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5.2.5 Terrestrial Resources

5.2.5.1 Environmental Setting and Expected Environmental Impacts

This section describes the terrestrial resources in the vicinity of the four Big Creek Alternative Licensing Process (ALP) Projects, including vegetation communities and wildlife habitat; federally listed threatened and endangered plant and wildlife species; other special-status plants and wildlife; noxious weeds and invasive ornamental plant species; and game species. This report identifies potential terrestrial resource issues existing under current operations and maintenance of the Projects (No Action), and the effects to these resources resulting from the continued operations and maintenance of the Projects under the Proposed Action (including implementation of additional avoidance, protection, mitigation, and enhancement measures).

5.2.5.1.1 Methods

This assessment of terrestrial resources was based on a review of relevant information, extensive agency and stakeholder consultation, and field surveys. A summary of agency and stakeholder consultation is provided in Section 4.0, Consultation. Detailed descriptions of the methods are provided in the Final Technical Study Plan Package for the Big Creek Alternative Licensing Process (SCE 2001; Volume 4, SD-B (Books 6 and 21)). Study results, including comprehensive maps of terrestrial resources, are provided in the 2002 Technical Study Report Package (TSRP) for the Big Creek Hydroelectric System ALP (SCE 2003; Volume 4, SD-C (Books 7-10, 21 and 22), the 2003 TSRP for the Big Creek Hydroelectric System ALP (SCE 2004a; Volume 4, SD-D (Books 11-17 and 23), and the 2004 TSRs for the Big Creek Hydroelectric System ALP (SCE 2004b; Volume 4, SD-E (Books 18 and 24)).

Extensive field surveys were conducted as part of the Big Creek ALP to document terrestrial resources and conditions present in vicinity of the four Big Creek ALP Projects. These field surveys included completion of the following:

- Vegetation Community and Wildlife Habitat Mapping
- Noxious Weeds and Invasive Ornamental Plant Species Surveys
- Reconnaissance-level Wildlife Surveys
- Special-status Plant Surveys
- Valley Elderberry Longhorn Beetle (VELB) Habitat and United States Fish and Wildlife Service (USFWS) Protocol-level Surveys
- California Red-legged Frog Site Assessment
- Bald Eagle Nesting and Wintering Surveys

- Special-status Amphibian and Reptile Habitat Mapping and Surveys
- Great Gray Owl U.S. Department of Agriculture–Forest Service (USDA-FS) Protocol Surveys
- Special-status Bat Surveys
- Waterfowl, Raptors, Riparian Nesting Songbirds, and Game Species Habitat Identification or Mapping
- Mammoth Pool Mule Deer Migration Study
- Mule Deer Summer and Winter Range, Migration Corridor, and Holding Area Mapping

5.2.5.2 Affected Environment

This section describes the existing environment in the vicinity of each of the four Big Creek ALP Projects. This encompasses the identification of the vegetation communities and wildlife habitats present; special-status species known or potentially occurring in the vicinity of the Projects, which includes federally listed threatened and endangered species; noxious weeds and invasive ornamental plant species; and game species. Refer to Table 5.2.5-1 for a list of vegetation communities and wildlife habitats within one-quarter mile of the four Big Creek ALP Projects. Table 5.2.5-2 includes a list of known occurrences of noxious weeds and invasive ornamental and special-status species by Project facility, recreation facility, road or trail. Table 5.2.5-3 includes a listing of special-status plant and wildlife species known or potentially occurring in the vicinity of the four Big Creek ALP Projects.

A special-status species is defined as any species that is granted status by a federal, state, or local agency. Federally listed threatened and endangered species are defined as those species granted a special status under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) (ESA) by federal agencies: threatened (FT), endangered (FE), proposed threatened or endangered (FPT and FPE) or candidate (FC). Federally listed species proposed for delisting are also included. Since the majority of the BCS is on lands managed by the USDA-FS within California, the category of special-status also pertains to species granted status as Forest Service Sensitive (FSS) or as Management Indicator Species for the Sierra National Forest (SNF-MIS), and species listed as threatened (CT), endangered (CE), rare (CR), and species of concern (CSC) by the State of California.

This includes species listed by the California Native Plant Society (CNPS) as 1B (rare, threatened, or endangered in California and elsewhere); and 2 (rare in California but more common elsewhere). CNPS-listed plants are further defined as (1) seriously endangered in California (over 80% of occurrences threatened, and a high degree and immediacy of threat); (2) fairly endangered in California (20-80% of occurrences threatened); and (3) not very endangered in California (less than 20% of occurrences

threatened or no current threats known). For example, a plant rated 2.1 would be rare in California, with more than 80% of occurrences threatened to a high degree, but more common elsewhere.

5.2.5.2.1 Mammoth Pool Project (FERC Project No. 2085)

Vegetation Communities and Wildlife Habitats

Listed below are thirteen vegetation communities/wildlife habitats identified within one-quarter mile of the Mammoth Pool Project. Additional area types identified were developed, ruderal, open water, and open ground.

- Gray Pine-Chaparral Woodland/Mixed Chaparral
- Gray Pine Chaparral Woodland with Rock Substrate/Mixed Chaparral with Rock substrate
- Westside Ponderosa Pine Forest/Ponderosa Pine Forest
- Westside Ponderosa Pine Forest/Ponderosa Pine Forest with Rock Substrate
- Sierran Mixed Coniferous Forest
- Sierran Mixed Coniferous Forest with Rock Substrate
- Blue Oak Woodland
- Oak Woodland/Montane Hardwood
- Oak Woodland with Rock Substrate/Montane Hardwood with Rock Substrate
- Mixed Montane Chaparral/Mixed Chaparral or Montane Chaparral
- Mixed Montane Chaparral with Rock Substrate/Mixed Chaparral or Montane Chaparral with Rock Substrate
- Riparian/Montane, Valley, and Foothill Riparian
- Wet Montane Meadow/Wet Meadow

Refer to TERR 1, Vegetation Communities TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Books 17 and 23)) for a detailed description and map depicting the location of each vegetation community and wildlife habitat in the vicinity of the Mammoth Pool Project.

Special-status Species

The following section summarizes all special-status plants and wildlife known or potentially occurring in the vicinity of the Mammoth Pool Project.

Special-status Plant Species

Federally Listed Plant Species

There are no known occurrences of federally listed plant species in the vicinity of the Mammoth Pool Project.

Other Plant Species

Three special-status plant species are known to occur in the vicinity of Mammoth Pool Project, including:

- Mono Hot Springs evening primrose (*Camissonia sierrae* ssp. *alticola*) FSS, CNPS 1B.2
- Flaming trumpet (*Collomia rawsoniana*) FSS, CNPS 1B.2
- Yosemite lewisia (*Lewisia disepala*) FSS, CNPS 1B.2

Refer to TERR 3, Special-status Plant Populations TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 10 and 22), SD-D (Books 17 and 23) and SD-E (Books 18 and 24)) for a detailed description and known or potential locations of each of these species.

Special-status Wildlife Species

Federally Listed Wildlife Species

Three federally listed wildlife species are known to occur in the vicinity of the Mammoth Pool Project.

- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) FT, FPD
- Bald eagle (*Haliaeetus leucocephalus*) FT, FPD, SNF MIS, CE, CFP
- American peregrine falcon (*Falco peregrinus anatum*) Former FE (Delisted on 8/20/99), FSS, SNF MIS, CE, CFP

A brief description of the life history and critical habitat of VELB and bald eagle is provided below.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) FT, FPD

The Valley Elderberry Longhorn Beetle (VELB) was listed as federally threatened by the USFWS in 1980 (USFWS 1980). This species is completely dependent on its host plant, elderberry (*Sambucus* spp.) and is associated with various species of elderberry below 3,000 feet in elevation. VELB generally occur along waterways and in floodplains that support remnant stands of riparian vegetation. A total of 42 elderberry shrubs, of which two showed signs of beetle occupancy, occur in the vicinity of the Mammoth Pool Project. These 42 shrubs are located adjacent to two Project roads:

- USDA-FS Road No. 9S42, the Mammoth Pool Powerhouse transmission line access road from the gate near County Road 225, Italian Bar Road to USDA-FS Road No. 8S44; and

- USDA-FS Road No. 8S03 from Big Creek Powerhouse No. 8 to the Mammoth Pool Powerhouse.

Refer to the TERR 6, VELB TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 10 and 22), SD-D (Book 17), and SD-E (Books 18 and 24)) and the Big Creek ALP Valley Elderberry Longhorn Beetle Management Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)) for more information on VELB in the vicinity of the Mammoth Pool Project.

Bald Eagle (*Haliaeetus leucocephalus*) FT, FPD, SNF MIS, CE, CFP

The bald eagle was originally listed as federally endangered in 1967 and downgraded to federally-threatened in 1995. The species was proposed for delisting on July 6, 1999, but the status change was never finalized by the USFWS. The breeding range of bald eagles formerly included most of the North American Continent, but bald eagles now nest mainly in Alaska, Canada, the Pacific Northwest, the Great Lakes states, Florida, and Chesapeake Bay. The winter range of the bald eagle is similar to the breeding range, but extends mainly from southern Alaska and southern Canada southward (USFWS 1986). Bald eagles are permanent residents and uncommon winter migrants throughout the state of California. They breed primarily in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties (CDFG 2002). The breeding range is primarily in mountainous habitats next to reservoirs, in the Central Coast Range, and on Santa Catalina Island. About half of the wintering population is found in the Klamath Basin (CDFG 2002). Bald eagles forage near large aquatic ecosystems such as lakes, reservoirs, or free flowing rivers. Bald eagle nests are usually located in uneven-aged stands with old-growth components (USFWS 1986). Nesting usually occurs in large trees along shorelines in relatively remote areas. Breeding occurs February through July, with peak activity occurring between the months of March through June. Average clutch size is two eggs. Incubation lasts approximately 35 days and fledging takes place at 11 to 12 weeks of age. Parental care may extend to 11 weeks after fledging. Bald eagles become sexually mature at 4 to 5 years of age.

The California Natural Diversity Database (CNDDB) has records of two known occurrences of bald eagle in the vicinity of the Mammoth Pool Project (CDFG 2004). The USDA-FS database (USDA-FS 2001) has records of occurrences of bald eagle scattered throughout the Project vicinity. There is a high concentration of wintering bald eagle occurrences at Redinger Lake located downstream of the Mammoth Pool Reservoir on the San Joaquin River, with one wintering adult observed at Redinger Lake in 2001. Bald eagles are known to winter at Mammoth Pool Reservoir. In 2001, there was one adult and one immature bald eagle detected wintering at Mammoth Pool Reservoir. In 2002, adult bald eagles and one subadult were observed at Mammoth Pool Reservoir. No bald eagle nests were detected in the vicinity of the Mammoth Pool Project during focused bald eagle nest surveys, which were conducted on April 18, May 15, and June 18, 2002.

American Peregrine Falcon (*Falco peregrinus anatum*) Former FE (Delisted on 8/20/99), FSS, SNF MIS, CE, CFP

The American peregrine falcon was listed as endangered in 1970 under the Endangered Species Conservation Act of 1969 (Public Law 91-135, 83 Stat. 275). Population declines were attributed to the negative effects of DDT and its metabolites on peregrine falcon reproduction and survival. The American peregrine falcon subspecies were listed as endangered throughout their respective ranges upon passage of the ESA in 1973. Because of restrictions on the use of organochlorine pesticides in the United States and Canada and because of successful management activities, including the reintroduction of captive-bred and relocated wild hatchling peregrine falcons, the species population has increased. In 1999, the USFWS removed the peregrine falcon in North America from the Federal List of Endangered and Threatened Wildlife species (50 CFR Part 17; USFWS 1999b).

The American peregrine falcon breeds in woodlands, forests, coastal habitats, and riparian areas near wetlands, lakes, rivers, or other water bodies, situated near high cliffs, banks, dunes, or mounds. It is a very uncommon breeding resident and migrant in California, with active nesting areas along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. Migrants occur along the coast and in the western Sierra Nevada in spring and fall. The nest is a scrape on a depression or ledge in an open area, on human-made structures, and occasionally in a tree or snag cavity or old nest of other raptors. Riparian areas and coastal and inland wetlands are important habitats yearlong, especially in non-breeding seasons. It feeds on a variety of birds and occasionally takes mammals, insects, and fish. Breeding occurs from early March to late August with a clutch size of three to seven eggs. Incubation is approximately 32 days.

No peregrine falcon nests are present in the study area, and CNDDB has no records of this species in the vicinity of the Mammoth Pool Project (CDFG 2004). However, the species has been documented in the area by the USDA-FS, and appropriate nesting and foraging habitat is present in riverine, lacustrine, wetlands, oak woodland, coniferous forest, and riparian habitats near cliffs in the Project vicinity.

Refer to TERR 8, Raptors TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Books 17 and 23)) for more detailed information on peregrine falcon in the Project vicinity.

The following two federally listed species were initially identified as potentially occurring in the Project vicinity.

- California red-legged frog (*Rana aurora draytonii*) FT, CSC
- Pacific fisher (*Martes pennanti pacifica*) FC, FSS, SNF MIS, CSC

However, further analysis showed that California red-legged frog (CRLF) is unlikely to occur in the Project vicinity. A brief description of the life history for both species is provided below, including a rationale for why CRLF is unlikely to occur in the Project vicinity.

California Red-legged Frog (*Rana aurora draytonii*) FT, CSC

On June 24, 1996, the USFWS listed the California red-legged frog (CRLF) as threatened. On March 13, 2001, a final designation of critical habitat was made for the CRLF (USFWS 2001). The primary constituent elements of critical habitat for CRLF are aquatic and upland areas where suitable breeding and non-breeding habitat is interspersed throughout the landscape and is interconnected by unfragmented dispersal habitat. To possess the primary constituent elements, an area must include two (or more) suitable breeding locations, a permanent water source, associated uplands surrounding these water bodies up to 300 feet from the water's edge, all within 1.25 miles of one another and connected by barrier-free dispersal habitat that is at least 300 feet wide. There is no Critical Habitat for this species in the Project vicinity.

The four Big Creek ALP Projects, including the Mammoth Pool Project, are within the historic range but not within the current known range of the CRLF. The Project vicinities occur within the Sierra Nevada Foothills and Central Valley Recovery Unit for the CRLF (USFWS 2002). This unit includes the western foothills and Sierra Nevada foothills to approximately 5,000 feet elevation in the Central Valley hydrographic basin. However, the four Project areas are not within a core area.

The historical records nearest to the vicinity of the four Big Creek ALP Projects are reported 30 miles to the south, near Minkler, and 15 miles to the northwest in Willow Creek near O'Neals. The Minkler record dates back to 1916 and CRLF are presumed extirpated at this site. The O'Neals records date back to 1951 with CRLF seen as late as 1968. They are currently presumed extirpated. The nearest known extant population of CRLF to the vicinity of the Projects is in Mine Creek (near Mercey Hot Springs), approximately 90 miles to the west in the Coast Range foothills in Fresno County. Although small sections of Jose Creek and Chiquito Creek represent suitable habitat for CLRF, these sections lie outside of the four Big Creek ALP Projects area. Therefore, CRLF are not expected to occupy the Project vicinities because of the lack of

suitable habitat and because the Project vicinities are outside of the species' current known range.

Refer to the CAWG 8, Amphibians and Reptiles TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 9 and 21) and SD-D (Books 14 and 23)) for detailed information on CLRF in the Project vicinity.

Pacific Fisher (*Martes pennanti pacifica*) FC, FSS, SNF MIS, CSC

The Pacific fisher has been a candidate for federal listing since April 2004. It is among the most habitat-specific mammals in North America (USDA-FS 2001). The Pacific fisher occurs in a variety of forest types with mature, dense forest stands with 40% canopy closure or greater. It requires standing dead trees, downed logs, and rocky areas for denning sites. USDA-FS (2001) lists the following key habitat features for Pacific fisher resting and denning sites in the southern Sierra:

- Mean den tree diameter at breast height (dbh) of 49" conifer and 27" oak
- Mean rest site tree dbh of 44" conifer and 26" oak
- Mean rest site basal area of 273 sq ft/acre
- Mean den canopy closure of 94%
- Mean rest site canopy closure of 93%

The Pacific fisher dens in cavities, broken treetops, and snags from winter to May. The study area is within the Southern Sierra Fisher Conservation Area, which encompasses the known occupied range of the Pacific fisher in the Sierra Nevada—an elevational band from 3,500 to 8,000 feet on the Sierra and Sequoia National Forests.

There are several records of Pacific fisher at Red Top Camp near Dinkey Creek in 1913; near Dinkey Creek in 1974; south of Coon Creek near Huntington Lake in 1989; and at Marcella Lake 12 miles north of Mono Hot Springs in 1978. Additionally, there are many detections of American fisher throughout the Big Creek System, with a concentration to the south and east of Huntington Lake. No focused surveys have been conducted, and no incidental observations were reported while implementing other studies for the Big Creek ALP Project area.

There are no records of Pacific fisher in the Mammoth Pool Project vicinity. However, potential denning and foraging habitat is present in coniferous forests that contain specific vegetation and structural habitat aspects, as described above.

Refer to TERR 13, Mesocarnivores TSRP (SCE 2003; Volume 4, SD-C (Books 10 and 22) for detailed information and maps of appropriate Pacific fisher habitat in the vicinity of this Project.

Other Sensitive Wildlife Species

Three special-status wildlife species are known to occur in the vicinity of the Mammoth Pool Project.

- Western pond turtle (*Actinemys marmorata*) FSS, CSC
- Osprey (*Pandion haliaetus*) SNF MIS, CSC
- California spotted owl (*Strix occidentalis occidentalis*) FSS, SNF MIS, CSC

Five special-status wildlife species have been identified as potentially occurring in the Project vicinity.

- Foothill yellow-legged frog (*Rana boylii*) FSS, CSC
- Cooper's hawk (*Accipiter cooperi*) CSC
- Willow flycatcher (*Empidonax traillii brewsteri*) FSS, SNF MIS, CE
- Yellow warbler (*Dendroica petechia brewsteri*) CSC
- Sierra Nevada mountain beaver (*Aplondontia rufa californica*) CSC

Tables 5.2.5-2 and 5.2.5-3 provide the known occurrence or potential for occurrence for each species at each Project facility associated with the Mammoth Pool Project. Refer to the CAWG 8, Amphibians and Reptiles; TERR 5, Common Special-status Wildlife; TERR 8, Raptors; TERR 9, Bald Eagle and Osprey; and TERR 11, Riparian-Nesting Songbirds TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 9-10 and 21-22) SD-D (Books 14, 17, and 23) and SD-E (Books 18 and 24)) for detailed information on these species.

Noxious Weeds and Invasive Ornamental Plant Species

Four noxious weeds and invasive ornamental plant species were identified in the vicinity of the Mammoth Pool Project, including:

- Black mustard (*Brassica nigra*)
- Cheatgrass (*Bromus tectorum*)
- Tocalote (*Centaurea melitensis*)
- Bull thistle (*Cirsium vulgare*)

Refer to Table 5.2.5-2 for the location of each noxious weed, invasive ornamental and special-status species. Refer to the Vegetation and Integrated Pest Management Plan

for the California Invasive Plant Council (Cal-IPC) rating for each (SCE 2007; Volume 4, SD-G (Books 19 and 24)).

Game Species

Mule Deer (*Odocoileus hemionus*) SNF-MIS

Mule deer are SNF-MIS. In the central Sierra, the San Joaquin deer herd ranges from about 2,000 feet along the San Joaquin River up to about 12,000 feet along the crest of the Sierra. The herd inhabits winter ranges at elevations up to 3,600 feet from early October through mid-May (Holl et al. 1979). The herd remains at its winter range until mid-May (depending on snow pack) and then begins a gradual upward migration (Loft et al. 1989). During the summer, mule deer may be found from 6,000 to 10,000 feet in elevation from late May to early November (Holl et al. 1979). They are most commonly found from 6,500 to 8,000 feet, where optimum habitat occurs. A large number of deer using the summer range in Fresno County winter on the north side of the San Joaquin River in Madera County, and thus must cross the San Joaquin River when migrating between summer and winter ranges (Peabody et al. 1978). The area around Mammoth Pool Reservoir has been identified as a mule deer holding area and mule deer are known to migrate through the Project vicinity. Deer have been observed swimming the reservoir, as well as crossing the road on the dam.

Refer to TERR 14, Mule Deer TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Book 17)) for more detailed information on mule deer in the Project vicinity.

5.2.5.2.2 Big Creek Nos. 1 and 2 (FERC Project No. 2175)

Vegetation Communities and Wildlife Habitats

Listed below are the fourteen vegetation communities/wildlife habitats identified in the vicinity of the Big Creek Nos. 1 and 2 Project. Additional area types identified were developed, ruderal, open water, and open ground.

- Gray Pine–Chaparral Woodland/Mixed Chaparral
- Gray Pine–Chaparral Woodland/Mixed Chaparral with Rock Substrate
- Sierran Mixed Coniferous Forest
- Sierran Mixed Coniferous Forest with Rock Substrate
- Jeffrey Pine-Fir Forest/Jeffrey Pine Forest
- Jeffrey Pine-Fir Forest with Rock Substrate/Jeffrey Pine Forest with Rock Substrate
- Blue Oak Woodland

- Oak Woodland/Montane Hardwood
- Oak Woodland with Rock Substrate /Montane Hardwood with Rock Substrate
- Mixed Montane Chaparral/Mixed Chaparral or Montane Chaparral
- Mixed Montane Chaparral with Rock Substrate/Mixed Chaparral or Montane Chaparral with Rock Substrate
- Riparian/Montane, Valley and Foothill Riparian
- Wet Montane Meadow/Wet Meadow

Refer to the TERR 1, Vegetation Communities TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Books 17 and 23)) for a detailed description and map depicting the location of each vegetation community and wildlife habitat in the vicinity of the Big Creek Nos. 1 and 2 Project.

Special-status Species

The following section summarizes all special-status plants and wildlife known or potentially occurring in the vicinity of the Big Creek Nos. 1 and 2 Project.

Special-status Plant Species

Federally Listed Plant Species

There are no known occurrences of federally listed plant species in the vicinity of the Big Creek Nos. 1 and 2 Project.

Other Plant Species

Two special-status plant species are known to occur in the vicinity of the Big Creek Nos. 1 and 2 Project:

- Subalpine fireweed (*Epilobium howellii*) FSS, CNPS 1B.3
- Madera linanthus (*Leptosiphon serrulatus*) CNPS 1B.2

Six special-status plants were identified as potentially occurring in the vicinity of the Big Creek Nos. 1 and 2 Project:

- Scalloped moonwort (*Botrychium crenulatum*) FSS, CNPS 2.2
- Bolander's candle moss (*Bruchia bolanderi*) FSS, CNPS 2.2
- Veined water lichen (*Hydrothyria venosa*) FSS

- Three-ranked hump moss (*Meesia triquetra*) FSS, CNPS 2.2
- Broad-nerved hump moss (*Meesia uliginosa*) FSS, CNPS 2.2
- Flat-leaved bladderwort (*Utricularia intermedia*) CNPS 2.2

Refer to TERR 3, Special-status Plant Populations TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 10 and 22), SD-D (Books 17 and 23), and SD-E (Books 18 and 24)) for a detailed description and known or potential locations of each of these species.

Special-status Wildlife Species

Federally Listed Wildlife Species

Five federally listed, or formerly listed, wildlife species are known to occur in the vicinity of the Big Creek Nos. 1 and 2 Project. These species are the mountain yellow-legged frog (MYLF), Yosemite toad (YT), bald eagle, American peregrine falcon, and Pacific fisher. A brief description of each species' life history and distribution is provided below.

Mountain Yellow-Legged Frog (*Rana muscosa*) FC, FSS, CSC

The mountain yellow-legged frog (MYLF) is endemic to the Sierra Nevada and Transverse ranges in California (Storer 1925). This species is highly aquatic and is closely associated with low-gradient streams, meadows, ponds, and lakes from 4,500 to 12,000 feet in elevation in the Sierra Nevada. Adults are most active during the day and often bask in open areas (Bradford 1984). The MYLF is most often found in lakes and streams with gently sloping banks that are moderately rocky and interspersed with sedges (*Carex* spp.), grasses, and low clumps of willows (*Salix* spp.) (Mullally and Cunningham 1956). The MYLF is a pond-breeding species that associates primarily with lakes and ponds throughout its southern range and with streams throughout its northern range (J. Wild, pers. comm.). Because of harsh winters and high spring run-off in the higher elevations of the MYLF's range, only large pools and ponds that maintain the low velocities required during metamorphosis are used for breeding. Tadpoles may transform after their second summer, thus the tadpoles require still, deep water with fine sediments for overwintering. Adults are commonly observed basking at the edge of pools and along shallow sloped stream margins. Like other pond-breeding frogs and toads, the MYLF is not well adapted to swift flowing water. However, individuals have been noted basking on open, sunny cobbles adjacent to gently flowing riffles during dispersal season.

Historic occurrences of MYLF in the vicinity of the Project have been reported at Lakecamp Lake and Lakecamp Creek in 1992, Kaiser Pass Meadow in 1974, Kaiser Peak Meadow in 1955, Huntington Lake in 1955, and East Fork Big Creek in 1993 (CDFG 2004).

There are known occurrences of MYLF in the vicinity of the Big Creek Nos. 1 and 2 Project, at Huntington Lake Reservoir.

Potential MYLF habitat (i.e., that rated as good or moderate in habitat survey results) was also identified in the vicinity of the Big Creek Nos. 1 and 2 Project:

- Big Creek (River Mile (RM) 7.4) to Huntington Lake (RM 9.9-7.4) and adjustable channel reach (RM 8.3-8.6) – total of 2.30 RM of potential habitat
- Big Creek (RM 7.4) to Dam 4 (RM 6.3) – total of 0.55 RM of potential habitat
- Big Creek Dam 4 to Dam 5 (RM 1.8-6.2) – total of 3.05 RM of potential habitat
- Dam 4 Forebay (RM 6.2-6.35) – total of 0.05 RM of potential habitat

Refer to CAWG 8, Amphibians and Reptiles TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 9 and 21) and SD-D (Books 14 and 23)) for more detailed information on MYLF in the Project vicinity.

Yosemite Toad (*Bufo canorus*) FC, FSS, CSC

The YT associates with montane meadows, streams, ponds, and lakes in lodgepole pine forests in the Sierra Nevada from 6,400 to 11,300 feet (Camp 1916, Mullally 1956, Sherman and Morton 1993). Along the western slope of the Sierra Nevada, the northernmost limit of this species is Heather Lake in El Dorado County, and the southernmost limit is approximately five miles south of Kaiser Pass in Fresno County (Karlstrom 1962). This species co-exists with its close relative, the western toad (Bufo boreas), near Upper Blue Lake in Alpine County (Karlstrom 1962). Excluding this location, both species are thought to be separated by several thousand feet in elevation throughout the remainder of their distribution (Karlstrom 1962). In Fresno County, YT at Kaiser Peak Meadow (8,000 feet in elevation) and western toads at Huntington Lake (7,000 feet in elevation) are separated by approximately 1,000 feet in elevation. Much of the information on the natural history of this toad is the result of studies conducted at Tioga Pass and at Kaiser Peak Meadow.

The preferred habitat of YT is high elevation montane meadows, although individuals do associate with slow flowing, low-gradient stream habitats, such as pools and flatwater, near or adjacent to meadows. Individuals are rarely, if ever, seen in swiftly flowing habitats like cascades or exposed habitats like bedrock sheets. The substrate in streams that meander through montane meadows is predominantly composed of fines occasionally interspersed with sand. Coarse material is rare and probably holds little value for the YT, which breeds in shallow pools in meadows during spring and primarily uses stream habitats during the drier portions of the year. Because YT have a high association with low gradient streams adjacent to meadows, cover types more typical to those habitats are considered to have higher importance in providing refuge sites. Specifically, aquatic and terrestrial vegetation, woody debris, and undercut banks would

be more common in meadow-stream complexes and would provide crucial protection from predators.

Historic occurrences of YT in the Project vicinity have been reported in Lakecamp Lake and Lakecamp Creek in 1993, Kaiser Pass Meadow in 2002, Kaiser Peak Meadow in 1955, Rancheria Creek in 1993, East Fork Big Creek in 1993, and an unnamed meadow approximately five miles south of Kaiser Pass in 1949 (CDFG 2004). Biologists from the SNF detected this species in Graveyard Meadow in 2000 (Phil Strand, pers. Comm.).

There are known occurrences of YT within the vicinity of the Big Creek Nos. 1 and 2 Project at Huntington Lake Reservoir.

Refer to CAWG 8, Amphibians and Reptiles TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (9 and 21) and SD-D (Books 14 and 23)) for more detailed information on YT in the Project vicinity.

Bald Eagle (*Haliaeetus leucocephalus*) FT, FPD, SNF MIS, CE, CFP

A brief description of bald eagle life history and distribution is provided above under the Mammoth Pool Project. Bald eagles are known to winter and have been observed foraging in the vicinity of Big Creek Nos. 1 and 2 Project at Huntington Lake. In 2003, a new bald eagle nest was constructed at Huntington Lake, but did not produce any young. In 2005, this nest produced two fledglings (Sorini-Wilson, pers. comm., 2005).

Refer to the TERR 9, Bald Eagle and Osprey TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Book 17) and the Big Creek ALP Bald Eagle Management Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)) for detailed information on bald eagle in the Project vicinity.

American Peregrine Falcon (*Falco peregrinus anatum*) Former FE (Delisted on 8/20/99), FSS, SNF MIS, CE, CFP

A brief description of American peregrine falcon life history and distribution is provided above under Mammoth Pool Project. The USDA-FS database has several records of observations throughout the Project vicinity, concentrated near the town of Big Creek, where a pair is known to have nested on Big Creek Powerhouse No. 1 in 1999 (USDA-FS 2001). The pair has also nested on Sunset Point for the last few years. Appropriate nesting and foraging habitat is present in riverine, lacustrine, wetlands, oak woodland, coniferous forest, and riparian habitat types near cliffs throughout the Project vicinity.

Refer to TERR 8, Raptors TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Books 17 and 23)) for more detailed information on peregrine falcon in the Project vicinity.

Pacific Fisher (*Martes pennanti pacifica*) FC, FSS, SNF MIS, CSC

There are several records of Pacific fisher in the vicinity of Ely Creek; Powerhouse No. 1; Powerhouse No. 2; Huntington-Pitman-Shaver conduit; Huntington Lake Reservoir; Big Creek, Huntington Lake to Dam 4; and along several Project roads. Potential denning and foraging habitat is present in coniferous forests that contain specific vegetation and structural habitat aspects. Refer to Mammoth Pool Project for specific habitat aspects.

Refer to the TERR 13, Mesocarnivores TSRP (SCE 2003; Volume 4, SD-C (Books 10 and 22)) for detailed information and maps of appropriate Pacific fisher habitat in the vicinity of this Project.

Other Sensitive Wildlife Species

Eight special-status wildlife species are known to occur in the vicinity of the Big Creek Nos. 1 and 2 Project. Each of these species is listed below.

- Osprey (*Pandion haliaetus*) SNF MIS, CSC
- Northern goshawk (*Accipiter gentilis*) FSS, SNF MIS, CSC
- Great gray owl (*Strix nebulosa*) FSS, CE
- California spotted owl (*Strix occidentalis occidentalis*) FSS, SNF MIS, CSC
- Western red bat (*Lasiurus blossevillii*) FSS
- Sierra Nevada red fox (*Vulpes vulpes necator*) FSS, FSC, CT
- American (pine) marten (*Martes americana*) FSS, SNF MIS
- California wolverine (*Gulo gulo luteus*) FSS, CT, CFP

Six special-status wildlife species have been identified as potentially occurring in the Project vicinity as listed below.

- Foothill yellow-legged frog (*Rana boylii*) FSS, CSC
- Western pond turtle (*Actinemys marmorata*) FSS, CSC
- Cooper's hawk (*Accipiter cooperi*) CSC
- Willow flycatcher (*Empidonax traillii brewsteri*) FSS, SNF MIS, CE
- Yellow warbler (*Dendroica petechia brewsteri*) CSC
- Sierra Nevada mountain beaver (*Aplodontia rufa californica*) CSC

Tables 5.2.5-2 and 5.2.5-3 provide the known or potential for occurrence for each species at each Project facility associated with the Big Creek Nos. 1 and 2 Project. Refer to the CAWG 8, Amphibians and Reptiles; TERR 5, Common Special-status Wildlife; TERR 8, Raptors; TERR 9, Bald Eagle and Osprey; TERR 11, Riparian-Nesting Songbirds; TERR 12, Special-status Bat Species; and TERR 13, Mesocarnivores TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 9-10, 12 and 21-22), SD-D (Books 14, 17, and 23) and SD-E (Books 18 and 24)) for detailed information on these species.

Noxious Weeds and Invasive Ornamental Plant Species

Eight noxious weeds and invasive ornamental plant species were identified in the vicinity of the Big Creek Nos. 1 and 2 Project:

- Cheatgrass (*Bromus tectorum*)
- Bull thistle (*Cirsium vulgare*)
- Scotch broom (*Cytisus scoparius*)
- Klamath weed (*Hypericum perforatum*)
- Black locust (*Robinia pseudoacacia*)
- Himalayan blackberry (*Rubus discolor*)
- Spanish broom (*Spartium junceum*)
- Periwinkle (*Vinca major*)

Refer to Table 5.2.5-2 for the location of each noxious weed and invasive ornamental plant species. Refer to the Vegetation and Integrated Pest Management Plan for the Cal-IPC rating for each (SCE 2007; Volume 4, SD-G (Books 19 and 24)).

Game Species

Mule Deer (*Odocoileus hemionus*) SNF-MIS

As described in the sections above, the San Joaquin deer herd—including the Huntington herd, which is part of the larger San Joaquin herd—is known to occur in the vicinity of the four Big Creek ALP Projects, including the Big Creek Nos. 1 and 2 Project. The Huntington Lake area has been identified as a mule deer summer and winter range and several migration corridors occur in the Project vicinity.

Refer to TERR 14, Mule Deer TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Book 17)) for more detailed information on mule deer in the Project vicinity.

5.2.5.2.3 Big Creek Nos. 2A, 8, and Eastwood (FERC Project No. 67)

Vegetation Communities and Wildlife Habitats

Listed below are the 17 vegetation communities/wildlife habitats identified within one-quarter mile of the Big Creek Nos. 2A, 8 and Eastwood Project. Additional area types identified were developed, ruderal, open water, and open ground.

- Gray Pine-Chaparral Woodland/Mixed Chaparral
- Gray Pine-Chaparral Woodland with Rock Substrate/Mixed Chaparral with Rock Substrate
- Sierran Mixed Coniferous Forest
- Sierran Mixed Coniferous Forest with Rock Substrate
- Jeffrey Pine Forest
- Jeffrey Pine Forest with Rock Substrate
- Jeffrey Pine-Fir Forest/Jeffrey Pine Forest
- Jeffrey Pine-Fir Forest with Rock Substrate/Jeffrey Pine Forest with Rock Substrate
- Lodgepole Pine Forest
- Oak Woodland/Montane Hardwood
- Oak Woodland with Rock Substrate/Montane Hardwood with Rock Substrate
- Mixed Montane Chaparral/Mixed Chaparral or Montane Chaparral
- Mixed Montane Chaparral with Rock Substrate/Mixed Chaparral or Montane Chaparral with Rock Substrate
- Riparian/Montane, Valley and Foothill Riparian
- Wet Montane Meadow/Wet Meadow
- Dry Montane Meadow/Perennial Grassland
- Montane Freshwater Marsh/Fresh Emergent Wetland

Refer to the TERR 1, Vegetation Communities TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Books 17 and 23)) for a detailed description and

map depicting the location of each vegetation community and wildlife habitat in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project.

Special-status Species

The following section summarizes all special-status plants and wildlife known or potentially occurring in the vicinity of Big Creek Nos. 2A, 8 and Eastwood Project.

Special-status Plant Species

Federally Listed Plant Species

There are no known occurrences of federally listed plant species in the vicinity of Big Creek Nos. 2A, 8 and Eastwood Project.

Other Plant Species

Four special-status plant species are known to occur in the vicinity of Big Creek Nos. 2A, 8 and Eastwood Project:

- Mono Hot Springs evening primrose (*Camissonia sierrae* ssp. *alticola*) FSS, FSC, CNPS 1B
- Short-leaved hulsea (*Hulsea brevifolia*) FSS, CNPS 1B
- Madera linanthus (*Leptosiphon serrulatus)* CNPS 1B
- Flat-leaved bladderwort (*Utricularia intermedia*) CNPS 2.2

Five special-status plant species were identified as potentially occurring in the vicinity of Big Creek Nos. 2A, 8 and Eastwood Project:

- Scalloped moonwort (*Botrychium crenulatum*), FSS, CNPS 2.2
- Bolander's candle moss (*Bruchia bolanderi*) FSS, CNPS 2.2
- Veined water lichen (*Hydrothyria venosa*) FSS
- Three-ranked hump moss (*Meesia triquetra*) FSS, CNPS 2.2
- Broad-nerved hump moss (*Meesia uliginosa*) FSS CNPS 2.2

Refer to TERR 3, Special-status Plant Populations TSRPs (SCE 2003; SCE 2004a; SCE 2004b, Volume 4, SD-C (Books 10 and 22), SD-D (Books 17 and 23) and SD-E (Books 18 and 24)) for a detailed description and known or potential locations of each of these species.

Special-status Wildlife Species

Federally Listed Wildlife Species

Four federally listed, or formerly listed, wildlife species are known to occur in the Project vicinity.

- Yosemite Toad (*Bufo canorus*) FC, FSS, CSC
- Bald eagle (*Haliaeetus leucocephalus*) FT, FPD, SNF MIS, CE, CFP
- American Peregrine Falcon (*Falco peregrinus anatum*) Former FE (Delisted on 8/20/99), FSS, SNF MIS, CE, CFP
- Pacific Fisher (*Martes pennanti pacifica*) FC, FSS, SNF MIS, CSC

Refer to the CAWG 8, Amphibians and Reptiles; TERR 8, Raptors; and TERR 9, Bald Eagle and Osprey TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 9-10 and 21-22) and SD-D (Books 14, 17 and 23)) for detailed information on these species.

Yosemite Toad (*Bufo canorus*) FC, FSS, CSC

A brief description of life history and distribution of the Yosemite Toad (YT) is provided above in the Big Creek Nos. 1 and 2 Project section of this document.

The YT is known to occur at the following locations:

- Portions of bypass stream reach at Crater Creek, adjustable meadow reach (RM 0-0.5) – total of 0.25 RM of potential habitat

Potential YT habitat (i.e., that rated as good or moderate in survey results) was identified in the following locations:

- Tombstone Creek, Jackass Campground Meadow reach to South Fork San Joaquin River (RM 0.0-0.6) – total of 0.6 RM of potential habitat
- Portions of the South Fork San Joaquin River, Jackass Meadow to San Joaquin River (RM 26.1-0.0) – total of 0.35 RM of potential habitat
- Portions of the South Fork San Joaquin River, Jackass Meadow (RM 27.7-26.1) – total of 0.90 RM of potential habitat
- Portions of the South Fork San Joaquin River, Adjustable Channel Reaches (RM 17.8-18.0, 19.9-21.0, 22.0-24.1), Poison Meadow, Mono Hot Springs, and Mono Crossing – total of 0.55 RM of potential habitat

Meadows associated with these stream reaches also represent potential habitat. Total acres of meadows are not provided. Refer to CAWG 8, Amphibians and Reptiles for

detailed information on the acreage of meadows (SCE 2003; SCE 2004a; Volume 4, SD-C (9 and 21) and SD-D (14 and 23)).

Refer to CAWG 8, Amphibians and Reptiles TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 9 and 21) and SD-D (Books 14 and 23)) for more detailed information on MYLF and YT in the Project vicinity.

Bald Eagle (*Haliaeetus leucocephalus*) FT, FPD, SNF MIS, CE, CFP

A brief description of bald eagle life history and distribution is provided above under the Mammoth Pool Project. Bald eagles are known to nest in the Project vicinity at Shaver Lake and could potentially nest at Florence Lake. The nest at the south shore of Shaver Lake on Kokanee Point was first detected in 1999. In 2000, two chicks were reported, but both chicks died, presumably from a winter storm. In 2001, two chicks successfully fledged. The nest was unsuccessful in 2002, but produced three young in 2003. In 2005, one chick fledged successfully (Byrd, pers. comm., 2005).

Refer to the TERR 9, Bald Eagle and Osprey TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Book 17)) and the Big Creek ALP Bald Eagle Management Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)) for detailed information on bald eagle in the Project Vicinity.

American Peregrine Falcon (*Falco peregrinus anatum*) Former FE (Delisted on 8/20/99), FSS, SNF MIS, CE, CFP

A brief description of American peregrine falcon life history and distribution is provided above under the Mammoth Pool Project. The USDA-FS database has several records of observations in the Project vicinity, concentrated near the town of Big Creek. No peregrine falcon nests are present in the Project vicinity. However, appropriate nesting and foraging habitat is present in riverine, lacustrine, wetlands, oak woodland, coniferous forest, and riparian habitat types near cliffs throughout the Project vicinity.

Refer to TERR 8, Raptors TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Book 10 and 22) and SD-D (Books 17 and 23)) for more detailed information on peregrine falcon in the Project vicinity.

Pacific Fisher (*Martes pennanti pacifica*) FC, FSS, SNF MIS, CSC

There are records of Pacific fisher in the vicinity of Powerhouse No. 2A, Huntington-Pitman-Shaver, Shaver Lake, and along several Project roads. Potential denning and foraging habitat is present in coniferous forests that contain specific vegetation and structural habitat aspects. Refer to the Mammoth Pool Project for specific habitat aspects.

Refer to the TERR 13, Mesocarnivores TSRP (SCE 2003; Volume 4, SD-C (Books 10 and 22)) for detailed information and maps of appropriate Pacific fisher habitat in the vicinity of this Project.

Two federally listed species were identified as potentially occurring in the Project vicinity.

- Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) FT, FPD

- Mountain Yellow-Legged Frog (*Rana muscosa*) FC, FSS, CSC

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) FT, FPD

A brief description of the Valley Elderberry Longhorn Beetle (VELB) life history and distribution is provided above under Mammoth Pool Project. A total of 15 elderberry shrubs occur in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project, none of which showed signs of VELB occupancy. These shrubs are located near the following Project facility and road:

- Powerhouse No. 8, Tunnel No. 8

- Access road to Big Creek Powerhouse No. 8 from USDA-FS Road No. 8S03

Refer to the TERR 6, VELB TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 10 and 22), SD-D (Book 17) and SD-E (Books 18 and 24)) and the Big Creek ALP VELB Management Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)) for more information on VELB in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project.

Mountain Yellow-Legged Frog (*Rana muscosa*) FC, FSS, CSC

A brief description of life history and distribution of the Mountain Yellow-Legged Frog (MYLF) is provided above in the Big Creek Nos. 1 and 2 Project section of this document.

While there are no known occurrences of MYLF in the Project vicinity, potential habitat for MYLF (i.e., that rated as good or moderate in survey results) was identified in the following locations:

- Portions of Tombstone Creek to Diversion (RM 0.6-1.0) – total of 0.20 RM of potential habitat

- Tombstone Creek, Jackass Campground Meadow reach to South Fork San Joaquin River (RM 0.0-0.6) – total of 0.60 RM of potential habitat

- Portions of Crater Creek, Diversion (RM 2.85) to RM 0.5 (upstream from adjustable reach) – total of 1.80 RM of potential habitat

- Crater Creek, adjustable meadow reach (RM 0.0-0.5) – total of 0.50 RM of potential habitat

- Portions of Chinquapin Creek, Diversion Camp 62 Creek to South Fork San Joaquin River (RM 0-0.9) – total of 0.50 RM of potential habitat

- Camp 62 Creek, Diversion to South Fork San Joaquin River (RM 0-1.35) – total of 1.35 RM of potential habitat

- Portions of Bolsillo Creek, Diversion to South Fork San Joaquin River (RM 0-1.60) – total of 1.30 RM of potential habitat

- Portions of Balsam Creek, Diversion to Big Creek (RM 0-0.65) – total of 0.34 RM of potential habitat

- Bear Creek, Diversion to South Fork San Joaquin River (RM 0-1.60) – total of 1.60 RM of potential habitat

- Portions of Mono Creek, Diversion to South Fork San Joaquin River (RM 0-5.80) – total of 5.09 RM of potential habitat

- Pitman Creek, Diversion to Big Creek (RM 0-1.5) – total of 1.50 RM of potential habitat

- Stevenson Creek, downstream of Shaver Lake Dam (RM 4.25-4.1) – total of 0.15 RM of potential habitat

- Portions of Stevenson Creek downstream of Shaver Lake Dam (RM 4.1-3.3) – total of 0.80 RM of potential habitat

- Portions of Stevenson Creek downstream of Shaver Lake Dam (RM 3.3-2.75) – total of 0.50 RM of potential habitat

- Portions of Bypass reach at Stevenson Creek (RM 2.75 to San Joaquin River) – total of 2.10 RM of potential habitat

- Portions of Balsam Creek, Forebay to Balsam Creek Diversion (RM 0.65-2.70) – total of 0.50 RM of potential habitat

- Portions of South Fork San Joaquin River Jackass Meadow to San Joaquin River (RM 26.1-0.0) – total of 18.20 RM of potential habitat

- South Fork San Joaquin River Jackass Meadow to San Joaquin River (RM 27.7-26.1) – total of 1.60 RM of potential habitat

- Portions of North Fork Stevenson Creek adjustable reaches (RM 2.4-1.8 and RM 1.2-1.3) – total of 0.25 RM of potential habitat

- Florence Lake (RM 27.95-30.30) – potential habitat behind dam arches

- Bear Diversion Pool (RM 1.8-1.55) – total of 0.25 RM of potential habitat
- Mono Diversion Pool (RM 5.75-5.95) – total of 0.20 RM of potential habitat
- Dam 5 Forebay (RM 1.7-1.95) – total of 0.25 RM of potential habitat

Meadows associated with these stream reaches also represent potential habitat. Total acres of meadows are not provided. Refer to CAWG 8, Amphibians and Reptiles (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 9 and 21) and SD-D (Books 14 and 23)) for detailed information on the acreage of meadows.

Other Sensitive Wildlife Species

Fourteen special-status wildlife species are known to occur in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project:

- Western pond turtle (*Actinemys marmorata*) FSS, CSC
- Osprey (*Pandion haliaetus*) SNF MIS, CSC
- Cooper's hawk (*Accipiter cooperi*) CSC (nesting)
- Northern goshawk (*Accipiter gentilis*) FSS, SNF MIS, CSC
- Great gray owl (*Strix nebulosa*) FSS, CE
- California spotted owl (*Strix occidentalis occidentalis*) FSS, SNF MIS, CSC
- Willow flycatcher (*Empidonax traillii brewsteri*) FSS, SNF MIS, CE
- Yellow warbler (*Dendroica petechia brewsteri*) CSC (nesting)
- Townsend's western big-eared bat (*Corynorhinus townsendii*) FSS, CSC
- Pallid bat (*Antrozous pallidus*) FSS, CSC
- Sierra Nevada mountain beaver (*Aplodontia rufa californica*) CSC
- Sierra Nevada red fox (*Vulpes vulpes necator*) FSS, CT, FSC
- American (pine) marten (*Martes americana*) FSS, SNF MIS
- California wolverine (*Gulo gulo luteus*) FSS, CT, CFP

One special-status wildlife species has been identified as potentially occurring in the Project vicinity.

- Foothill yellow-legged frog (*Rana boylii*) FSS, CSC

The known occurrence or potential for occurrence for each species at each Project facility associated with the Big Creek Nos. 2A, 8 and Eastwood Project is provided in Tables 5.2.5-2 and 5.2.5-3. Refer to the CAWG 8, Amphibians and Reptiles; TERR 5, Common Special-status Wildlife; TERR 8, Raptors; TERR 9, Bald Eagle and Osprey; TERR 11, Riparian-Nesting Songbirds; TERR 12, Special-status Bat Species; and TERR 13, Mesocarnivores TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 9-10 and 21-23), SD-D (Books 14, 17 and 22-23) and SD-E (Books 18 and 24)) for detailed information on these species.

Noxious Weeds and Invasive Ornamental Plant Species

Ten noxious weeds and invasive ornamental plant species were identified in the Big Creek Nos. 2A, 8 and Eastwood Project vicinity:

- Black mustard (*Brassica nigra*)
- Cheatgrass (*Bromus tectorum*)
- Bull thistle (*Cirsium vulgare*)
- English ivy (*Hedera helix*)
- Klamath weed (*Hypericum perforatum*)
- Perennial pepperweed (*Lepidium latifolium*)
- Himalayan blackberry (*Rubus discolor*)
- Black locust (*Robinia pseudoacacia*)
- Common tansy (*Tanacetum vulgare*)
- Woolly mullein (*Verbascum thapsus*)

Refer to Table 5.2.5-2 for the location of each noxious weed and invasive ornamental plant species. Refer to the Vegetation and Integrated Pest Management Plan for the Cal-IPC rating for each (SCE 2007; Volume 4, SD-G (Books 19 and 24)).

Game Species

Mule Deer (*Odocoileus hemionus*) SNF-MIS

The North Kings mule deer herd is known to occur in and migrate through the Big Creek Nos. 2A, 8 and Eastwood Project vicinity near Shaver Lake. Both summer and winter range and several migration corridors occur or cross the Project vicinity.

Refer to TERR 14, Mule Deer TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Book 17)) for more detailed information on mule deer in the Project vicinity.

5.2.5.2.4 Big Creek No. 3 (FERC Project No. 120)

Vegetation Communities and Wildlife Habitats

Listed below are the five vegetation communities/wildlife habitats identified within one-quarter mile of the Big Creek No. 3 Project. Developed and open water areas were also identified in the Project vicinity.

- Gray Pine–Chaparral Woodland/Mixed Chaparral
- Gray Pine–Chaparral Woodland with Rock Substrate/Mixed Chaparral with Rock Substrate
- Sierran Mixed Coniferous Forest
- Blue Oak Woodland
- Mixed Montane Chaparral/Mixed Chaparral or Montane Chaparral

Refer to the TERR 1, Vegetation Communities TSRPs (SCE 2003; SCE 2004a; Volume 4, SD-C (Books 10 and 22) and SD-D (Books 17 and 23)) for a detailed description and map depicting the location of each vegetation community and wildlife habitat in the vicinity of the Big Creek No. 3 Project.

Special-status Species

The following section summarizes all special-status plants and wildlife known or potentially occurring in the Big Creek No. 3 Project vicinity.

Special-status Plant Species

There are no known occurrences of federally listed or other special-status plant species in the vicinity of the Big Creek No. 3 Project.

Special-status Wildlife Species

Federally Listed Wildlife Species

Three federally listed wildlife species are known to occur in the vicinity of the Big Creek No. 3 Project.

- Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) FT, FPD

- Bald Eagle (*Haliaeetus leucocephalus*) FT, FPD, SNF MIS, CE, CFP

- American Peregrine Falcon (*Falco peregrinus anatum*) Former FE (Delisted on 8/20/99), FSS, FSC, SNF MIS, CE, CFP

A brief description of Valley Elderberry Longhorn Beetle (VELB) life history and species distribution is provided above under the Mammoth Pool Project. A total of 515 elderberry shrubs occur in the vicinity of the Big Creek No. 3 Project, eight of which showed signs of beetle occupancy. These shrubs are in the following locations:

- Big Creek Powerhouse No. 3 near the penstocks, rock/sand traps and surge chamber.

- USDA-FS Road No. 8S05, Canyon Road (from junction with USDA-FS Road No. 8S03 to junction with Italian Bar Road).

- USDA-FS Road No. 9S89, access road to Big Creek Powerhouse No.3 and administrative building from Italian Bar Road.

- Miscellaneous Powerhouse No. 3 roads (i.e., water tank access road and shop) (USDA-FS Road Nos. 9S020D, 9S020DA, 9S088, 9S088A, 9S088X and 9S088XA).

Refer to the TERR 6, VELB TSRPs (SCE 2003; SCE 2004a; SCE 2004b; Volume 4, SD-C (Books 10 and 22), SD-D (Book 17) and SD-E (Books 18 and 24)) and the Big Creek ALP VELB Management Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)) for more information on VELB in the vicinity of the Big Creek No. 3 Project.

Bald Eagle (*Haliaeetus leucocephalus*) FT, FPD, SNF MIS, CE, CFP

A brief description of bald eagle life history and distribution is provided above under the Mammoth Pool Project. No bald eagle nests have been observed in the Project vicinity. However, wintering bald eagles have been observed in the vicinity of Powerhouse No. 3 on Redinger Reservoir, and appropriate bald eagle foraging habitat is present on the San Joaquin River upstream of Dam 6.

Refer to the TERR 9, Bald Eagle and Osprey TSRPs (SCE 2003; SCE 2004; Volume 4, SD-C (Books 10 and 22) and SD-D (Book 17)) and the Big Creek ALP Bald Eagle Management Plan (SCE 2007, Volume 4, SD-G (Books 19 and 24)) for detailed information on bald eagle in the Project Vicinity.

American Peregrine Falcon (*Falco peregrinus anatum*) Former FE (Delisted on 8/20/99), FSS, FSC, SNF MIS, CE, CFP

A brief description of American peregrine falcon life history and distribution is provided above under the Mammoth Pool Project. The USDA-FS database has several records of observations in the Project vicinity. No peregrine falcon nests are present in the Project vicinity. However, appropriate nesting and foraging habitat is present in riverine,

lacustrine, wetlands, oak woodland, coniferous forest, and riparian habitats near cliffs throughout the Project area.

Refer to TERR 8, Raptors TSRPs (SCE 2003; SCE 2004; Volume 4, SD-C (Books 10 and 22) and SD-D (Books 17 and 23)) for more detailed information on peregrine falcon in the Project vicinity.

Other Sensitive Wildlife Species

Six special-status wildlife species are known to occur in the vicinity of the Big Creek No. 3 Project:

- Western pond turtle (*Actinemys marmorata*) FSS, CSC
- Osprey (*Pandion haliaetus*) SNF MIS, CSC
- Northern goshawk (*Accipiter gentilis*) FSS, SNF MIS, CSC
- California spotted owl (*Strix occidentalis occidentalis*) FSS, SNF MIS, CSC
- Willow flycatcher (*Empidonax traillii brewsteri*) FSS, SNF MIS, CE
- Pallid bat (*Antrozous pallidus*) FSS, CSC

Three special-status wildlife species have been identified as potentially occurring in the Project vicinity.

- Foothill yellow-legged frog (*Rana boylii*) FSS, CSC
- Yellow warbler (*Dendroica petechia brewsteri*) CSC
- Sierra Nevada mountain beaver (*Aplodontia rufa californica*) CSC

The known occurrence or potential for occurrence for each species at each Project facility associated with the Big Creek No. 3 Project is provided in Tables 5.2.5-2 and 5.2.5-3. Refer to the CAWG 8, Amphibians and Reptiles; TERR 5, Common Special-status Wildlife; TERR 8, Raptors; TERR 9, Bald Eagle and Osprey; TERR 11, Riparian-Nesting Songbirds; TERR 12, Special-status Bat Species; and TERR 13, Mesocarnivores TSRPs (SCE 2003; SCE 2004; SCE 2004b; Volume 4, SD-C (Books 9-10 and 21-22), SD-D (Books 14, 17, and 23) and SD-E (Books 18 and 24)) for detailed information on these species.

Noxious Weeds and Invasive Ornamental Plant Species

Six noxious weeds and invasive ornamental plant species were identified in the vicinity of the Big Creek No. 3 Project:

- Tree of heaven (*Ailanthus altissima*)

- Black mustard (*Brassica nigra*)
- Cheatgrass (*Bromus tectorum*)
- Klamath weed (*Hypericum perforatum*)
- Himalayan blackberry (*Rubus discolor*)
- Spanish broom (*Spartium junceum*)

Refer to Table 5.2.5-2 for the location of each noxious weed and invasive ornamental plant species. Refer to the Vegetation and Integrated Pest Management Plan for the Cal-IPC rating for each (SCE 2007; Volume 4, SD-G (Books 19 and 24)).

Game Species

Mule Deer (*Odocoileus hemionus*) SNF-MIS

The Huntington mule deer herd, part of the larger San Joaquin herd, is known to occur in the vicinity of the Big Creek No. 3 Project.

Refer to TERR 14, Mule Deer TSRPs (SCE 2003; SCE 2004; Volume 4, SD-C (Books 10 and 22) and SD-D (Book 17)) for more detailed information on mule deer in the Project vicinity.

5.2.5.3 Environmental Impacts and Recommendations

This section discusses potential impacts on terrestrial resources of continued operations and maintenance of the four Big Creek ALP Projects under the Proposed Action. The assessment first identifies potential resource issues under current Project operations (No Action Alternative) and discusses the environmental impacts resulting from implementation of new environmental measures recommended in the Proposed Action (see Section 3.1.7, New Environmental Measures). Potential resource issues identified under current Project operations (No Action Alternative) include:

- Protection of special-status plant species
- Protection of VELB and their habitat
- Protection of special-status amphibians and reptiles and their habitat
- Protection of migratory waterfowl habitat
- Protection of raptors on Project structures (power lines or transmission lines)
- Protection of active raptor nests and bald eagle wintering roosts
- Protection of breeding habitat of riparian-nesting songbirds

- Protection of special-status bats
- Protection of mesocarnivore habitat and denning sites
- Reduction of the introduction or spread of noxious weed species
- Reduction of the introduction of invasive ornamental plant species
- Prevention of human-bear interactions
- Protection of mule deer migration and habitat
- Protection of special-status species at newly identified Project facilities, roads, and trails
- Protection of special-status species prior to construction of new Project facilities

5.2.5.3.1 Mammoth Pool (Project No. 2085)

Protection of Special-status Plant Species

Upland special-status plant species, including Mono Hot Springs evening primrose, flaming trumpet and Yosemite lewisia, are known to occur in the vicinity of the Mammoth Pool Project. Impact analyses show that, under the No Action Alternative, routine maintenance activities in the Project vicinity may result in loss of Mono Hot Springs evening primrose as a result of trimming by hand and with equipment, or use of herbicides.

Under the Proposed Action, SCE will enhance protection of special-status plant populations through implementation of avoidance and protection (AP) measures included in the Vegetation and Integrated Pest Management Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)) and implementation of several environmental programs. The AP measures include:

- Development of buffer areas around and documentation of special-status plant populations.
- Monitoring of the effectiveness of avoidance and protection measures.
- Conducting special-status plant surveys in the vicinity of the four Big Creek ALP Projects following methods employed during Big Creek ALP studies.

Environmental programs that SCE will implement to further protect special-status plant species are described in Section 3.1.7, New Environmental Measures:

- Environmental Training Program
- Endangered Species Alert Program (ESAP)

- Noxious Weeds Training Program
- Northern Hydro Special-status Species Information Program (NHSSIP)
- Environmental Compliance Program

Protection of VELB and their Habitat

Forty-two elderberry shrubs below 3,000 feet elevation, which represent VELB habitat, occur in the vicinity of the Mammoth Pool Project. These shrubs occur along the following roads:

- USDA-FS Road No. 9S42, the Mammoth Pool Powerhouse transmission line access road from gate near County Road 225, Italian Bar Road to USDA-FS Road No. 8S44; and
- USDA-FS Road No. 8S03 from Big Creek Powerhouse No. 8 to the Mammoth Pool Powerhouse.

Vegetation management activities, including trimming by hand and equipment, and road maintenance activities could potentially affect VELB habitat (i.e., elderberry shrubs) under the No Action Alternative.

Under the Proposed Action, SCE will implement a VELB Management Plan to enhance the protection of VELB and their habitat. This plan includes the following enhancement measures:

- Identification of protected areas
- Measures to protect VELB and their habitat during vegetation management and road maintenance
- Mitigation measures for trimming of stems and branches
- Mitigation monitoring and reporting

Several training programs will also be implemented by SCE under the Proposed Action to enhance the protection of VELB and their habitat:

- Environmental Training Program
- ESAP
- NHSSIP
- Environmental Compliance Program

Protection for Special-status Amphibians and Reptiles and their Habitats

There are no known populations of foothill yellow-legged frog (FYLF) in the vicinity of the Mammoth Pool Project. However, potential FYLF habitat (i.e., that rated as good or moderate in survey results) was identified in Rock Creek, Ross Creek, San Joaquin River, and Mammoth to Dam 6.

There are known populations of western pond turtle (WPT) in Rock Creek and Ross Creek. Additionally, potential turtle habitat (i.e., that rated as good or moderate in survey results) was identified in Rock Creek, Ross Creek, San Joaquin River, and Mammoth to Dam 6.

Under the Proposed Action, environmental measures are recommended to enhance aquatic habitat and address water quality issues. These measures include higher minimum instream flow (MIF) requirements, and implementation of sediment management prescriptions, the Vegetation and Integrated Pest Management Plan (specifically BMPs for use of herbicides and pesticides), the Temperature Monitoring and Control Plan, and the Flow Monitoring and Reservoir Water Level Management Plan. Habitat for FYLF and WPT will be maintained or enhanced under the Proposed Action.

Several training programs will also be implemented under the Proposed Action to enhance the protection of special-status amphibians and reptiles and their habitat. These programs include:

- Environmental Training Program
- Environmental Compliance Program
- ESAP
- Flow Monitoring and Reservoir Water Level Measurement Plan
- NHSSIP

Protection of Migratory Waterfowl Habitat

Waterfowl migrate through the Project vicinity and forage in Project reservoirs, including Mammoth Pool Reservoir. Project operations will not result in an adverse change in foraging habitat for waterfowl. Under the Proposed Action, Project operations will continue to provide foraging habitat for waterfowl.

Protection of Raptors on Project Structures (Power Lines or Transmission Lines)

Several raptor species are known to occur or could potentially occur in the vicinity of the Mammoth Pool Project. These include bald eagle, American peregrine falcon, osprey, Cooper's hawk and California spotted owl. While there have been no known raptor mortalities on the MPPH–BC3 220kV power transmission line, and the Project

transmission line meets Avian Power Line Interaction Committee (APLIC) guidelines, it nevertheless may pose a potential risk to raptors. Where we don't generally meet APLIC guidelines are on our distribution lines, which could also apply to switchyards. In those cases, we retrofit on a case-by-case basis, initiated by reports of raptor electrocutions, or nests presenting potential hazards.

Under the Proposed Action, specific measures and programs identified in the Bald Eagle Management Plan will be implemented to enhance protection of raptors from electrocution on Project power line structures such as:

- Reporting of raptor mortality
- Retrofitting of Project power line structures with raptor safe designs, if appropriate, during replacement or on-going maintenance
- Protecting active and inactive nests on Project power line structures

Under the Proposed Action, SCE will also implement the Avian Protection Program (APP) to inform SCE Personnel of the appropriate procedures and measures to follow when conducting maintenance activities on Project power line structures. Several additional training programs that will enhance the protection of raptors and their habitat include:

- Environmental Training Program
- ESAP
- APP
- NSSHIP
- Environmental Compliance Program

<u>Protection of Active Raptor Nests and Bald Eagle Wintering Roosts</u>

As stated above, several raptor species could potentially nest in the Project area. Additionally, there are potential bald eagle wintering roosts at the Mammoth Pool reservoir in the vicinity of the following roads:

- Mammoth Pool Fishwater Generator access road from USDA-FS Road No. 6S25, Mammoth Pool Road, to base of Mammoth Pool Dam; and
- USDA-FS Road No. 9S42, Mammoth Pool Powerhouse Transmission Line access road from gate near County Road 225, Italian Bar Road, to USDA-FS Road No. 8S44.

Under the No Action Alternative, vegetation management activities may disturb raptor species potentially nesting in the Project vicinity. All Project vegetation management

activities, such as trimming with equipment and road maintenance activities, including paving/graveling and grading, occur during summer months and therefore, should not disturb bald eagle wintering roosts.

Under the Proposed Action, SCE will implement the Bald Eagle Management Plan, the Vegetation and Integrated Pest Management Plan, and several environmental programs to enhance protection of active raptor nests.

The AP measures specified in the Bald Eagle Management Plan include requiring SCE to obtain necessary permission and permits prior to removal or actions to trim active raptor nests (eggs, young and incubating adults present) and inactive bald eagle (non-breeding) nests.

The AP measures specified in the Vegetation and Integrated Pest Management Plan to protect active raptor nests during vegetation maintenance activities include:

- Monitoring the location and status of raptor nests through surveys and/or communication with appropriate agencies.
- Delineating a species-specific sensitive area around active nests in areas where maintenance activities are scheduled.
- Staging equipment outside the sensitive area.
- Conducting management activities continuously through the sensitive area without stopping.

SCE will also implement the following programs to enhance the protection of raptor nests and bald eagle wintering roosts in the Mammoth Pool Project vicinity:

- Environmental Training Program
- ESAP
- APP
- NSSHIP
- Environmental Compliance Program

<u>Protection of Breeding Habitat for Riparian-Nesting Songbirds</u>

Riparian-nesting songbirds could potentially occur in the vicinity of the Mammoth Pool Project, including the willow flycatcher and yellow warbler. SCE does not implement maintenance activities that would result in removal of breeding habitat for these species. MIF recommended in the Proposed Action would either maintain or enhance riparian habitat for these species.

Under the Proposed Action, implementation of training programs will also enhance the protection of riparian-nesting songbirds and their habitat:

- Environmental Training Program
- ESAP
- NHSSIP
- Environmental Compliance Program

Protection of Special-status Bats

Special-status bat species are not known to occur in the vicinity of the Mammoth Pool Project. Therefore, no enhancement measures are proposed.

Protection of Mesocarnivore Habitat and Denning Sites

There are no known occurrences of mesocarnivores in the vicinity of the Mammoth Pool Project. Potential habitat has been identified in the Project area for Pacific fisher. However, there are no known mesocarnivore denning sites in the vicinity of the Project, and Project operations and maintenance activities would not result in removal of appropriate habitat for these species.

Under the Proposed Action, several training programs will be implemented that will enhance the protection of mesocarnivores and their habitat. These training programs include:

- Environmental Training Program
- ESAP
- NHSSIP
- Environmental Compliance Program

Additionally, to protect mesocarnivores from the possibility of secondary poisoning from rodenticides used to control unwanted vertebrate pests on earthen dams, SCE will apply pesticides according to permit requirements and implement the following Best Management Practices (BMPs) for the use of pesticides, as specified in the Vegetation and Integrated Pest Management Plan. The applicable BMPs include:

- BMP 5.8 - Pesticide Application According To Label Directions and Applicable Legal Requirements
- BMP 5.9 - Pesticide Application Monitoring and Evaluation
- BMP 5.10 - Pesticide Spill Contingency Planning

- BMP 5.11 - Cleaning and Disposal of Pesticide Containers and Equipment

Reduction of the Introduction or Spread of Noxious Weed Species

Several noxious weed populations are known to occur in the vicinity of the Mammoth Pool Project. Under existing Project operations (No Action Alternative), vegetation management activities, including trimming by hand, and road maintenance activities, including paving/graveling and grading, may result in the spread of these existing weed populations. Under the Proposed Action, SCE will implement measures specified in the Vegetation and Integrated Pest Management Plan to reduce the spread of noxious weeds in the vicinity of the Mammoth Pool Project. These measures include:

- Clean SCE vehicles prior to entering the Project vicinity from another watershed.
- Clean SCE vehicles traveling through noxious weeds within the watershed.
- Implement measures for treatment of new and established noxious weed populations.
- Monitor noxious weed treatment areas.
- Implement long-term monitoring of noxious weeds.

Under the Proposed Action, SCE will also implement several programs to educate SCE personnel on the prevention of the spread of noxious weeds such as:

- Noxious Weed Training Program
- Environmental Compliance Program

Reduction of the Introduction of Invasive Ornamental Plant Species

No invasive ornamental plant species are present in the vicinity of the Mammoth Pool Project. Therefore, no enhancement measures are proposed.

Prevention of Bear/Human Interactions

Black bears potentially occur in the Project vicinity. Under the Proposed Action, SCE will implement the Bear/Human Interaction License Article (SCE 2007; Volume 4, SD-G (Book 19)) to reduce the number of bear/human interactions occurring in the Project vicinity. SCE will install and maintain bear proof dumpsters at the Big Creek No. 1 administrative offices and company housing, and other Project facilities where food waste may be disposed of or stored. CDFG and USDA-FS will review and approve dumpster design prior to installation. SCE will also implement a program to educate SCE personnel about proper food storage and garbage disposal to reduce bear/human incidents. The education program will consist of written materials (educational pamphlet) and employee training.

Protection of Mule Deer Migration and Habitat

The San Joaquin mule deer herd crosses Mammoth Pool Reservoir as they migrate from their winter habitat at 1,200 to 3,600 feet in elevation to their breeding grounds at 6,000 to 10,000 feet in elevation.

Under the Proposed Action, SCE will implement the proposed Mule Deer License Article (SCE 2007; Volume 4, SD-G (Book 19)) to enhance protection of deer crossing Mammoth Pool Reservoir during spring migration. This includes maintaining existing facilities in Mammoth Pool to protect mule deer migration, placement of sand on the dam road, implementation of road closures, and monitoring the presence of debris build-up in the reservoir.

Protection of Special-status Species at Newly Identified Project Facilities, Roads, and Trails

SCE has recently identified several roads as Project facilities associated with the Mammoth Pool Project. These roads were identified following completion of surveys for the Big Creek ALP Projects. There are no CNDDB or USDA-FS records for special-status plant species along these roads.

Under the Proposed Action, SCE will complete focused surveys for special-status plants and VELB to document the presence of special-status resources in the vicinity of the newly identified Project roads. Additionally, SCE will conduct noxious weed and invasive plant species surveys at these locations. Surveys will follow agency and stakeholder approved survey methods. If special-status resources, noxious weeds, or invasive ornamental plant species are identified adjacent to these Project roads, SCE will implement AP measures specified in the Vegetation and Integrated Pest Management Plan and/or VELB Management Plan. If it is determined that future maintenance activities would result in trimming of one or more elderberry shrub branches or stems at least 1 inch in diameter, SCE will follow the mitigation approaches described in the Valley Elderberry Longhorn Beetle Management Plan and consult with USFWS to adequately mitigate for potential project effects.

Refer to the Vegetation and Integrated Pest Management Plan for a list of the newly identified roads to be surveyed in the Mammoth Pool Project vicinity.

Protection of Special-status Species at New Helicopter Landing Sites to be Developed

SCE proposes to develop two new helicopter landing sites in the Mammoth Pool Project vicinity, at Mammoth Pool Dam and at the San Joaquin River above Shakeflat Creek. Development of these sites will require removal of several trees and shrubs.

There are no CNDDB or USDA-FS records for special-status plants in the vicinity of these proposed helicopter landing sites. Prior to development of these sites, SCE will complete focused surveys for special-status plants, noxious weeds, and invasive ornamental plant species. Surveys will follow agency and stakeholder approved survey

methods. SCE will locate the landing pads to avoid effects to any special-status species that are identified during surveys.

Because both helicopter landing sites are above 3,000 feet in elevation, SCE will not conduct surveys for VELB and potential VELB habitat.

Bald eagle and osprey are known to occur on the reservoir and along the San Joaquin River in the vicinity of these two sites. SCE will conduct clearance surveys for wintering bald eagles, bald eagle nests, and/or other active raptor nests prior to development of the helicopter landing sites. SCE will locate the landing pads to avoid effects to any nest trees, and site development activities (i.e., tree removal) will be scheduled to avoid disturbance of any wintering bald eagles or active raptor nests identified during surveys.

Protection of Special-status Species Prior to Construction of New Project Facilities

Under the Proposed Action, SCE will implement the Special-status Species License Article (SCE 2007; Volume 4, SD-G (Book 19)) which states, prior to the construction of new Project features on National Forest Service Land, which are not evaluated in this APDEA, that may affect Forest Service special-status species and their habitat (i.e., Forest Service sensitive and/or management indicator species), SCE will prepare a Biological Evaluation to describe the potential impact of the action on the species or its habitat. For state or federally listed species, federal candidate species, California species of special concern, and California fully protected species, SCE will prepare a Biological Assessment or other required document and obtain any necessary permits or approvals.

5.2.5.3.2 Big Creek Nos. 1 and 2 (FERC Project No. 2175)

Protection of Special-status Plant Species

Upland special-status plant species, including subalpine fireweed and Madera linanthus, are known to occur in the vicinity of Big Creek Nos. 1 and 2 Project facilities. Impact analyses indicate that under the No Action Alternative, loss of Madera linanthus could result from vegetation management activities, including vegetation trimming by hand and herbicide use, at several locations in the Project vicinity under existing Project operations (No Action Alternative).

Under the Proposed Action, SCE will implement the measures and programs specified in the Vegetation and Integrated Pest Management Plan (SCE 2007; Volume 4, SD-G (Book 19)) to enhance protection of these special-status plant populations documented in the Project area. See the Mammoth Pool Project above for a brief description of these measures.

Several aquatic, wetland, and riparian special-status species have the potential to occur in the Project vicinity. These include: Bolander's candle moss, three-ranked hump moss, and broad-nerved hump moss, which occur in moist soils in montane coniferous forests and in meadows, seeps, and bogs. Flat-leaved bladderwort may occur in

meadows, seeps, ponds, and shallow streams. Veined water lichen, which occurs in streams in mixed conifer forests, also could potentially occur in the Project vicinity. Minimum instream flow (MIF) recommended under the Proposed Action would either maintain or enhance appropriate habitats in the floodplains that may support these species. Project operations and maintenance activities conducted in the Project vicinity under the Proposed Action will not result in the disturbance and/or removal of these species or their habitats.

Protection of VELB and Their Habitat

No occurrences of VELB or their habitat (elderberry shrubs below 3,000 feet in elevation) were detected during VELB surveys in the Big Creek Nos. 1 and 2 Project vicinity.

Protection of Special-status Amphibians and Reptiles and Their Habitat

There are no known populations of FYLF in the vicinity of the Big Creek Nos. 1 and 2 Project. However, potential FYLF habitat (i.e., that rated as good or moderate in survey results) was identified at the following: Ely Creek, Big Creek from Huntington Lake to Dam 4, and Big Creek between Dam 4 to Dam 5.

There are known populations of MYLF within the vicinity of Huntington Lake Reservoir. Potential MYLF habitat (i.e., that rated as good or moderate in survey results) was identified along Ely Creek; Big Creek, Huntington Lake to Dam 4; Big Creek, Dam 4 to Dam 5; and the Dam 4 Impoundment.

There are known populations of YT in the vicinity of Huntington Lake Reservoir.

No known populations of the western pond turtle (WPT) were detected during surveys in the vicinity of the Big Creek Nos. 1 and 2 Project. However, there are agency records of WPT occurrences, and potential habitat (i.e., that rated as good or moderate in survey results) was identified along Ely Creek; Big Creek, Huntington Lake to Dam 4; and Big Creek, Dam 4 to Dam 5.

Under the Proposed Action, environmental measures are recommended to enhance aquatic habitat and address water quality issues. These measures include: higher MIF requirements; and implementation of sediment management prescriptions, Vegetation and Integrated Pest Management Plan (specifically BMPs for use of herbicides and pesticides), Temperature Monitoring and Management Plan, and Flow Monitoring and Reservoir Water Level Measurement Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)). Additionally, several programs will be implemented under the Proposed Action. See the Mammoth Pool Project above for a brief description of these measures and programs. Implementation of these measures and programs under the Proposed Action will either maintain or enhance habitat for FYLF, MYLF, YT, and WPT.

Protection of Migrating Waterfowl Habitat

Waterfowl migrate through the Project vicinity and forage in Big Creek Nos. 1 and 2 Project reservoirs, including Huntington Lake Reservoir. Project operations will not result in an adverse change in foraging habitat for waterfowl. Under the Proposed Action, Project operation will continue to provide foraging habitat for migrating waterfowl.

Protection of Raptors on Project Structures (Power Lines or Transmission Lines)

Special-status raptor species are known or could potentially occur in the vicinity of the Big Creek Nos. 1 and 2 Project. These include bald eagle, American peregrine falcon, osprey, Cooper's hawk, northern goshawk, great gray owl, and California spotted owl. While there have been no known raptor mortalities on the Musick 7kV power line, the power line does not meet APLIC guidelines and therefore may pose a potential risk to raptors.

Under the Proposed Action, specific measures and programs identified in the Bald Eagle Management Plan will be implemented to enhance protection of raptors from electrocution on Project structures. See the Mammoth Pool Project section above for a brief description of these measures.

Protection of Active Raptor Nests and Bald Eagle Wintering Roosts

There is one known active bald eagle nest and one known active peregrine falcon nest in the Big Creek Nos. 1 and 2 Project vicinity, and other raptors could potentially nest or roost in the area.

The known bald eagle nest is located at the eastern end of Huntington Lake. The known peregrine falcon nest is in the vicinity of the following Project roads:

- 8S301, from gate with 8S66T to penstock surge pipes; and
- 8S302, access to Big Creek No. 1 42-inch gatehouse.

Under the No Action Alternative, vegetation management activities, such as trimming with equipment and road maintenance activities, including paving, graveling and grading, may disturb breeding falcons.

Under the Proposed Action, SCE will implement measures identified in the Bald Eagle Management Plan to enhance protection of active raptor nests on Project power line structures. To protect active nests during vegetation maintenance activities, SCE will implement measures specified in the Vegetation and Integrated Pest Management Plan. See the Mammoth Pool Project section above for a brief description of these measures.

Adverse effects on bald eagle and peregrine falcon are not expected to occur from recreation activities. Recreation, including camping, flatwater boating, and use of interpretive and day-use areas, are ongoing at Huntington Lake and associated

recreation facilities. These activities are not greatly expanding in length of season or facilities available, and reservoir operations will remain essentially unchanged. Despite possible disturbance from these activities during nesting season, special-status raptors (e.g., bald eagle and peregrine falcon) have continued to nest or have initiated nesting in the vicinity of these facilities in the presence of ongoing recreation activities. Thus, continued recreation activities and use of these facilities at the existing intensity and frequency would not result in adverse effects to nesting raptors.

Protection of Breeding Habitat for Riparian-Nesting Songbirds

Riparian-nesting songbirds, such as the willow flycatcher and yellow warbler, could potentially occur in the Big Creek Nos. 1 and 2 Project vicinity. SCE does not implement maintenance activities that would result in removal of breeding habitat for these species. MIF recommended under the Proposed Action would either maintain or enhance riparian habitat for these species. Training programs will also enhance the protection of riparian-nesting songbirds and their habitat. See the Mammoth Pool Project above for a brief description of these measures.

Protection of Special-status Bats

Western red bats are known to occur in the vicinity of the Big Creek Nos. 1 and 2 Project. Under the Proposed Action, SCE will implement the proposed Special-status Bat Species License Article which states that SCE will consult with CDFG and USDA-FS prior to conducting any non-routine maintenance activities to enhance protection of special-status bats (SCE 2007; Volume 4, SD-G (Book 19)). Several training programs will also be implemented under the Proposed Action to enhance protection of special-status bats. These training programs include:

- Environmental Training Program
- ESAP
- NHSSIP
- Environmental Compliance Program

Protection of Mesocarnivore Habitat and Denning Sites

Mesocarnivores known or potentially occurring in the Project vicinity include: the Sierra Nevada red fox, American marten, Pacific fisher, and the California wolverine. Potential habitat for all of these species has been identified in the Project vicinity. There are no known denning sites in the Project vicinity and Project operation and maintenance activities would not result in removal of appropriate habitat for these species.

Under the Proposed Action, several training programs will enhance the protection of mesocarnivores and their habitat, and implementation of BMPs for the use of rodenticides and programs, as specified in the Vegetation and Integrated Pest

Management Plan would enhance protection of these species. See the Mammoth Pool Project above for a brief description of these measures.

Reduction of the Introduction or Spread of Noxious Weed Species

Several noxious weed populations are known to occur in the vicinity of Big Creek Nos. 1 and 2 Project facilities, recreational facilities, and roads. Under the existing Project (No Action Alternative) vegetation management activities such as trimming by hand, and road maintenance activities, including paving, graveling and grading, may result in the spread of these existing weed populations. Additionally, construction equipment brought into the Big Creek No. 1 facilities from outside of the watershed could potentially introduce new noxious weed populations.

Under the Proposed Action, SCE will implement measures and programs specified in the Vegetation and Integrated Pest Management Plan to reduce the spread of noxious weed species in the vicinity of the Big Creek Nos. 1 and 2 Project. See the Mammoth Pool Project above for a brief description of these measures.

Reduction of the Introduction of Invasive Ornamental Plant Species

Invasive ornamental plants, which are sometimes also considered noxious weeds, are known to occur in the vicinity of the Big Creek Nos. 1 and 2 Project. Under the Proposed Action, the following measures, as specified in the Vegetation and Integrated Pest Management Plan, will be implemented to reduce the spread of invasive ornamental plant populations within the Project vicinity:

- SCE will not plant invasive ornamental plant species, and
- SCE will remove any invasive ornamental plant species that already exist around SCE's Project facilities.

Under the Proposed Action, implementation of the Noxious Weed Training Program would also reduce the introduction of invasive ornamental plant species.

Prevention of Bear/Human Interactions

Black bears potentially occur in the Project vicinity. Under the Proposed Action, SCE will implement the Bear/Human Interaction License Article (SCE 2007; Volume 4, SD-G (Book 19)) to reduce the number of bear/human interactions occurring in the Project vicinity. SCE will install and maintain bear proof dumpsters at the Big Creek No. 1 administrative offices and company housing, and other Project facilities where food waste may be disposed of or stored. CDFG and USDA-FS will review and approve dumpster design prior to installation. SCE will also implement a program to educate SCE personnel about proper food storage and garbage disposal to reduce bear/human incidents. The education program will consist of written materials (educational pamphlet) and employee training.

Protection of Mule Deer Migration and Habitat

The Huntington mule deer herd, part of the larger San Joaquin herd, is known to forage year round in, and migrate through, the Big Creek Nos. 1 and 2 Project vicinity. However, Project facilities, roads, and trails do not impede or prevent mule deer migration. There are no anticipated impediments to mule deer migration or substantial changes in habitat in the Big Creek Nos. 1 and 2 Project vicinity.

Protection of Special-status Species at Newly Identified Project Facilities, Roads, and Trails

SCE has recently identified several roads and one helicopter landing site as Project facilities associated with the Big Creek Nos. 1 and 2 Project. These roads and the helicopter landing site were identified following completion of surveys for the Big Creek ALP Projects. There are no CNDDB or USDA-FS records for special-status plant species at these locations.

Under the Proposed action, SCE will complete focused surveys for special-status plants and VELB to document the presence of special-status resources in the vicinity of the newly identified Project roads and helicopter landing site. Additionally, SCE will conduct noxious weeds and invasive plant species surveys at these locations. Surveys will follow agency and stakeholder approved survey methods. If special-status resources, noxious weeds, or invasive ornamental plant species are identified, SCE will implement the measures and programs specified in the Vegetation and Integrated Pest Management Plan and/or VELB Management Plan. If it is determined that future maintenance activities would result in trimming of one or more elderberry shrub branches or stems at least 1 inch in diameter, SCE will follow the mitigation approaches described in the VELB Management Plan and consult with USFWS to adequately mitigate for potential project effects.

Refer to the Vegetation and Integrated Pest Management Plan for a list of the newly identified roads and helicopter landing site to be surveyed in the Big Creek Nos. 1 and 2 Project vicinity.

Protection of Special-status Species Prior to Construction of New Project Facilities

Under the Proposed Action, SCE will implement the Special-status Species License Article (SCE 2007; Volume 4, SD-G (Book 19)), which states that, prior to construction of new Project features not evaluated in this APDEA on National Forest Service Land that may affect Forest Service special-status species and their habitat (i.e., Forest Service sensitive and/or management indicator species), SCE will prepare a Biological Evaluation to describe the potential impact of the action on the species or its habitat. For state or federally listed species, federal candidate species, California species of special concern, and California fully protected species, SCE will prepare a Biological Assessment or other required document and obtain any necessary permits or approvals.

5.2.5.3.3 Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67)

Protection of Special-status Plant Species

Upland special-status plant species, including Mono Hot Springs evening primrose, short-leaved hulsea, and Madera linanthus, are known to occur in the Big Creek Nos. 2A, 8 and Eastwood Project vicinity. Impact analyses indicate that, under existing Project operations (No Action Alternative), losses of Mono Hot Springs evening primrose, Madera linanthus, and short-leaved hulsea could result from vegetation management, including trimming by hand and with equipment, and herbicide use, at various locations in the Project vicinity. Under the Proposed Action, SCE will implement the measures and programs as specified in the Vegetation and Integrated Pest Management Plan (SCE 2007; Volume 4, SD-G (Book 19)). See the Mammoth Pool Project above for a brief description of these measures.

Several aquatic, wetland, and riparian special-status species are known to occur or have the potential to occur in the Project vicinity. Flat-leaved bladderwort, which grows in meadows, seeps, ponds, and shallow streams, is known to occur in the Project vicinity. Special-status moss species potentially occur in the Project vicinity, including Bolander's candle moss, three-ranked hump moss, and broad-nerved hump moss. These species occur in moist soils in montane coniferous forests and in meadows, seeps, and bogs. Veined water lichen, which occurs in streams in mixed conifer forests, could also potentially occur in the Project vicinity. The MIF and channel riparian maintenance flow (CRMF) recommended under the Proposed Action would either maintain or enhance appropriate habitats in the floodplains that may support these species. Project operations and maintenance activities conducted in the Project vicinity under the Proposed Action will not result in the disturbance and/or removal of these species or their habitats.

Potential resource issues from work activities necessary to decommission the North and South Slide Creek diversions, Crater Creek Diversion, and Tombstone Creek Diversion structures and associated ancillary features include removal or disturbance of special-status plant populations as a result of equipment use or foot traffic. Mono Hot Springs evening primrose is known to occur in the vicinity of these diversions. Under the Proposed Action, this special-status plant species would be protected during the decommissioning by the measures and programs specified in the Vegetation and Integrated Pest Management Plan and the Small Diversions Decommissioning Plan (SCE 2007; Volume 4, SD-G (Book 19)).

Protection of VELB and Their Habit

Fifteen elderberry shrubs below 3,000 feet elevation, which represent VELB habitat, are known to occur in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project. These shrubs occur in the vicinity of Powerhouse No. 8, Tunnel 8, and along the access road to Powerhouse No. 8 from 8S03. Vegetation management activities, including trimming by hand and equipment and herbicide use, and road maintenance activities, including road grading, graveling, paving, and maintenance of culverts, ditches, and water bars,

could affect VELB and their habitat under existing Project operations (No Action Alternative).

Under the Proposed Action, SCE will implement the VELB Management Plan to enhance the protection of VELB and their habitat (SCE 2007; Volume 4, SD-G (Book 19)). See the Mammoth Pool Project above for a brief description of these measures.

Protection of Special-status Amphibians and Reptiles and their Habitat

There are no known populations of FYLF in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project. However, potential FYLF habitat (i.e., that rated as good or moderate in survey results) was identified along Pitman Creek, Diversion to Big Creek; Big Creek, Dam 5 to San Joaquin River; and Stevenson Creek, Shaver Lake Dam to San Joaquin River.

There are no known populations of MYLF within the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project. However, potential MYLF habitat (i.e., that rated as good or moderate in survey results) was identified along Tombstone Creek; Crater Creek; Chinquapin Creek; Camp 62 Creek; Bolsillo Creek; Bear Creek; Mono Creek; Pitman Creek; Stevenson Creek; Balsam Creek; South Fork San Joaquin River, Florence Lake to Mammoth Pool; North Fork Stevenson Creek; Florence Lake dam arches; Bear Diversion Pool; Mono Diversion Pool; and Dam 5 Impoundment.

There are known populations of Yosemite toad (YT) in the vicinity of, Crater Creek, part of the Big Creek Nos. 2A, 8 and Eastwood Project. Potential YT habitat (i.e., that rated as good or moderate in survey results) was identified at Tombstone Creek, and the South Fork San Joaquin River from Florence Lake to Mammoth Pool.

There are known populations of western pond turtle (WPT) at Camp 62 Creek, Stevenson Creek, North Fork Stevenson Creek, Dam 5 Forebay, and Dam 6 Forebay.

Under the Proposed Action, environmental measures are recommended to enhance aquatic habitat and address water quality issues. These measures include (1) higher MIF requirements; (2) establishment of CRMF; (3) implementation of sediment management prescriptions; (4) Vegetation and Integrated Pest Management Plan (specifically BMPs for use of herbicides and pesticides); (5) Temperature Monitoring Control Plan, and (6) implementing a Flow Monitoring and Reservoir Water Level Management Plan.

Several training programs will also be implemented by SCE under the Proposed Action to enhance the protection of VELB and their habitat:

- Environmental Training Program
- ESAP
- NHSSIP

- Environmental Compliance Program

Implementation of these measures and programs under the Proposed Action will either maintain or enhance habitat for FYLF, MYLF, YT, and WPT. Other Water Quality (WQ) measures need to address timing of CRMF analysis.

As stated under the No Action Alternative, North and South Slide Creek diversions, and Tombstone Creek Diversion are currently out of service. The decommissioning of these diversions, plus the Crater Creek Diversion, which is currently in service, under the Proposed Action would permanently return the reaches to free-flowing conditions and would likely continue to maintain downstream meadows. One of these meadows, Jackass Meadow, which is adjacent to Tombstone Creek, represents potential habitat for YT and MYLF. Another, Poison Meadow, is adjacent to Crater Creek and represents potential habitat for YT. However, if extensive non-Project-related historic grazing and recreation continue in these meadows and stream reaches, habitat for these special-status amphibians could continue to be limited.

Protection of Migrating Waterfowl Habitat

Waterfowl migrate through the Project vicinity and forage in Big Creek Nos. 2A, 8 and Eastwood Project reservoirs, including Florence Lake and Shaver Lake. Project operations will not result in an adverse change in foraging habitat for migrating waterfowl. Under the Proposed Action, operation of the Project will continue to provide foraging habitat for migrating waterfowl.

Protection of Raptors on Project Structures (Power Lines or Transmission Lines)

Several special-status raptor species are known or could potentially occur in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project. These include: bald eagle, peregrine falcon, osprey, Cooper's hawk, northern goshawk, great gray owl, and the California spotted owl. While there have been no known raptor mortalities on the EPS-BC1 220kV power transmission lines, and this transmission line meets APLIC guidelines, it nevertheless may pose a potential risk to raptors.

Under the Proposed Action, specific measures and programs identified in the Bald Eagle Management Plan will be implemented to enhance protection of raptors from electrocution or nest disturbance on Project power line structures. See the Mammoth Pool Project above for a brief description of these measures.

Protection of Active Raptor Nests and Bald Eagle Wintering Roosts

As stated above, several raptor species are known or could potentially nest in the Project area. There are known osprey and bald eagle nests, and potential bald eagle wintering roosts in the Project vicinity, and other raptors could potentially nest or roost in the area.

The potential bald eagle wintering roosts are in the vicinity of USDA-FS Road No. 8S05, Canyon Road (Powerhouse No. 2 and USDA-FS Road No. 9S05E to Powerhouse No.

8). The known bald eagle nest is on the south shore of Shaver Lake. The known osprey nests are in the vicinity of two access roads to Shaver Dam from Highway 168 (Access road to Shaver Dam North and Access road to Shaver Dam south).

Under the No Action Alternative, the bald eagle nest at Shaver Lake is not in the direct vicinity of any Project roads or facilities, and will therefore not be affected by routine Operation and Maintenance (O&M) activities. However, vegetation management activities, such as trimming by equipment and road maintenance activities, including paving, graveling and grading, may disturb breeding osprey. All Project vegetation management activities, such as trimming with equipment and road maintenance activities, including paving, graveling and grading, occur during summer months and, therefore, should not disturb bald eagle wintering roosts.

Under the Proposed Action, SCE will implement measures identified in the Bald Eagle Management Plan to enhance protection of active raptor nests on Project structures. To protect active nests during vegetation maintenance activities, SCE will implement measures specified in the Vegetation and Integrated Pest Management Plan. See the Mammoth Pool Project above for a brief description of these measures.

Adverse effects on raptor species are not expected to occur from recreation activities in the Project area. Recreation, including camping, flatwater boating, and use of interpretive and day-use areas, are ongoing at Shaver Lake and associated recreation facilities. These activities are limited to existing facilities and the reservoir. Despite possible disturbance from these activities during nesting season, special-status raptors (e.g., bald eagle and peregrine falcon) have continued to nest or have initiated nesting in the vicinity of these facilities and activities. Continued recreation activities and use of these facilities at the existing intensity and frequency would not result in adverse effects to nesting raptors.

Short-term temporary disturbance resulting from work activities necessary to decommission North and South Slide Creek diversions, Crater Creek Diversion, and Tombstone Creek Diversion structures may affect two special-status raptors—bald eagle and California spotted owl—that are known to occur in the vicinity of these diversions. There are no known raptor nests in the vicinity. Measures to protect these species will be included in the Small Diversion Decommissioning Plan and Agency permit conditions.

Protection of Breeding Habitat for Riparian-Nesting Songbirds

Riparian-nesting songbirds that are known or could potentially occur in the Big Creek Nos. 2A, 8 and Eastwood Project vicinity include the willow flycatcher and yellow warbler. Riparian habitat along Tombstone Creek; Crater Creek; Mono Creek; Bolsillo Creek; Bear Creek; Stevenson Creek, Shaver Lake Dam to San Joaquin River; and North Fork Stevenson Creek bypass reach may represent breeding habitat for riparian nesting songbirds. However, grazing (under USDA-FS grazing leases) in the vicinity of Tombstone Creek; Crater Creek; Mono Creek; Stevenson Creek, Shaver Lake Dam to

San Joaquin River; and the North Fork Stevenson Creek bypass reach may adversely impact this habitat.

SCE does not implement maintenance activities that would result in removal of breeding habitat for these species. The MIF and CRMF recommended in the Proposed Action would either maintain or enhance riparian habitat for these species. Training programs implemented under the Proposed Action will also enhance the protection of riparian-nesting songbirds and their habitat. See the Mammoth Pool Project above for a brief description of these measures.

Protection of Special-status Bats

Special-status bat species, including Townsend's big-eared bat and the pallid bat, are known to occur in the Project vicinity. Additionally, Townsend's big-eared bat is known to roost at a valve house at Big Creek Powerhouse No. 2A and at the Eastwood School storage yard.

Under the Proposed Action, SCE will implement the Special-status Bat Species License Article and training programs to avoid disturbance of special-status bat species. For a brief description of these measures see the above section covering Big Creek Nos. 1 and 2 Project.

Work activities necessary to decommission the Tombstone Creek Diversion structures and ancillary features may cause disturbance to Townsend's big-eared bat, which are known to occur in the vicinity of the Tombstone Creek diversion piping. These bats would be protected during the decommissioning process in compliance with the Special-status Bat License Article and Small Diversions Decommissioning Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)).

Protection of Mesocarnivore Habitat and Denning Sites

Mesocarnivores known or potentially occurring in the Project vicinity include: the Sierra Nevada red fox, American marten, Pacific fisher, and the California wolverine. Potential habitat has been identified for these four species in the vicinity of the Project. There are no known denning sites in the Project vicinity and routine operations and maintenance activities would not result in removal of appropriate habitat for these species. Under the Proposed Action, several training programs will enhance the protection of mesocarnivores and their habitat, and implementation of BMPs for the use of rodenticides and programs, as specified in the Vegetation and Integrated Pest Management Plan, would enhance protection of these species. See the section covering the Mammoth Pool Project above for a brief description of these measures.

Reduction of the Introduction or Spread of Noxious Weed Species

Several noxious weed populations are known to occur in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project. Under the existing Project (No Action Alternative), vegetation management activities such as trimming by hand, and road maintenance

activities, including paving, graveling and grading, may result in the spread of these existing weed populations. Additionally, construction equipment brought in to the Florence Lake Work Camp from outside the watershed could potentially introduce new noxious weed populations. Under the Proposed Action, SCE will implement measures and programs specified in the Vegetation and Integrated Pest Management Plan to reduce the spread of noxious weed species in the vicinity of the Big Creek Nos. 2A, 8 and Eastwood Project. See the section covering the Mammoth Pool Project above for a brief description of these measures.

Reduction of the Introduction of Invasive Ornamental Plant Species

Invasive ornamental plants, which are sometimes also considered noxious weeds, are known to occur along Big Creek Nos. 2A, 8 and Eastwood Project roads and power lines. Under the Proposed Action, SCE will implement measures and programs, as specified in the Vegetation and Integrated Pest Management Plan, to reduce the spread of invasive ornamental plant populations within the Project vicinity. See the section covering the Big Creek Nos. 1 and 2 Project above for a brief description of these measures.

Prevention of Bear/Human Interactions

Black bears potentially occur in the Project vicinity. Under the Proposed Action, SCE will implement the Bear/Human Interaction License Article (SCE 2007; Volume 4, SD-G (Book 19)) to reduce the number of bear/human interactions occurring in the Project vicinity. SCE will install and maintain bear proof dumpsters at the Big Creek No. 1 administrative offices and company housing, and other Project facilities where food waste may be disposed of or stored. CDFG and USDA-FS will review and approve dumpster design prior to installation. SCE will also implement a program to educate SCE personnel about proper food storage and garbage disposal to reduce bear/human incidents. The education program will consist of written materials (educational pamphlet) and employee training.

Protection of Mule Deer Migration and Habitat

The North Kings deer herd is known to occur in and migrate through the Big Creek Nos. 2A, 8 and Eastwood Project near Shaver Lake. Under the Proposed Action, SCE will maintain protection of mule deer migration and habitat by implementing measures specified in the proposed Mule Deer License Article (SCE 2007; Volume 4, SD-G (Book 19)). For the Big Creek Nos. 2A, 8 and Eastwood Project, this includes implementing road closures to prevent the disturbance of mule deer and other wildlife in this vicinity.

Protection of Special-status Species at Newly Identified Project Facilities, Roads, and Trails

SCE has recently identified several roads, one trail, and ten existing helicopter landing sites as Project facilities associated within the Big Creek Nos. 2A, 8 and Eastwood Project. The roads, the trail, and the helicopter landing sites were identified following

completion of surveys for the Big Creek ALP Projects. There are agency (CNDDB and/or USDA-FS) records identifying the occurrence of short-leaved hulsea, Mono Hot Springs evening primrose, and flat-leaved bladderwort in the vicinity of several of these roads. Additionally, there are agency records for Mono Hot Springs evening primrose in the vicinity of the Bear Creek Diversion helicopter landing site, and for Madera leptosiphon in the vicinity of the Pitman Creek at Diversion helicopter landing site. SCE will implement the measures and programs specified in the Vegetation and Integrated Pest Management Plan to enhance protection of these special-status plant populations.

Under the Proposed Action, SCE will complete focused surveys for special-status plants, VELB, noxious weeds and invasive plant species to document their presence in the vicinity of the newly identified Project roads and helicopter landing sites. Surveys will follow agency and stakeholder approved survey methods. If special-status resources, noxious weeds, or invasive ornamental plant species are identified adjacent to these Project roads, SCE will implement AP measures specified in the Vegetation and Integrated Pest Management Plan or VELB Management Plan. If it is determined that future maintenance activities would result in trimming of one or more elderberry shrub branches or stems at least 1 inch in diameter, SCE will follow the mitigation approaches described in the VELB Management Plan and consult with USFWS to adequately mitigate for potential project effects.

Refer to the Vegetation and Integrated Pest Management Plan (SCE 2007; Volume 4, SD-G (Books 19 and 24)) for a list of the newly identified roads, the trail, and the helicopter landing sites to be surveyed in the Big Creek Nos. 2A, 8 and Eastwood Project vicinity.

Protection of Special-Status Species at New Helicopter Landing Sites to be Developed

SCE proposes to develop five new helicopter landing sites in the Big Creek Nos. 2A, 8 and Eastwood Project vicinity: (1) Florence Lake Dam; (2) South Fork San Joaquin River Florence Spill Station; (3) South Fork San Joaquin River below Hooper Creek; (4) Mono Creek at Diversion, and (5) Mono Creek below Lake Thomas A. Edison. Development of these sites will require removal of several trees and shrubs.

There are no CNDDB or USDA-FS records for special-status plants in the vicinity of these proposed helicopter landing sites. Prior to development of these sites, SCE will complete focused surveys for special-status plants, noxious weeds, and invasive ornamental plant species. The Surveys will follow agency and stakeholder approved survey methods. SCE will locate the landing pad to avoid effects to any special-status species that are identified during surveys.

Because both helicopter landing sites are above 3,000 feet in elevation, SCE will not conduct surveys for VELB and potential VELB habitat.

Bald eagles and peregrine falcons are known to occur in the vicinity of these sites at Florence Lake and along the South Fork San Joaquin River, and there is potential foraging and nesting habitat for great gray owls along the South Fork San Joaquin

River. SCE will conduct clearance surveys for bald eagle nests and other active raptor nests prior to development of the helicopter landing pads. SCE will locate the landing pad to avoid effects to any nest trees, and site development activities (i.e., tree removal) will be scheduled to avoid disturbance of any active raptor nests identified during surveys.

Protection of Special-Status Species Prior to Construction of New Project Facilities

Under the Proposed Action, SCE will implement the Special-Status Species License Article (SCE 2007; Volume 4, SD-G (Book 19)), which states, prior to the construction of new Project features on National Forest Service Land, which are not evaluated in this APDEA, that may affect Forest Service special-status species and their habitat (i.e., Forest Service sensitive or management indicator species), SCE will prepare a Biological Evaluation to describe the potential impact of the action on the species or its habitat. For state or federally listed species, federal candidate species, California species of special concern, and California fully protected species; SCE will prepare a Biological Assessment or other required document and obtain any necessary permits or approvals.

5.2.5.3.4 Big Creek No. 3 (FERC Project No. 120)

Protection of Special-status Plant Species

There are no special-status plant species known to occur or potentially occurring in the Big Creek No. 3 Project vicinity. Therefore, no enhancement measures are proposed.

Protection of VELB and Their Habitat

A total of 515 elderberry shrubs below 3,000 feet elevation, which represent VELB habitat, are known to occur in the vicinity of the Big Creek No. 3 Project. These shrubs occur along the Powerhouse No. 3, penstocks, rock/sand trap and surge chamber, and along the following roads:

- USDA-FS Road No. 8S05, Canyon Road (from junction with USDA-FS Road No. 8S03 to junction with Italian Bar Road);

- USDA-FS Road No. 9S89, access road to Big Creek Powerhouse No.3 and administrative building from Italian Bar Road, and

- Miscellaneous Powerhouse No. 3 roads (i.e., water tank access road and shop) USDA-FS Road Nos. 9S020D, 9S020DA, 9S088, 9S088A, 9S088X and 9S088XA).

Vegetation management activities, including trimming by hand and equipment; herbicide use; road maintenance activities, including road grading, graveling, and paving; snow removal or sanding; and maintenance of culverts, ditches, and water bars may negatively impact elderberry shrubs under existing Project operations (No Action Alternative).

Under the Proposed Action, SCE will implement the VELB Management Plan to enhance the protection of VELB and their habitat. See the section covering the Mammoth Pool Project above for a brief description of these measures.

Protection of Special-status Amphibians and Reptiles and their Habitat

There are no known populations of FYLF in the vicinity of the Big Creek No. 3 Project. However, potential FYLF habitat (i.e., that rated as good or moderate in survey results) was identified along the San Joaquin River, Dam 6 to Redinger.

There are no known populations or appropriate habitat to support MYLF within the vicinity of the Big Creek No. 3 Project.

There are no known populations or appropriate habitat to support YT in the vicinity of the Big Creek No. 3 Project.

There are known occurrences of WPT in the Project vicinity in Jose Creek. WPT habitat (i.e., that rated as good or moderate in survey results) was also identified along the San Joaquin River, Dam 6 to Redinger, and the Dam 6 Forebay.

Under the Proposed Action, environmental measures are recommended to enhance aquatic habitat and address water quality issues. These measures include: higher MIF requirements, sediment management prescriptions, implementation of the Vegetation and Integrated Pest Management Plan (specifically BMPs for use of herbicides and pesticides), and the Flow Monitoring and Reservoir Water Level Monitoring Plan. Additionally, several programs will be implemented under the Proposed Action. See the Mammoth Pool Project above for a brief description of these measures and programs. Implementation of these measures and programs under the Proposed Action will either maintain or enhance habitat for FYLF, MYLF, YT, and WPT.

Protection of Migrating Waterfowl Habitat

Waterfowl migrate through the Project vicinity and forage in Big Creek No. 3 Project reservoirs, including the Dam 6 Forebay. Project operations will not result in an adverse change in foraging habitat for migrating waterfowl. Under the Proposed Action, Project operations will continue to provide foraging habitat for migrating waterfowl.

Protection of Raptors on Project Structures (Power Lines or Transmission Lines)

The Big Creek No. 3 Project does not include Project powerlines or transmission lines; therefore, there is no potential for electrocution of raptors. Under the Proposed Action, no enhancement measures are proposed.

Protection of Active Raptor Nests and Bald Eagle Wintering Roosts

Several special-status raptors are known or could potentially occur in the Project vicinity, including bald eagle, American peregrine falcon, osprey, northern goshawk, and California spotted owl.

There are potential bald eagle wintering roosts in the vicinity of Big Creek No. 3 Project roads. However, all Project vegetation management activities such as trimming with equipment, and road maintenance activities, including paving, graveling and grading, occur during summer months and, therefore, should not disturb bald eagle wintering roosts.

Under the Proposed Action, SCE will implement measures identified in the Bald Eagle Management Plan to enhance protection of active raptor nests on Project structures. To protect active nests during vegetation maintenance activities, SCE will implement measures specified in the APP and Vegetation and Integrated Pest Management Plan. See the Mammoth Pool Project above for a brief description of these measures.

Protection of Breeding Habitat for Riparian-nesting Songbirds

Riparian-nesting songbirds that are known or could potentially occur in the Big Creek Nos. 2A, 8 and Eastwood Project vicinity include the willow flycatcher and yellow warbler.

SCE does not implement maintenance activities that would result in removal of breeding habitat for these species. MIF and CRMF recommended in the Proposed Action would either maintain or enhance riparian habitat for this species. Training programs will also enhance the protection of riparian-nesting songbirds and their habitat. See the Mammoth Pool Project above for a brief description of these measures.

Protection of Special-status Bats

Pallid bats are known to roost at Powerhouse No. 3 and at Adits 1, 2, and 3 on Tunnel 3.

Under the Proposed Action, SCE will implement the proposed Special-status Bat Species License Article and training programs to avoid disturbance of special-status bat species. See the Big Creek Nos. 1 and 2 Project above for a brief description of these measures.

Protection of Mesocarnivore Habitat and Denning Sites

The only mesocarnivore known or potentially occurring in the Big Creek No. 3 Project vicinity is the Pacific fisher. No potential mesocarnivore habitat was identified in the Project vicinity. There are no known denning sites in the Project vicinity and Project operation and maintenance activities would not result in removal of appropriate habitat for this species.

Under the Proposed Action, implementation of several training programs will enhance the protection of mesocarnivores and their habitat, and implementation of programs and BMPs for the use of rodenticides, as specified in the Vegetation and Integrated Pest Management Plan, would enhance protection of these species. See the Mammoth Pool Project above for a brief description of these measures.

Reduction of the Introduction or Spread of Noxious Weed Species

Noxious weed populations are known to occur in the vicinity of the Big Creek No. 3 Project. Under the existing Project operations (No Action Alternative), vegetation management activities, such as trimming by hand, and road maintenance activities, including paving, graveling and grading, may result in the spread of these existing weed populations.

Under the Proposed Action, SCE will implement measures and programs specified in the Vegetation and Integrated Pest Management Plan to reduce the spread of noxious weeds in the vicinity of the Big Creek No. 3 Project. See the Mammoth Pool Project above for a brief description of these measures.

Reduction of the Introduction of Invasive Ornamental Plant Species

Invasive ornamental plants, sometimes also considered noxious weeds, are known to occur along Big Creek No. 3 Project roads. Under the Proposed Action, SCE will implement measures and programs, as specified in the Vegetation and Integrated Pest Management Plan, to reduce the spread of invasive ornamental plant populations within the Project vicinity. See the section covering the Big Creek Nos. 1 and 2 Project above for a brief description of these measures.

Prevention of Bear/Human Interactions

Black bears potentially occur in the Project vicinity. Under the Proposed Action, SCE will implement the Bear/Human Interaction License Article (SCE 2007; Volume 4, SD-G (Book 19)) to reduce the number of bear/human interactions occurring in the Project vicinity. SCE will install and maintain bear-proof dumpsters at the Big Creek No. 1 administrative offices and company housing, and other Project facilities where food waste may be disposed of or stored. CDFG and USDA-FS will review and approve dumpster design prior to installation. SCE will also implement a program to educate SCE personnel about proper food storage and garbage disposal to reduce bear/human incidents. The education program will consist of written materials (educational pamphlet) and employee training.

Protection of Mule Deer Migration and Habitat

The Huntington mule deer herd, which is part of the larger San Joaquin herd, is known to migrate through and winter in the Big Creek No. 3 Project vicinity. However, Project facilities, roads, and trails do not impede or prevent mule deer migration. Under the Proposed Action, there are no anticipated impediments to mule deer migration or substantial changes in habitat in the Project vicinity.

Protection of Special-Status Species at Newly Identified Project Facilities, Roads, and Trails

SCE has recently identified several roads as Project facilities associated with the Big Creek No. 3 Project. These roads were identified following completion of surveys for

the Big Creek ALP Projects. There are no CNDDB or USDA-FS records for special-status plants in the vicinity of these roads.

Under the Proposed Action SCE will complete focused surveys for special-status plants, VELB, noxious weeds and invasive plant species to document their presence in the vicinity of the newly identified Project roads and helicopter landing sites. Surveys will follow agency and stakeholder approved survey methods. If special-status resources, noxious weeds, or invasive ornamental plant species are identified adjacent to these Project roads, SCE will implement avoidance and protection measures and programs specified in the Vegetation and Integrated Pest Management Plan or VELB Management Plan. If it is determined that future maintenance activities would result in trimming of one or more elderberry shrub branches or stems ≥ 1 inch in diameter, SCE will follow the mitigation approaches described in the VELB Management Plan and consult with USFWS to adequately mitigate for potential project effects.

Refer to the Vegetation and Integrated Pest Management Plan for a list of the newly identified roads, the trail, and the helicopter landing sites to be surveyed in the Big Creek No. 3 Project vicinity.

Protection of Special-Status Species Prior to Construction of New Project Facilities

Under the Proposed Action, SCE will implement the Special-status Species License Article (SCE 2007; Volume 4, SD-G (Book 19)), which states, prior to the construction of new Project features on National Forest Service Land, which are not evaluated in this APDEA, that may affect Forest Service special-status species and their habitat (i.e., Forest Service sensitive or management indicator species), SCE will prepare a Biological Evaluation to describe the potential impact of the action on the species or its habitat. For state or federally listed species, federal candidate species, California species of special concern, and California fully protected species, SCE will prepare a Biological Assessment or other required document and obtain any necessary permits or approvals.

TABLES

Table 5.2.5-1. Vegetation Communities and Wildlife Habitats within 1/4 Mile of the Big Creek ALP Project Facilities.

Vegetation Community/ Wildlife Habitat	Mammoth Pool (FERC No. 2085)	Big Creek Nos. 1 and 2 (FERC No. 2175)	Big Creek Nos. 2A, 8, and Eastwood (FERC No. 67)	Big Creek No. 3 (FERC No. 120)
Gray Pine-Chaparral Woodland/ Mixed Chaparral	X	X	X	X
Gray Pine-Chaparral Woodland with Rock Substrate/ Mixed Chaparral with Rock Substrate	X	X	X	X
Westside Ponderosa Pine Forest/ Ponderosa Pine Forest	X			
Westside Ponderosa Pine Forest with Rock Substrate/ Ponderosa Pine Forest with Rock Substrate				
Sierran Mixed Coniferous Forest/ Sierran Mixed Coniferous Forest	X	X	X	X
Sierran Mixed Coniferous Forest with Rock Substrate/ Sierran Mixed Coniferous Forest with Rock Substrate	X	X	X	X
Jeffrey Pine Forest/ Jeffrey Pine Forest			X	
Jeffrey Pine Forest with Rock Substrate/ Jeffrey Pine Forest with Rock Substrate			X	
Jeffrey Pine-Fir Forest/ Jeffrey Pine Forest		X	X	
Jeffrey Pine-Fir Forest with Rock Substrate/ Jeffrey Pine Forest with Rock Substrate		X	X	
Lodgepole Pine Forest/ Lodgepole Pine Forest			X	
Blue Oak Woodland/ Blue Oak Woodland	X	X		X
Oak Woodland/ Montane Hardwood	X	X	X	X
Oak Woodland with Rock Substrate/ Montane Hardwood with Rock Substrate	X	X	X	
Mixed Montane Chaparral/ Mixed Chaparral or Montane Chaparral	X	X	X	X
Mixed Montane Chaparral with Rock Substrate/ Mixed Chaparral or Montane Chaparral with Rock Substrate	X	X	X	
Riparian/ Montane, Valley, and Foothill Riparian	X	X	X	X
Wet Montane Meadow/ Wet Meadow	X	X	X	
Dry Montane Meadow/ Perennial Grassland			X	
Montane Freshwater Marsh/ Fresh Emergent Wetland				

Table 5.2.5-1. Vegetation Communities and Wildlife Habitats within 1/4 Mile of the Big Creek ALP Project Facilities.

Vegetation Community/ Wildlife Habitat	Mammoth Pool (FERC No. 2085)	Big Creek Nos. 1 and 2 (FERC No. 2175)	Big Creek Nos. 2A, 8, and Eastwood (FERC No. 67)	Big Creek No. 3 (FERC No. 120)
Ruderal/ Ruderal	X	X	X	
Open Ground/ Open Ground	X	X	X	
Water/ Water	X	X	X	X
Developed/ Developed	X	X	X	X

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental and Special-Status Species by Project Facility, Recreation Facility, Road or Trail.

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	INVASIVE/ORNAMENTAL PLANT SPECIES																		FEDERALLY LISTED OR CANDIDATE SPECIES					
			Black mustard (*Brassica nigra*)	Cheatgrass (*Bromus tectorum*)	Tocalote (*Centaurea melitensis*)	Bull thistle (*Cirsium vulgare*)	English ivy (*Hedera helix*)	Klamath weed (*Hypericum perforatum*)	Perennial pepperweed (*Lepidium latifolium*)	Himalayan blackberry (*Rubus discolor*)	Woolly mullein (*Verbascum thapsus*)	Periwinkle (*Vinca major*)	Tree-of-heaven (*Ailanthus altissima*)	Scotch broom (*Cytisus scoparius*)	Ox-eye daisy (*Leucanthemum vulgare*)	Black locust (*Robinia pseudoacacia*)	Spanish broom (*Spartium junceum*)	Common tansy (*Tanacetum vulgare*)	French broom (*Genista monspessulana*)	Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Mountain yellow-legged frog (*Rana muscosa*)	Yosemite toad (*Bufo canorus*)	Bald eagle (*Haliaeetus leucocephalus*)	American peregrine falcon (*Falco peregrinus anatum*)	Pacific fisher (*Martes pennanti pacifica*)
Mammoth Pool (FERC Project No. 2085)																									
Dams and Diversions																									
Large Dams																									
Mammoth Pool		3400		K																					
Mammoth Pool Spillway		3400		K																			K		
Power Generation																									
Mammoth Pool Powerhouse		2600	K																						
Mammoth Pool Fishwater Generator		3000	K	K	K																				
Gaging Stations																									
Streams																									
Mammoth Pool Fish Water Generator		3000		K																					
San Joaquin River above Shakeflat Creek (with cable crossing)		2800-3000		K																					
Reservoir																									
Mammoth Pool Dam		3400		K																					
Mammoth Pool Powerhouse		2600	K		K																				
Water Conveyance																									
Mammoth Pool Powerhouse																									
Intake Gate House		3400		K																			K		
Adit Portals 1 & 2 at Shakeflat Creek		3200																							
Mammoth Tunnel[1]		3100-3400																					K		
Rock Trap Flushing Channel		2600	K																						
Valve House		2600	K																						
Penstocks		2300-3100	K		K																				
HB Valves																									
Mammoth Pool Reservoir		3400		K																					
Cabins																									
Mammoth Pool Reservoir Maintenance Cabin		3400		K																			K		
Power Transmission Lines																									
Mammoth Pool Powerhouse - BC3 220KV		1600-3800	K	K																			K		
Reservoirs, Forebays, and Diversion Pools																									
Large Reservoir																									
Mammoth Pool Reservoir		3400		K		K																	K		
Bypass Stream Reaches (Small Tributaries)																									
Rock Creek, Diversion to San Joaquin River[1, 2]		2600-3400																							
Ross Creek, Diversion to San Joaquin River[1, 2]		2200-3400																							
Bypass Stream Reaches (San Joaquin River)																									
San Joaquin River, Mammoth Pool Dam to Dam 6[1, 2]		2200-3400	K	K																					
Helicopter Landing Sites																									
Mammoth Pool Dam		3400																					K		
Roads Within Project Boundaries: SCE controlled																									
6S025G Mammoth Pool Fishwater Generator access road from 6S25 (Mammoth Pool Road) to Base of Mammoth Pool Dam		3200-3400		K																			K		
6S25, Mammoth Pool Road, from 7S20 (Shake Flat Creek access) to end of road at east abutment		3500		K																					
8S03 USDA-FS Road No. 8S44 from Powerhouse No. 8 to Mammoth Pool Powerhouse		2300-2400	K	K																K					
8S44, Mammoth Pool Transmission Line access road					K																				
9S42 Mammoth Pool Powerhouse Transmission Line access road from gate near County Road 225, Italian Bar Road, to USDA-FS Road No. 8S44		1600-4000			K															K			K		
Big Creek Nos. 1 and 2 (FERC Project No. 2175)																									
Dams and Diversions																									
Large Dams																									
Huntington Lake Dams 1, 2, 3, & 3a		6900		K		K																	K	K	
Moderate Diversion Dams																									
Dam 4		4800		K						K				K			K						K	K	
Small Diversions																									
Balsam Creek		4500																					K		
Ely Creek		5200																							K

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental and Special-Status Species by Project Facility, Recreation Facility, Road or Trail.

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	INVASIVE/ORNAMENTAL PLANT SPECIES																		FEDERALLY LISTED OR CANDIDATE SPECIES					
			Black mustard (*Brassica nigra*)	Cheatgrass (*Bromus tectorum*)	Tocalote (*Centaurea melitensis*)	Bull thistle (*Cirsium vulgare*)	English ivy (*Hedera helix*)	Klamath weed (*Hypericum perforatum*)	Perennial pepperweed (*Lepidium latifolium*)	Himalayan blackberry (*Rubus discolor*)	Woolly mullein (*Verbascum thapsus*)	Periwinkle (*Vinca major*)	Tree-of-heaven (*Ailanthus altissima*)	Scotch broom (*Cytisus scoparius*)	Ox-eye daisy (*Leucanthemum vulgare*)	Black locust (*Robinia pseudoacacia*)	Spanish broom (*Spartium junceum*)	Common tansy (*Tanacetum vulgare*)	French broom (*Genista monspessulana*)	Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Mountain yellow-legged frog (*Rana muscosa*)	Yosemite toad (*Bufo canorus*)	Bald eagle (*Haliaeetus leucocephalus*)	American peregrine falcon (*Falco peregrinus anatum*)	Pacific fisher (*Martes pennanti pacifica*)
Big Creek Nos. 1 and 2 (FERC Project No. 2175) (continued)																										
Power Generation																										
Big Creek Powerhouse No. 1		4800		K						K				K			K						K	K	
Big Creek Powerhouse No. 2		3000		K				K		K																
Gaging Stations																										
Streams																										
Big Creek below Huntington Lake at Dam 1		6900		K																						
Balsam Creek at Diversion Dam		4800																						K		
Ely Creek at Diversion Dam		5000																								K
Reservoir																										
Huntington Dam		6900		K		K															K	K	K			
Powerhouse																										
Big Creek Powerhouse No. 1		4800		K						K				K			K						K	K	
Big Creek Powerhouse No. 2		3000		K				K		K																
Water Conveyance																										
Powerhouse No. 1																										
Intake Gate House at Huntington Lake- Dam 1		6900		K																				K		
Tunnel No. 1		6600-6900		K																				K	K (N)	K
Incline Adit		6900																						K	K	
Upper 84" Valve House below Huntington Lake		6900																						K		K
Upper 60" Valve House below Huntington Lake		6900																						K		K
60" & 84" Flowlines below Huntington Lake		6200-6800																							K (N)	
Lower 84" Valve House at top of Powerhouse No.1 Penstock		6200																							K (N)	
Lower 60" Valve House at top of Powerhouse No.1 Penstock		6200																							K (N)	
42" Valve House at top of Powerhouse No.1 Penstock		6200																							K (N)	
Vent Stacks		6800																							K (N)	
Penstocks		4800-6200		K						K				K			K							K	K (N)	
Powerhouse No. 2																										
Inlet Structure at Dam 4		4800		K						K				K			K							K	K	
Tunnel No. 2		4800-5000																						K	K	K
Adit 1, Tunnel 2		4900																						K		
Adit 2, Tunnel 2		5000																								
Adit 3, Tunnel 2		4800																						K		
Adit 4, Tunnel 2		4900																						K		
Adit 5, Tunnel 2		4800																								K
Adit 6, Tunnel 2		5000																								K
Adit 7, Tunnel 2		4900																								K
Adit 7&1/2, Tunnel 2		4800																								K
Adit 8, Tunnel 2		4800																								K
Adit 7&1/2 Leakage Weir		4800																								K
Shoofly Piping & Splashgate Structure (Adit 8/Shoofly Diversion)		4800																								K
Diversion Shaft, Bulkhead and Drain Valve at Adit 8		4800																								K
Balsam Creek Diversion Piping (Adit 3)		4800																						K		
Ely Creek Diversion Piping (Adit 6)		5000																								K
Rock Trap/Surge Chamber (9' Gate House) on the railroad grade		4700																							K	
42" Valve House and valves below railroad grade		4700-4800																							K	
Drain Piping & Valves (10" & 24") from Surge Chamber, below railroad grade		4700																							K	
Vent Stacks below railroad grade		4700																							K	
Penstocks		3000-4700		K				K		K															K	
Huntington-Pitman-Shaver																										
Inlet Structure & Gate 1A and 1B at Dam 2 (10' Gate House)		6900		K		K																		K	K	K
Weather Stations																										
Big Creek No. 1		4800		K						K				K			K							K	K	
Huntington Lake		7100																						K	K	
Buildings/Camps																										
Big Creek Powerhouse No.1 Facilities		4800		K						K				K			K							K	K	
Storage Yards																										
Big Creek Powerhouse No. 1		4800																						K	K	

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental and Special-Status Species by Project Facility, Recreation Facility, Road or Trail.

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	INVASIVE/ORNAMENTAL PLANT SPECIES																	FEDERALLY LISTED OR CANDIDATE SPECIES					
			Black mustard (*Brassica nigra*)	Cheatgrass (*Bromus tectorum*)	Tocalote (*Centaurea melitensis*)	Bull thistle (*Cirsium vulgare*)	English ivy (*Hedera helix*)	Klamath weed (*Hypericum perforatum*)	Perennial pepperweed (*Lepidium latifolium*)	Himalayan blackberry (*Rubus discolor*)	Woolly mullein (*Verbascum thapsus*)	Periwinkle (*Vinca major*)	Tree-of-heaven (*Ailanthus altissima*)	Scotch broom (*Cytisus scoparius*)	Ox-eye daisy (*Leucanthemum vulgare*)	Black locust (*Robinia pseudoacacia*)	Spanish broom (*Spartium junceum*)	Common tansy (*Tanacetum vulgare*)	French broom (*Genista monspessulana*)	Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Mountain yellow-legged frog (*Rana muscosa*)	Yosemite toad (*Bufo canorus*)	Bald eagle (*Haliaeetus leucocephalus*)	American peregrine falcon (*Falco peregrinus anatum*)	Pacific fisher (*Martes pennanti pacifica*)
Big Creek Nos. 1 and 2 (FERC Project No. 2175) (continued)																									
Utilities																									
Water Supply/Treatment																									
Big Creek Powerhouse No. 1		4800		K																					
Domestic Water Diversions																									
Scot Lake		5400		K																			K		
Sewage Treatment																									
Big Creek Powerhouse No. 1 Community		4800		K																			K	K	
Fuel- Gasoline & Diesel																									
Big Creek Powerhouse No. 1		4800																					K		
Propane																									
Big Creek Powerhouse No. 1 Automotive Shop		1800																					K		
Project Power Lines Less Than 33KV																									
Musick 7KV		3000-4700		K						K														K	
Reservoirs, Forebays, and Diversion Pools																									
Large Reservoir																									
Huntington Lake		7000		K		K															K	K	K (N)	K	K
Moderate Forebays or Diversion Pools																									
Dam 4 Forebay		4800		K						K				K			K						K	K	
Bypass Stream Reaches (Small Tributaries)																									
Ely Creek, Diversion to Big Creek[1, 2]		3500-5000																							K
Bypass Stream Reaches (Moderate Tributaries)																									
Big Creek, Huntington Lake to Dam 4[1, 2]		4800-6900								K				K									K	K	K
Big Creek, Dam 4 to Dam 5[1, 2]		3000-4800																					K	K	
Flow Augmented Streams																									
Rancheria Creek below Portal Powerhouse[1, 2]		6900-7000																			K	K	K		
Helicopter Landing Sites																									
Hodges (Big Creek Heliport)		5000																					K	K	
Project Roads																									
8S05, Canyon Road (from Huntington Lake Road to Powerhouse No. 2 and 8S05E)		2000-4800	K	K						K													K	K	K
8S05C Powerhouse No.2 access road from Canyon Road		3000-3200	K					K		K															
8S05EA Old housing road 2												K													
8S082A access to Hydro offices at Big Creek		4500-5000		K																					
8S082C access to Hydro offices at Big Creek[3]		4500-5000																					K	K	
8S082D access to Hydro offices at Big Creek[3]		4500-5000																					K	K	
8S082X access to Hydro offices at Big Creek[3]		4900-5000																					K	K	
8S13 from the gate to 8S05, the Canyon Road		3800-4200				K																		K	
8S66 from gate to west end of Dam 2		7000		K																			K		
8S66, from west end of Dam 2 to 8S66A		7000		K		K																	K	K	
8S66B, from Dam 2 to end		7000		K																			K		
8S66BA Short road between 8S66B and 8S66BC[3]		7000																							
8S66BC East end of Dam 1 to Dam 1 drainage gates[3]		7000		K																			K		
8S66X Road over Dam 2		6800-7000		K																			K		
8S82AA Access road to Warehouse[3]		4500-5000																					K	K	
8S82BA Upper access road to Wastewater treatment plant from 8S82B[3]		4500-5000																					K	K	
8S82BB Lower access road to Wastewater treatment plant from 8S82B[3]		4500-5000																					K	K	
8S82BC Access road to Fish Farm upper gate[3]		4500-5000																					K	K	
8S82E Upper access road to SCE company housing[3]		5000																					K	K	
8S82EA Lower access road to SCE company housing[3]		5000																					K	K	
8S82F Access road to Domestic water treatment plant from FRE 2710[3]		5000										K											K	K	
8S82J Upper access road to Powerhouse No. 1 from FRE 2710[3]		4500-5000										K											K	K	
Old housing road 3 adjacent to Powerhouse No. 2 from 8S05E		3200-3300		K						K						K	K								
Trail Name/Description																									
Trail to Scott Lake Domestic Diversion		5000-5500		K						K															

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental and Special-Status Species by Project Facility, Recreation Facility, Road or Trail.

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	INVASIVE/ORNAMENTAL PLANT SPECIES																		FEDERALLY LISTED OR CANDIDATE SPECIES					
			Black mustard (*Brassica nigra*)	Cheatgrass (*Bromus tectorum*)	Tocalote (*Centaurea melitensis*)	Bull thistle (*Cirsium vulgare*)	English ivy (*Hedera helix*)	Klamath weed (*Hypericum perforatum*)	Perennial pepperweed (*Lepidium latifolium*)	Himalayan blackberry (*Rubus discolor*)	Woolly mullein (*Verbascum thapsus*)	Periwinkle (*Vinca major*)	Tree-of-heaven (*Ailanthus altissima*)	Scotch broom (*Cytisus scoparius*)	Ox-eye daisy (*Leucanthemum vulgare*)	Black locust (*Robinia pseudoacacia*)	Spanish broom (*Spartium junceum*)	Common tansy (*Tanacetum vulgare*)	French broom (*Genista monspessulana*)	Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Mountain yellow-legged frog (*Rana muscosa*)	Yosemite toad (*Bufo canorus*)	Bald eagle (*Haliaeetus leucocephalus*)	American peregrine falcon (*Falco peregrinus anatum*)	Pacific fisher (*Martes pennanti pacifica*)
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67)																									
Dams and Diversions																									
Large Dams																									
Florence Lake		7350		K		K					K												K		
Shaver Lake		5400	K	K																			K		
Moderate Diversion Dams																									
Bear Creek Diversion		7400		K																					
Mono Creek Diversion		7400		K							K														
Hooper Creek		7500		K																					
Pitman Creek		7100									K														
Balsam		6800																							
Small Diversions																									
Tombstone Creek		7800		K																					
North Slide Creek		7600																					K		
South Slide Creek		7600																					K		
Chinquapin Creek		7600									K														
Camp 62 Creek		7400									K														
Power Generation																									
Big Creek Powerhouse No. 2A		3100		K				K		K															
Big Creek Powerhouse No. 8		2600	K					K		K															
Eastwood Power Station		5600		K																			K		
Gaging Stations																									
Streams																									
Bear Creek below Diversion Dam		7400		K																					
Bear Creek Conduit at Diversion Dam		7400		K																					
Bear Creek upstream of Diversion Dam (with cable crossing)		7400																							
Big Creek below Dam 5 (with cable crossing)		2600								K															
Camp 62 Creek below Diversion Dam		7400									K														
Chinquapin Creek below Diversion Dam		7300									K														
Hooper Creek below Diversion Dam		7600		K																					
Huntington-Shaver Conduit gate 2 release		6700		K																					
Middle Fork Balsam Creek below Balsam Meadows Forebay		6700		K		K			K																
Mono Creek below Diversion Dam		7400		K							K														
Mono Creek Conduit at Diversion Dam		7400		K							K														
Mono-Bear Conduit (flow meter near Camp 62)		7000									K														
North Fork Stevenson Creek at Perimeter Rd.		5700																							
South Fork San Joaquin River below Hooper Creek		7000				K					K														
Stevenson Creek below Shaver Lake		5200						K															K		
Ward Tunnel at Intake		7400		K							K												K		
Camp 62 Creek at Diversion Dam		7400									K														
Chinquapin Creek at Diversion Dam		7600									K														
Crater Creek Diversion Ditch near Florence Lake		7400																							
Reservoir																									
Florence Dam		7350		K		K					K												K		
Mono Dam		7400		K							K														
Shaver Dam		5400	K	K																			K		
Powerhouse																									
Big Creek Powerhouse No. 2A		3100		K				K		K															
Big Creek Powerhouse No. 8		2200	K					K		K															
Eastwood Power Station		6300		K																			K		
Water Conveyance																									
Powerhouse No. 2A																									
Intake Gate House at Shaver Lake		5400		K																			K		
Tunnel No. 5		5200-6200		K		K																	K		K
Adit 1, Tunnel 5		5600				K																			
Adit 2, "Shoo fly", Tunnel 5		5000																							K
Surge Chamber, Rock Trap		5400		K																				K	K
102" Valve House		5200																							K
Penstocks		3100-5200		K				K		K													K	K	K

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			Black mustard *(Brassica nigra)*	Cheatgrass *(Bromus tectorum)*	Tocalote *(Centaurea melitensis)*	Bull thistle *(Cirsium vulgare)*	English ivy *(Hedera helix)*	Klamath weed *(Hypericum perforatum)*	Perennial pepperweed *(Lepidium latifolium)*	Himalayan blackberry *(Rubus discolor)*	Woolly mullein *(Verbascum thapsus)*	Periwinkle *(Vinca major)*	Tree-of-heaven *(Ailanthus altissima)*	Scotch broom *(Cytisus scoparius)*	Ox-eye daisy *(Leucanthemum vulgare)*	Black locust *(Robinia pseudoacacia)*	Spanish broom *(Spartium junceum)*	Common tansy *(Tanacetum vulgare)*	French broom *(Genista monspessulana)*	Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	Mountain yellow-legged frog *(Rana muscosa)*	Yosemite toad *(Bufo canorus)*	Bald eagle *(Haliaeetus leucocephalus)*	American peregrine falcon *(Falco peregrinus anatum)*	Pacific fisher *(Martes pennanti pacifica)*
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67) (continued)																									
Water Conveyance (continued)																									
Powerhouse No. 8																									
Intake structure at Dam 5		3000																							
Tunnel No.8[1]		2900-3200								K															
Adit 1, Tunnel 8		3000								K															
Surge Chamber - includes trash drain and penstocks valves		2900																							
Penstocks		2200-2900	K					K		K															
Eastwood Power Station																									
Inlet Structure (Gate 4)		6700		K																					
Power Tunnel[1]		6300-6800																							
Surge Chamber		6300		K																					
Tailrace Tunnel		5400-6300		K		K																	K		
Ward Tunnel																									
Inlet Structure at Florence Lake		7400		K							K												K		
Gate House at Florence Lake		7400		K							K												K		
Ward Tunnel		7000-7400		K							K												K		
Minimum Pool Weir		7400		K							K												K		
Chinquapin Creek Borehole		7600									K														
Camp 62 Adit		7300									K														
Camp 62 Creek Borehole		7400									K														
Mono-Bear Siphon																									
Bear Inlet Structure at Bear Forebay		7700		K																					
Bear Tunnel		7400-7700		K																					
Bear Adit		7200																							
Bear Flowline		7400-7700		K																					
Mono Inlet Structure at Mono Forebay		7400		K							K														
Mono Tunnel		7200-7500		K							K														
Mono Flow Line		7200-7500		K							K														
Combined Flow Line (siphon)		6600-7400		K		K					K														
Camp 62 Adit Valving		7400																							
Huntington-Pitman-Shaver																									
Steel Conduit with Air Vents		6900																					K	K	K
Siphon w 4" and 10" Drain Valves		6300-6600																					K	K	K
Vent Valve House		6800																					K	K	K
Tunnel No. 7		6700-7800		K		K																	K	K	
Tunnel No. 7 Vent		6800																							
Camp 72 Adit		7100																							
Diversion Tunnel from Tunnel 7 to Gate 3 at Balsam Meadow Forebay[1]		6800-7000																							
Gate 3 Outlet to Balsam Forebay		6700		K																					
Tombstone																									
Tombstone Creek Diversion Piping		7300-7800		K																			K		
Hooper																									
Hooper Diversion Piping to Florence Lake		7100-7500		K		K					K												K		
North Slide Creek Diversion Piping		7100-7600																					K		
South Slide Creek Diversion Piping		7100-7600																					K		
Diversion Channels																									
Crater Creek		7400-8600		K																					
Bypass Stream Reaches																									
Crater Creek, Diversion to SF San Joaquin River																					K				
Stevenson Creek, Shaver Lake Dam to San Joaquin River																									
HB Valves																									
Shaver Lake		5400	K	K																			K		
Weather Stations																									
Florence Lake		7400		K							K												K		
Kaiser Ridge/Mt Givens		8500																							
Shaver Lake		5400		K																			K		
Cabins																									
Camp 62		7200																							
Florence Lake Relief		7400		K							K												K		

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Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67) (continued)																									
Buildings/Camps																									
Florence Work Camp		7400		K							K												K		
Big Creek 8 Facilities		2600	K					K		K															
Storage Yards																									
Florence Lake Work Camp		7400		K							K												K		
Camp 62		7400																							
Big Creek Powerhouse No.2 & Powerhouse No.2A		3000						K		K															
Eastwood School Site		3000																							
Utilities																									
Water Supply/Treatment																									
Camp Edison		5400		K																			K		
Florence Work Camp		7400		K							K												K		
Fuel- Gasoline & Diesel																									
Big Creek Powerhouse No. 8		2600	K					K		K															
Camp 62		7400																							
Florence Work Camp		7400		K							K												K		
Propane																									
Big Creek Powerhouse No. 8		2600	K					K		K															
Camp 62 - Emergency Cabin Heating		7400																							
Florence Work Camp - Generator, Heating		7400		K							K												K		
Project Power Lines Less Than 33KV																									
Jumbo 12KV		2200-3000	K				K	K		K						K									
Pitman 33kV (to diversion)																									
Power Transmission Lines																									
Eastwood Power Station - BC1 220KV		4800-6700		K																			K	K	
Switchyards																									
Eastwood Switchyard		6100		K																					
Reservoirs, Forebays, and Diversion Pools																									
Large Reservoir																									
Florence Lake		7400		K		K					K												K		
Shaver Lake		5400	K	K		K				K	K												K		K
Moderate Forebays or Diversion Pools																									
Bear Diversion Pool		7400		K																					
Mono Diversion Pool		7400		K							K														
Hooper Diversion Pool		7600		K																					
Balsam Forebay		6700		K		K			K	K															
Dam 5 Forebay		4000	K	K				K		K															
Bypass Stream Reaches (Small Tributaries)																									
Tombstone Creek, Diversion to SF San Joaquin River[1, 2]		7100-7800		K																					
North Slide Creek, Diversion to SF San Joaquin River[1, 2]		7100-7600																					K		
South Slide Creek, Diversion to Confluence with North Slide Creek[1, 2]		7100-7600																					K		
Crater Creek, Diversion to SF San Joaquin River[1, 2]		6800-8600																				K			
Camp 62 Creek, Diversion to SF San Joaquin River[1, 2]		6500-7400																							
Balsam Creek, Diversion to Big Creek[1, 2]		4200-6700																					K		
Bypass Stream Reaches (Moderate Tributaries)																									
Bear Creek, Diversion to SF San Joaquin River[1, 2]		6700-7400		K																					
Mono Creek, Diversion to SF San Joaquin River[1, 2]		6300-7400									K														
Hooper Creek, Diversion to SF San Joaquin River[1, 2]		7000-7500		K																					
Pitman Creek, Diversion to Big Creek[1, 2]		5000-7000									K												K	K	
Big Creek, Dam 5 to San Joaquin River[1, 2]		2200-3000								K															
Stevenson Creek, Shaver Lake Dam to San Joaquin River[1, 2]		1600-5400								K		K											K		
Bypass Stream Reaches (San Joaquin River)																									
SF San Joaquin River, Florence to Mammoth Poo[1, 2]		3400-7350		K		K					K												K		
Flow Augmented Streams																									
Balsam Creek, Forebay to Balsam Creek Diversion[1, 2]		4800-6700				K			K														K		
NF Stevenson Creek, tunnel outlet to Shaver Lake[1, 2]		5400-6700																					K		

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental and Special-Status Species by Project Facility, Recreation Facility, Road or Trail.

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	INVASIVE/ORNAMENTAL PLANT SPECIES																	FEDERALLY LISTED OR CANDIDATE SPECIES					
			Black mustard (*Brassica nigra*)	Cheatgrass (*Bromus tectorum*)	Tocalote (*Centaurea melitensis*)	Bull thistle (*Cirsium vulgare*)	English ivy (*Hedera helix*)	Klamath weed (*Hypericum perforatum*)	Perennial pepperweed (*Lepidium latifolium*)	Himalayan blackberry (*Rubus discolor*)	Woolly mullein (*Verbascum thapsus*)	Periwinkle (*Vinca major*)	Tree-of-heaven (*Ailanthus altissima*)	Scotch broom (*Cytisus scoparius*)	Ox-eye daisy (*Leucanthemum vulgare*)	Black locust (*Robinia pseudoacacia*)	Spanish broom (*Spartium junceum*)	Common tansy (*Tanacetum vulgare*)	French broom (*Genista monspessulana*)	Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Mountain yellow-legged frog (*Rana muscosa*)	Yosemite toad (*Bufo canorus*)	Bald eagle (*Haliaeetus leucocephalus*)	American peregrine falcon (*Falco peregrinus anatum*)	Pacific fisher (*Martes pennanti pacifica*)
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67) (continued)																									
Recreation Features																									
Shaver Lake																									
Camp Edison Campground		5500		K																			K		
Camp Edison Boat Ramp/Launch		5400		K																			K		
Day Use Areas on North Shore Roads 1 & 2		5400		K		K																	K		
Day Use Area off Hwy 168 (The Point)		5400		K																			K		
Eagle Point Boat Only Day Use Area		5400		K		K																			
Balsam Meadow Forebay																									
Balsam Meadow Forebay Day Use Picnic Area		6700		K																					
Balsam MeadowTrailhead and Parking		6800																							
Helicopter Landing Sites																									
Bear		7400																							
Florence Camp		7500																					K		
Florence Gaging Station		7500																					K		
Tiffany (Camp Edison)		5500																					K		
Summit (Shaver Hill)		5000																							
Florence Dam		7500																					K		
S.F. San Joaquin River at Florence Lake (Spill)		7500																					K	K	
Mono Creek below Lake T.A. Edison		7400																							
Roads Within Project Boundaries: SCE controlled																									
7S01BA Florence Work Camp road from 7S01B		7500		K																			K		
7S370F Access road to Florence Dam from FS370[3]		7500																							
8S02 from Hwy 168 to 8S02B		6600-6800																							
8S03 (from 8S05, Canyon Road to 8S03A, Powerhouse No. 8 access road		2300-2400	K	K																					
8S05, Canyon Road (from Powerhouse No. 2 and 8S05E to Powerhouse No. 8)	BOW	2000-4800	K	K						K									K				K	K	K
8S05F Access Road to Powerhouse No. 8 penstock from 8S05		2800-3000		K																			K		
8S05FB Access Road to Powerhouse No. 8 penstock from 8S05		2800-3000		K																			K		
8S13 from the gate to 8S05, the Canyon Road		3800-4200		K																				K	
8S303 Access road to Eastwood Overflow Campground[3]		7000																					K		K
8S47 Access road to Eastwood Power Station Transmission Line tower- from gate to end[3]		5000-5500																							
8S83 from 8S66 to Huntington Shaver Siphon		6800-7000																					K	K	K
8S83A, connector road between 8S66T and 8S83		7000																					K	K	K
8S94 Pitman Creek Diversion Access Road		7000									K														
9S312, access to Eastwood Substation from Highway 168		6400-6600																							
9S32 from gate near Hwy 168 to Eastwood Power Station Transmission Line		6500		K																					K
9S32A, spur from 9S32 to east side of Balsam Forebay		6700		K																					
9S32AB spur from 9S32A to Balsam Forebay[3]		6500																							
9S32CA Access road to Eastwood Power Station Transmission Line tower[3]		6500																							
9S58, from Shaver Marina to North Fork Stevenson Gage		5300-5800		K		K												K					K		K
9S58K Access Road to Eastwood Power Tunnel Entrance		5600																					K		
Access road to Eagle Point Boat Only Day Use Area from 9S58		5400-5600		K																					
Access road to Eastwood Tailrace (off of 9S58)		5400		K		K																	K		
Access road to Shaver Dam north		5300	K	K		K																	K		
Access road to Shaver Dam south		5300	K	K		K																	K		
Access Tunnel to Eastwood Power Station		5600																							
Camp Edison Roads		5400		K																			K		
Florence Work Camp access road from gate on 7S01 near picnic area		7400		K							K												K		
Trail Name/Description																									
Trail to Big Creek Gage below Dam 5		5000-5400		K																			K	K	
Trail to Camp 62 Creek Gage and Diversion Dam		7000-7200									K														
Trail to Chinquapin Creek Gage and Diversion Dam		7000-7400									K														
Trail to Bear Creek Gage upstream of Bear Forebay		7400		K																					
Trails to North-South Slide Creek Diversions		7100-7600																					K		
Trail to Tombstone Creek Diversion		7200-7800		K																					
Trail from Jackass Meadow Campground to Florence Dam outlet and Gage		7200		K																			K		
Two trails to Stevenson Creek Gage below Shaver Lake Dam		5000-5500		K				K															K		
Trail to SF San Joaquin River Gage downstream of Jackass Meadows[3]		7500																					K		

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental and Special-Status Species by Project Facility, Recreation Facility, Road or Trail.

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	INVASIVE/ORNAMENTAL PLANT SPECIES																		FEDERALLY LISTED OR CANDIDATE SPECIES					
			Black mustard (*Brassica nigra*)	Cheatgrass (*Bromus tectorum*)	Tocalote (*Centaurea melitensis*)	Bull thistle (*Cirsium vulgare*)	English ivy (*Hedera helix*)	Klamath weed (*Hypericum perforatum*)	Perennial pepperweed (*Lepidium latifolium*)	Himalayan blackberry (*Rubus discolor*)	Woolly mullein (*Verbascum thapsus*)	Periwinkle (*Vinca major*)	Tree-of-heaven (*Ailanthus altissima*)	Scotch broom (*Cytisus scoparius*)	Ox-eye daisy (*Leucanthemum vulgare*)	Black locust (*Robinia pseudoacacia*)	Spanish broom (*Spartium junceum*)	Common tansy (*Tanacetum vulgare*)	French broom (*Genista monspessulana*)	Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Mountain yellow-legged frog (*Rana muscosa*)	Yosemite toad (*Bufo canorus*)	Bald eagle (*Haliaeetus leucocephalus*)	American peregrine falcon (*Falco peregrinus anatum*)	Pacific fisher (*Martes pennanti pacifica*)
Big Creek No. 3 (FERC Project No. 120)																										
Dams and Diversions																										
Moderate Diversion Dams																										
Dam 6		2600						K		K																
Power Generation																										
Big Creek Powerhouse No. 3		1800																					K			
Gaging Stations																										
Powerhouse																										
Big Creek Powerhouse No. 3		1800																					K			
Water Conveyance																										
Powerhouse No. 3																										
Intake Gate House at Dam 6		2600						K		K																
Tunnel No. 3[1]	Not applicable	1800-2600																					K			
Adit 1, Tunnel 3		2600																								
Adit 2, Tunnel 3		2600																								
Adit 3, Tunnel 3		2400																								
Surge Chamber, Rock/Sand Trap		1800																		K			K			
Rock/Sand Trap Drain Piping & Valves		1800																		K			K			
Rock Trap Flushing Channel		1800																		K			K			
Manifold Structure		1800																					K			
Valve House		1800																					K			
Penstocks		1400-1800																		K			K			
Storage Yards																										
Big Creek Powerhouse No. 3		1800		K																			K			
Utilities																										
Water Supply/Treatment																										
Big Creek Powerhouse No. 3		1800																					K	K		
Fuel- Gasoline & Diesel																										
Big Creek Powerhouse No. 3		1800																					K			
Project Power Lines Less Than 33KV																										
Manifold 2.4KV		1800																					K			
Reservoirs, Forebays, and Diversion Pools																										
Bypass Stream Reaches (San Joaquin River)																										
San Joaquin River, Dam 6 to Redinger[1, 2]		1600-2200																					K			
Roads Within Project Boundaries: SCE controlled																										
8S05, Canyon Road (from junction with 8S03 to junction with Italian Bar Road)	SMC, SMC/RCK, OW	2000-4800	K	K						K									K				K	K		
8S05G Access road to Powerhouse No. 3 surge chamber uphill from 8S05 Canyon Road		2000-2400		K																			K	K		
9589BA Access road to Powerhouse No. 3 and Switchyard[3]		1500-2000																					K			
9S20 Access to Carpenter Shop[3]		1500-2000																					K			
9S20A Access to transmission line tower[3]		1500-2000																					K			
9S20B Access road to transmission line tower[3]		1500-2000																					K			
9S20BC Connector road between 9S20B loop[3]		1500-2000																					K			
9S20D Access to Carpenter Shop[3]		1500-2000																					K			
9S20DA Access to garage and shops[3]		1500-2000																					K			
9S20E Access to material yard[3]		1500-2000																					K			
9S20F Connector road between 9S20 Loop[3]		1500-2000																					K			
9S88 from Italian Bar Road to old company housing		1500-2000								K													K			
9S88A Access to old company housing[3]		1500-2000																					K			
9S88X Access road to Powerhouse No. 3 road water tank access and shop	BOW, WAT, DEV	1600-1800								K													K			
9S88XA Access road to old company housing from 9S88X[3]		1500-2000																					K			
9S89 Access road to Powerhouse No. 3 administrative bldg. from Italian Bar Road	BOW, WAT, DEV	1600		K				K					K				K							K		
Trail																										
Trail to Stevenson Creek Gage below Shaver Lake	SMC, WAT, SMC/RCK, RUD, MDW, DEV	5300		K				K															K			

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental and Special-Status Species by Project Facility, Recreation Facility, Road or Trail.

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	INVASIVE/ORNAMENTAL PLANT SPECIES																	FEDERALLY LISTED OR CANDIDATE SPECIES					
			Black mustard (*Brassica nigra*)	Cheatgrass (*Bromus tectorum*)	Tocalote (*Centaurea melitensis*)	Bull thistle (*Cirsium vulgare*)	English ivy (*Hedera helix*)	Klamath weed (*Hypericum perforatum*)	Perennial pepperweed (*Lepidium latifolium*)	Himalayan blackberry (*Rubus discolor*)	Woolly mullein (*Verbascum thapsus*)	Periwinkle (*Vinca major*)	Tree-of-heaven (*Ailanthus altissima*)	Scotch broom (*Cytisus scoparius*)	Ox-eye daisy (*Leucanthemum vulgare*)	Black locust (*Robinia pseudoacacia*)	Spanish broom (*Spartium junceum*)	Common tansy (*Tanacetum vulgare*)	French broom (*Genista monspessulana*)	Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Mountain yellow-legged frog (*Rana muscosa*)	Yosemite toad (*Bufo canorus*)	Bald eagle (*Haliaeetus leucocephalus*)	American peregrine falcon (*Falco peregrinus anatum*)	Pacific fisher (*Martes pennanti pacifica*)

1 Not surveyed for plants or VELB. Facility is completely underground or is outside of project boundaries or is a stream.
2 There is potential for invasive plant species to be present along all Project bypass and flow-augmented streams.
3 This facility has not been surveyed because it was identified by SCE with USDA-FS as a project facility after completion of resource surveys for the Big Creek ALP Projects. However, resource agency data was available for this location.
4 Vegetation Communities and Wildlife Habitats within 1/4 mile of the facility based on vegetation community mapping; except for streams, which includes only riparian and water habitat.

LEGEND:

Rows highlighted in orange are facilities that are not considered part of the ALP Projects.

K = Known occurrences (CNDDB, USFS, and ALP) based on the following distances around the facility:

Plants - 200 feet around dams, reservoirs, moderate diversions, forebays, powerhouses, transmission lines, and recreational facilities; 300 feet around campgrounds; 50 feet around small diversions; 30 feet around roads; and 5 feet or the area visible from trails (ALP plant survey distance)

Valley elderberry longhorn beetle - 200 feet around dams, reservoirs, moderate diversions, forebays, powerhouses, transmission lines, and recreational facilities; 300 feet around campgrounds; 100 feet around small diversions, roads, and trails (ALP VELB survey distance)

Bald eagle - 1/2 mile (ALP survey area)

American peregrine falcon - 1/4 mile (ALP study area)

Bats - facility itself only

All other wildlife species - 1/4 mile (ALP study area)

K (N) = Known avian nest

K (R) = Known bat roost

Vegetation Communities and Wildlife Habitats:

SMC - Sierran Mixed Coniferous Forest - Sierran Mixed Coniferous Forest

SMC/RCK - Sierran Mixed Coniferous Forest with Rock Substrate - Sierran Mixed Coniferous Forest with Rock Substrate

JPF - Jeffrey Pine Forest - Jeffrey Pine Forest

JPF/RCK - Jeffrey Pine Forest with Rock Substrate - Jeffrey Pine Forest with Rock Substrate

JPWF - Jeffrey Pine/Fir Forest - Jeffrey Pine Forest

JPWF/RCK - Jeffrey Pine/Fir Forest with Rock Substrate - Jeffrey Pine Forest with Rock Substrate

LDG - Lodgepole Pine Forest - Lodgepole Pine Forest

OW - Oak Woodland - Montane Hardwood

OW/RCK - Oak Woodland with Rock Substrate - Montane Hardwood with Rock Substrate

UCHP - Mixed Montane Chaparral - Montane Chaparral/Mixed Chaparral

UCHP/RCK - Mixed Montane Chaparral with Rock Substrate - Montane Chaparral/Mixed Chaparral with Rock Substrate

MDW - Wet Montane Meadow - Wet Meadow

DMD - Dry Montane Meadow - Perennial Grassland

RIP - Montane Riparian - Montane Riparian

MAR - Montane Freshwater Marsh - Fresh Emergent Wetland

OGRD - Open Ground - Open Ground

RUD - Ruderal - Ruderal

WAT - Water - Riverine/Lacustrine

DEV - Developed - Developed

DPCW - Gray Pine-Chaparral Woodland - Mixed Chaparral

DPCW/RCK - Gray Pine-Chaparral Woodland with Rock Substrate - Mixed Chaparral with Rock Substrate

PPF - Westside Ponderosa Pine Forest - Ponderosa Pine Forest

PPF/RCK - Westside Ponderosa Pine Forest with Rock Substrate - Ponderosa Pine Forest with Rock Substrate

BOW - Blue Oak Woodland - Blue Oak Woodland

The following species have no known occurrences in the Study Area although they may potentially occur based on distribution, habitat, and elevation:

Scalloped moonwort (*Botrychium crenulatum*)
Bolander's candle moss (*Bruchia bolanderi*)
Veined water lichen (*Hydrothyria venosa*)
Three-ranked hump moss (*Meesia triquetra*)
Broad-nerved hump moss (*Meesia uliginosa*)
Slender-stemmed monkeyflower (*Mimulus filicaulis*)
Pansy monkeyflower (*Mimulus pulchellus*)
Foothill yellow-legged frog (*Rana boylii*)

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																				
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Mammoth Pool (FERC Project No. 2085)																											
Dams and Diversions																											
Large Dams																											
Mammoth Pool		3400																									
Mammoth Pool Spillway		3400														K (N)											
Power Generation																											
Mammoth Pool Powerhouse		2600																									
Mammoth Pool Fishwater Generator		3000																									
Gaging Stations																											
Streams																											
Mammoth Pool Fish Water Generator		3000																									
San Joaquin River above Shakeflat Creek (with cable crossing)		2800-3000														K											
Reservoir																											
Mammoth Pool Dam		3400																									
Mammoth Pool Powerhouse		2600																									
Water Conveyance																											
Mammoth Pool Powerhouse																											
Intake Gate House		3400																									
Adit Portals 1 & 2 at Shakeflat Creek		3200																									
Mammoth Tunnel[1]		3100-3400																		K							
Rock Trap Flushing Channel		2600																									
Valve House		2600																									
Penstocks		2300-3100																									
HB Valves																											
Mammoth Pool Reservoir		3400					K																				
Cabins																											
Mammoth Pool Reservoir Maintenance Cabin		3400					K					K				K (N)											
Power Transmission Lines																											
Mammoth Pool Powerhouse - BC3 220KV		1600-3800																									
Reservoirs, Forebays, and Diversion Pools																											
Large Reservoir																											
Mammoth Pool Reservoir		3400						K								K (N)		K								
Bypass Stream Reaches (Small Tributaries)																											
Rock Creek, Diversion to San Joaquin River[1, 2]		2600-3400													K												
Ross Creek, Diversion to San Joaquin River[1, 2]		2200-3400													K												
Bypass Stream Reaches (San Joaquin River)																											
San Joaquin River, Mammoth Pool Dam to Dam 6[1, 2]		2200-3400																		K							
Helicopter Landing Sites																											
Mammoth Pool Dam		3400					K					K				K											
Roads Within Project Boundaries: SCE controlled																											
6S025G Mammoth Pool Fishwater Generator access road from 6S25 (Mammoth Pool Road) to Base of Mammoth Pool Dam		3200-3400																									
6S25, Mammoth Pool Road, from 7S20 (Shake Flat Creek access) to end of road at east abutment		3500														K											
8S03 USDA-FS Road No. 8S44 from Powerhouse No. 8 to Mammoth Pool Powerhouse		2300-2400																									
8S44, Mammoth Pool Transmission Line access road																											
9S42 Mammoth Pool Powerhouse Transmission Line access road from gate near County Road 225, Italian Bar Road, to 8S44		1600-4000																									
Big Creek Nos. 1 and 2 (FERC Project No. 2175)																											
Dams and Diversions																											
Large Dams																											
Huntington Lake Dams 1, 2, 3, & 3a		6900				K										K (N)											
Moderate Diversion Dams																											
Dam 4		4800									K																
Small Diversions																											
Balsam Creek		4500																									K
Ely Creek		5200				K															K						

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																			
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Big Creek Nos. 1 and 2 (FERC Project No. 2175) (continued)																										
Power Generation																										
Big Creek Powerhouse No. 1		4800									K															
Big Creek Powerhouse No. 2		3000																								
Gaging Stations																										
Streams																										
Big Creek below Huntington Lake at Dam 1		6900				K										K (N)										
Balsam Creek at Diversion Dam		4800																								
Ely Creek at Diversion Dam		5000				K															K					
Reservoir																										
Huntington Dam		6900				K										K (N)										
Powerhouse																										
Big Creek Powerhouse No. 1		4800									K															
Big Creek Powerhouse No. 2		3000																								
Water Conveyance																										
Powerhouse No. 1																										
Intake Gate House at Huntington Lake- Dam 1		6900				K										K (N)										
Tunnel No. 1		6600-6900				K										K (N)										
Incline Adit		6900														K										
Upper 84" Valve House below Huntington Lake		6900														K (N)										
Upper 60" Valve House below Huntington Lake		6900														K (N)										
60" & 84" Flowlines below Huntington Lake		6200-6800									K					K										K
Lower 84" Valve House at top of Powerhouse No.1 Penstock		6200									K					K										K
Lower 60" Valve House at top of Powerhouse No.1 Penstock		6200									K					K										K
42" Valve House at top of Powerhouse No.1 Penstock		6200									K					K										K
Vent Stacks		6800									K					K										K
Penstocks		4800-6200									K					K										K
Powerhouse No. 2																										
Inlet Structure at Dam 4		4800									K															
Tunnel No. 2		4800-5000			K	K					K					K					K					K
Adit 1, Tunnel 2		4900									K					K										
Adit 2, Tunnel 2		5000									K					K										K
Adit 3, Tunnel 2		4800																								
Adit 4, Tunnel 2		4900																								
Adit 5, Tunnel 2		4800			K																K					
Adit 6, Tunnel 2		5000				K															K					
Adit 7, Tunnel 2		4900																								
Adit 7&1/2, Tunnel 2		4800																								
Adit 8, Tunnel 2		4800																								
Adit 7&1/2 Leakage Weir		4800																								
Shoofly Piping & Splashgate Structure (Adit 8/Shoofly Diversion)		4800																								
Diversion Shaft, Bulkhead and Drain Valve at Adit 8		4800																								
Balsam Creek Diversion Piping (Adit 3)		4800																								
Ely Creek Diversion Piping (Adit 6)		5000				K															K					
Rock Trap/Surge Chamber (9' Gate House) on the railroad grade		4700																								
42" Valve House and valves below railroad grade		4700-4800																								
Drain Piping & Valves (10" & 24") from Surge Chamber, below railroad grade		4700																								
Vent Stacks below railroad grade		4700																								
Penstocks		3000-4700																								
Huntington-Pitman-Shaver																										
Inlet Structure & Gate 1A and 1B at Dam 2 (10' Gate House)		6900				K										K (N)										
Weather Stations																										
Big Creek No. 1		4800									K															
Huntington Lake		7100														K (N)										
Buildings/Camps																										
Big Creek Powerhouse No.1 Facilities		4800									K															
Storage Yards																										
Big Creek Powerhouse No. 1		4800									K															

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																			
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Big Creek Nos. 1 and 2 (FERC Project No. 2175) (continued)																										
Utilities																										
Water Supply/Treatment																										
Big Creek Powerhouse No. 1		4800									K					K										
Domestic Water Diversions																										
Scot Lake		5400									K															K
Sewage Treatment																										
Big Creek Powerhouse No. 1 Community		4800									K					K										
Fuel- Gasoline & Diesel																										
Big Creek Powerhouse No. 1		4800									K					K										
Propane																										
Big Creek Powerhouse No. 1 Automotive Shop		1800									K					K										
Project Power Lines Less Than 33KV																										
Musick 7KV		3000-4700																								
Reservoirs, Forebays, and Diversion Pools																										
Large Reservoir																										
Huntington Lake		7000	K		K	K			K							K (N)		K	K				K			K
Moderate Forebays or Diversion Pools																										
Dam 4 Forebay		4800									K															
Bypass Stream Reaches (Small Tributaries)																										
Ely Creek, Diversion to Big Creek[1, 2]		3500-5000				K															K					
Bypass Stream Reaches (Moderate Tributaries)																										
Big Creek, Huntington Lake to Dam 4[1, 2]		4800-6900									K					K (N)					K					
Big Creek, Dam 4 to Dam 5[1, 2]		3000-4800									K										K					
Flow Augmented Streams																										
Rancheria Creek below Portal Powerhouse[1, 2]		6900-7000														K										
Helicopter Landing Sites																										
Hodges (Big Creek Heliport)		5000																								
Project Roads																										
8S05, Canyon Road (from Huntington Lake Road to Powerhouse No. 2 and 8S05E)		2000-4800																K			K					
8S05C Powerhouse No.2 access road from Canyon Road		3000-3200																								
8S082A access to Hydro offices at Big Creek		4500-5000																								
8S082C access to Hydro offices at Big Creek[3]		4500-5000																								
8S082D access to Hydro offices at Big Creek[3]		4500-5000																								
8S082X access to Hydro offices at Big Creek[3]		4900-5000																								
8S13 from the gate to 8S05, the Canyon Road		3800-4200																								
8S66 from gate to west end of Dam 2		7000																								
8S66, from west end of Dam 2 to 8S66A		7000				K										K (N)										
8S66B, from Dam 2 to end		7000																								
8S66BA Short road between 8S66B and 8S66BC[3]		7000														K										
8S66BC East end of Dam 1 to Dam 1 drainage gates[3]		7000				K										K										
8S66X Road over Dam 2		6800-7000																								
8S82AA Access road to Warehouse[3]		4500-5000																								
8S82BA Upper access road to Wastewater treatment plant from 8S82E[3]		4500-5000																								
8S82BB Lower access road to Wastewater treatment plant from 8S82E[3]		4500-5000																								
8S82BC Access road to Fish Farm upper gate[3]		4500-5000																								
8S82E Upper access road to SCE company housing[3]		5000																								
8S82EA Lower access road to SCE company housing[3]		5000																								
8S82F Access road to Domestic water treatment plant from FRE 271C[3]		5000																								
8S82J Upper access road to Powerhouse No. 1 from FRE 271C[3]		4500-5000																								
Old housing road 3 adjacent to Powerhouse No. 2 from 8S05E		3200-3300																								
Trail Name/Description																										
Trail to Scott Lake Domestic Diversion		5000-5500																								

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																			
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67)																										
Dams and Diversions																										
Large Dams																										
Florence Lake		7350					K																			
Shaver Lake		5400		K												K										
Moderate Diversion Dams																										
Bear Creek Diversion		7400		K			K																			
Mono Creek Diversion		7400														K						K				
Hooper Creek		7500					K																			
Pitman Creek		7100																								
Balsam		6800														K										
Small Diversions																										
Tombstone Creek		7800																								
North Slide Creek		7600					K																			
South Slide Creek		7600					K																			
Chinquapin Creek		7600																								
Camp 62 Creek		7400																								K
Power Generation																										
Big Creek Powerhouse No. 2A		3100																								
Big Creek Powerhouse No. 8		2600																							K	
Eastwood Power Station		5600														K										
Gaging Stations																										
Streams																										
Bear Creek below Diversion Dam		7400		K			K																			
Bear Creek Conduit at Diversion Dam		7400		K			K																			
Bear Creek upstream of Diversion Dam (with cable crossing)		7400					K																			
Big Creek below Dam 5 (with cable crossing)		2600																								
Camp 62 Creek below Diversion Dam		7400																								K
Chinquapin Creek below Diversion Dam		7300																								
Hooper Creek below Diversion Dam		7600					K																			
Huntington-Shaver Conduit gate 2 release		6700				K																				
Middle Fork Balsam Creek below Balsam Meadows Forebay		6700														K										
Mono Creek below Diversion Dam		7400														K						K				
Mono Creek Conduit at Diversion Dam		7400														K						K				
Mono-Bear Conduit (flow meter near Camp 62)		7000																								K
North Fork Stevenson Creek at Perimeter Rd.		5700																								
South Fork San Joaquin River below Hooper Creek		7000		K																						
Stevenson Creek below Shaver Lake		5200		K												K (N)										
Ward Tunnel at Intake		7400					K																			
Camp 62 Creek at Diversion Dam		7400																								K
Chinquapin Creek at Diversion Dam		7600																								K
Crater Creek Diversion Ditch near Florence Lake		7400					K																			
Reservoir																										
Florence Dam		7350					K																			
Mono Dam		7400														K						K				
Shaver Dam		5400		K												K (N)										
Powerhouse																										
Big Creek Powerhouse No. 2A		3100																								
Big Creek Powerhouse No. 8		2200																								
Eastwood Power Station		6300														K										
Water Conveyance																										
Powerhouse No. 2A																										
Intake Gate House at Shaver Lake		5400														K (N)										
Tunnel No. 5		5200-6200				K										K (N)										
Adit 1, Tunnel 5		5600				K																				
Adit 2, "Shoo fly", Tunnel 5		5000																								
Surge Chamber, Rock Trap		5400																								
102" Valve House		5200																						K (R)		
Penstocks		3100-5200																								

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																			
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67) (continued)																										
Water Conveyance (continued)																										
Powerhouse No. 8																										
Intake structure at Dam 5		3000																								
Tunnel No.8[1]		2900-3200																								
Adit 1, Tunnel 8		3000																								
Surge Chamber - includes trash drain and penstocks valves		2900																								
Penstocks		2200-2900																								
Eastwood Power Station																										
Inlet Structure (Gate 4)		6700														K										
Power Tunnel[1]		6300-6800														K					K					
Surge Chamber		6300																			K					
Tailrace Tunnel		5400-6300														K (N)					K					
Ward Tunnel																										
Inlet Structure at Florence Lake		7400					K																			
Gate House at Florence Lake		7400					K																			
Ward Tunnel		7000-7400			K	K	K																			
Minimum Pool Weir		7400					K																			
Chinquapin Creek Borehole		7600																								
Camp 62 Adit		7300																								K
Camp 62 Creek Borehole		7400																								K
Mono-Bear Siphon																										
Bear Inlet Structure at Bear Forebay		7700		K			K																			
Bear Tunnel		7400-7700		K			K																			
Bear Adit		7200					K																			
Bear Flowline		7400-7700		K			K																			
Mono Inlet Structure at Mono Forebay		7400														K						K				
Mono Tunnel		7200-7500					K									K						K				
Mono Flow Line		7200-7500					K															K				
Combined Flow Line (siphon)		6600-7400					K									K										
Camp 62 Adit Valving		7400																								K
Huntington-Pitman-Shaver																										
Steel Conduit with Air Vents		6900				K										K (N)										
Siphon w 4" and 10" Drain Valves		6300-6600				K										K (N)										
Vent Valve House		6800				K										K (N)		K								
Tunnel No. 7		6700-7800				K										K (N)								K		
Tunnel No. 7 Vent		6800				K																				
Camp 72 Adit		7100							K																	
Diversion Tunnel from Tunnel 7 to Gate 3 at Balsam Meadow Forebay[1]		6800-7000														K										
Gate 3 Outlet to Balsam Forebay		6700														K										
Tombstone																										
Tombstone Creek Diversion Piping		7300-7800																						K		
Hooper																										
Hooper Diversion Piping to Florence Lake		7100-7500					K																			
North Slide Creek Diversion Piping		7100-7600					K																			
South Slide Creek Diversion Piping		7100-7600					K																			
Diversion Channels																										
Crater Creek		7400-8600					K																			
Bypass Stream Reaches																										
Crater Creek, Diversion to SF San Joaquin River																										
Stevenson Creek, Shaver Lake Dam to San Joaquin River																										
HB Valves																										
Shaver Lake		5400		K												K (N)										
Weather Stations																										
Florence Lake		7400					K																			
Kaiser Ridge/Mt Givens		8500																								
Shaver Lake		5400														K (N)										
Cabins																										
Camp 62		7200																								K
Florence Lake Relief		7400					K																			

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																			
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67) (continued)																										
Buildings/Camps																										
Florence Work Camp		7400					K																			
Big Creek 8 Facilities		2600																								
Storage Yards																										
Florence Lake Work Camp		7400					K																			
Camp 62		7400																								K
Big Creek Powerhouse No.2 & Powerhouse No.2A		3000																								
Eastwood School Site		3000																					K (R)			
Utilities																										
Water Supply/Treatment																										
Camp Edison		5400																								
Florence Work Camp		7400					K																			
Fuel- Gasoline & Diesel																										
Big Creek Powerhouse No. 8		2600																								
Camp 62		7400																								K
Florence Work Camp		7400					K																			
Propane																										
Big Creek Powerhouse No. 8		2600																								
Camp 62 - Emergency Cabin Heating		7400																								K
Florence Work Camp - Generator, Heating		7400					K																			
Project Power Lines Less Than 33KV																										
Jumbo 12KV		2200-3000																								
Pitman 33kV (to diversion)																										
Power Transmission Lines																										
Eastwood Power Station - BC1 220KV		4800-6700			K	K				K	K										K				K	K
Switchyards																										
Eastwood Switchyard		6100																			K					
Reservoirs, Forebays, and Diversion Pools																										
Large Reservoir																										
Florence Lake		7400				K	K									K								K		
Shaver Lake		5400	K	K		K									K	K (N)	K							K		K
Moderate Forebays or Diversion Pools																										
Bear Diversion Pool		7400					K																	K		
Mono Diversion Pool		7400														K						K				
Hooper Diversion Pool		7600					K																			
Balsam Forebay		6700														K										
Dam 5 Forebay		4000																						K		
Bypass Stream Reaches (Small Tributaries)																										
Tombstone Creek, Diversion to SF San Joaquin River[1, 2]		7100-7800																								
North Slide Creek, Diversion to SF San Joaquin River[1, 2]		7100-7600																								
South Slide Creek, Diversion to Confluence with North Slide Creek[1, 2]		7100-7600																								
Crater Creek, Diversion to SF San Joaquin River[1, 2]		6800-8600					K																			
Camp 62 Creek, Diversion to SF San Joaquin River[1, 2]		6500-7400													K											K
Balsam Creek, Diversion to Big Creek[1, 2]		4200-6700																								K
Bypass Stream Reaches (Moderate Tributaries)																										
Bear Creek, Diversion to SF San Joaquin River[1, 2]		6700-7400		K			K																			
Mono Creek, Diversion to SF San Joaquin River[1, 2]		6300-7400														K						K				
Hooper Creek, Diversion to SF San Joaquin River[1, 2]		7000-7500		K			K																			
Pitman Creek, Diversion to Big Creek[1, 2]		5000-7000									K															
Big Creek, Dam 5 to San Joaquin River[1, 2]		2200-3000																								
Stevenson Creek, Shaver Lake Dam to San Joaquin River[1, 2]		1600-5400		K											K	K (N)		K			K					
Bypass Stream Reaches (San Joaquin River)																										
SF San Joaquin River, Florence to Mammoth Pool[1, 2]		3400-7350		K			K														K					
Flow Augmented Streams																										
Balsam Creek, Forebay to Balsam Creek Diversion[1, 2]		4800-6700														K					K				K	K
NF Stevenson Creek, tunnel outlet to Shaver Lake[1, 2]		5400-6700														K					K					

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																			
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67)																										
Recreation Features																										
Shaver Lake																										
Camp Edison Campground		5500																								K
Camp Edison Boat Ramp/Launch		5400																								K
Day Use Areas on North Shore Roads 1 & 2		5400														K										
Day Use Area off Hwy 168 (The Point)		5400														K (N)										
Eagle Point Boat Only Day Use Area		5400																								
Balsam Meadow Forebay																										
Balsam Meadow Forebay Day Use Picnic Area		6700														K										
Balsam MeadowTrailhead and Parking		6800														K										
Helicopter Landing Sites																										
Bear		7400					K														K					
Florence Camp		7500														K										
Florence Gaging Station		7500														K										
Tiffany (Camp Edison)		5500	K			K										K										K
Summit (Shaver Hill)		5000																		K						
Florence Dam		7500														K										
S.F. San Joaquin River at Florence Lake (Spill)		7500																								
Mono Creek below Lake T.A. Edison		7400																		K						
Roads Within Project Boundaries: SCE controlled																										
7S01BA Florence Work Camp road from 7S01B		7500					K																			
7S370F Access road to Florence Dam from FS370[3]		7500					K						K													
8S02 from Hwy 168 to 8S02B		6600-6800								K																
8S03 (from 8S05, Canyon Road to 8S03A, Powerhouse No. 8 access road		2300-2400																								
8S05, Canyon Road (from Powerhouse No. 2 and 8S05E to Powerhouse No. 8)	BOW	2000-4800																K			K					
8S05F Access Road to Powerhouse No. 8 penstock from 8S05		2800-3000																								
8S05FB Access Road to Powerhouse No. 8 penstock from 8S05		2800-3000																								
8S13 from the gate to 8S05, the Canyon Road		3800-4200																								
8S303 Access road to Eastwood Overflow Campground[3]		7000														K										K
8S47 Access road to Eastwood Power Station Transmission Line tower- from gate to end[3]		5000-5500																								K
8S83 from 8S66 to Huntington Shaver Siphon		6800-7000				K										K (N)										
8S83A, connector road between 8S66T and 8S83		7000				K										K (N)										
8S94 Pitman Creek Diversion Access Road		7000								K																
9S312, access to Eastwood Substation from Highway 168		6400-6600																		K(N)	K					
9S32 from gate near Hwy 168 to Eastwood Power Station Transmission Line		6500														K										
9S32A, spur from 9S32 to east side of Balsam Forebay		6700														K										
9S32AB spur from 9S32A to Balsam Forebay[3]		6500														K										
9S32CA Access road to Eastwood Power Station Transmission Line tower[3]		6500																								K
9S58, from Shaver Marina to North Fork Stevenson Gage		5300-5800	K													K (N)										
9S58K Access Road to Eastwood Power Tunnel Entrance		5600																								
Access road to Eagle Point Boat Only Day Use Area from 9S58		5400-5600														K (N)										
Access road to Eastwood Tailrace (off of 9S58)		5400														K (N)										
Access road to Shaver Dam north		5300		K												K (N)										
Access road to Shaver Dam south		5300		K												K (N)										
Access Tunnel to Eastwood Power Station		5600																		K(N)						
Camp Edison Roads		5400				K																				K
Florence Work Camp access road from gate on 7S01 near picnic area		7400					K																			
Trail Name/Description																										
Trail to Big Creek Gage below Dam 5		5000-5400									K					K										
Trail to Camp 62 Creek Gage and Diversion Dam		7000-7200																								K
Trail to Chinquapin Creek Gage and Diversion Dam		7000-7400																								
Trail to Bear Creek Gage upstream of Bear Forebay		7400					K													K(N)						
Trails to North-South Slide Creek Diversions		7100-7600					K																			
Trail to Tombstone Creek Diversion		7200-7800					K																			
Trail from Jackass Meadow Campground to Florence Dam outlet and Gage		7200																								
Two trails to Stevenson Creek Gage below Shaver Lake Dam		5000-5500														K										
Trail to SF San Joaquin River Gage downstream of Jackass Meadows[3]		7500											K													

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																				
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus borealis*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)
Big Creek No. 3 (FERC Project No. 120)																											
Dams and Diversions																											
Moderate Diversion Dams																											
Dam 6		2600																									
Power Generation																											
Big Creek Powerhouse No. 3		1800																									
Gaging Stations																											
Powerhouse																											
Big Creek Powerhouse No. 3		1800																									
Water Conveyance																											
Powerhouse No. 3																											
Intake Gate House at Dam 6		2600																									
Tunnel No. 3[1]	Not applicable	1800-2600																K									
Adit 1, Tunnel 3		2600																							K (R)		
Adit 2, Tunnel 3		2600																K							K (R)		
Adit 3, Tunnel 3		2400																							K (R)		
Surge Chamber, Rock/Sand Trap		1800																									
Rock/Sand Trap Drain Piping & Valves		1800																									
Rock Trap Flushing Channel		1800																									
Manifold Structure		1800																									
Valve House		1800																									
Penstocks		1400-1800																									
Storage Yards																											
Big Creek Powerhouse No. 3		1800																									
Utilities																											
Water Supply/Treatment																											
Big Creek Powerhouse No. 3		1800															K										
Fuel- Gasoline & Diesel																											
Big Creek Powerhouse No. 3		1800																									
Project Power Lines Less Than 33KV																											
Manifold 2.4KV		1800																									
Reservoirs, Forebays, and Diversion Pools																											
Bypass Stream Reaches (San Joaquin River)																											
San Joaquin River, Dam 6 to Redinger[1, 2]		1600-2200																									
Roads Within Project Boundaries: SCE controlled																											
8S05, Canyon Road (from junction with 8S03 to junction with Italian Bar Road)	SMC, SMC/RCK, OW	2000-4800													K			K		K							
8S05G Access road to Powerhouse No. 3 surge chamber uphill from 8S05 Canyon Road		2000-2400																									
9589BA Access road to Powerhouse No. 3 and Switchyard[3]		1500-2000																									
9S20 Access to Carpenter Shop[3]		1500-2000																									
9S20A Access to transmission line tower[3]		1500-2000																									
9S20B Access road to transmission line tower[3]		1500-2000																									
9S20BC Connector road between 9S20B loop[3]		1500-2000																									
9S20D Access to Carpenter Shop[3]		1500-2000																									
9S20DA Access to garage and shops[3]		1500-2000																									
9S20E Access to material yard[3]		1500-2000																									
9S20F Connector road between 9S20 Loop[3]		1500-2000																									
9S88 from Italian Bar Road to old company housing		1500-2000																									
9S88A Access to old company housing[3]		1500-2000																									
9S88X Access road to Powerhouse No. 3 road water tank access and shop	BOW, WAT, DEV	1600-1800															K										
9S88XA Access road to old company housing from 9S88X[3]		1500-2000																									
9S89 Access road to Powerhouse No. 3 administrative bldg. from Italian Bar Road	BOW, WAT, DEV	1600															K										
Trail																											
Trail to Stevenson Creek Gage below Shaver Lake	SMC, WAT, SMC/RCK, RUD, MDW, DEV	5300		K													K										

Table 5.2.5-2. Known Occurrences of Noxious Weeds, Invasive Ornamental Special-Status Species by Project Facility, Recreation Facility, Road or Trail (continued).

FACILITIES	HABITAT[4]	APPROX. ELEV. (ft.)	STATE LISTED OR CANDIDATE SPECIES				FOREST SERVICE SENSITIVE, SPECIES OF CONCERN, CNPS, AND OTHER SPECIES																				
			Great gray owl (*Strix nebulosa*)	Willow flycatcher (*Empidonax traillii brewsteri*)	California wolverine (*Gulo gulo luteus*)	Sierra Nevada red fox (*Vulpes vulpes necator*)	Mono Hot Springs evening primrose (*Camissonia sierrae ssp. alticola*)	Flaming trumpet (*Collomia rawsoniana*)	Subalpine fireweed (*Epilobium howellii*)	Short-leaved hulsea (*Hulsea brevifolia*)	Madera linanthus (*Leptosiphon serrulatus*)	Yosemite lewisia (*Lewisia disepala*)	Flat-leaved bladderwort (*Utricularia intermedia*)	Foothill yellow-legged frog (*Rana boylii*)	Western Pond Turtle (*Actinemys marmorata*)	Osprey (*Pandion haliaetus*)	Cooper's hawk (*Accipiter cooperi*)	Northern goshawk (*Protected Activity Center*)	Northern goshawk (*Accipiter gentilis*)	California spotted owl (*Protected Activity Center*)	California spotted owl (*Strix occidentalis occidentalis*)	Yellow warbler (*Dendroica petechia brewsteri*)	Western red bat (*Lasiurus boreals*)	Townsend's western big-eared bat (*Corynorhinus townsendii*)	Pallid bat (*Antrozous pallidus*)	Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	American (pine) marten (*Martes americana*)

[1] Not surveyed for plants or VELB. Facility is completely underground or is outside of project boundaries or is a stream.
[2] There is potential for invasive plant species to be present along all Project bypass and flow-augmented streams.
[3] This facility has not been surveyed because it was identified by SCE with USDA-FS as a project facility after completion of resource surveys for the Big Creek ALP Projects. However, resource agency data was available for this location.
[4] Vegetation Communities and Wildlife Habitats within 1/4 mile of the facility based on vegetation community mapping; except for streams, which includes only riparian and water habita

LEGEND:
Rows highlighted in orange are facilities that are not considered part of the ALP Projects.
K = Known occurrences (CNDDB, USFS, and ALP) based on the following distances around the facility:
Plants - 200 feet around dams, reservoirs, moderate diversions, forebays, powerhouses, transmission lines, and recreational facilities; 300 feet around campgrounds; 50 feet around small diversions; 30 feet around roads; and 5 feet or the area visible from trails (ALP plant survey distance)
Valley elderberry longhorn beetle - 200 feet around dams, reservoirs, moderate diversions, forebays, powerhouses, transmission lines, and recreational facilities; 300 feet around campgrounds; 100 feet around small diversions, roads, and trails (ALP VELB survey distance)
Bald eagle - 1/2 mile (ALP survey area)
American peregrine falcon - 1/4 mile (ALP study area)
Bats - facility itself only
All other wildlife species - 1/4 mile (ALP study area)
K (N) = Known avian nest
K (R) = Known bat roost
Vegetation Communities and Wildlife Habitats:
SMC - Sierran Mixed Coniferous Forest - Sierran Mixed Coniferous Forest
SMC/RCK - Sierran Mixed Coniferous Forest with Rock Substrate - Sierran Mixed Coniferous Forest with Rock Substrate
JPF - Jeffrey Pine Forest - Jeffrey Pine Forest
JPF/RCK - Jeffrey Pine Forest with Rock Substrate - Jeffrey Pine Forest with Rock Substrate
JPWF - Jeffrey Pine/Fir Forest - Jeffrey Pine Forest
JPWF/RCK - Jeffrey Pine/Fir Forest with Rock Substrate - Jeffrey Pine Forest with Rock Substrate
LDG - Lodgepole Pine Forest - Lodgepole Pine Forest
OW - Oak Woodland - Montane Hardwood
OW/RCK - Oak Woodland with Rock Substrate - Montane Hardwood with Rock Substrate
UCHP - Mixed Montane Chaparral - Montane Chaparral/Mixed Chaparral
UCHP/RCK - Mixed Montane Chaparral with Rock Substrate - Montane Chaparral/Mixed Chaparral with Rock Substrate
MDW - Wet Montane Meadow - Wet Meadow
DMD - Dry Montane Meadow - Perennial Grassland
RIP - Montane Riparian - Montane Riparian
MAR - Montane Freshwater Marsh - Fresh Emergent Wetland
OGRD - Open Ground - Open Ground
RUD - Ruderal - Ruderal
WAT - Water - Riverine/Lacustrine
DEV - Developed - Developed
DPCW - Gray Pine-Chaparral Woodland - Mixed Chaparral
DPCW/RCK - Gray Pine-Chaparral Woodland with Rock Substrate - Mixed Chaparral with Rock Substrate
PPF - Westside Ponderosa Pine Forest - Ponderosa Pine Forest
PPF/RCK - Westside Ponderosa Pine Forest with Rock Substrate - Ponderosa Pine Forest with Rock Substrate
BOW - Blue Oak Woodland - Blue Oak Woodland

The following species have no known occurrences in the Study Area although they may potentially occur based on distribution, habitat, and elevation:
Scalloped moonwort (*Botrychium crenulatum*)
Bolander's candle moss (*Bruchia bolanderi*)
Veined water lichen (*Hydrothyria venosa*)
Three-ranked hump moss (*Meesia triquetra*)
Broad-nerved hump moss (*Meesia uliginosa*)
Slender-stemmed monkeyflower (*Mimulus filicaulis*)
Pansy monkeyflower (*Mimulus pulchellus*)
Foothill yellow-legged frog (*Rana boylii*)

Table 5.2.5-3. Special-status Plant and Wildlife Species Known or Potentially Occurring in the Vicinity of the Four Big Creek ALP Projects.

Scientific/Common Name	Federal Status	FSS Status	Other Status	Blooming Period/Fertile	Habitat	Mammoth Pool (FERC Project No. 2085)	Big Creek Nos. 1 and 2 (FERC Project No. 2175)	Big Creek Nos. 2A, 8 & Eastwood (FERC Project No. 67)	Big Creek No. 3 (FERC Project No. 120)
`									
Allium yosemitense Yosemite onion	–	FSS	CR, CNPS 1B.3	April–July	Broad-leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest; rocky, metamorphic substrate. 1,755–7,200 feet.	Unlikely	Not detected	Not detected	Unlikely
Botrychium crenulatum Scalloped moonwort	–	FSS	CNPS 2.2	Fertile June to July	Lower montane coniferous forests, oak woodlands, and chaparral, open rocky slopes. 4,900–10,765 feet.	Unlikely	Potential	Potential	Unlikely
Botrychium lineare Slender moonwort	FC	FSS	CNPS 1B.3	Unknown fertility period	Lower montane coniferous forests, oak woodlands, and chaparral, open rocky slopes to 8,530 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Bruchia bolanderi Bolander's candle moss	–	FSS	CNPS 2.2	N/A	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest: damp soil. 5,575–9,190 feet.	Unlikely	Potential	Potential	Unlikely
Calyptridium pulchellum Mariposa pussypaws	FT	–	CNPS 1B.1	April–August	Cismontane woodland in shallow granite soils on granitic domes, restricted to exposed sites. 1,300–3,600 feet.	Unlikely	Unlikely	Not detected	Not detected
Camissonia sierrae ssp. *alticola* Mono Hot Springs evening primrose	–	FSS	CNPS 1B.2	May–August	Lower montane coniferous forest, upper montane coniferous forest: granitic, gravel and sand pans. 4,500–8,500 feet.	Known	Not detected	Known	Unlikely
Carlquistia muirii Muir's tarplant	–	FSS	CNPS 1B.3	July–August	Chaparral (montane), lower montane coniferous forest, upper montane coniferous forest. 3,605–8,205 feet.	Unlikely	Not detected	Not detected	Unlikely
Carpenteria californica Tree-anemone	–	FSS	CT, CNPS 1B.2	May–July	Cismontane woodland, chaparral. Endemic to Fresno County. Very localized on well-drained granitic soils, mostly on north-facing ravines and drainages. 1,500–4,000 feet.	Not detected	Not detected	Not detected	Not detected
Castilleja campestris ssp. *succulenta* Succulent owl's-clover	FT	–	CE, CNPS 1B.2	April–May	Vernal pools. 1,640–2,460 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Clarkia biloba ssp. *australis* Mariposa clarkia	–	FSS	CNPS 1B.2	May–July	Chaparral, cismontane woodland. 980–3,100 feet.	Not detected	Not detected	Not detected	Not detected
Clarkia lingulata Merced clarkia	–	FSS	CE, CNPS 1B.1	May–June	Chaparral, cismontane woodland. 1,312—1,492 feet.	Unlikely	Unlikely	Not detected	Not detected
Collomia rawsoniana Flaming trumpet	–	FSS	CNPS 1B.2	July–August	Riparian forest, lower montane coniferous forest on stabilized alluvium in riparian zones, at mid elevations along perennial streams north of the San Joaquin River. 2,500–7,200 feet.	Known	Not detected	Not detected	Not detected
Cypripedium montanum Mountain lady's slipper	–	FSS	CNPS 4.2	March–August	Broad-leaved upland and lower montane coniferous forests, moist or dry shaded slopes. 700–7,200 feet.	Not detected	Not detected	Not detected	Not detected
Delphinium inopinum Unexpected larkspur	–	FSS	CNPS 4.3	May–July	Alpine boulder and rock fields at high elevations in rocky soil at the extreme southern boundary of the SNF. 7,200–9,200 feet.	Unlikely	Not detected	Not detected	Unlikely
Dicentra nevadensis Tulare County bleeding heart	–	FSS	CNPS 4.3	June–October	Subalpine coniferous forest in gravelly openings. 7,200–10,000 feet.	Unlikely	Not detected	Not detected	Unlikely
Epilobium howellii Subalpine fireweed	–	FSS	CNPS 1B.3	July–August	Meadows, subalpine coniferous forest, wet meadows, mossy seeps. 6,500–9,000 feet.	Unlikely	Known	Not detected	Unlikely
Erigeron aequifolius Hall's daisy	–	FSS	CNPS 1B.3	July–August	Broad-leaved upland forest, lower and upper montane coniferous forest, pinyon-juniper woodland, rocky soils. 4,900–8,000 feet.	Unlikely	Not detected	Not detected	Unlikely

Table 5.2.5-3. Special-status Plant and Wildlife Species Known or Potentially Occurring in the Vicinity of the Four Big Creek ALP Projects (continued).

Scientific/Common Name	Federal Status	FSS Status	Other Status	Blooming Period/Fertile	Habitat	Mammoth Pool (FERC Project No. 2085)	Big Creek Nos. 1 and 2 (FERC Project No. 2175)	Big Creek Nos. 2A, 8 & Eastwood (FERC Project No. 67)	Big Creek No. 3 (FERC Project No. 120)
Special Status Plant Species (continued)									
Eriogonum nudum var. regirivum King's River buckwheat	–	FSS	CNPS 1B.2	August–November	Cismontane woodland; carbonate, rocky substrate. 490–985 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Eriogonum prattenianum var. *avium* Kettle Dome buckwheat	–	FSS	CNPS 4.2	June–August	Upper montane coniferous forest on granitic soils. 3,900–8,500 feet.	Unlikely	Not detected	Not detected	Unlikely
Eriophyllum congdonii Congdon's woolly sunflower	–	FSS	CR, CNPS 1B.2	May–June	Chaparral, cismontane woodland, lower montane coniferous forest: on metamorphic soils. 1,600–6,200 feet.	Not detected	Not detected	Not detected	Not detected
Erythronium pluriflorum Shuteye Peak fawn lily	–	FSS	CNPS 1B.2	May–July	Upper montane coniferous forest, meadows, subalpine coniferous forest, rocky granitic outcrops and slopes. 6,758–8,366 feet.	Unlikely	Not detected	Not detected	Unlikely
Heterotheca monarchensis Monarch golden-aster	–	FSS	CNPS 1B.3	May–October	Cismontane woodland; carbonate substrate. 3,590–6,070 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Hulsea brevifolia Short-leaved hulsea	–	FSS	CNPS 1B.2	May–August	Granitic or volcanic soils in openings and under canopy in mixed conifer and red fir forest. 4,900–8,900 feet.	Unlikely	Not detected	Known	Unlikely
Hydrothyria venosa Veined water lichen	–	FSS	–	N/A	Cold, clear, unpolluted streams in mixed conifer forests. 4,000–8,000 feet.	Unlikely	Potential	Potential	Unlikely
Lewisia congdonii Congdon's lewisia	–	FSS	CR, CNPS 1B.3	April–June	Chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest, granitic, moist places on metamorphic soils. 1,600–9,200 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Lewisia disepala Yosemite lewisia	–	FSS	CNPS 1B.2	April–June	Lower montane coniferous forest, pinyon juniper woodland, upper montane coniferous forest, fine gravel on rock outcrops or domes. 4,250–11,000 feet.	Known	Not detected	Not detected	Unlikely
Leptosiphon serrulatus Madera linanthus	–	–	CNPS 1B.2	April–May	Cismontane woodland, lower montane coniferous forest, open areas, chaparral. 1,000–4,000 feet.	Not detected	Known	Known	Not detected
Lupinus citrinus var. *citrinus* Orange lupine	–	FSS	CNPS 1B.2	April–July	Chaparral, cismontane woodland, lower montane coniferous forest, rocky granitic outcrops, usually in open areas (i.e. forest openings), on flat to rolling terrain. 2,000–5,000 feet.	Not detected	Unlikely	Not detected	Not detected
Meesia triquetra Three-ranked hump moss	–	FSS	CNPS 2.2	N/A	In bogs and wet woods. 6,000–8,000 feet.	Unlikely	Potential	Potential	Unlikely
Meesia uliginosa Broad-nerved hump moss	–	FSS	CNPS 2.2	N/A	In bogs and rock fissures, usually in alpine or arctic regions, sometimes in the lowlands. 7,500–9,000 feet.	Unlikely	Potential	Potential	Unlikely
Mimulus filicaulis Slender-stemmed monkeyflower	–	FSS	CNPS 1B.2	April–August	Cismontane woodland, lower montane coniferous forest, meadows and seeps, upper montane coniferous forest; vernally mesic environments. 2,950–5,745 feet.	Not detected	Not detected	Not detected	Unlikely
Mimulus gracilipes Slender-stalked monkeyflower	–	FSS	CNPS 1B.2	April–June	Lower and upper montane coniferous forest, pinyon-juniper woodlands; granitic sand substrate. 1,600–4,300 feet.	Not detected	Not detected	Not detected	Not detected
Mimulus pulchellus Pansy monkeyflower	–	FSS	CNPS 1B.2	May–July	Lower montane coniferous forest, meadows and seeps; vernally mesic environments. 1,965–6,565 feet.	Not detected	Not detected	Not detected	Unlikely

Table 5.2.5-3. Special-status Plant and Wildlife Species Known or Potentially Occurring in the Vicinity of the Four Big Creek ALP Projects (continued).

Scientific/Common Name	Federal Status	FSS Status	Other Status	Blooming Period/Fertile	Habitat	Mammoth Pool (FERC Project No. 2085)	Big Creek Nos. 1 and 2 (FERC Project No. 2175)	Big Creek Nos. 2A, 8 & Eastwood (FERC Project No. 67)	Big Creek No. 3 (FERC Project No. 120)
Special Status Plant Species (continued)									
Orcuttia inaequalis San Joaquin Valley Orcutt grass	FT	–	CE, CNPS 1B.1	April–September	Vernal pools. 100–2,477 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Sidalcea keckii Keck's checkerbloom	FE	–	CNPS 1B.1	April–May	Cismontane woodland, valley and foothill grassland; serpentine and clay substrate. 393–1,394 feet.	Unlikely	Unlikely	Unlikely	Not detected
Streptanthus fenestratus Tehipite Valley jewel-flower	–	FSS	CNPS 1B.3	April–July	Lower montane coniferous forest, upper montane coniferous forest. 3,490–5,745 feet.	Unlikely	Not detected	Not detected	Unlikely
Trifolium bolanderi Bolander's clover	–	FSS	CNPS 1B.2	June–August	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest; mesic environments. 7,900–8,530 feet.	Unlikely	Unlikely	Not detected	Unlikely
Utricularia intermedia Flat-leaved bladderwort	–	–	CNPS 2.2	June–August	Bogs, fens, meadows, seeps, marshes and lake margins. 3,950–8,850 feet.	Unlikely	Potential	Known	Unlikely
Viola pinetorum ssp. *grisea* Grey-leaved violet	–	FSS	CNPS 1B.3	April–July	Dry peaks and slopes in subalpine conifer forest and upper montane conifer forest. 4,875–11,050 feet.	Unlikely	Not detected	Not detected	Unlikely

LEGEND:

Federal Status
FC = Candidate Species
FE = Federal Endangered
FPE = Federally proposed for listing as endangered
FT = Federal Threatened
FSS = Forest Service Sensitive
SNF MIS = Sierra National Forest Management Indicator Species

State Status
CR = California Rare
CT = California Threatened
CE = California Endangered

CNPS = California Native Plant Society
1B = Rare, threatened or endangered in California and elsewhere
2 = Rare in California but more common elsewhere
3 = Need more information
4 = Plants of limited distribution; a watch list

_.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
_.2 = Fairly endangered in California (20–80% occurrences threatened)
_.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Known: Species identified either through literature review (USFS, CNDDB, CNPS) or during focused surveys completed in vicinity of the four Big Creek Projects.
Potential: Surveys were completed only in representative habitat potentially supporting the species. Species could potentially occur in potential habitat in the vicinity of the four Big Creek Projects that were not surveyed.
Not Detected: Species were not found during surveys completed in the vicinity of the four Big Creek Projects.
Unlikely: Regulatory agencies identified species as potentially occurring in the vicinity of the four Big Creek Projects. Upon further review, it was determined that the Projects were outside the species known elevation range or that no appropriate habitat is present.

Table 5.2.5-3. Special-status Plant and Wildlife Species Known or Potentially Occurring in the Vicinity of the Four Big Creek ALP Projects (continued).

Scientific/Common Name	Federal Status	FSS Status	Other Status	Habitat	Mammoth Pool (FERC Project No. 2085)	Big Creek Nos. 1 and 2 (FERC Project No. 2175)	Big Creek Nos. 2A, 8 & Eastwood (FERC Project No. 67)	Big Creek No. 3 (FERC Project No. 120)
Special Status Wildlife Species								
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT, FPD	–	–	Elderberry shrubs throughout the Central Valley and foothills below 3,000 feet elevation.	Known	Not detected	Potential	Known
Ambystoma californiense California tiger salamander	FT (Central California), FE (Sonoma and Santa Barbara Cos. only)	–	CSC	Vernal pools, annual grassland, and the grassy understory of valley-foothill oak woodland habitats below 4,500 feet. Requires seasonal wetlands or slow moving stream courses for reproduction.	Unlikely	Unlikely	Unlikely	Unlikely
Batrachoseps relictus Relictual slender salamander	–	FSS	CSC	Habitat requirements are poorly understood. Have been found under rocks, bark, and downed woody debris. Known from the SNF at elevations ranging from 600 to 8,000 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Hydromantes brunus Limestone salamander	–	FSS	CT, CFP	Associated with limestone outcroppings in foothill woodland and chaparral habitats of Merced Canyon in Mariposa County from 836–2,624 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Rana aurora draytonii California red-legged frog	FT	–	CSC	Breeds in quiet streams and permanent, deep, cool ponds with overhanging and emergent vegetation below 4,000 feet elevation. Known to occur adjacent to breeding habitats in riparian areas and heavily vegetated streamside shorelines, and non-native grasslands. Sierran streams historically supported populations of red-legged frog; however, these populations have been eliminated.	Unlikely	Unlikely	Unlikely	Unlikely
Rana boylii Foothill yellow-legged frog	–	FSS	CSC	Breeds in rocky streams with cool, clear water in a variety of habitats, including valley and foothill oak woodland, riparian forest, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows; occurs at elevations ranging from 0 to 4,500 feet.	Potential	Potential	Potential	Potential
Rana muscosa Mountain yellow-legged frog	FC (Sierra Nevada), FE (San Gabriel, San Jacinto, and San Bernardino Mts. Only)	FSS	CSC	Occurs in the Sierras at elevations ranging from 4,500 to 12,000 feet; associated with streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats; breeds in shallow water in low gradient perennial streams and lakes. Known from the high elevations of the SNF.	Unlikely	Known	Potential	Unlikely
Bufo canorus Yosemite toad	FC	FSS	CSC	Occurs in montane meadows and forest borders; breeds in shallow pools, at lake margins, or in pools of quiet streams at elevations ranging 6,400 to 11,300 feet. Known from the SNF.	Unlikely	Known	Known	Unlikely

Table 5.2.5-3. Special-status Plant and Wildlife Species Known or Potentially Occurring in the Vicinity of the Four Big Creek ALP Projects (continued).

Scientific/Common Name	Federal Status	FSS Status	Other Status	Habitat	Mammoth Pool (FERC Project No. 2085)	Big Creek Nos. 1 and 2 (FERC Project No. 2175)	Big Creek Nos. 2A, 8 & Eastwood (FERC Project No. 67)	Big Creek No. 3 (FERC Project No. 120)
Special Status Wildlife Species (continued)								
Actinemys marmorata Western pond turtle	–	FSS	CSC	Perennial wetlands and slow moving creeks and ponds with overhanging vegetation up to 6,000 feet; suitable basking sites such as logs and rocks above the waterline.	Known	Potential	Known	Known
Gambelia silus Blunt-nosed leopard lizard	FE	–	SE, CFP	Scarce resident of sparsely vegetated alkali and desert scrub habitats in the San Joaquin Valley and adjacent foothills up to 3,000 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Pandion haliaetus Osprey	–	–	SNF MIS, CSC	Breeds in northern California, associated strictly with large fish-bearing waters, primarily in ponderosa pine and mixed conifer habitats.	Known	Known	Known	Known
Haliaeetus leucocephalus Bald eagle	FT, FPD (Proposed delisting on 7/6/99) (nesting and wintering)	–	SNF MIS, SE, CFP	Local winter migrant to various California lakes. Most of the breeding population is restricted to more northern counties. Regular winter migrants to the region. Usually not found at high elevations in the Sierra.	Known	Known	Known	Known
Accipiter cooperi Cooper's hawk			CSC (nesting)	Breeding resident throughout most of the wooded portion of the state. Breeds in Sierra Nevada foothills, New York Mountains, Owens Valley, and other local areas in southern California. Dense stands of oak and riparian woodland for nesting and grassland for foraging up to 9,000 feet.	Potential	Potential	Known	Known
Accipiter gentilis Northern goshawk	–	FSS	SNF MIS, CSC (nesting)	Prefers middle to high elevation, mature, dense conifer forests for foraging and nesting. Casual in foothills during winter, northern deserts in pinyon-juniper woodland, and low elevation riparian habitats.	Known	Known	Known	Known
Buteo swainsoni Swainson's hawk	–	FSS	CT (nesting)	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Riparian woodlands, juniper-sage flats, and oak woodlands for nesting. Grasslands and agricultural areas for foraging.	Unlikely	Unlikely	Unlikely	Unlikely
Falco peregrinus anatum American peregrine falcon	Former FE (Delisted on 8/20/99) (nesting)	FSS	SNF MIS, CE, CFP	Very uncommon breeding resident and uncommon as a migrant. Breeds in woodlands, forests, coastal habitats, and riparian areas near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds. Active nesting sites are known along the coast, in the Sierra Nevada, and in the mountains of northern California. Migrants occur along the coast and the western Sierra Nevada in spring and fall.	Potential	Known	Known	Known
Strix nebulosa Great gray owl	–	FSS	CE (nesting)	Nests in old-growth coniferous forests and forages in montane meadows. Distribution includes high elevations of the Sierra Nevada and Cascade Ranges from 4,500 to 7,500 feet.	Unlikely	Known	Known	Unlikely
Strix occidentalis occidentalis California spotted owl	–	FSS	SNF MIS CSC	Resides in dense, old growth, multi-layered mixed conifer, redwood, Douglas fir, and oak woodland habitats, from sea level up to approximately 7,600 feet. Known from the SNF.	Known	Known	Known	Known
Empidonax traillii brewsteri Willow flycatcher	–	FSS	SNF MIS CE (nesting)	Wet meadow and montane riparian habitats from 2,000 to 8,000 feet. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows. Known from the SNF.	Potential	Potential	Known	Known

Table 5.2.5-3. Special-status Plant and Wildlife Species Known or Potentially Occurring in the Vicinity of the Four Big Creek ALP Projects (continued).

Scientific/Common Name	Federal Status	FSS Status	Other Status	Habitat	Mammoth Pool (FERC Project No. 2085)	Big Creek Nos. 1 and 2 (FERC Project No. 2175)	Big Creek Nos. 2A, 8 & Eastwood (FERC Project No. 67)	Big Creek No. 3 (FERC Project No. 120)
Special Status Wildlife Species (continued)								
Vireo bellii pusillus Least Bell's vireo	FE	–	CE (nesting)	Summer resident below 2,000 feet in Santa Barbara, Ventura, San Bernardino, Riverside, San Diego, Imperial, and Inyo counties. Prefers willows and other low, dense valley-foothill riparian habitat in the lower portion of canyons for breeding.	Unlikely	Unlikely	Unlikely	Unlikely
Dendroica petechia brewsteri Yellow warbler			CSC (nesting)	Breeds in riparian woodlands from coastal and desert lowlands up to 8,000 feet in the Sierra Nevada. Also breeds in montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush.	Potential	Potential	Known	Potential
Lasiurus blossevilli Western red bat	–	FSS	–	Occurs from British Columbia to South America. In California, occurs from Shasta County to the Mexican border west of the Sierra crest. Roosts solitarily in foliage in forests and woodlands from sea level up through mixed coniferous forest. In California known to roost in cottonwood and willow.	Not detected	Known	Not detected	Not detected
Corynorhinus townsendii Townsend's western big-eared bat	–	FSS	CSC	Found in all but alpine and subalpine habitats; most abundant in mesic habitats. Requires caves, mines, tunnels, buildings, or other man-made structures for roosting. This species is extremely sensitive to disturbance and may abandon a roost if disturbed. Known from the SNF.	Not detected	Not detected	Known	Known
Antrozous pallidus Pallid bat	–	FSS	CSC	Inhabits grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Typically roosts in caves, crevices, or mines. Requires open habitat for foraging.	Not detected	Not detected	Known	Known
Aplodontia rufa Sierra Nevada mountain beaver	–	–	SNF MIS CSC	Occurs in dense riparian and open brushy stages of most forest types. Deep, friable soils are required for burrowing along cool, moist microclimates. Line in burrows located in or near deep soils near streams and springs. Typical habitat in the Sierra is montane riparian.	Potential	Potential	Known	Potential
Dipodomys nitratoides exilis Fresno kangaroo rat	FE	–	CE	Alkali desert scrub habitat and herbaceous habitat with scattered shrubs. Found in the San Joaquin Valley up to 1,800 feet.	Unlikely	Unlikely	Unlikely	Unlikely
Vulpes vulpes necator Sierra Nevada red fox	–	FSS	CT	Occurs throughout the Sierra Nevada at elevations above 7,000 feet in forests interspersed with meadows or alpine forests. Open areas are used for hunting, forested habitats for cover and reproduction. Known from the higher elevations of the SNF.	Unlikely	Known	Known	Unlikely
Martes americana American (pine) marten	–	FSS		Within the SNF, martens are known from the high elevation forested plant communities. Optimal habitats are various mixed evergreen forests with more than 40% crown closure and large trees and snags for den sites. Most commonly found in red fir and lodgepole pine forests between 4,000 and 10,600 feet elevation.	Unlikely	Known	Known	Unlikely

Table 5.2.5-3. Special-status Plant and Wildlife Species Known or Potentially Occurring in the Vicinity of the Four Big Creek ALP Projects (continued).

Scientific/Common Name	Federal Status	FSS Status	Other Status	Habitat	Mammoth Pool (FERC Project No. 2085)	Big Creek Nos. 1 and 2 (FERC Project No. 2175)	Big Creek Nos. 2A, 8 & Eastwood (FERC Project No. 67)	Big Creek No. 3 (FERC Project No. 120)
Special Status Wildlife Species (continued)								
Martes pennanti pacifica Pacific fisher	FC	FSS	CSC SNF MIS	Suitable habitat consists of large areas of mature, dense forest red fir, lodgepole pine, ponderosa pine, mixed conifer, and Jeffery pine forests with snags and greater than 50% canopy closure. Known from 4,000 to 8,000 feet elevations in the SNF.	Potential	Known	Known	Unlikely
Gulo gulo luteus California wolverine	–	FSS	CT, CFP	Mixed conifer, red fir, and lodgepole habitats, and probably sub-alpine conifer, alpine dwarf shrub, wet meadow, and montane riparian habitats. Occurs in Sierra Nevada from 4,300 to 10,800 feet. Majority of recorded sightings are found above 8,000 feet elevation.	Unlikely	Known	Known	Unlikely
Ovis canadensis californiana Sierra Nevada (California) bighorn sheep	FE	FSS	CE, CFP	Southern Sierra Nevada from Fresno and Mono counties and south. Alpine dwarf–shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, and montane riparian habitats.	Unlikely	Unlikely	Unlikely	Unlikely

LEGEND:

State Status

CFP = California Fully Protected
CSC = California Species of Special Concern
CE = California Endangered
CT = California Threatened

Federal Status

FC = Candidate Species
FE = Federal Endangered
FPE = Federally proposed for listing as endangered
FT = Federal Threatened
FSS = Forest Service Sensitive
SNF MIS = Sierra National Forest Management Indicator Species

Known: Species identified either through literature review (USFS, CNDDB, CNPS) or during focused surveys completed in vicinity of the four Big Creek Projects.
Potential: Surveys were completed only in representative habitat potentially supporting the species. Species could potentially occur in other potential habitat in the vicinity of the four Big Creek Projects that were not surveyed. For birds, the potential for occurrence refers to the potential for the species to nest in the Project area.
Not Detected: Species were not found during surveys completed in the vicinity of the four Big Creek Projects.
Unlikely: Regulatory agencies identified species as potentially occurring in the vicinity of the four Big Creek Projects. Upon further review, it was determined that the Projects were outside the species known elevation range or that no appropriate habitat is present.