

This section describes existing conditions, potential impacts, and mitigation measures for special-status wildlife and plant species, sensitive habitats, and stream environment zones (SEZs).

### 3.5.1 Environmental Setting

#### 3.5.1.1 *Special-Status Wildlife Species*

Sensitive wildlife species are known to occur or may occur in the vicinity of the proposed Program. At this time, the Program does not require FHWA or federal agency review; however, a USFWS list of federally designated endangered and threatened species was consulted to determine the potential presence of these species. This list was compiled for the 7.5-minute quarter quadrangles within and immediately adjacent to the study area (Markleeville, Carson Pass, Caples Lake, Tragedy Spring, Minden, South Lake Tahoe, Freel Peak, Woodfords, Emerald Bay, Rockbound Valley, Pyramid Peak, Echo Lake, Loon Lake, Kings Beach, Tahoe City, Homewood, Meeks Bay, Granite Chief, and Wentworth Springs).

A complete list of sensitive species was compiled using the following resources:

- Official USFWS Species List of Federal Endangered and Threatened Species that may be affected (December 20, 2005)
- TRPA Goals and Policies Special Interest Species
- California's Fully Protected Animals List
- California's Amphibians, Birds, Fish, Mammals, and Reptile Species of Special Concern
- State and Federally Listed Endangered and Threatened Animals of California
- California Natural Diversity Data Base (CNDDDB) (October 2005)
- Wildlife2000, Forest Service Lake Tahoe Basin Management Unit (LTBMU), 2003 and 2005.

Table 3.5-1 lists all sensitive wildlife species for which suitable habitat exists in the study area or that are known to occur in the study area. These include:

- Species for which potential suitable habitat is present and that may be expected to occur in the project area
- Species for which there are known occurrences from the CNDDDB or Wildlife2000 databases in the project vicinity
- Species that were observed during the wetland delineation fieldwork within the study area

Descriptions of the potential occurrence of species within the study area were compiled based on the information provided above and known occurrences provided in the form of GIS databases. The GIS database area is as follows:

- CNDDDB 2005, known occurrences within 16.1 km (10 miles) of the study area

**Table 3.5-1  
Special-Status Wildlife Species That Potentially Occur in the Study Area**

Scientific Name	Common Name	Status	Habitat	Presence/Absence of Habitat/Species in the Study Area
<b>Amphibians</b>				
<i>Hydromantes platycephalus</i>	Mount Lyell salamander	FSC, CSC	Inhabits high-elevation rock fields in mixed conifer, lodgepole pine, and sub-alpine areas, using rock fissures, seeps, shade, and low plants.	Present. Potential suitable habitat present in the study area. Known occurrence in the study area vicinity.
<i>Rana muscosa</i>	Mountain yellow-legged frog	FC, CSC, LTBMU	Inhabits ponds, tarns, lakes, and streams at moderate to high elevations.	Present. Potential suitable habitat present in the study area. Known occurrences present in the study area vicinity.
<b>Birds</b>				
<i>Accipiter gentilis</i>	Northern goshawk	FSC, CSC, LTBMU, MI, TRPA	Mature coniferous forests.	Known occurrence. Suitable habitat located within the study area. Known occurrences with associated buffers are located in the study area.
<i>Anas platyrhynchos</i>	Mallard	MI, TRPA	Shallow ponds, lakes, rivers, marshes and flooded fields. Nests in concealing vegetation.	Present. Potential suitable habitat is located within the study area.
<i>Aquila chrysaetos</i>	Golden eagle	CFP, CSC, TRPA	Nests on cliffs and in large trees in open areas. Hunts in rolling foothills, mountain areas, sage-juniper flats, and deserts.	Present. Potential suitable habitat located in the study area vicinity. Known occurrence in the study area vicinity.
<i>Baeolophus inornatus</i>	Oak titmouse	FSLC	Open oak and oak-pine woodlands. Nests mostly in natural cavities, also in woodpecker holes.	Present. Potential suitable habitat located in the study area. However, there are no known occurrences located in the study area vicinity.
<i>Cinclus mexicanus</i>	American dipper	FSLC	Along streams in mountainous areas.	Known occurrence. Observed in Upper Truckee River during URS wetland delineation survey.
<i>Cypseloides niger</i>	Black swift	FSC	Nests in moist crevice or cave on cliffs in proximity to waterfalls. Forages widely over many habitats.	Present. Potential suitable habitat is located within the study area. However, there are no known occurrences in the study area vicinity.
<i>Dendroica petechia brewsteri</i>	Yellow warbler	CSC	Breeds in riparian deciduous habitats.	Present. Potential suitable habitat found within the study area. However, no known occurrences in the study area vicinity.
<i>Dendragapus obscurus</i>	Blue grouse	MI	Open, mid- to mature-aged stands of fir, Douglas fir, and other conifer habitats interspersed with medium to large openings and available water.	Present. Suitable wintering habitat present within the study area. However, there are no known occurrences in the study area vicinity.
<i>Dryocopus pileatus</i>	Pileated woodpecker	MI	Dense, mature deciduous and coniferous forests, requires large territories.	Present. Suitable nesting habitat present in study area. However, there are no known occurrences in the study area vicinity.

**Table 3.5-1 (Continued)**  
**Special-Status Wildlife Species That Potentially Occur in the Study Area**

Scientific Name	Common Name	Status	Habitat	Presence/Absence of Habitat/Species in the Study Area
<i>Empidonax traillii</i> ssp. <i>brewsteri</i>	Willow flycatcher	CE, LTBMU, MI	Nests in extensive montane willow thickets 2,000-8,000 feet elevation.	Present. Potential suitable habitat is located in the study area vicinity. Known occurrences in the study area vicinity.
<i>Falco peregrinus anatum</i>	Peregrine falcon	FD, CE, CFP, LTBMU, MI, TRPA	Nests and roosts on protected ledges.	Known occurrence. One Peregrine Falcon threshold area occurs within the study area. Suitable nesting habitat available in the study area vicinity.
<i>Haliaeetus leucocephalus</i>	Bald eagle	FT, FPD, CE, CFP, MI, TRPA	Coniferous and conifer -hardwood forests near water.	Known occurrence. One area has been identified as wintering habitat for the bald eagle within the study area. Suitable wintering and nesting habitat present in the study area.
<i>Melanerpes lewis</i>	Lewis' woodpecker	FSC	Primarily in open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest.	Present. Potential suitable habitat present within the study area. However, there are no known occurrences in the study area vicinity.
<i>Otus flammeolus</i>	Flammulated owl	FSC	Old growth forest, especially ponderosa pine and mountainous pine forests. Depend on excavated holes by woodpeckers and flickers.	Present. Potential suitable habitat present in the study area. However, there are no known occurrences in the study area vicinity.
<i>Pandion haliaetus</i>	Osprey	CSC, TRPA	Conifer and conifer/hardwood forests near water.	Known occurrence. Suitable nesting sites present in the study area. Known occurrences and associated buffer zones occur with the study area.
<i>Picoides albolarvatus</i>	White headed woodpecker	FSC	Old growth forest of ponderosa pine, Jeffrey pine, and sugar pine.	Present. Potential suitable nesting sites present in the study area. However, there are no known occurrences located in the study area vicinity.
<i>Riparia riparia</i>	Bank swallow	CT	Requires sandy vertical bluffs or riverbanks for digging nest burrows. Nests in colonies.	Known occurrence. Suitable habitat present in the study area. There is one known occurrence within the study area.
<i>Selasphorus rufus</i>	Rufous hummingbird	FSC	Gardens, chaparral, meadows, forest edges, and riparian thickets of coniferous woodlands.	Present. Potential suitable habitat present in the study area. However, there are no known occurrences in the study area vicinity.
<i>Strix occidentalis occidentalis</i>	California spotted owl	FSC, CSC, LTBMU, MI	Mature forests with suitable nest sites.	Known occurrence. Suitable habitat present in the study area. There is a known occurrence and associated buffer located within the study area.
-	Waterfowl	TRPA	Aquatic habitats, wetlands, wetland edges.	Known occurrence. Suitable habitat present in the study area. Known occurrence data are not maintained for these species; however, they were observed during the URS wetland delineation survey.
<b>Fish</b>				
<i>Oncorhynchus</i> (=Salmo) <i>clarki henshawi</i>	Lahontan cutthroat trout	FT, CSC, MI, TRPA	Lakes and streams of the Lahontan Basin.	Known occurrence. Known to occur in Taylor Creek. Potential suitable habitats present in the study area.

**Table 3.5-1 (Continued)**  
**Special-Status Wildlife Species That Potentially Occur in the Study Area**

Scientific Name	Common Name	Status	Habitat	Presence/Absence of Habitat/Species in the Study Area
<i>Oncorhynchus (Salmo) mykiss</i> ssp. <i>gairderi</i>	Rainbow trout	CSC, MI	Cold perennial freshwater systems statewide.	Present. Potential suitable habitat present in the study area; however, there are no known occurrences in the study area vicinity.
<i>Salvelinus fontinalis</i>	Brook trout	MI	High mountain lakes and streams, generally above 4,000' elevation, requires cool oxygenated waters.	Known occurrence. URS observed brook trout in small stream located adjacent to Grass Lake. Potential suitable habitat present in the study area.
<b>Mammals</b>				
<i>Aplodontia rufa</i>	Sierra Nevada mountain beaver	CSC	Dense riparian-deciduous forest, preferring open and intermediate canopy cover with dense understory near water. Deep, friable soils required for burrowing.	Present. Potential suitable habitat is located in study area. Known occurrences located in the study area vicinity.
<i>Gulo gulo luteus</i>	California wolverine	FSC, CT, CFP, LTBMU	Montane conifer, sub-alpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats. Prefer areas with low human disturbance.	Present. Potential suitable habitat present in the study areas. Known occurrences in the study area vicinity.
<i>Lepus americanus tahoensis</i>	Sierra Nevada snowshoe hare	FSC, CSC	Early successional montane forests with brushy understory.	Known occurrence. Suitable habitat present within the study area. Known occurrences present in the study area.
<i>Martes americana</i>	American marten	FSC, LTBMU	Mature coniferous forests.	Known occurrence. Suitable habitat present within the study area. Known occurrences present within the study area.
<i>Martes pennanti pacifica</i>	Pacific fisher	FC, CSC	Mature coniferous forests.	Known occurrence. Suitable habitat present within the study area. Known occurrences within the study areas. However, there have been no recent sightings.
<i>Myotis evotis</i>	Long eared myotis	FSC	Inhabits a variety of wooded habitats including montane forests. Roosts in buildings, crevices, under bark, and in snags.	Present. Potential suitable habitats present within the study area. However, there are no known occurrences in the study area vicinity.
<i>Myotis thysanodes</i>	Fringed myotis	FSC	Inhabits a variety of wooded habitats including coastal and montane forest and mountain meadows. Roosts in caves, mines, crevices and buildings.	Present. Potential suitable habitat present within the study area. Known occurrences in the study area vicinity.
<i>Myotis volans</i>	Long leg myotis	FSC	Commonly inhabits woodlands and forests above 4,000 feet. Habitats include forested and brushy areas. Roosts in rock crevices, buildings, tree bark, in snags, mines, and caves.	Present. Potential suitable habitat present within the study area. However, there are no known occurrences in the study area vicinity.

**Table 3.5-1 (Concluded)  
Special-Status Wildlife Species That Potentially Occur in the Study Area**

Scientific Name	Common Name	Status	Habitat	Presence/Absence of Habitat/Species in the Study Area
<i>Myotis yumanensis</i>	Yuma myotis	FSC	Inhabits open forests and woodlands near water, especially in wooded canyon bottoms. Roosts in caves, mines, crevices, and buildings.	Present. Potential suitable habitat present within the study area. However, there are no known occurrences in the study area vicinity.
<i>Odocoileus hemionus</i>	Mule deer	MI, TRPA	Forests, brushfields, and meadows statewide.	Known occurrence. Observed during URS wetland delineation within the study area.
<i>Taxidea taxus</i>	American badger	CSC	Grasslands, savannas, and mountain meadows.	Present. Potential suitable habitat present in the study area. Known occurrences present within the study area vicinity.
<i>Ursus americanus</i>	Black bear	MI	Forested habitats statewide	Present. Potential suitable habitat present in the study area. There are no known occurrences in the study area vicinity. Species is somewhat tolerant of human presence.
<i>Vulpes vulpes necator</i>	Sierra Nevada red fox	CT, LTBMU	Coniferous forests above 5,000 feet, often associated with montane meadows.	Present. Potential suitable habitat present in the study area. Known occurrence within the study area vicinity.
<b>Reptiles</b>				
<i>Sceloporus graciosus graciosus</i>	Northern sagebrush lizard	FSC	Sagebrush dominated areas on forest slopes, mountain slopes and open flat lands.	Present. Potential suitable habitat present in the study area. However, there are no known occurrences in the study area vicinity.

Federal:

FC: Candidate for Federal Listing  
 FD: Federal Delisted  
 FE: Federal Endangered  
 FPD: Federal Proposed Delisting  
 FPE: Federal Proposed Endangered  
 FPT: Federal Proposed threatened  
 FSC: Federal Species of Concern - Species for which the USFWS has sufficient information to propose them as threatened or endangered under FESA.  
 FSLC: Federal Species of Local Concern  
 FT: Federal Threatened

State:

CE: CA Endangered  
 CFP: California Fully Protected Species  
 CR: CA Rare - Not currently threatened with extinction, but occurs in such small numbers that it may become endangered if its present environment worsens.  
 CSC: CA Special Concern  
 CT: CA Threatened

LTBMU:

LTBMU: Lake Tahoe Basin Management Unit Sensitive Species  
 MI: LTBMU Management Indicator Species; Land Resources Management Plan

TRPA:

TRPA: Tahoe Regional Planning Agency Special Interest Species

- Wildlife2000, LTBMU 2003, known occurrences within the Tahoe Basin
- Wildlife2000, LTBMU 2005, known occurrences within 0.8 km (0.5 mile) of the study area

Regulatory agency protocol-level species surveys would need to be performed for only those species with the potential to occur in the project area. Not all of the species listed in Table 3.5-1 have survey protocols established by the USFWS, and the potential for the species to occur would depend on the presence of site-specific habitat within each project segment. Table 3.5-1 should therefore be used to determine which types of surveys are appropriate and for which species.

### 3.5.1.2 Special-Status Plant Species

Sensitive plant species are known to occur or may occur in the project vicinity. Data on vegetation communities located within the study area and the plants associated with these communities were compiled and reviewed. This research focused on the special-status species that may occur in the study area. Some of the plants that were considered, though not formally listed, as rare or endangered under the Federal or California Endangered Species Acts (FESA or CESA) meet the definitions of the Native Plant Protection Act (California Fish and Game Code Section 1901) and are eligible for state listing. These plant species were treated as if they were already listed species for purposes of this investigation.

Special-status plant species that are potentially present in the study area were identified based on information compiled from the following resources:

- Forest Service Lake Tahoe Basin Management Area Sensitive Species List
- TRPA Goals and Policies Special Interest Species List
- CNDDDB (December 2005)
- Forest Service 2004 Survey Data
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (online edition, v7-06a)
- USFWS Sensitive Species List for the Lake Tahoe Basin.

Official species lists were obtained from the USFWS for the nine quad areas surrounding the study area. Additionally, documented occurrence data were obtained from the CNDDDB December 2005 database for the quad areas surrounding the study area (the 7.5-minute U.S. Geological Survey [USGS] quadrangles for Markleeville, Carson Pass, Caples Lake, Tragedy Spring, Minden, South Lake Tahoe, Freel Peak, Woodfords, Emerald Bay, Rockbound Valley, Pyramid Peak, Echo Lake, Loon Lake, Kings Beach, Tahoe City, Homewood, Meeks Bay, Granite Chief, and Wentworth Spring).

Table 3.5-2 lists the special-status plant species that are potentially present in the study area. Regulatory agency protocol-level species surveys would need to be completed only for those species with the potential to occur in the project area. These species include: Carson Range rock cress (*Arabis rigidissima* var. *demote*), creeping barberry (*Berberis aquifolium* var. *reprens*), upswept moonwort (*Botrychium ascendens*), scalloped moonwort (*Botrychium crenulatum*), western goblin (*Botrychium montanum*), Bolander's candle moss (*Bruchia bolanderi*), shore

sedge (*Carex limosa*), subalpine fireweed (*Epilobium howellii*), Oregon fireweed (*Epilobium oreganum*), marsh willowherb (*Epilobium palustre*), starved daisy (*Erigeron miser*), Nevada daisy (*Erigeron nevadincola*), American manna grass (*Glyceria grandis*), short-leaved hulsea (*Hulsea brevifolia*), vein water lichen (*Hydrothyria venosa*), saw-toothed lewisia (*Lewisia serrata*), three-ranked hump moss (*Meesia triquetra*), broad-nerved hump-moss (*Meesia uliginosa*), northern adder's tongue (*Ophioglossum pusillum*), Stebbin's phacelia (*Phacelia stebbinsii*), holly fern (*Polystichum lonchitis*), Nuttall's pondweed (*Potamogeton epihydrus* ssp. *nuttallii*), slender-leaved pondweed (*Potamogeton filliformis*), water bulrush (*Scirpus subterminalis*), marsh skullcap (*Scutellaria galericulata*), Munroe's desert mallow (*Sphaeralcea munroana*), and felt-leaved (=woolly) violet (*Viola tomentosa*).

### 3.5.1.3 Sensitive Habitat

The eight proposed project segments along US 50 and SR 89 cross 12 habitat types, as classified in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988). These habitats were categorized as aspen, Jeffrey pine, lodgepole pine, montane chaparral, montane riparian, perennial grass, red fir, sagebrush, Sierran mixed conifer, sub-alpine mixed conifer, wet meadow, and white fir. The study area also includes highly developed urban areas, such as portions of project segments within the city limits of South Lake Tahoe.

These habitats fall within 14 different watersheds, which drain into creeks and meadows and ultimately into Lake Tahoe. Wetlands, SEZs, and other waters of the United States occur within these watersheds and are crossed by the project segments. Wetlands and other waters of the U.S. are addressed in Sections 3.2 and 3.4. SEZs are discussed in Section 3.5.1.4.

Potential impacts were quantified by overlaying the project features that have been defined to date (proposed infiltration basins and paving of existing and new highway pullout areas) with the identified resources. Wildlife habitat types crossed by each highway and each segment have been mapped using data from the Forest Service and TRPA.

**Table 3.5-2  
Special-Status Plant, Lichen, and Moss Species That Potentially Occur in the Study Area**

Scientific Name	Common Name	Federal <sup>1</sup> / State <sup>2</sup> /CNPS <sup>3</sup> / LTBMU/TRPA	Habitat	Presence/Absence of Habitat/Species in the Study Area
<i>Arabis rigidissima</i> var. <i>demote</i>	Carson Range rock cress	-/-1B/LTBMU/-	Broadleaved upland forest, upper montane coniferous forest/rocky, 2255-2650 m	Present. Suitable habitat found at high elevations in the study area. No known occurrences from the study area vicinity.
<i>Berberis aquifolium</i> var. <i>repens</i>	Creeping barberry	-/-/LTBMU/-	Streambanks of yellow pine and red fir forests, chaparral; elevation 0-2200 m	Present. Suitable habitat found throughout the study area. No known occurrences from the study area vicinity.
<i>Botrychium ascendens</i>	Upswept moonwort	-/-2/LTBMU	Lower montane coniferous forest (mesic), 1500-2285 m	Present. Suitable habitat found throughout the study area. No known occurrences from the study area vicinity.
<i>Botrychium crenulatum</i>	Scalloped moonwort	-/2/LTBMU/-	Bogs and fens, 1500-3280 m	Present. Suitable habitat found throughout the study area. Known occurrences from the study area vicinity.
<i>Botrychium montanum</i>	Western goblin	-/-2/LTBMU/-	Lower montane coniferous forest (mesic): elevation 1500-1830 m	Present. Suitable habitat found throughout the study area. No known occurrences in the Tahoe Basin.
<i>Bruchia bolanderi</i>	Bolander's candle moss	-/-2/LTBMU/-	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest/damp soil: elevation 1700-2800 m	Present. Suitable habitat found throughout the study area. No known occurrences in the Tahoe Basin.
<i>Calochortus clavatus</i> var. <i>avius</i>	Pleasant Valley mariposa lily	-/-1B/-/-	Lower montane coniferous forest (Josephine silt loam and volcanic), 305-800 m	Absent. Suitable soils not found in the study area; occurs outside of the elevation range of the study area.
<i>Carex limosa</i>	Shore sedge	-/-2/-/-	Bogs and fens, 1200-2700 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.
<i>Chaenactis douglasii</i> var. <i>alpina</i>	Alpine dusty maidens	-/-2/-/-	Alpine boulder and rock field (granitic), 3000-3400 m	Absent. Occurs outside of the elevation range of the study area.
<i>Claytonia megarhiza</i>	Fell-fields claytonia	-/-2/-/-	Alpine boulder and rock field, subalpine coniferous forest/rocky, 2600-3300 m	Absent. Occurs outside of the elevation range of the study area.
<i>Cryptantha crymophila</i>	Subalpine cryptantha	-/-1B/-/-	Subalpine coniferous forest (volcanic, rocky), 2600-3200 m	Absent. Occurs outside of the elevation range of the study area.
<i>Draba asterophora</i> var. <i>asterophora</i>	Tahoe draba	-/-1B/ LTBMU/TRPA	Subalpine coniferous forest, 2500-3505 m	Absent. Occurs outside of the elevation range of the study area.
<i>Draba asterophora</i> var. <i>macrocarpa</i>	Cup Lake draba	-/-1B/ LTBMU/TRPA	Subalpine coniferous forest (rocky), 2500-2815 m	Absent. Occurs outside of the elevation range of the study area.
<i>Epilobium howellii</i>	Subalpine fireweed	-/-1B/LTBMU/-	Meadows and seeps, subalpine coniferous forest/mesic; elevation 2000-2700 m	Present. No known occurrences in the Tahoe Basin.
<i>Epilobium oreganum</i>	Oregon fireweed	-/-1B/-/-	Bogs and fens, mesic sites in lower and upper montane coniferous forests, 500-2240 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.

**Table 3.5-2 (Continued)**  
**Special-Status Plant, Lichen, and Moss Species That Potentially Occur in the Study Area**

Scientific Name	Common Name	Federal <sup>1</sup> / State <sup>2</sup> /CNPS <sup>3</sup> / LTBMU/TRPA	Habitat	Presence/Absence of Habitat/Species in the Study Area
<i>Epilobium palustre</i>	Marsh willowherb	-/-2/-/-	Bogs and fens, 2200 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.
<i>Erigeron miser</i>	Starved daisy	-/-1B/LTBMU/-	Upper montane coniferous forest (rocky); elevation 1840-2620 m	Present. Suitable habitat found throughout the study area. No known occurrences from the study area vicinity.
<i>Erigeron nevadincola</i>	Nevada daisy	-/-2/-/-	Great Basin scrub, 1400-2900 m	Present. Suitable habitat limited in the study area and species is unlikely to occur. No known occurrences from the study area vicinity.
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>	Donner Pass buckwheat	-/-1B/LTBMU/-	Upper montane coniferous forest (volcanic, rocky), meadows and seeps, 1855-2620 m	Absent. No suitable habitat in the study area. No known occurrences from the study area vicinity.
<i>Glyceria grandis</i>	American manna grass	-/-2/-/-	Bogs and fens, 15-1980 m	Present. Suitable habitat found throughout the study area.
<i>Hulsea brevifolia</i>	Short-leaved hulsea	-/-1B/-/-	Lower and upper montane coniferous forest/granitic or volcanic, gravelly or sandy, 1500-3200 m	Present. Suitable habitat limited in the study area and species is unlikely to occur. Known occurrence in the study area vicinity.
<i>Hydrothyria venosa</i>	Vein water lichen	-/-/-LTBMU/-		Present. Suitable habitat found throughout the study area. No known occurrences from the study area vicinity.
<i>Ivesia sericoleuca</i>	Plumas ivesia	-/-1B/-/-	Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools/vernally mesic, usually volcanic, 1465-2200 m	Absent. No suitable habitat in the study area. No known occurrences of this species known from the study area vicinity.
<i>Lewisia longipetala</i>	Long-petaled lewisia	-/-2/ LTBMU/-	Subalpine coniferous forest (mesic, rocky) /granitic, alpine boulder and rock field, 2500-2925 m	Absent. Occurs outside of the elevation range of the study area.
<i>Lewisia serrata</i>	Saw-toothed lewisia	-/-1B/-/-	Broadleaved upland forest, lower montane coniferous forest, riparian forests, 900-1435 m	Present. Suitable habitat found throughout the study area.
<i>Meesia triquetra</i>	Three-ranked hump moss	-/-1B/LTBMU/-	Upper montane coniferous forest (mesic), meadows and seeps, bogs and fens, 1300-2500 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.
<i>Meesia uliginosa</i>	Broad-nerved hump-moss	-/-2/LTBMU/-	Meadows and seeps, upper montane coniferous forest/damp soil: elevation 1300-2500 m	Present. Suitable habitat found throughout the study area. No known occurrences from the study area vicinity.
<i>Ophioglossum pusillum</i>	Northern adder's tongue	-/-3/-/-	Marshes and swamps (margins), valley and foothill grassland, 1000-2000 m	Present. Suitable habitat found throughout the study area.

**Table 3.5-2 (Concluded)**  
**Special-Status Plant, Lichen, and Moss Species That Potentially Occur in the Study Area**

Scientific Name	Common Name	Federal <sup>1</sup> / State <sup>2</sup> /CNPS <sup>3</sup> / LTBMU/TRPA	Habitat	Presence/Absence of Habitat/Species in the Study Area
<i>Phacelia stebbinsii</i>	Stebbin's phacelia	-/-2/-/-	Lower montane coniferous forest, meadows and seeps, cismontane woodland, 610-2010 m	Present. Suitable habitat found throughout the study area.
<i>Polystichum lonchitis</i>	Holly fern	-/-3/-/-	Upper montane coniferous forest/granitic or carbonate, Subalpine coniferous forest, 1800-2600 m	Present. Suitable habitat found throughout the study area.
<i>Potamogeton epihydrus</i> ssp. <i>nuttallii</i>	Nuttall's pondweed	-/-2/-/-	Marshes and swamps (assorted shallow freshwater), 400-1900 m	Present. Suitable habitat found throughout the study area.
<i>Potamogeton filliformis</i>	Slender-leaved pondweed	-/-2/-/-	Marshes and swamps (shallow freshwater), 300-2150 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.
<i>Rorippa subumbellata</i>	Tahoe yellow cress	C/E/1B/ LTBMU/TRPA	Meadows and seeps/decomposed granitic beaches, lower montane coniferous forest, sandy areas of riparian communities, 1895-1900 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.
<i>Scirpus subterminalis</i>	Water bulrush	-/-2/-/-	Marshes and swamps (montane lake margins), bogs and fens, 750-2250 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.
<i>Scutellaria galericulata</i>	Marsh skullcap	-/-2/-/-	Lower montane coniferous forest, meadows and seeps, marshes and swamps, 0-2100 m	Present. Suitable habitat found throughout the study area. Known occurrence in the study area vicinity.
<i>Sphaeralcea munroana</i>	Munroe's desert mallow	-/-2/-/-	Great Basin scrub, 2,000 m	Present. Suitable habitat limited in the study area and species is unlikely to occur. No known occurrences in the project vicinity. Plant not observed in the Tahoe Basin since 1922.
<i>Viola tomentosa</i>	Felt-leaved (=woolly) violet	-/-4/-/-	Lower montane, subalpine and upper montane coniferous forest/gravelly, 1435-2000 m	Present. Suitable habitat found throughout the study area. No known occurrences in the study area vicinity.

## Federal:

FE: Federal Endangered; FT: Federal Threatened; FPE: Federal Proposed Endangered; FPT: Federal Proposed threatened; FC: Candidate for Federal Listing; FPD: Federal Proposed Delisting; FSC: Federal Species of Concern

## State:

CE: CA Endangered; CT: CA Threatened; CR: CA rare; Not presently threatened with extinction, it is in such small numbers that it may become endangered if its present environment worsens. CSC: California Special Concern

## CNPS:

CNPS List 1B: California Native Plant Society list of plants rare, threatened or endangered in California; CNPS List 2: California Native Plant Society list of plants rare, threatened or endangered in California, but more common elsewhere; CNPS List 3: California Native Plant Society list of plants about which there is a need for more information- a review list; CNPS List 4: California Native Plant Society list of plants of limited distribution- a watch list.

## LTBMU:

Lake Tahoe Basin Management Unit Sensitive Species

## TRPA:

Tahoe Regional Planning Agency Special Interest Species

### **3.5.1.4 Stream Environment Zones**

A total of 38.753 ha (95.76 acres) of SEZ features fall within the study area. SEZs are resources defined by TRPA and were obtained from TRPA data. SEZs generally encompass wetlands and other waters of the United States as well as drainage areas that contain specific key and secondary indicators. These indicators include evidence of water flow, primary and or secondary vegetation (defined by TRPA), near-surface groundwater, lakes, ponds, and certain soil types. SEZs can be identified by the presence of any one of the key indicators or three of the secondary indicators. Key indicators include the presence of beach; Elmira loamy coarse sand, wet variant; or marsh soil types. Secondary indicators include soils such as loamy alluvial sand, Celio gravelly loamy coarse sand, or gravelly alluvial sand. Key and secondary indicator soils are found in various locations throughout the study area. See the *Wetland Delineation Report* (URS 2007a) for a more detailed description of the soil units in the project area.

Quantitative estimates of each SEZ found in the study area were calculated using GIS analyses. The *Wetland Delineation Report* (URS 2007a) identifies SEZs in the study area in Figure 4 of Appendix A and provides additional details about each SEZ in Appendix B.

## **3.5.2 Regulatory Setting**

The following section summarizes the jurisdictional and resource regulatory setting within the study area.

### **3.5.2.1 Federal**

#### ***U.S. Fish and Wildlife Service***

##### **Federal Endangered Species Act**

Biological assessments are required under Section 7(c) of the FESA (16 United States Code [USC] 1536) if listed species or critical habitat may be present in an area affected by any major construction activity conducted by, or subject to issuance of a permit from, a federal agency. Federally listed species have the potential to be present in the vicinity of the study area. A list of threatened and endangered species in the study area was downloaded from the Sacramento Office of the USFWS on August 22, 2005. Federally listed species, candidate species, and species of special concern that may occur within the study vicinity are listed in Tables 3.5-1 and 3.5-2.

##### **Migratory Bird Species Act**

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703–711) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). If impacts to active nests or individual birds are anticipated, Caltrans shall consult with USFWS regarding appropriate action to comply with the MBTA.

*Forest Service*

The proposed Program would impact lands under the jurisdiction of the Forest Service LTBMU. A Biological Evaluation process (Forest Service Manual 2672.43) is followed to conduct and document activities necessary to demonstrate that proposed management actions will not likely jeopardize the continued existence or cause adverse modification to habitat for federally listed species, or for species listed as Sensitive by Region 5 of the Forest Service.

Current management direction for the LTBMU derives from a combination of the *Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement* (SNFP FEIS) (Forest Service 2001), applicable components of LTBMU Land and Resource Management Plan, and TRPA guidance. Caltrans will strive to adhere to the management direction provided in these documents to avoid and reduce impacts to sensitive species, and for mitigation guidelines.

In relation to the Program, the Sierra Nevada Forest Plan Amendment prohibits vegetation management activities such as vegetation removal or reduction in the following areas:

- Within 0.4 km (0.25 mile) of a California spotted owl nest site during the breeding season (March 1 to August 31)
- Within 0.4 km (0.25 mile) mile of northern goshawk nest site during the breeding season (February 15 to September 15)
- Within 1.2 km (0.75 mile) of great grey owl nest site during the breeding season (March 1 to August 15)
- Within a 40.5 ha (100 acre) buffer area of the highest quality surrounding an American pine marten den site during the breeding and rearing season (May 1 to July 31)
- Within an 8 km (5 mile) radius of a Sierra Nevada red fox detection during the breeding and rearing season (May 1 to July 31) for 2 years following the detection

Exceptions to management directions for specific biological resources relevant to the proposed highway rehabilitation are provided in Appendix A of the SNFP FEIS Record of Decision (Forest Service 2001, A-29).

The LTBMU *Land and Resource Management Plan* (Forest Service 1988) states the Forest Service must manage habitat of designated Management Indicator Species in order to maintain viable population levels within the Tahoe Basin. In relation to the Program, the *Land and Resource Management Plan*:

- Prohibits the loss of trees greater than 0.8 meter (30 inches) in diameter at breast height (dbh)
- Limits the creation of forest openings to 0.8 ha (2 acres)
- Requires retention of all snags, except those that pose a safety hazard, and all downed material
- Prohibits land disturbing activity within 91.4 meters (300 feet) of perennial stream riparian zone unless the project is beneficial to the watershed
- Prohibits land-disturbing activities within 45.7 meters (150 feet) of seasonal stream riparian zones

- Limits activity within 0.4 km (0.25 mile) of known spotted owl and northern goshawk nest sites between March 1 and August 31 and February 15 and September 15, respectively
- Limits activity near forest carnivore dens as follows: 202.3 ha (500 acres) for Pacific fisher from March 1 to June 30; 40.5 ha (100 acres) for American marten from May 1 to July 31; 101.2 ha (250 acres) for Sierra Nevada red fox from April 15 to June 15
- Limits noisy, ground disturbing activity within forest carnivore habitat for more than seven consecutive days in a drainage area
- Requires sanitary waste facilities to be located outside riparian areas, except where no reasonable alternative exists

In addition, the Forest Service has established special management areas for unique areas that have scientific, biological, geological, historical, or recreational characteristics of local, regional, or national significance. In the study area, special management areas include the Grass Lake Research Natural Area.

### *3.5.2.2 State*

#### *California Environmental Quality Act*

The following are CEQA significance criteria that could potentially apply to the proposed Program.

- Long-term degradation of a sensitive plant community because of substantial alteration of landform or site conditions
- Substantial loss of a plant community and associated wildlife habitat
- Fragmentation or isolation of wildlife habitats, especially riparian and wetland communities
- Substantial disturbance of wildlife resulting from human activities
- Avoidance by fish of biologically important habitat for substantial periods, which may increase mortality or reduce reproductive success
- Disruption of natural wildlife movement corridors
- Substantial reduction in local population size attributable to direct mortality or habitat loss, lowered reproductive success, or habitat fragmentation of:
  - Species qualifying as rare under California Endangered Species Act
  - Species that are state-listed or federally listed as threatened or endangered
  - Portions of local populations that are candidates for state or federal listing and federal and state species of concern
- Substantial reduction or elimination of species diversity or abundance of any species of animal
- Conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other regional or state habitat conservation plan, local ordinance, or policy

*California Department of Fish and Game***Section 1602**

Areas within the jurisdiction of California Fish and Game Code Sections 1600–1616 include all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, including their beds and banks. Several streams were observed within the study area, and consultation with state resource agencies will be necessary in accordance with legal requirements set forth under Sections 1600–1616. A Section 1602 Lake and Streambed Alteration Agreement will be required for all work conducted within the jurisdiction.

**California Endangered Species Act**

Because state-listed species may be impacted by the proposed Program, consultation with state resource agencies is necessary in accordance with legal requirements set forth under Sections 2050–2098 of the California Fish and Game Code. For projects that affect both a state and federal listed species, compliance with the FESA will satisfy the CESA if the CDFG determines that the federal incidental take authorization is “consistent” with CESA under Fish and Game Code Section 2080.1.

**Native Plant Protection Act**

The Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900–1913) directs the CDFG to preserve, protect, and enhance rare and endangered plants in the state and protect them as endangered or rare. No species protected by this Act are expected to be impacted by the proposed Program, and no consultation with state resource agencies is anticipated in accordance with these requirements.

**3.5.2.3 Regional**

The TRPA has established thresholds for fisheries, vegetation, wildlife, and SEZs. The following thresholds may apply to the proposed Program.

**Fisheries**

- F1 – Maintain 121 km (75 miles) of habitat rated excellent, 169 km (105 miles) of habitat rated good, and 61 km (38 miles) of marginal stream habitat.
- F2 – A nondegradation standard shall apply to fish habitat in Lake Tahoe.
- F3 – Achieve the equivalent of 2,407 total ha (5,948 total acres) of excellent habitat in Lake Tahoe.
- F4 – Until instream flow standards are established in the Regional Plan to protect fishery values, nondegradation standards shall apply to instream flows.
- F5 – It shall be a policy of the TRPA governing board to seek transfers of existing points of water diversion from streams to Lake Tahoe.
- F6 – It shall be the policy of the TRPA governing board to support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout.

### Vegetation

- V1 – Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern. Provide for promotion and perpetuation of late successional/old growth forests. The goal is to increase late successional/old growth conditions across elevational ranges of the Lake Tahoe Basin forest cover types. Individual trees greater than 0.8 meter (30 inches) dbh shall also be favored for retention because of their late seral attributes.
- V2 – Provide for the nondegradation of the natural qualities of any plant community that is uncommon to the region or of exceptional scientific, ecological, or scenic values. This threshold shall apply but not be limited to deep-water plants of Lake Tahoe, Grass Lake (sphagnum bog), Osgood swamp, and the Freel Peak cushion plant community.
- V3 – Maintain a minimum number of population sites for each of five sensitive plant species: *Carex paucifructus*, *Lewisia pygmaea logipetala*, *Draba asterophora* v. *macrocarpa*; *Draba asterophora* v. *asterophora*; and *Rorippa subumbellata*.

### Wildlife

- W1 – Wildlife protection and maintenance of special-interest species viability in the Lake Tahoe Region. Provide a minimum number of population sites and disturbance zones for the following species: (1) northern goshawk (*Accipiter gentilis*); (2) osprey (*Pandion Haliaeetus*); (3) bald eagle (*Haliaeetus leucocephalus*); (4) golden eagle (*Aquila chrysaetos*); (5) peregrine falcon (*Falco peregrinus anatum*); (6) waterfowl (all open-water associated species); and (7) deer (*Odocoileus hemionus*).

### Stream Environment Zones

The TRPA regulates SEZ resources through the agency's *Regional Plan for the Lake Tahoe Basin* (TRPA 1987) and Code of Ordinances. SEZs include all natural marshes, meadows, watercourses, drainage ways, and floodplains that provide surface water conveyance from terrestrial upland areas to Lake Tahoe and its tributary streams. SEZs are determined by the presence of riparian vegetation, alluvial soil, minimum buffer strips, water influence areas and/or floodplains. Vegetation within SEZs is important for wildlife habitat, water purification, retention of soils and associated nutrients, and aesthetic value. Protection and restoration of SEZs is essential for achieving water quality, vegetation, and soil conservation thresholds. The SEZ goals and policies established for SEZs in the Lake Tahoe Basin are discussed in detail in the *Natural Environment Study* for the proposed Program (URS 2007b).

Threshold V1 (listed above) includes a nondegradation standard for native deciduous trees, wetlands, and meadows. It also calls for the preservation of the richness and abundance of wetland and riparian-associated species. Similarly, uncommon plant species are protected by Vegetation Thresholds.

### *3.5.2.4 Local*

#### **El Dorado County**

Goals and policies were established within the El Dorado County General Plan that provide guidance for development in the county specific to biological resources. Caltrans will generally follow these policies to protect trees, water quality, and natural habitats, and to control erosion.

#### **City of South Lake Tahoe**

The City of South Lake Tahoe is a rapidly growing summer and winter resort destination located along the south shore of Lake Tahoe. The City Code of Ordinances regulates tree removal on both private and public property within the city limits. Trees with a diameter of 15 cm (6 inches) or greater when measured 0.6 meter (2 feet) above the ground fall within this ordinance.

## **3.5.3 Impacts**

### *3.5.3.1 CEQA Considerations*

Permanent impacts would primarily occur where paving and grading of wider shoulders and pullouts is performed, new retaining walls are constructed, and drainage facilities (primarily the proposed drainage basins) are installed. This construction will occur alongside the existing highways and will extend outside of the existing right-of-way where new drainage facilities are installed. This will require removal of existing vegetation within the drainage areas and where the minimal highway widening impacts vegetation alongside the shoulders, such as where cut and fill is necessary along slopes and embankments. Temporary impacts could include loss of vegetation where equipment access and work areas are necessary. Noise levels and construction activities could also cause temporary disturbance to wildlife species.

Avoidance and mitigation measures are identified that include seasonal timing restrictions for construction activities to avoid periods of time when wildlife species are most vulnerable, such as during breeding seasons. Preconstruction surveys would be performed in areas of known habitat of sensitive species to verify whether the species is present; and if so, to apply avoidance measures. Construction contract specifications would include establishing Environmentally Sensitive Areas (ESAs); imposing construction clean-up, weed control, and erosion control measures; restricting in-stream work; and restoring disturbed vegetation.

#### ***Impacts to Special-Status Wildlife Species***

The potential Program-related impacts to sensitive wildlife species based on known occurrences and buffer zones located within the study area are summarized in Table 3.5-3. This table identifies potential impacts to known biological resources and the location by roadway and segment within the implementation sequence. Some of the CNDDDB information provided in the table includes historical occurrence information and may not reflect current conditions. The table does not reflect site-specific survey information, and impacts to sensitive species could potentially be greater depending on the results of focused surveys. The impacts listed in this table assume complete development of the study limits and within proposed/existing basins. Refined impacts to wildlife resources should be conducted based on the results of focused specific surveys and preparation of detailed Program development plans.

**Table 3.5-3  
Potential Program-Related Impacts to Special-Status Wildlife Species**

Wildlife Species	Impact, Hectares (Acres)			Roadway/ Segment
	ESL	PB	EB	
<i>CNDDDB Database</i>				
Pacific fisher		1.062 (2.62)		89/1
Sierra Nevada snowshoe hare/American badger		0.194 (0.48)		50/1
Sierra Nevada snowshoe hare/American badger		0.299 (0.74)		50/1
Sierra Nevada snowshoe hare/American badger		0.180 (0.45)		50/1
Sierra Nevada snowshoe hare/American badger		1.270 (3.14)		50/1
Sierra Nevada snowshoe hare/American badger		1.378 (3.40)		50/1
Sierra Nevada snowshoe hare/American badger		0.282 (0.70)		50/1
Sierra Nevada snowshoe hare/American badger		0.213 (0.53)		50/1
Sierra Nevada snowshoe hare/American badger		0.114 (0.28)		50/1
Sierra Nevada snowshoe hare/American badger		0.093 (0.23)		50/1
Northern goshawk		0.070 (0.17)		50/2
Northern goshawk		0.146 (0.36)		50/2
Northern goshawk		0.183 (0.45)		50/2
Northern goshawk		0.084 (0.21)		50/2
Northern goshawk		0.167 (0.41)		50/ 2
Northern goshawk		0.138 (0.34)		50/2
Northern goshawk		0.424 (1.05)		50/2
Northern goshawk		0.964 (2.38)		50/2
Northern goshawk		0.034 (0.08)		50/2
Northern goshawk		0.116 (0.29)		50/2
Northern goshawk		0.080 (0.20)		50/2
Northern goshawk		0.781 (1.93)		50/2
Northern goshawk		0.034 (0.08)		50/2
Northern goshawk		0.080 (0.20)		50/1
Northern goshawk		0.136 (0.34)		50/1
Bank swallow		0.072 (0.18)		89/2
Bank swallow		0.236 (0.58)		89/2
Bank swallow		0.126 (0.31)		89/2
Bank swallow		0.476 (1.18)		89/2
Bank swallow		0.381 (0.94)		89/2
Bank swallow		0.193 (0.48)		89/2
Bank swallow		0.143 (0.35)		89/2
Bank swallow		0.066 (0.16)		89/2
Sierra marten		0.511 (1.26)		89/2
Sierra Nevada snowshoe hare		0.207 (0.51)		89/4
Sierra Nevada snowshoe hare		0.197 (0.49)		89/4
Sierra Nevada snowshoe hare		0.098 (0.24)		89/4
Sierra Nevada snowshoe hare		0.057 (0.14)		89/4
Sierra Nevada snowshoe hare		0.043 (0.11)		89/4
Sierra Nevada snowshoe hare		0.182 (0.45)		89/4

**Table 3.5-3 (Continued)**  
**Potential Program-Related Impacts to Special-Status Wildlife Species**

Wildlife Species	Impact, Hectares (Acres)			Roadway/ Segment
	ESL	PB	EB	
Sierra Nevada snowshoe hare		0.126 (0.31)		89/4
Sierra Nevada snowshoe hare		0.101 (0.25)		89/4
Sierra Nevada snowshoe hare		0.133 (0.33)		89/4
Sierra Nevada snowshoe hare		0.146 (0.36)		89/4
Sierra Nevada snowshoe hare		0.034 (0.08)		89/4
Sierra Nevada snowshoe hare		0.058 (0.14)		89/4
Pacific fisher		0.009 (0.02)		89/5
Pacific fisher		0.491 (1.21)		89/5
Pacific fisher		0.018 (0.04)		89/5
Sierra Nevada snowshoe hare/American badger		0.059 (0.15)		50/1
Northern goshawk			0.034 (0.08)	50/2
Northern goshawk			0.149 (0.37)	89/2
Northern goshawk			0.212 (0.52)	89/2
Northern goshawk			0.122 (0.30)	89/2
Bank swallow			0.249 (0.61)	89/2
Northern goshawk	19.165 (47.36)			50/2
Pacific fisher	34.613 (85.53)			89/1
Sierra Nevada snowshoe hare/American badger	27.184 (67.17)			50/1
Northern goshawk	3.015 (7.45)			89/2
Lahontan cutthroat trout	0.998 (2.47)			89/2
Bank swallow	12.927 (31.94)			89/2
Sierra marten	3.703 (9.15)			89/2
Sierra marten	0.003 (0.01)			89/2
Sierra marten	0.861 (2.13)			89/3
Sierra Nevada snowshoe hare	23.858 (58.95)			89/4
Pacific fisher	3.353 (8.29)			89/4
Sierra marten	3.008 (7.43)			89/2
<i>TRPA Database</i>				
Bald Eagle-Winter Habitat	21.881 (54.07)			89/2 & 3
Bald Eagle-Winter Habitat			0.003 (0.01)	89/3
Bald Eagle-Winter Habitat		0.557 (1.38)		89/2
Bald Eagle-Winter Habitat		0.113 (0.28)		89/3
Bald Eagle-Winter Habitat		0.110 (0.27)		89/3
Bald Eagle-Winter Habitat		0.204 (0.51)		89/3
Bald Eagle-Winter Habitat		0.069 (0.17)		89/3
Bald Eagle-Winter Habitat		0.015 (0.04)		89/3
Bald Eagle-Winter Habitat		0.077 (0.19)		89/3
Bald Eagle-Winter Habitat		0.006 (0.02)		89/3
Northern Goshawk-PAC	0.286 (0.71)			89/2
Northern Goshawk-PAC	5.513 (13.62)			50/2
Northern Goshawk-PAC		0.127 (0.31)		50/2

**Table 3.5-3 (Concluded)**  
**Potential Program-Related Impacts to Special-Status Wildlife Species**

Wildlife Species	Impact, Hectares (Acres)			Roadway/ Segment
	ESL	PB	EB	
Northern Goshawk-PAC		0.432 (1.07)		50/2
Northern Goshawk-PAC		0.060 (0.15)		50/2
Northern Goshawk-PAC		0.179 (0.44)		50/2
Northern Goshawk-PAC		0.002 (0.00)		50/2
Northern Goshawk-PAC		0.076 (0.19)		50/2
Osprey-0.25 mile buffer	5.577 (13.78)			
Osprey-0.25 mile buffer	2.287 (5.65)			
Osprey-0.25 mile buffer	2.319 (5.73)			
Osprey-0.25 mile buffer	2.884 (7.13)			
Osprey-0.25 mile buffer	1.405 (3.47)			
Osprey-0.25 mile buffer	1.735 (4.29)			
Osprey-0.25 mile buffer	0.814 (2.01)			
Osprey-0.25 mile buffer	0.188 (0.47)			
Osprey-0.25 mile buffer			0.003 (0.01)	89/3
Osprey-0.25 mile buffer		0.155 (0.38)		89/4
Osprey-0.25 mile buffer		0.082 (0.20)		89/4
Osprey-0.25 mile buffer		0.147 (0.36)		89/4
Osprey-0.25 mile buffer		0.101 (0.25)		89/4
Osprey-0.25 mile buffer		0.058 (0.14)		89/4
Osprey-0.25 mile buffer		0.103 (0.25)		89/3
Osprey-0.25 mile buffer		0.205 (0.51)		89/3
Osprey-0.25 mile buffer		0.069 (0.17)		89/3
Osprey-0.25 mile buffer		0.015 (0.04)		89/3
Osprey-0.25 mile buffer		0.006 (0.02)		89/3
Spotted Owl-HRCA	0.849 (2.10)			89/1
<b>Total</b>	<b>44.890 (113.03)</b>	<b>2.968 (7.28)</b>	<b>0.006 (0.02)</b>	

EB = Existing basin

ESL = Environmental study limit (same as study area)

PB = Proposed basin

### *Impacts to Special-Status Plant Species*

Potential impacts to sensitive plant species could include permanent, temporary, and indirect effects. Permanent impacts could include loss or degradation of habitat due to creation of drainage basins. Temporary impacts, which would occur only during the construction period, could include increased erosion and vehicle disturbances of habitat. Indirect effects are those that may result after Program implementation, such as altered hydrology, introduction of invasive non-native species, or reduced genetic exchange.

Impacts to native vegetation, including sensitive plants and SEZ vegetation within the project area due to an increase in noxious weed spread as a result of the proposed Program are possible but not likely. Relatively few noxious weeds are known from the project area, and avoidance

strategies and design features would be implemented to reduce the spread of noxious weeds as described in Section 3.5.4. In general, the amount of disturbance associated with Program activities would be relatively low, given the limited extent of impacts adjacent to the existing roadway. Therefore, the habitat changes due to construction activities (reduced shade and soil cover) that could increase noxious weed growth would be relatively minor.

### *Impacts to Sensitive Habitats*

Potential impacts to sensitive habitat could include permanent, temporary, and indirect effects. Permanent impacts include loss or degradation of habitat due to creation of drainage basins. Temporary impacts, occurring only during the construction period, include increased erosion and vehicle disturbances of habitat. Indirect effects are those that may result after implementation of the Program, such as altered hydrology, introduction of invasive non-native species, or reduced genetic exchange.

### *3.5.3.2 TRPA Considerations*

#### *Impacts to Special-Status Wildlife Species*

Three TRPA special-interest species were identified in the wildlife databases as having the potential to occur within the project area: northern goshawk, bald eagle, and osprey. Habitat for mule deer and waterfowl, two other TRPA special-interest wildlife categories, is also potentially present in the project area.

Program construction and the associated equipment noise and movement have the potential to disrupt wildlife behavior. However, construction would take place along existing highways that are primary traffic routes in the Lake Tahoe Basin. The highways already present barriers to wildlife movement due to the presence of heavy traffic during the day. Daytime construction along the roadways, if limited to the hours of 8 a.m. to 6:30 p.m., would not present a significant change to the corridor in terms of wildlife movement, except for the potential presence of temporary fencing surrounding the work sites. Because construction would transition along each project segment, opportunities for wildlife to cross the roadways would be similar to existing conditions.

Removal of trees and vegetation along highway shoulders or for proposed basins and drainage facilities could eliminate some wildlife habitat. Specific acreages of tree/vegetation removal will be defined during the development of plans for each segment. Any existing trees over 0.8 meter (30 inches) dbh will be avoided or removal will be minimized consistent with the TRPA Threshold V1, but some tree removal will likely be unavoidable, resulting in an adverse impact with respect to this threshold.

Work at creek crossings has the potential to temporarily impair fish passage, which may be inconsistent with TRPA Threshold F2. If work is necessary at creek crossings, contractor requirements will be required to avoid or minimize obstructions, and the design of culvert installation will have to provide for fish passage, depending on the creek or tributary.

#### *Impacts to Stream Environment Zones*

Direct and indirect impacts to SEZ areas are expected to occur from the proposed construction of infiltration basins, retrofitting of existing basins, paving of pullout areas on the sides of US 50

and SR 89, and other proposed Program activities. SEZs are under TRPA jurisdiction and include wetlands and other waters of the U.S. along with their drainage areas. As a result, there is overlap in jurisdiction between the USACE, the CDFG, and the TRPA. Therefore, areas of impacts to SEZs may include wetlands and other waters of the U.S. Total SEZ impacts are not expected to exceed 20 acres for the entire Program. This amount is based on construction of all Program segments, all basins, and all other design elements as currently proposed. However, as each segment is further developed and more location-specific data become available, avoidance and minimization measures for each project are expected to reduce the impacts significantly.

### **Proposed and Existing Basins**

Proposed basins and retrofitting and/or enlarging of existing basins may impact SEZ areas. However, the exact impact area is unknown because the specific locations of new basins and the extents of modification to existing basins have not been determined. These impacts will be specifically identified in the environmental document for each segment based on more detailed designs.

### **Paving of Pullout Areas**

SEZ areas could be impacted by the paving of the proposed pullouts. These impacts will be specifically identified in the environmental document for each segment based on more detailed designs.

### **Other Program Activities**

Direct and indirect impacts to SEZs would be associated with widening shoulders along portions of the study area. Construction of asphalt-concrete dikes would convey stormwater runoff into the SEZs, causing potential indirect impacts including higher sedimentation rates and scouring. Any SEZ areas that are paved would be directly and permanently impacted. Although no areas have been specified for shoulder widening, SEZ losses could be high if shoulder widening is implemented throughout the study area. SEZ areas close to current shoulder locations occur along Grass Lake Creek, Taylor Creek, Tallac Creek, Emerald Bay, Meeks Bay, Upper Truckee River, Lake Valley State Recreation Area, and various unnamed perennial stream crossings throughout the study area. Temporary impacts to SEZs could include potential sedimentation and compaction of SEZs during construction activities, introduction and/or spread of weed seeds, and removal of mature SEZ vegetation. Other proposed construction activities would cause both direct/indirect and permanent/temporary impacts if they are located within or in close proximity to existing SEZs. However, most of the other proposed construction activities can be positioned outside of SEZ areas.

#### ***3.5.3.3 No Project Alternative***

The No Project Alternative would consist of not implementing the EIP projects for which Caltrans is the lead agency; therefore, there would be no construction-related impacts to the natural environment.

### 3.5.4 Avoidance, Minimization, and Mitigation

Potential impacts to sensitive wildlife and plant species and sensitive habitats will be avoided and/or minimized through modification of construction specifications and timing of Program implementation. Mitigation and minimization measures are described below by category.

#### 3.5.4.1 *Avoidance Measure*

##### *Establish Environmentally Sensitive Areas*

Additional direct and indirect impacts to sensitive biological resources (including wetlands, waters of the United States, SEZ resources, and sensitive habitats for rare plants) throughout the project area will be avoided or minimized by designating these features outside of the construction impact areas as environmentally sensitive areas (ESAs) in construction plans and specifications. Information related to the locations of ESAs and their treatment will be shown on contract plans and discussed in the Special Provisions. ESA provisions should include, but are not limited to, the use of temporary high-visibility orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources, and to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be restricted (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions shall be implemented as a first order of work, and remain in place until all construction activities have been completed.

#### 3.5.4.2 *General Minimization and Mitigation Measures*

##### *Construction Clean-up*

All temporary fill and construction debris will be removed from the project area after completion of construction activities.

##### *Construction Scheduling*

Construction will be timed to minimize potential impacts to sensitive biological resources as specified in Sections 3.5.4.3, 3.5.4.5, and 3.5.4.6. Construction work will be minimal during the fall, winter, and spring.

#### 3.5.4.3 *Minimization and Mitigation Measures for Impacts to Rare Plants*

##### *Preconstruction Surveys for Tahoe Yellow Cress*

This species is the only California-listed endangered species in the project area. Since construction activities may result in effects to the shore zone where Tahoe yellow cress may occur, surveys for this species shall be conducted prior to final design. Prior to conducting surveys for Tahoe yellow cress, the Reno office of the USFWS shall be consulted for up-to-date information regarding known occurrences of the species in the project vicinity. The Reno office of the USFWS shall be consulted after Tahoe yellow cress surveys are complete to ensure that potential impacts are avoided or minimized and that construction activities do not inhibit long-term conservation efforts for the survival of the species.

***Sensitive Plant Species Mitigation***

Preservation, enhancement, and/or restoration of habitat will be conducted for any impacts to sensitive plant species and their associated habitats according to USFWS and CDFG requirements.

***Plant Material Collection***

Collection of seeds for annual plants or bulbs for transplanting will be conducted in coordination with the CDFG.

**3.5.4.4 *Weed Control Minimization and Mitigation Measures******Weed-Free Construction Equipment***

All construction equipment working in or near SEZ areas must be steam cleaned of potential noxious weed sources (such as mud and vegetation) prior to mobilization at the project site (preferably before entry into the Lake Tahoe Basin) and maintained in clean and good working order with maintenance logs made available to TRPA at their request. This should also be performed after entering a potentially infested area and before moving on to another area, to help ensure that noxious weeds are not introduced into the construction area. The contractor shall employ whatever cleaning methods are necessary to ensure that equipment is free of noxious weeds, typically spraying equipment with a high-pressure water hose. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools are not required. Equipment-washing stations shall be placed in areas that afford easy containment and monitoring (preferably outside of the Lake Tahoe Basin) and that do not drain into the forest or sensitive (riparian, SEZ, wetlands, etc.) areas.

***Equipment Staging in Weed-Free Areas***

Equipment should only be staged in weed-free areas. Landings should be placed in forested areas rather than open flats to help prevent the establishment of noxious invaders such as yellow star thistle, which use open, sunny areas.

***Weed-Free Erosion Control Treatments***

To further minimize the risk of introducing additional non-native species into the area, only locally TRPA-approved plant species will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and certified weed-free straw shall be required where erosion control straw is to be used. In addition, any hydroseed mulch used for revegetation activities must also be certified weed-free.

**3.5.4.5 *Minimization and Mitigation Measures for Wildlife Impacts******Ensure Fish Passage***

Work would comply with the USFWS Biological Opinion and all agency permits. Corrective action shall be taken immediately (when safe based on stream flows) if the culverts create a condition that obstructs fish passage, such as clogging by sediment and debris. Any intakes that

may be required for water pumps associated with wetting, irrigation, or dewatering of sites shall be screened to CDFG specifications to avoid fish kills.

#### ***Preconstruction Amphibian Surveys***

A focused survey for mountain yellow-legged frogs shall be conducted by a qualified biologist within 30 days prior to the beginning of construction-related activities. In the unlikely event that mountain yellow-legged frogs are found, Caltrans will follow agreements with the USFWS as to the appropriate action.

#### ***Restrict Timing of Woody Vegetation Removal***

It is recommended that the removal of any woody vegetation (trees and shrubs) required for the Program is completed between August 16 and October 15, prior to construction, outside of the predicted nesting season for raptors and migratory birds in this area. Vegetation removal outside of this time period may not proceed until a survey by a qualified biologist determines that no nests are present or in use, as described in the next measure (Nesting Bird Survey).

#### ***Nesting Bird Survey***

If woody vegetation removal, construction, grading, or other Program-related improvements are scheduled during the nesting season of protected raptors and migratory birds (March 1 to August 15), a focused survey for active nests of such birds shall be conducted by a qualified biologist within 30 days prior to the beginning of construction-related activities. If active nests are found, Caltrans will follow agreements with the USFWS and the CDFG as to the appropriate action.

#### ***Limit Vegetation Removal***

Vegetation removal shall be limited to the absolute minimum amount required for construction.

#### ***Preconstruction Surveys for Roosting, Denning, or Burrowing Mammals***

A qualified biologist shall conduct focused preconstruction surveys within 30 days prior to the beginning of construction-related activities. In the unlikely event that a sensitive roosting, burrowing, or nesting mammal is found, Caltrans shall consult with the appropriate regulatory agency regarding actions needed to comply the various regulations before the work can be initiated. If a lapse in Program-related work of 30 days or longer occurs, a focused survey and, if required, consultation with the appropriate agency will be required before the work can be reinitiated.

### ***3.5.4.6 Minimization and Mitigation Measures for Water Quality Impacts***

#### ***Restrict Timing of In-Stream Activities***

Culvert rehabilitation or extension is proposed at potential fish-bearing waters. To avoid direct impacts to fisheries resources, Caltrans would comply with the USFWS Biological Opinion and agency permits with regard to timing of in-stream activities. In most years, the seasonal dry period of these drainages occurs between July 15 and October 15; however, work within these drainages will be subject to stream conditions and permit restrictions.

***Minimize Disturbance to Creek Channel and Adjacent Areas***

Disruption of the streambed and adjacent riparian corridor will be minimized. All stream and riparian habitat areas outside of the construction impact areas will be designated as ESAs as detailed in Section 3.5.4.1.

Disturbed areas within the construction limits, including temporary or permanent access routes, will be graded to minimize surface erosion and siltation into streambeds. Any access routes will be removed after each construction season, and the streambed and bank will be re-contoured back to the general angle of repose that existed preconstruction. Streambanks and adjacent areas that are disturbed by construction activities will be stabilized to avoid increased erosion during subsequent storms and runoff. Bare areas will be covered with mulch and revegetated to preconstruction conditions. Construction site BMPs will be used to prevent contamination of the streambank and watercourse from construction material and debris as detailed in Section 3.5.4.6.

***Containment Measures/Construction Site Best Management Practices***

Measures will be employed to prevent any construction material or debris from entering surface waters or their channels. BMPs for erosion control will be implemented and in place prior to, during, and after construction to ensure that no silt or sediment enters surface waters.

Caltrans' Standard Specifications require the Contractor to submit a Water Pollution Control Plan. This plan must meet the standards and objectives to minimize water pollution impacts set forth in Section 7-1.01G of Caltrans' Standard Specifications. The Water Pollution Control Plan must also be in compliance with the goals and restrictions identified in the Lahontan RWQCB's Basin Plan. Any additional measures included in the RWQCB Section 401 certification, CDFG Section 1602 Agreement, CWA Section 404 permit, or TRPA permit will be complied with. Typical standards/objectives, at times referred to as BMPs, may include the following:

- Where working areas encroach on live or dry streams, lakes, or wetlands, physical barriers approved by TRPA and Lahontan RWQCB adequate to prevent the flow or discharge of sediment into these systems shall be constructed and maintained between working areas and streams, lakes, and wetlands. During construction of the barriers, discharge of sediment into streams shall be held to a minimum. Discharge will be contained through the use of measures approved by TRPA and Lahontan RWQCB that will keep sediment from entering protected waters.
- Oily or greasy substances originating from the Contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland.
- Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland.

***Dewatering Activities***

Depending on seasonal flows, dewatering of a streambed or culvert course and or a temporary stream diversion may be necessary where culvert rehabilitation or replacement is proposed. Any intakes that may be required for water pumps associated with wetting, irrigation, or dewatering of sites shall be screened to CDFG specifications to avoid the intake of fish. If dewatering of a site is required, a temporary basin will be constructed downstream of the activity if necessary. Discharge waters from the dewatering of an excavation will be pumped into the

basin to allow sediments to settle out before being allowed to re-enter drainages. Diversions that involve only clear water may not require disposal to a basin.

#### ***Restore Riparian and Stream Habitat Disturbed by Construction***

Prior to vegetation removal, the area will be surveyed by a qualified biologist for a complete accounting of species and their quantities present within the construction limits. Upon completion of construction activities, streambanks will be permanently stabilized and the riparian areas will be replanted with appropriate native species. Tree and shrub species that will be used for the riparian restoration will include species such as aspen, willow, alder, and cottonwood. Stream channels will be regraded to preconstruction conditions. In addition, all temporary disturbance areas will be hydroseeded with the appropriate mix of native herbaceous and grass species unique to the specific Lake Tahoe vegetation type disturbed.

A restoration and monitoring plan will be prepared by the Caltrans Landscape Architecture Branch and will be submitted for approval by the appropriate agencies prior to Program permitting. The restoration plan will outline and detail all planting and erosion control activities and all associated proposed monitoring activities (including length and timing of monitoring, success criteria, remedial actions, and documentation).

#### ***Water Quality Fees or Excess Coverage Mitigation***

Any new land coverage in the Lake Tahoe Basin is subject to TRPA regulation and may be assessed a water quality mitigation fee (for projects using “allowable” potential coverage; \$1.34 per square foot) or may be required to perform Excess Coverage Mitigation (for projects utilizing “excess” coverage). Excess land coverage is defined as existing coverage beyond the total maximum allowable base coverage, the transferred coverage, and the coverage previously mitigated under the Program. The Excess Coverage Mitigation program offers five options to mitigate excess land coverage:

- Reduce coverage on-site
- Reduce coverage off-site
- Coverage mitigation fee used to retire land coverage within the same hydrologic zone
- Parcel consolidation or parcel line adjustment
- Projects within community plans (see TRPA Code of Ordinances Section 20-5)

#### ***Restore Disturbed SEZs***

Mitigation shall be provided for direct impacts to SEZ areas according to TRPA policy.

#### ***Erosion Control***

Temporary erosion control devices will be installed on slopes where erosion or sedimentation could degrade sensitive biological resources.