listed in Appendix D, Floral and Faunal Compendium.

(1) Invertebrates

Focused surveys for common invertebrate species were not conducted; however, the Ski Back Trail area would not be expected to support populations of a diverse assortment of invertebrates due to fact that the study area supports only one plant community.

(2) Amphibians

Terrestrial amphibian species may or may not require standing water for reproduction. Terrestrial species avoid desiccation by burrowing underground; within crevices in trees, rocks, and logs; and under stones and surface litter during the day and dry seasons. Due to their secretive nature, terrestrial amphibians are rarely observed, but may be quite abundant if conditions are favorable. Aquatic amphibians are dependent on standing or flowing water for reproduction. Such habitats include fresh water marshes and open water (reservoirs, permanent and temporary pools and ponds, and perennial streams). Many aquatic amphibians will utilize vernal pools as breeding sites. These pools are temporary in duration and form following winter and spring rains. Due to the lack of aquatic habitat within the study area, no amphibian species are expected to occur.

(3) Reptiles

Reptiles, as a group, occupy a much broader spectrum of habitats than amphibians. Reptilian diversity and abundance typically varies with habitat type and character. Some species prefer only one or two natural communities; however, most will forage in a variety of communities. A number of reptile species prefer open habitats that allow free movement and

high visibility. Most species occurring in open habitats rely on the presence of small mammal burrows for cover and escape from predators and extreme weather.

Several species have the potential to occur on-site. These include rubber boa (*Charina bottae*), mountain garter snake (*Thamnophis elegans*), Sierra alligator lizard (*Elgaria coerulea palmeri*), and Sierra fence lizard (*Sceloperus occidentalis*). The rubber boa is a MIS associated with meadow, riparian (wetlands), mature conifer, and multi-habitat community types in the SEIS of the SNFPA. The mountain garter snake is a subspecies of the western terrestrial garter snake (*Thamnophis elegans*), which is a MIS associated with meadow and riparian (wetlands) habitat types. All reptile species expected to occur within the study area are included in Appendix D, Floral and Faunal Compendium. Sensitive reptile species are discussed further in Section 3.6.2(g), Sensitive Biological Resources, below.

(4) Birds

The habitat within the Ski Back Trail area provides foraging and cover habitat for year-round and seasonal residents; however, due to the Ski Back Trail area's small size and proximity to development and human disturbance, bird diversity is expected to be low. A common raven (*Corvus corax*) was detected within the study area during meso-carnivore surveys conducted by the Forest Service in spring 2005 (Forest Service, 2005). Bird species with the potential to occur on-site include, but are not limited to, the European starling (*Sturnus vulgaris*), Stellar's jay (*Cyanocitta stelleri*), Brewer's blackbird (*Euphagus cyanocephalus*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), northern flicker (*Colaptes auratus*), Clark's nutcracker (*Nucifraga columbiana*), mountain chickadee (*Poecila gambeli*), house wren (*Troglodytes aedon*), spotted towhee (*Pipilo erythrophthalmus*), white-crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), and lesser goldfinch (*Carduelis psaltria*).

A red-tailed hawk (*Buteo jamaicensis*) was detected within the study area during a northern goshawk survey conducted by the Forest Service in 2005 (Ellis 2005). Raptor species with the potential to occur on-site include the turkey vulture (*Cathartes aura*) and American kestrel (*Falco sparverius*). As noted previously, northern flicker, song sparrow, and white-crowned sparrow have the potential to occur on-site. Northern flicker is a MIS associated with snag and down log (cavity-nesters) and mixed conifer habitat types in the SEIS of the SNFPA. The song sparrow and white-crowned sparrow are MIS associated with meadow and riparian (wetlands) habitat types. All bird species observed or expected to occur within the study area are included in Appendix D, Floral and Faunal Compendium. Sensitive bird species are discussed further in Section 3.6.2(g), Sensitive Biological Resources, below.

(5) Mammals

Due to the Ski Back Trail area's small size and proximity to development and human disturbance, mammal diversity is expected to be low, especially for large mammal species. Most mammals are either nocturnal, reclusive, or both, and are more often detected by their sign, denning sites, etc., or through live-trapping (rodents).

One American marten (*Martes americana*) and a northern flying squirrel (*Glaucomys sabrinus*) were detected within the study area during surveys conducted by the Forest Service in spring 2005 (U.S. Department of Agriculture, Forest Service 2005). The American marten is a Forest Service, Inyo National Forest, sensitive species. The Northern flying squirrel is not a Forest Service designated sensitive species. Mammal species expected to occur on-site primarily include those species that may be more tolerant of living in close proximity to urban environments including the California ground squirrel (*Spermophilus beecheyi*), lodgepole chipmunk (*Tamias speciosus*), mountain pocket gopher (*Thomomys monticola*), deer mouse (*Peromyscus maniculatus*), long-tailed weasel (*Mustela frenata*), Belding ground squirrel (*Spermophilus beldingi*), Sierra Nevada golden-mantled ground squirrel (*Spermophilus lateralis*), raccoon (*Procyon lotor*), coyote (*Canus latrans*), and black bear (*Ursus americanus*). Northern flying squirrel is a MIS associate with snag and down log (cavity nesters) and mature conifer habitat types. Black bear is a MIS associated with meadow, hardwoods, mature conifer, multi-habitat, and mixed conifer habitat types. Mule deer (*Odocoileus hemionus*) has a low potential to occur on-site and this is a MIS associated with multi-habitat and opening and early seral stages typed habitats. All mammal species observed or expected to occur within the study area are included in Appendix D, Floral and Faunal Compendium. Sensitive mammal species are discussed further in Section 3.6.2(g), Sensitive Biological Resources, below.

Although not considered a sensitive wildlife species, mule deer are considered an important harvest species by the CDFG. The study area is located within the Eastern Sierra Nevada Deer Assessment Unit. Two mule deer herds make use of locations within the vicinity of the study area during their annual migrations including the Round Valley Herd and the Casa Diablo Herd. These herds are migratory. Deer herd management plans were prepared by the CDFG in the mid 1980's for both herds. Management objectives include enhancing important winter, holding, migratory, and fawning habitats. Migratory movements occur over a six to ten week period. Deer begin their spring migration in April or May after occupying holding areas to feed and regain strength lost over the winter. When the snow recedes and forage is available at their higher elevation summer ranges (usually mid-June), they migrate to these areas. Additional details regarding mule deer migration in the vicinity of the study area is provided in the following Section 3.6.2(e), Wildlife Movement.

e. Wildlife Movement

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). Each type of movement has the possibility of occurring at varying spatial scales. These scales range from non-migratory, daily, local movements to seasonal migrations and dispersal events at the regional and landscape scale.

A number of terms have been used in various wildlife movement studies, such as "travel route," "wildlife corridor," and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this section, these terms are defined as follows:

Travel route: A landscape feature (such as a ridge line, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relative direct link between target habitat areas.

Wildlife corridor: A piece of habitat that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-scale corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.

Wildlife crossing: A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are man-made and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor (Noss 1983, Fahrig and Merriam 1985, Simberloff and Cox 1987, Harris and Gallagher 1989).

The Town, which occurs to the east of the study area, represents the most densely developed area within the vicinity of the study area. Numerous structures associated with the ski area also occur throughout the study area. In addition, the study area is heavily utilized for

recreational purposes throughout the year. Open space, owned by the U.S. Forest Service, occurs to the north, south, and west of the study area.

Local scale wildlife movement likely occurs within the study area as well as its surrounding vicinity. The study area contains habitat that supports a variety of common species of invertebrates, amphibians, reptiles, birds, and mammals. The home range and average dispersal distance of many of these species may be entirely contained within the study area and immediate vicinity. Numerous populations of insects, amphibians, reptiles, small mammals, and a few bird species may find all of their resource requirements within the study area and its immediate vicinity. Riparian areas and other natural landscape features located in and around the study area can serve as natural guides for wildlife along travel routes. Local movement by small and medium-sized mammals such as California ground squirrel (*Spermophilus beecheyi*), mountain pocket gopher, deer mouse, long-tailed weasel (*Mustela frenata*), American marten, and gray fox (*Urocyon cinereoargenteus*) may occur within the study area; the American marten was detected within the study area in 2005 (U.S. Department of Agriculture, Forest Service, 2005). Occasionally, individuals expanding their home range or dispersing from their natal range will attempt to disperse from the study area.

While it is unlikely the study area serves as a major component of a landscape scale linkage, it is possible for wayward, migratory individuals to utilize the study area. The Round Valley and Casa Diablo Mule Deer Herds are known to use areas north and south of the study area for portions of their migrations from winter ranges in the lowlands to summer ranges within the higher elevations of the Sierra Nevada. Predators, such as the mountain lion (*Puma concolor*), have also been known to make migrations that directly correlate temporally and spatially with those of mule deer in the region. Additional predatory and scavenger species, such as the black bear, wolverine (*Gulo gulo*), coyote (*Canis latrans*), and countless additional species likely benefit from mule deer migrations, as well. In Canada, wolverines have been known to trail herds of large ungulates in order to scavenge scraps of their carcasses that were taken by other predators.

Mule deer (Odocoileus hemionus)

Deer have been able to adapt to a wide range of habitats throughout North America. Mule deer are browsers, thus a majority of their diet is composed of leaves and twigs of woody shrubs. Since shrubs mostly occur in early succession habitats, disturbance is a key component to maintaining high quality deer habitat. In addition to browse, mule deer supplement their diet with forbs such as poppies (*Eschscholzia* spp.) and lupines (*Lupinus* spp.), which supply concentrations of valuable nutrients that are lacking from their normal browse.

Two deer herds make use of locations within the vicinity of the study area during their annual migrations. The Mammoth Lakes Basin, which is located south-southeast of the study

area, is utilized as a migratory corridor and holding area by the Round Valley Herd. The Casa Diablo Herd utilizes an area approximately eight to nine miles to the northwest of the study area and six to seven miles north of the Town.

Approximately 75 percent of the Round Valley Herd leaves their wintering grounds in the Round Valley, which is located approximately 20 miles southeast of the study area, to migrate in a northerly direction along the toe of the Eastern Sierra to the Mammoth Lakes Basin. The herd utilizes the Mammoth Lakes Basin as a holding area for approximately eight weeks while they forage and wait for winter snows to recede from the mountain passes. Following the snowmelt, some deer leave the approximately 11,300-acre holding area to traverse over the Mammoth Crest via McGee, Hopkins, Solitude, Mammoth, and San Joaquin passes to their preferred summering grounds in the Sierra Nevada between the Sierra Nevada's western slope and the San Joaquin Ridge. Those deer that do not continue their migration beyond the Mammoth Lakes Basin remain there until the herd makes its way back to the Round Valley in the fall months.

The *General Plan Update* identifies three distinct migration corridors for the Round Valley Herd, which occur within the vicinity of the study area:

1. The Solitude Pass/Duck Pond herd segment leaves the holding area and migrates to summer ranges through the Solitude Pass located in the Sherwin Range, and Duck Pass located approximately three miles south of the holding area.

2. The Mammoth Pass herd segment of the Round Valley Herd migrates along a route that heads westerly below Mammoth Rock, passes through the Mammoth Lakes Basin, and then crosses over Mammoth Pass into the Middle Fork of the San Joaquin River Drainage.

3. The San Joaquin herd segment migrates across the Sierra crest over San Joaquin Ridge between Minaret Summit and Deadman Pass from the western portion of the holding area.

A fairly consistent timeline of movement is generally observed for the Round Valley Herd's annual migration. Interannual temporal variability does occur, however, with respect to migrations. Variability in migration timing is generally dependent on environmental factors that affect food and habitat requirements. The Round Valley Herd begins to appear in the Mammoth Lakes Basin during the spring. Migrants typically occupy the basin from April through June. Around mid-June most deer that are going to continue their journey to summering grounds in the higher elevations of the Sierra have left the Mammoth Lakes Basin. Not all deer continue on to the higher elevations. Some choose to spend their summers in and around the holding area. The Round Valley Herd will begin to return to its wintering grounds in the fall months as temperatures drop and snow begins to accumulate.

The Mammoth Lakes Basin holding area represents the point where migration associated areas are most closely located to the study area. Deer from the Round Valley Herd generally occupy an area south of Interstate 395 and between Tobacco Flats to the east and Mammoth and Sherwin Creeks to the west. This area is known as the Sherwin Holding Area. The westernmost portion of the Sherwin holding area nearly abuts the study area in the Twin Lakes region, which is located near the study area's southeast corner.

Although the study area is located adjacent to a well-traveled road (Minaret Road) and the eastern portion of the study area is surrounded by development within the Town, the close proximity of these two areas presents a low potential for members of the Round Valley Herd to occur within the study area during the spring through fall months. Within the vicinity of the Town, mule deer are more likely to be found near the southeast corner around the Mammoth Creek/Twin Lakes region; however, it is possible that they do occur within the study area as well.

Mountain lion (*Puma concolor*)

Mountain lions were once the broadest ranging terrestrial mammals in the western hemisphere ranging from British Columbia to southern Chile and Argentina, and from coast to coast in North America. As time has passed, land use changes, extermination campaigns, and hunting pressure have diminished the geographic range of the mountain lion to rocky, mountainous, and relatively unpopulated areas.

A wide range of habitats, including swamps, riparian woodlands, and open space with ample brush and/or woodland cover, are utilized by mountain lions throughout their range. This highly adaptable species is found in North America between sea level and approximately 11,500 feet above MSL.

Mule deer make up the bulk of the mountain lion's diet throughout North America. Some experts have observed mule deer constituting over 90 percent of a mountain lion's diet. This rate has been known to vary between seasons. Small to medium sized mammals, birds, and reptiles are also opportunistically consumed by mountain lions.

Home range figures are highly variable throughout the mountain lion's range with males typically utilizing larger home ranges than females. Home ranges between 164 square miles and 315 square miles have been documented for mountain lions in the Round Valley area of California. Mountain lions are generally solitary in nature, but home ranges have been known to overlap.

An interesting connection between mountain lion home range size and behavior of their prey has been observed. Mountain lions from the Round Valley Herd that primarily preyed on migratory mule deer had home ranges that rarely changed over time. Contrastingly, mountain lions that primarily preyed on non-migratory mule deer tended to make seasonal migrations that corresponded to mule deer movements, both spatially and temporally. Home ranges for mountain lions that were contiguous throughout the year were larger than those with distinct summer and winter ranges.

The Round Valley mountain lion population exhibited two different modes of migration. Some lions tended to move rather slowly along the deer herd's migratory route, but did not show signs of having a discontinuous home range. Other lions moved more rapidly and had distinct summer and winter ranges that mirrored those of the Round Valley Herd.

Mountain lions that followed the migration of the Round Valley Herd to the Sherwin Holding Area have a potential to occur within the study area. Documented transient behavior in numerous mountain lion populations describe the possibility of mountain lions making the change from transient behavior to territorial multiple times throughout its life. Transient behavior usually occurs because of one or a combination of four potential conditions: (1) population isolation; (2) an extremely low, patchy, or migratory food base; (3) an extremely diffuse mountain lion population; and (4) inability to compete. If transient lions make their way into the Sherwin Holding Area it is possible that they could wander into the study area in search of food, mates, or establishment of a new home range.

f. Critical Habitat

The study area does not fall within the Critical Habitat boundaries as designated by the USFWS for any threatened or endangered plant or wildlife species.

g. Sensitive Biological Resources

Special status or sensitive biological resources include declining habitats as well as species that have been afforded special recognition by Federal, State, or local conservation agencies and organizations as endangered, threatened, rare, or otherwise sensitive, principally due to the species' declining or limited range, usually resulting from habitat loss. Watch lists of such resources are maintained by the CDFG, the USFWS, and groups such as the CNPS.

(1) Sensitive Resource Classification

(a) Federal Protection and Classifications

A Federally endangered species is a species of invertebrate, plant, or wildlife formally listed by the USFWS under the ESA as facing extinction throughout all or a significant portion of its geographic range. A Federally threatened species is one formally listed by the USFWS as likely to become endangered within the foreseeable future throughout all or a significant portion of its range. "Take" of a federally endangered or threatened species or, in some cases, its habitat is prohibited by Federal law without a special permit. The term "take," under the ESA, means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Harm is defined by the USFWS to encompass "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."

A Federal species of concern is an informal term that refers to a species that the USFWS believes might be declining and in need of concentrated conservation actions to prevent decline. These species receive no legal protection and the use of the term does not mean that they will eventually be proposed for listing. The Federal species of concern status has not been maintained on a Statewide basis, so this designation has been removed from CDFG's "Special Animals" list. Some USFWS field offices (e.g., Sacramento) continue to maintain lists of Federal species of concern.

The NFMA of 1976 and its implementing regulations require the Forest Service to ensure a diversity of animal and plant communities and maintain viable populations of existing native species as part of their multiple use mandate. The Forest Service sensitive species program is a proactive approach to conserving species, to ensure the continued existence of viable, well-distributed populations, and to maintain biodiversity of National Forest Service lands (Forest Service 2004).

The Forest Service defines sensitive species as those animal and plant species identified by a regional forester for which population viability is a concern. This may be a result of significant current or predicted downward trends in habitat that would reduce a species' existing distribution or significant current or predicted downward trends in density or population numbers (CNDDB 2007, Special Animals List). The Forest Service, Regional Forester's, Pacific Southwest Region, has published a list of sensitive animal and plant species that is organized according to the forest in which the species occurs.

(b) State of California Protection and Classifications

The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy; a threatened species is one present in such small numbers throughout its range that it is considered likely to become an endangered species in the near future in the absence of special protection or management; and a rare species is one present in such small numbers throughout its range that it may become endangered if its present environment worsens. The designation "rare species" applies only to California native plants. State threatened and endangered species include both plants and wildlife but do not include invertebrates and are legally protected against "take" as this term is defined in the California Endangered Species Act (California Fish and Game Code, Section 2050 et seq.).

Species of special concern is an informal designation used by the CDFG for some declining wildlife species that are not officially listed as endangered, threatened, or rare. This designation does not provide legal protection, but signifies that these species are recognized as vulnerable by CDFG.

Species that are California fully protected include those protected by special legislation for various reasons, such as the white-tailed kite (*Elanus leucurus*).

(c) California Native Plant Society

The CNPS is a statewide resource conservation organization that has developed an inventory of California's special status plant species (CNPS 2001). This inventory is a summary of information on the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory consists of four lists. CNPS List 1A plant species are presumed extinct in California because they have not been seen in the wild for many years. List 1B plants are considered as rare, threatened, or endangered throughout their range. List 2 plant species are considered rare, threatened, or endangered in California, but more common in other states. Plant species on Lists 1A, 1B, and 2 generally meet the CDFG criteria for endangered, threatened, or rare listing. Plant species for which CNPS requires additional information in order to properly evaluate their status are included on List 3. List 4 plant species are those of limited distribution in California whose susceptibility to threat is considered low at this time, or for which more survey data must be acquired within the State to adequately assess whether the species is rare in California.

The CNPS recently updated their Lists to include Threat Codes. These codes are shown as a decimal and number code after the List number.

1. Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat);

2. Fairly endangered in California (20 to 80 percent occurrences threatened); and

3. Not very endangered in California (less than 20 percent of occurrences threatened or no current threats known).

The following sections indicate the habitats, as well as plant and animal species, present or potentially present within the study area that have been afforded special recognition. Sources used to determine the potential occurrence of special status resources in the vicinity of the study area include the CDFG (CDFG 2007), CNPS (CNPS 2007 and 2001), and CNDDB (CNDDB 2007).

(2) Sensitive Plant Communities

The study area does not support any plant communities considered sensitive by the CDFG's CNDDB.

(3) Sensitive Plant Species

For the purposes of this discussion, sensitive plants include those plant species designated by the Regional Forester as such, and are included on the Regional Sensitive Plant List. The Regional Sensitive Plant List includes, but is not limited to, those species listed as rare, threatened, endangered, or proposed by the CDFG or USFWS (particularly Lists 1A, 1B, and 2).

Several species listed by the CNPS, including Forest Service Sensitive and Watch List species, were reported in the CNDDB from the broader general area, such as Inyo and Mono Counties, through not within the project area. Based on additional review of the literature, and based on habitat preferences, known ranges, and the available habitat within the project area, only one of these species was determined to be potentially present in the project area. The Sensitive Plant Species Table in Appendix D presents those species reported in the CNDDB from the broader area.

No plant species listed as sensitive by the Forest Service, nor species listed as threatened, endangered, or proposed by the USFWS, are known to occur within the project area, nor is there potential habitat for any sensitive or federally listed species within the project area.

The Pine City sedum *(Sedum pinetorum)*, a Forest Service Watch List species, could potentially occur within the project area, based on the known range, though the habitat is only marginally suitable. This species' habitat is expected more on rocky ledges and cliffs, which are habitats not present in the project area. No *Sedum pinetorum* species were observed during project surveys.

(4) Sensitive Wildlife Species

Sensitive wildlife species include those species listed as endangered or threatened under FESA or CESA, candidates for listing by USFWS or CDFG, and species of special concern to CDFG. In addition, species considered sensitive by the Forest Service (Inyo National Forest) have also been included and analyzed in this document to provide a comprehensive list of species.

A number of sensitive wildlife species were reported in the CNDDB as occurring in the vicinity of the study area. These species are included in Appendix D, which provides a summary of the sensitive wildlife species potentially occurring within the study area based upon their known geographic ranges, distributions, and preferred habitats.

In addition, several wildlife species are listed as sensitive by the Forest Service (Inyo National Forest). Several of these species may occur within the general bioregional location of the study area and presence of suitable habitat. Some species are not expected to occur within the study area due to limited distributional range and/or lack of suitable habitat. These species are included in Table 29 on page 158.

One American marten was detected within the study area during surveys conducted by the Forest Service in spring 2005 (U.S. Department of Agriculture, Forest Service, 2005). Sensitive wildlife species with a potential to occur within the study area include northern goshawk (*Accipiter gentilis*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), great gray owl (*Strix nebulosa*), Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*), California wolverine (*Gulo gulo*), Pacific fisher (*Martes pennant pacifica*), and Sierra Nevada red fox (*Vulpes vulpes necator*).

3.6.3 ENVIRONMENTAL CONSEQUENCES

a. Methodology

The determination of impacts in this analysis is based on both the features of the Proposed Action and Alternatives and the biological values of the habitat and/or sensitivity of plant and wildlife species to be affected. Much of the information was supplied in digital format and impacts to biological resources were calculated using GIS technology in order to maximize the accuracy of the assessment.

Table 29

Sensitive Wildlife Species

VERTEBRATES							
Scientific Name	**Common Name**	**Federal**	**State**	**Other**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
BIRDS							
Accipitridae	**Hawks, Kites, Harriers, and Eagles**						
Accipiter gentilis	northern goshawk	NONE	CSC	FS: SENSITIVE	Nests within mature or old-growth coniferous forests. Usually nests on north slopes, near water. Typical nest trees include red fir, lodgepole pine, Jeffrey pine, and aspens.	Through U.S. and Canada.	P, F, B
Strigidae	**Owls**						
Strix nebulosa	great gray owl	NONE	SE	FS: SENSITIVE	Nests in mixed conifer or red fir forests in or on the edge of meadows; requires large diameter snags in a forest with high canopy closure which provides a cool sub-canopy microclimate.	Sierra Nevadas, CA; Alaska, Canada, and northern United States.	P, F
Comments: The CNDDB has a recorded occurrence of the great gray owl in 1975 in Valentine Camp which is approximately one mile south of the study area; one owl was observed, and records indicate this was most likely a breeding area.							
MAMMALS							
Corynorhinus (Plecotus) townsendii townsendii	Townsend's western big-eared bat	NONE	CSC	FS: SENSITIVE	Found in all but sub-alpine and alpine habitats. Commonly occurs in mesic habitats characterized by coniferous and deciduous forests, but occupies a broad range of habitats. Maternity and hibernation colonies typically are in caves and mine tunnels.	Throughout CA.	P

Table 29 (Continued)

Sensitive Wildlife Species

VERTEBRATES							
Scientific Name	**Common Name**	**Federal**	**State**	**Other**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Mustelidae	**Weasels, Martins, and Allies**						
Gulo gulo	California wolverine	NONE	ST	FS: SENSITIVE	Found mainly in subalpine forest and alpine fellfields within alpine meadows, lodgepole forests, and red fir forests. Dens in caves, rock crevices, under fallen trees or tree roots, and in thickets. Needs water source – can travel long distances.	Sierra Nevadas and northwestern California.	P
Martes americana	American marten	NONE	NONE	FS: SENSITIVE	Dense coniferous forest and lowland forest. May use rocky alpine areas. May occupy holes in dead or live trees or stumps, abandoned squirrel nests, rock piles, or burrows.	Sierra Nevadas, Klamath Ranges and north Coast Ranges.	OBS
Comments: The CNDDB has a recorded occurrence of the American marten in 2002 within the vicinity of the Mammoth Mountain Ski Area main lodge approximately two miles west of the study area. One American marten was detected within the study area during surveys conducted by the USFS in spring 2005 (U.S. Department of Agriculture, Forest Service, 2005).							
Martes pennanti pacifica	Pacific fisher	FC	CSC	FS: SENSITIVE	Intermediate to large-tree stages of coniferous forests and deciduous riparian areas with high percent canopy closure. Use cavities, snags, logs, and rocky areas for cover and dens sites; need large areas of mature, dense forest.	Sierra Nevadas, Klamath Ranges and north Coast Ranges	P
Comments: The CNDDB has a recorded occurrence of the Pacific fisher in the 1970s approximately 3.5 miles northwest of the Town of Mammoth Lakes in the vicinity of the Mammoth Lodge. The Mammoth Lodge is approximately two miles west of the study area.							

Table 29 (Continued)

Sensitive Wildlife Species

VERTEBRATES							
Scientific Name	**Common Name**	**Federal**	**State**	**Other**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Canidae	**Foxes, Wolves, & Coyotes**						
Vulpes vulpes necator	Sierra Nevada red fox	NONE	ST	FS: SENSITIVE	Found in a variety of habitats from wet meadows to forested areas; use dense vegetation and rocky areas for cover and den sites. Prefers forests interspersed with meadows or alpine fell-fields.	From Cascades to Sierra Nevada.	P

Key to Occurrence Codes

NE Not expected
P Potential
OBS Observed
F Foraging
B Breeding

Key to Species Listing status Codes

FE *Federally Listed as Endangered*
FT *Federally Listed as Threatened*
FPE *Federally Proposed as Endangered*
FPT *Federally Proposed as Threatened*
FPD *Federally Proposed for Delisting*
FC *Federal Candidate Species*
SE *State Listed as Endangered*
ST *State Listed as Threatened*
SCE *State Candidate for Endangered*
SCT *State Candidate for Threatened*
SFP *State Fully Protected*
CSC *California Special Concern Species*

Source: PCR Services Corporation, 2007.

The biological values of resources within, adjacent to, and outside the area to be affected by the Proposed Action and Alternatives were determined by consideration of several factors. These included the overall size of habitats to be affected, the current level of disturbance of the habitats on the site, the site's surrounding environment and regional context, the on-site biological diversity and abundance, the presence of sensitive and special-status plant and wildlife species, the site's importance to regional populations of these species, and the degree to which on-site habitats are limited or restricted in distribution on a regional basis and, therefore, are considered sensitive in themselves. Whereas this assessment is comprehensive, the focus is on sensitive plant communities/habitats, resources that play an important role in the regional biological systems, and special-status species.

b. Environmental Consequences of the Proposed Action

(1) Construction Impacts

(a) Sensitive Plant Species

Many of the sensitive plant species mentioned in Section 3.6.2(g)(3), Sensitive Plant Species, of this section may occur within the region but are not expected to occur within the study area due to the lack of suitable habitat or due to the fact that they were not observed during botanical surveys conducted by the Forest Service during their blooming period. Species not expected to occur within the study area include Bolander's brachia, Blandow's bog-moss, three-ranked hump-moss, broad-nerved hump-moss, hydrotheria lichen, upswept moonwort, scalloped moonwort, slender moonwort, common moonwort, mingan moonwort, Gilman's goldenbush, Hall's fleabane, Kern River daisy, lone fleabane, short-leaved hulsea, pygmy hulsea, Mono ragwort, Tulare cryptantha, bristlecone cryptantha, Bodie Hills rock cress, Pinzl's rock cress, Shockley's rock cress, Jaeger's caulostramina, Lake Tahoe draba, hoary draba, Sweetwater Mountains draba, spear-fruited draba, White Mountains draba, subalpine draba, Mt. Whitney draba, William's combleaf, alpine jewel-flower, Masonic Mountain jewelflower, Pine City sedum, inflated milk-vetch, Long Valley milk-vetch, Lemmon's milk-vetch, Kern milk-vetch, Mono milk-vetch, Raven's milk-vetch, woolly-leaved milk-vetch, Mono Lake lupine, slender lupine, Hockett Meadows lupine, Father Crowley's lupine, DeDecker's clover, Inyo phacelia, Mono County phacelia, Death Valley round-leaved phacelia, Nine-Mile Canyon phacelia, sweet-smelling monardella, Ramshaw Meadows abronia, Coville's dwarf abronia, subalpine fireweed, Mason's sky pilot, July gold, Olancha Peak buckwheat, White Mountains horkelia, marble rockmat, Morefield's cinquefoil, short-fruited willow, Siskiyou indian paintbrush, Kern's Plateau bird's-beak, grey-leaved violet, Tioga sedge, seep kobresia, Inyo County star-tulip, pine fritillary, Scribner's wheat grass, and Robbins' pondweed. As such, these species would not be adversely affected and is consistent with findings from the MIS and BE documents. Furthermore, a mitigation measure has been prescribed below to ensure that non-native, noxious weed plant species would be controlled and minimized during ground disturbing activities.

(b) Sensitive Wildlife Species

Several of the sensitive wildlife species mentioned in Section 3.6.2(g)(4), Sensitive Wildlife Species, of this section may occur within the region but are not expected to occur within the study area due to the lack of suitable habitat. Those species not expected to occur due to the lack of suitable habitat include Owens Valley springsnail, Wong's springsnail, Paiute cutthroat trout, Volcano Creek golden trout, Owens sucker, steelhead – Klamath Mountain Province ESU, Chinook salmon – spring run – Klamath-Trinity population, Chinook salmon – central valley fall/late fall run, Inyo Mountains salamander, Kern Plateau salamander, Yosemite toad, mountain yellow-legged frog, northern leopard frog, Panamint alligator lizard, golden eagle, Swainson's hawk, northern harrier, bald eagle, American peregrine falcon, prairie falcon, greater sage-grouse, western yellow-billed cuckoo, yellow warbler, California spotted owl, willow flycatcher, Mount Lyell shrew, pallid bat, western red bat, western white-tailed jackrabbit, Sierra Nevada mountain beaver, American badger, and Sierra bighorn sheep. As such, these species would not be adversely affected.

Several sensitive wildlife species (detailed by taxonomic group below) have a potential to occur within the study area, as previously mentioned in Section 3.6.2(g)(4), Sensitive Wildlife Species. Long- and short-term adverse effects may occur as a result of construction activities and conversion of the study area to a ski trail.

No sensitive fish, amphibian, or reptiles have a potential to occur within the study area.

Several sensitive bird species have a potential for occurrence within the study area including northern goshawk, sharp-shinned hawk, Cooper's hawk, and great gray owl. All of these species, with the exception of the great gray owl, are not protected by Federal or State listings as threatened or endangered. Project implementation would not threaten the regional populations; therefore, removal of their habitat is not expected to adversely affect regional populations of these species.

The great gray owl is a State-listed endangered species (and Forest Service, Inyo National Forest, sensitive species) that is protected during nesting activities. This species has the potential to forage within the study area; however, it is not expected to utilize the study area for nesting activities since they nest in coniferous forests near the edge of meadows (no meadows are present within the study area). Project implementation would not threaten the regional population; therefore, removal of its foraging habitat would not adversely affect regional populations of this species.

The American marten was detected within the study area during meso-carnivore surveys conducted by the Forest Service in spring 2005 (U.S. Department of Agriculture, Forest Service,

2005). Specifically, according to the 1996 Ecology of American Martens on the Inyo National Forest and the 2004 Ecology of American Martens on the Mammoth Mountain Ski Area, Inyo National Forest, California, the average range of the American Marten is approximately 1,962 and 400 acres, respectively, (Kucera 1996, Kucera 2004). Given the 6.16 acre total impacted area of the proposed Ski Back Trail, impact to the American Marten would be less than significant as approximately 0.3 to 1.5 percent of American Marten habitat would be impacted, respectively. Sensitive mammal species potentially occurring within the study area include Townsend's western big-eared bat, California wolverine, Pacific fisher, and Sierra Nevada red fox. American marten, Townsend's western big-eared bat, and Pacific fisher are not protected by Federal or State listings as threatened or endangered, and loss of individuals would not threaten the regional populations; therefore, removal of their habitat is not expected to adversely affect regional populations of these species.

The California wolverine and Sierra Nevada red fox are State-listed threatened species (and Forest Service, Inyo National Forest, sensitive species). The California wolverine is found mainly in subalpine forest and alpine fellfields within alpine meadows, lodgepole forests, and red fir forest. This species dens in caves, rock crevices, under fallen trees or tree roots, and in thickets. The Sierra Nevada red fox is found in a variety of habitats from wet meadows to forested areas, and it uses dense vegetation and rocky areas for cover and den sites. This species prefers forests interspersed with meadows or alpine fell-fields. Although these species have the potential to occur within the study area, that potential is low due to the proximity of development, the secretive nature of the species, and the fact that habitat within the study area is not considered its preferred habitat type. As such, the Proposed Action is not expected to adversely affect regional populations of this species.

(c) Wildlife Movement

The eastern portion of the Ski Back Trail area is surrounded by development and the western portion runs adjacent to Minaret Road; therefore, the study area does not provide an effective route for migratory species including the mule deer. As such, development of the Proposed Action would not have a significant adverse effect on any known or suspected wildlife movement corridors.

(d) Critical Habitat

As discussed above, the Ski Back Trail area does not fall within the Critical Habitat boundaries as designated by the USFWS for any threatened or endangered plant or wildlife species. Therefore, the Proposed Actions would not have a significant adverse effect to critical habitat during construction activities.

(e) Nesting Birds

The study area has the potential to support both raptor and songbird nests due to the presence of trees, shrubs, and ground cover. Nesting activity typically occurs from mid-February to mid-August. Disturbing or destroying active nests is a violation of the Migratory Bird Treaty Act. In addition, nests and eggs are protected under Fish and Game Code Section 3503. The removal of vegetation during the breeding season could result in an adverse effect as a result of Proposed Action. Mitigation Measure 3.6-1 is recommended in order to ensure there would be no adverse effect to nesting birds with implementation of the Proposed Action.

(f) Management Indicator Species

As described above, the majority of the Management Indicator Species are not anticipated to occur in the study are and therefore, there would be no adverse effect to these species; including the pine marten, fisher, bald eagle, golden eagle, prairie falcon, tule elk, peregrine falcon, blue grouse, sage grouse, spotted owl, riparian area-dependent species, and the snag-dependent species. In addition, while the northern goshawk, great gray owl, wolverine, and the Sierra Nevada red fox have a potential occurrence within the study area, implementation of the Proposed Action is not expected to adversely affect regional populations of these species.

(2) Operational Impacts

The study area is not expected to support any sensitive plant species, is not considered a wildlife movement corridor, and is not within critical habitat for any listed plant or wildlife species. The Proposed Action is not expected to have any adverse impacts to regional populations of sensitive wildlife species and findings are consistent with those presented in the MIS and BE documents. As such, no adverse effects to Management Indicator Species would occur. In addition, temporary and permanent erosion control would be installed including revegetation of the trail surface with native grasses and a mix of native shrubs and wildflowers in the disturbed areas. This will control the colonization of disturbed ground by non-native, weedy, plant species. As such, implementation of the Proposed Action would not result in operational impacts to these biological resources. Mitigation measures to reduce potential impacts to nesting birds and to ensure that non-native, noxious weed plant species would be controlled and minimized as a result of the Proposed Action are discussed as follows.

(3) Mitigation Measures

Mitigation Measure 3.6-1: The project applicant shall schedule construction, grading, and vegetation removal activities outside the nesting season (nesting season is typically February 15–August 31) to the extent feasible to avoid the taking of

migratory bird species. If initial vegetation removal occurs during the nesting season, all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist before commencement of vegetation clearing. If any active nests are detected, a buffer of at least 100 feet (300 feet for raptors) shall be delineated, flagged, and avoided until the nesting cycle is complete as determined by the biological monitor or until construction, grading, and vegetation removal activities are completed (whichever comes first). The results of the monitoring shall be provided in writing by the biological monitor to the CDFG subsequent to the monitoring activities.

Mitigation Measure 3.6-2: The project applicant shall implement the following measures during ground disturbing activities:

1. All equipment used in ground disturbing activities will be cleaned free of soil and plant parts prior to beginning work on the project to prevent introduction or translocation of weed species. Ensure equipment is free of mud and plant parts by completing a thorough visual inspection of tires, tracks, and underbody.
2. Minimize the amount of ground disturbance through careful equipment operation.
3. Monitor project area for new noxious weed species for up to three years following project implementation, and remove any newly established noxious weed populations. Consult with the Forest Service botany personnel as needed to identify weed species
4. Revegetate project area with native species. Consult with the Forest Service botany staff on appropriate species mix.

c. Environmental Consequences of Alternative 1 – Original Alignment Proposal

(1) Construction Impacts

(a) Plant Species

Development of Alternative 1 would require grading a total of approximately 8.3 acres of land and would require substantially more cut and fill along the proposed Ski Back Trail alignment, including the export of 23,000 cubic yards of cut and the import of 2,000 cubic yards of rock stack. Alternative 1 construction would also require the six retaining walls and four temporary access corridors and would result in grading and slope retention techniques. No sensitive plant species are expected to occur within the Original Proposed Alignment area due to a lack of suitable habitat or because they were not detected during botanical surveys conducted by the USFS during their blooming period. As such, implementation of Alternative 1 would

result in construction impacts that would not adversely affect regional populations of sensitive plant species.

(b) Sensitive Wildlife Species

As previously described, the American marten was observed within the Original Proposed Alignment area. In addition, the following sensitive wildlife species have the potential to occur within the Original Proposed Alignment area: northern goshawk, sharp-shinned hawk, Cooper's hawk, great gray owl, Townsend's western big-eared bat, California wolverine, Pacific fisher, and Sierra Nevada red fox. The northern goshawk, sharp-shinned hawk, Cooper's hawk, Townsend's western big-eared bat, American marten, and Pacific fisher are not listed as threatened or endangered; the great gray owl is protected during nesting (but not expected to nest within the study area); and the California wolverine and Sierra Nevada red fox have a very low potential to occur within the study area. As such, implementation of Alternative 1 would result in construction impacts that do not adversely affect regional populations of sensitive wildlife species.

(c) Wildlife Movement

Alternative 1's project boundaries are not within any known wildlife movement corridors. In addition, the eastern end of the project boundary is almost completely surrounded by development. As such, implementation of Alternative 1 would not have an adverse effect on any known or suspected wildlife movement corridors.

(d) Critical Habitat

As discussed above, Alternative 1's project boundaries do not fall within the Critical Habitat boundaries as designated by the USFWS for any threatened or endangered plant or wildlife species. Therefore, implementation of Alternative 1 would not result in any adverse impacts to critical habitat.

(e) Nesting Birds

The habitat within Alternative 1's project boundaries has the potential to support both raptor and songbird nests due to the presence of trees, shrubs, and ground cover. The removal of vegetation during the breeding season (mid-February to mid-August) is considered a potentially adverse impact of the Proposed Action. Mitigation Measure 3.6-1 is recommended in order to ensure there are no adverse effects to nesting birds with implementation of Alternative 1.

(f) Management Indicator Species

As described above, the majority of the Management Indicator Species are not anticipated to occur in the study area and therefore, anticipated to occur within the boundaries of Alternative 1. As such, there would be no adverse effect to these species including the pine marten, fisher, bald eagle, golden eagle, prairie falcon, tule elk, peregrine falcon, blue grouse, sage grouse, spotted owl, riparian area-dependent species, and the snag-dependent species. In addition, while the northern goshawk, great gray owl, wolverine, and the Sierra Nevada red fox have a potential for occurrence within the study area, implementation of Alternative 1 is not expected to adversely affect regional populations of these species.

(2) Operational Impacts

Indirect impacts are considered to be those that involve the effects of increases in ambient levels of sensory stimuli (e.g., noise, light), unnatural predators (e.g., domestic cats and other non-native animals), and competitors (e.g., exotic plants, non-native animals). Indirect impacts may be associated with the construction and/or eventual habitation/operation of a project; therefore, these impacts may be both short-term and long-term in their duration. As such, there would also not be any adverse effects to Management Indicator Species. These impacts are commonly referred to as "edge effects" and may result in changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to study area. In certain situations, indirect impacts may adversely affect sensitive wildlife species, wildlife movement, or nesting birds. Furthermore, native vegetation within the project area may also be indirectly and adversely impacted.

Because the study area is surrounded by development along its eastern end and located adjacent to Minaret Road throughout its entire length, indirect operational impacts are not expected to adversely impact sensitive wildlife species, wildlife movement, or nesting birds within the study area. In addition, temporary and permanent erosion control would be installed including revegetation of the trail surface with native grasses and a mix of native shrubs and wildflowers in the disturbed areas. This will control the colonization of disturbed ground by non-native, weedy, plant species. As such, implementation of Alternative 1 would not result in operational impacts to biological resources.

d. Environmental Consequences of Alternative 2 – Transit Emphasis Alternative

(1) Construction Impacts

Under Alternative 2, the Ski Back Trail area would not be constructed. No grading or excavation activities that would affect plant species, sensitive wildlife species, wildlife

movement, critical habitat, or Management Indicator Species, located in the Ski Back Trail area would be impacted. As such, implementation of Alternative 2 would not adversely affect biological resources in the area.

(2) Operational Impacts

Alternative 2 would have an emphasis on transit provisions and would provide four additional buses along existing roadways that have already been developed. Implementation of Alternative 2 would not adversely affect biological resources in the area.

e. Environmental Consequences of Alternative 3 – No Action Alternative

(1) Construction Impacts

Under Alternative 3, the Ski Back Trail would not be constructed, other improvements to the area would not be implemented, and all existing conditions would remain unchanged. As such, implementation of Alternative 3 would not adversely affect biological resources in the area.

(2) Operational Impacts

Alternative 3 would result in the continued operation of the existing public transit system, Village Gondola, parking facilities, and mountain operations. As such, implementation of Alternative 3 would not adversely affect biological resources in the area.

f. Conformity with Applicable Plans and Policies

While implementation of the Proposed Action and Alternative 1 would result in grading of approximately 6.16 or 8.3 acres of land, respectively, within the Forest Service area, implementation is not expected to have an adverse impact on any biological resources given the proposed mitigation measures. As such, the Proposed Action and Alternative 1 would be consistent with the Federal Endangered Species Act, Forest Service plans and policies, CESA, CDFG, CNPS, and the *General Plan Update*.

Alternative 2 and Alternative 3 would not result in any construction activities. In addition, Alternative 2 would add four additional buses to an already developed bus route and Alternative 3 would not result in any operational impacts to biological resources. Therefore, both Alternative 2 and Alternative 3 would also be consistent with the Federal Endangered Species Act, Forest Service plans and policies, CESA, CDFG, CNPS, and the *General Plan Update*.