

## **6.7 Vegetation, Wildlife, and Sensitive Biological Resources**

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This section describes the plant and wildlife communities and sensitive biological resources in the vicinity of the Upper North Fork Feather River Hydroelectric Project (UNFFR Project) and analyzes the effects of the operation of the UNFFR Project under a new Federal Energy Regulatory Commission (FERC) license on these resources.

### 6.7.1 Environmental Setting

The biological setting is described in both regional and local contexts to provide an overview of the biological resources in the vicinity of the UNFFR Project and at each activity area<sup>1</sup>. The regional setting encompasses the UNFFR Project and surrounding plant and wildlife communities (referred to as the biological study area in this section). The information on the regional setting is based on studies previously conducted for Pacific Gas and Electric Company (PG&E) in support of its application to FERC to relicense the UNFFR Project (FERC Project No. 2105). Studies have not been conducted specifically for the activity areas; therefore, the description of the local setting is based on a review of aerial imagery, a site reconnaissance, and the results of previous studies.

#### Regional Plant and Wildlife Communities

The UNFFR Project is in the California Floristic Province at the northern edge of the Sierra Nevada. The varied elevation and geologic characteristics of the area support diverse plant communities that are found in a complicated mosaic, providing habitat for a wide variety of wildlife species.

Lake Almanor was formerly a large meadow, known as Big Meadows, through which the Feather River flowed. The Lake Almanor area still contains large, grassy meadows around the reservoir that are subject to flooding at high water levels. Wet meadows and seasonally wet volcanic flats are common throughout the region. Vegetative cover near Lake Almanor and Butt Valley reservoir is predominantly mixed conifer forest. Serpentine outcrops in a steep, eroded landscape occur between Butt Valley reservoir and the Caribou powerhouses. Downstream of the Caribou powerhouses, the vegetation consists of mixed conifer forest and chaparral. Steep, rocky slopes forming the North Fork Feather River canyon are dominated by montane hardwood forest. Seeps and springs are common in the area around the Belden forebay.

The following descriptions of plant and wildlife communities follow the nomenclature used in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Plant community descriptions were excerpted from PG&E's license application, Appendix E3.3-1: Special-Status Plant Survey and Noxious Weed Survey (Pacific Gas and Electric Company 2002a). An overview of invasive species and sensitive biological resources (e.g., special-status species, waters of the United States) in the biological study area is provided at the end of the communities descriptions.

#### **Montane Hardwood**

Montane hardwood forest is a diverse habitat found on serpentine and non-serpentine substrates in the biological study area between the Caribou and Belden powerhouses. On non-

<sup>1</sup> Activity areas encompass areas surrounding and portions of Lake Almanor, Butt Valley reservoir, Belden forebay, the North Fork Feather River, and Butt Creek where construction and ground disturbing activities have the potential to occur.

serpentine soils, this habitat is dominated by canyon live oak (*Quercus chrysolepis* var. *chrysolepis*). Other common overstory species include Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*), Pacific madrone (*Arbutus menziesii*), and ponderosa pine (*Pinus ponderosa*). On steep slopes, the understory is limited to leaf litter, and rock outcrops are common. On gentle slopes and along roadsides or openings in the dense canopy, the understory includes a mix of native shrubs and forbs such as deer brush (*Ceanothus integerrimus*), poison oak (*Toxicodendron diversilobum*), western mock orange (*Philadelphus lewisii*), toyon (*Heteromeles arbutifolia*), manzanita (*Arctostaphylos* spp.), California pipevine (*Aristolochia californica*), trail plant (*Adenocaulon bicolor*), woolly sunflower (*Eriophyllum lanatum*), and blue wildrye (*Elymus glaucus* ssp. *glaucus*).

On serpentine-derived soils, the montane hardwood community is more open, with emergent Douglas-fir and foothill pine (*Pinus sabiniana*). Dominant species in the shrub layer include California bay (*Umbellularia californica*), wedgeleaf ceanothus (*Ceanothus cuneatus*), toyon, and hoary coffeeberry (*Rhamnus tomentella*).

Nuts provided by montane hardwood forests are an important food source for many species, such as Lewis' woodpecker (*Melanerpes lewis*), Steller's jay (*Cyanocitta stelleri*), mountain quail, western gray squirrel (*Sciurus griseus*), and mule deer (*Odocoileus hemionus*). In addition, cavities in mature trees provide habitat for species such as the northern flicker (*Colaptes auratus*), western screech owl (*Otus kennicottii*), American kestrel (*Falco sparverius*), and little brown bat (*Myotis lucifugus*). Many reptiles are found on the forest floor in this community, including the western skink (*Eumeces skiltonianus*), California mountain kingsnake (*Lampropeltis zonata*), and rubber boa (*Charina bottae*).

### **Sierran Mixed Conifer**

In the biological study area between the Caribou and Belden powerhouses, the montane hardwood community transitions to Sierran mixed conifer on gentler slopes away from the steep, rocky canyon walls of the North Fork Feather River. This community is more common near Butt Valley reservoir and Lake Almanor. Dominant overstory species include ponderosa pine, Douglas-fir, incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), canyon live oak, black oak (*Quercus kelloggii*), and bigleaf maple (*Acer macrophyllum*). The shrub and herb layer is poorly developed in the dense shade of the forest. Openings in the dense forest canopy are dominated by deer brush, poison oak, greenleaf manzanita (*Arctostaphylos patula*), hoary honeysuckle (*Lonicera hispidula* var. *vascillans*), Pacific dogwood (*Cornus nuttallii*), and other shrubs and herbs.

At the higher elevations around Lake Almanor and Butt Valley reservoir, Douglas-fir is no longer a dominant species in the overstory; rather ponderosa pine and white fir are dominant, and incense cedar and sugar pine (*Pinus lambertiana*) are important components. In forest openings, dominant shrubs include mountain whitethorn (*Ceanothus cordulatus*), Sierra gooseberry (*Ribes roezlii*), greenleaf manzanita, and creeping snowberry (*Symphoricarpos mollis*).

The multi-layered vegetation in the Sierran mixed conifer community supports a variety of wildlife species. A significant feature of the community is the presence of cavity-bearing trees and snags (dead trees that are still standing), which are a valuable resource for birds such as the flammulated owl (*Otus flammeolus*) and northern pygmy owl (*Glaucidium gnoma*) and for mammals that prefer to nest and den in cavities. Snags also support wood-boring insects that provide food for bark-gleaning insectivorous birds, such as the brown creeper (*Certhia*

*americana*). Other birds that forage and/or breed in the Sierran mixed conifer community include the sharp-shinned hawk (*Accipiter striatus*), mountain quail (*Oreortyx pictus*), western wood-pewee (*Contopus sordidulus*), and western tanager (*Piranga ludoviciana*). Mammals typical of this community include the long-eared myotis (*Myotis evotis*), northern flying squirrel (*Glaucomys sabrinus*), long-tailed weasel (*Mustela tenata*), bobcat (*Lynx rufus*), and black bear (*Ursus americanus*). Common reptiles include the rubber boa and western skink.

### **Lodgepole Pine**

The single-species lodgepole pine (*Pinus contorta* ssp. *murrayana*) community is found in a band around the edges of wet montane meadows in the Lake Almanor area. Lodgepole pine occurs only at the higher elevations of the biological study area. Stands of slender, small-diameter trees are dense and have a thick layer of leaf litter. Understory vegetation is generally a sparse layer of species associated with adjacent wet and dry montane meadows (see description of this community below) that primarily occur in canopy openings.

Lodgepole pine stands have low structural diversity and are relatively low in animal species diversity. Many species found in lodgepole pine stands are associated with the meadow edge. The majority of birds found in this community belong to the group that feed on insects found in foliage or on bark. Foliage insects are combed off the needles by birds such as the yellow-rumped warbler (*Dendroica coronata*), ruby-crowned kinglet (*Regulus calendula*), and mountain chickadee (*Poecile gambeli*). Bark insects are pulled from crevices by brown creepers, red-breasted nuthatches (*Sitta canadensis*), and northern black-backed woodpeckers (*Picoides articus*). Lodgepole seeds are savored by species such as the: Clark's nutcracker (*Nucifraga columbiana*), pine siskin (*Carduelis pinus*), and red crossbill (*Loxia curvirostra*). The sooty grouse (*Dendragapus fuliginosus*) can digest resin-soaked needles, allowing it to spend the winter in lodgepole pine forests. Raptors, such as the northern goshawk (*Accipiter gentiles*) and red-tailed hawk (*Buteo jamaicensis*), may build large stick nests near the tops of the largest trees. Mammals, such as the common porcupine (*Erethizon dorsatum*) and black bear, gnaw on the bark of lodgepole pines to get at the sweet inner layer. Downed trees are a haven for small animals such as the western red-backed vole (*Clethrionomys californicus*) and moisture-dependent toads and salamanders.

### **Valley Foothill Riparian**

Valley foothill riparian communities are found adjacent to the North Fork Feather River in the Seneca and Belden reaches from Canyon dam downstream to the Belden powerhouse and along Butt Creek. The riparian corridor is narrow and discontinuous. Common species found in this community include Himalayan blackberry (*Rubus discolor*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), arroyo willow (*Salix lasiolepis*), California wild grape (*Vitis californica*), Bolander's sedge (*Carex bolanderi*), hedgenettle (*Stachys ajugoides* var. *rigida*), and bracken fern (*Pteridium aquilinum* var. *pubescens*).

Riparian woodlands represent some of the most important wildlife habitats due to their high floristic and structural diversity, high biomass (and therefore high food abundance), and high water availability. In addition to providing breeding, foraging, and roosting habitat for a diverse array of animals, riparian habitats also provide movement corridors for some species, connecting a variety of habitats throughout the region. Riparian areas have been identified as one of the most threatened and degraded habitats in the Sierra Nevada (Sierra Nevada Ecosystem Project 1996, Siegel and DeSante 1999).

The leaf litter, fallen tree branches, and logs associated with the riparian community provide cover for amphibians such as the western toad (*Bufo boreas*) and Pacific chorus frog (*Pseudacris regilla*). The western fence lizard (*Sceloporus occidentalis*), western skink, and northern alligator lizard (*Elgaria coerulea*) also occur in riparian communities. Common species nesting and foraging primarily in the riparian tree canopy include the tree swallow (*Tachycineta bicolor*), bushtit (*Psaltriparus minimus*), white-breasted nuthatch (*Sitta carolinensis*), and Nuttall's and downy woodpeckers (*Picoides nuttallii* and *Picoides pubescens*, respectively). Other resident species, such as the spotted towhee (*Pipilo maculatus*) and song sparrow (*Melospiza melodia*), nest and forage on or very close to the ground, usually in dense vegetation. A variety of mammals also occur in riparian communities, including the deer mouse (*Peromyscus maniculatus*), raccoon (*Procyon lotor*), and ringtail cat (*Bassariscus astutus*).

### **Mixed Chaparral**

A mixed chaparral community occurs on serpentine substrates near the Caribou powerhouses and the Belden reach of the North Fork Feather River. This community is dominated by leather oak (*Quercus durata*) and wedgeleaf ceanothus, with rubber rabbitbrush (*Chrysothamnus nauseosus*), Fremont's silk-tassel (*Garrya fremontii*), prickly phlox (*Leptodactylon pungens*), and yerba santa (*Eriodictyon californicum*) as important components. The herb layer is restricted to openings in the mostly dense chaparral and is dominated by colorful native forbs, such as common blue dicks (*Dichelostemma capitatum* ssp. *capitatum*), rayless daisy (*Erigeron inornatus*), purple sanicle (*Sanicula bipinnatifida*), Sierra morning-glory (*Calystegia malacophylla*), several lomatiums (*Lomatium* spp.), and scarlet fritillary (*Fritillaria recurva*).

Mixed chaparral provides habitat for a wide variety of wildlife species. It provides seeds, fruit, and protection from predators and harsh weather. In addition, it provides singing, roosting, and nesting sites for many species of birds, including the California quail (*Callipepla californica*), spotted towhee, and Anna's hummingbird (*Calypte anna*). Mammals common in this habitat include the black-tailed jackrabbit (*Lepus californicus*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), and deer mouse. Reptiles that make use of this habitat include the western fence lizard and northern alligator lizard.

### **Montane Chaparral**

The montane chaparral community is common in disturbed areas around Lake Almanor. Greenleaf manzanita is the dominant species, but mountain whitethorn (*Ceanothus cordulatus*), Sierra gooseberry, Bloomer's goldenbush (*Ericameria bloomeri*), and Mahala mat (*Ceanothus prostratus*) are important components. The density of the herb layer varies and is dominated by white hackelia (*Hackelia californica*), needlegrass (*Achnatherum* sp.), coyote mint (*Monardella odoratissima*), Torrey's monkeyflower (*Mimulus torreyi*), pygmy tarweed (*Madia minima*), Torrey's cryptantha (*Cryptantha torreyana*), diffuse groundsmoke (*Gayophytum diffusum*), and mountain violet (*Viola purpurea* ssp. *purpurea*).

The wildlife values of montane chaparral are similar to those described for mixed chaparral.

### **Perennial Grassland**

The perennial grassland community is common on the upland slopes adjacent to Lake Almanor. Dominant species vary from site to site, but generally include one or more of the following: Kentucky bluegrass (*Poa pratensis*), tufted hairgrass (*Deschampsia caespitosa*), common yarrow (*Achillea millefolium*), meadow penstemon (*Penstemon rydbergii*), beaked sedge (*Carex*

*utricularia*), Jones' muhly (*Muhlenbergia jonesii*), long-stalked clover (*Trifolium longipes* var. *nevadense*), and sheep sorrel (*Rumex acetosella*).

The value of the grassland community is enhanced by the communities that surround it (e.g., communities that provide shelter for species that forage in the open grasslands). Perennial grasslands support several herbivores, including mule deer, California ground squirrels (*Spermophilus beecheyi*), deer mice, and black-tailed jackrabbits. These species attract predators that breed in adjacent habitats, such as the bobcat, coyote, red-tailed hawk, and great-horned owl (*Bubo virginianus*). Reptile species expected to occur here include the western fence lizard, western skink, and gopher snake (*Pituophis melanoleucus*).

### **Wet Meadow**

Wet meadow communities, including seeps, springs, and freshwater marshes, are found scattered throughout the biological study area. Seeps and springs are common in both the Last Chance Marsh and the Caribou powerhouse area. Freshwater marsh is found as a fringe of marsh habitat around portions of Lake Almanor and Butt Valley reservoir and in small ponds near the Chester Airport (northwest of Lake Almanor). Dominant species vary with wet meadow type and location.

Montane meadow habitat is extremely important to the Sierra Nevada avifauna (Siegel and DeSante 1999). Not only do numerous species depend on montane meadows for breeding habitat, but meadows also serve as important supplemental habitat for many species that breed in other habitats. In addition, montane meadows provide critical molting and pre-migration staging areas for juveniles and adults of a broad array of Sierra Nevada landbird species (Siegel and DeSante 1999), and the population densities of many forest-inhabiting species are often highest near meadow edges.

Wet meadows are generally too wet to provide suitable habitat for small mammals; however, deer may feed in wet meadows. Amphibians and reptiles are common in wet meadows, including the Pacific chorus frog, bullfrog (*Rana catesbeiana*), Cascades frog (*Rana cascadae*), and western terrestrial garter snake (*Thamnophis elegans*).

### **Riverine**

The North Fork Feather River and its tributaries provide perennial and intermittent stream (riverine) habitats for aquatic communities within the biological study area. These habitats are important to many wildlife species including birds, mammals, reptiles, amphibians, and fish. Aquatic communities are described in more detail in Section 6.6, Fisheries.

### **Lacustrine**

Lake Almanor is the largest water body in the North Fork Feather River watershed. The lake provides approximately 27,000 acres of lacustrine (open water) habitat at its maximum water surface elevation (see Chapter 3, and Section 6.4, Water Resources, for additional details). Butt Valley reservoir provides approximately 1,600 acres of lacustrine habitat at its maximum water surface elevation. Belden forebay, with a surface area of 42 acres, is the smallest impoundment.

Lacustrine habitats in the watershed are extensively used by mammals (e.g., beavers, otters, and muskrats); birds (e.g., ducks, geese, osprey, and grebes); reptiles (e.g., turtles and

snakes); amphibians (e.g., toads, frogs, and salamanders); and both cold and warmwater fish (e.g., trout, bass, and sunfish). Fish are described in more detail in Section 6.6, Fisheries.

### ***Non-Native and Invasive Plant Species***

When plants that evolved in one region of the globe are moved to another region, a few flourish, crowding out native vegetation and the wildlife that feed on the native species. These invasive plants have a competitive advantage because they are no longer controlled by their natural predators and can quickly spread out of control. The scientific community has come to view invasive species as posing serious threats to biological diversity, second only to the threats resulting from habitat loss and fragmentation (Bossard et al. 2000). Invasive species present complex management issues; even when the species are no longer being actively introduced, they continue to spread and invade new areas. Invasive species affect native species and habitats in several ways. Invasive species: alter nutrient cycles, fire frequency and/or intensity, and hydrologic cycles; create changes in sediment deposition and erosion; displace native species; hybridize with native species; and promote non-native animal species (Bossard et al. 2000). In California, approximately three percent of the plant species growing in the wild are considered invasive, but they inhabit a much greater proportion of the landscape (California Invasive Plant Council 2007).

Several invasive and noxious weeds have been introduced to the biological study area and now occur in disturbed areas around the reservoirs and along roads and the river. Garcia and Associates conducted surveys for invasive and noxious weed species in 2000 in support of PG&E's relicensing application (Pacific Gas and Electric Company 2002a). Nine species of invasive and noxious weeds were observed during these surveys. These species are listed in Table 6.7-1 with their pest ratings (see Chapter 5, Regulatory Framework, for an explanation of the ratings).

**Table 6.7-1. Invasive and Noxious Weeds in the Biological Study Area**

COMMON NAME	SCIENTIFIC NAME	CAL-IPC LIST*	CDFA LIST*
Cheat grass	<i>Bromus tectorum</i>	High	—
Hairy whitetop	<i>Cardaria pubescens</i>	Limited	B
Spotted knapweed	<i>Centaurea maculosa</i>	Moderate	A
Yellow star-thistle	<i>Centaurea solstitialis</i>	High	C
Canada thistle	<i>Cirsium arvense</i>	Moderate	B
Klamath weed	<i>Hypericum perforatum</i>	Moderate	C
Dalmatian toadflax	<i>Linaria genistifolia ssp. dalmatica</i>	Moderate	A
Himalayan blackberry	<i>Rubus discolor</i>	High	—
Bouncing-bet	<i>Saponaria officinalis</i>	Limited	—

\*See Table 5-1 in Chapter 5 for category definitions and an overview of the lists.

CAL-IPC – California Invasive Plant Council

CDFA – California Department of Food and Agriculture

### ***Sensitive Biological Resources***

The biological study area supports a wide range of special-status species and other sensitive biological resources, including deer herds regulated by the California Department of Fish and Wildlife (CDFW; formerly the California Department of Fish and Game) and waters (including wetlands) under the regulatory jurisdiction of the United States Army Corps of Engineers (Corps) and State Water Resources Control Board (State Water Board).

A list of potentially occurring special-status species and their general habitat requirements was compiled by performing searches of the California Natural Diversity Database (CNDDDB) and California Native Plant Society Electronic Inventory database for the six quadrangles encompassing the biological study area, reviewing the United States Fish and Wildlife Service (USFWS) list of federal special-status species (species listed as endangered or threatened or candidates for listing as threatened or endangered) potentially occurring in Plumas County, and reviewing biological literature for the region. For the purposes of this evaluation, special-status plant and wildlife species are those that are: (1) listed as threatened or endangered under the federal or California endangered species acts (ESAs); (2) proposed for listing as threatened or endangered; (3) candidates for listing as threatened or endangered; (4) designated as rare by CDFW; (5) ranked by the California rare plant ranking system as 1B or 2; or (5) designated by the Regional Forester of the United States Department of Agriculture, Forest Service (USFS) as sensitive pursuant to the National Forest Management Act. Each species on the list was assessed for its potential to occur in the biological study area based on the species' known distribution and habitat requirements, vegetation communities mapped in the biological study area, elevation limits (approximately 2,200 to 4,500 feet) of the biological study area, and surveys of portions of the biological study area. Garcia and Associates conducted focused plant and wildlife surveys in portions of the biological study area in support of PG&E's application to FERC (Pacific Gas and Electric Company 2002a). Supplemental surveys were not conducted during preparation of this section. The regional assessment of special-status plant and wildlife species is presented as Appendix G.

Based on the initial review of special-status species, 93 special-status plant species were identified as potentially occurring in the region. This includes five federally listed species (*Webber's ivesia*, *Ivesia webberi*; Butte County meadowfoam, *Limnanthes floccosa* ssp. *californica*; slender Orcutt grass, *Orcuttia tenuis*; Layne's ragwort, *Senecio (Packera) layneae*; Greene's tuctoria, *Tuctoria greenei*), one federal candidate species (whitebark pine, *Pinus albicaulis*), and several other special-status plants. Many of these species are not expected to occur in the biological study area based on the elevation requirements of the species or their known ranges, as noted in Appendix G. In addition, 51 special-status wildlife species were identified as potentially occurring in the region. This includes seven federally listed species, two federal candidate species, eight state-listed species, and several other special-status wildlife species. Many of these species are not expected to occur in the biological study area based on the species' known ranges or a lack of suitable habitat, as noted in Appendix G.

During the late 1960s and early 1970s, deer herds in most of California exhibited serious long-term declines. In 1976, the CDFW developed a statewide plan to address the problem, and in 1977 a Deer Management Policy was subsequently adopted by the California Fish and Game Commission. CDFW is responsible for writing and approving deer herd management plans, including designating critical winter range. Critical winter range is that portion of a winter range that deer are dependent upon during severe winter weather.

At lower elevations, the biological study area overlaps the range of the Bucks Mountain Deer Herd and East Tehama Deer Herd. A portion of the Bucks Mountain Deer Herd winter range lies within the biological study area between the Caribou and Belden powerhouses. The summer range of the East Tehama Deer Herd extends outward a distance of 3 to 5 miles from the shorelines of Lake Almanor and Butt Valley reservoir. This large population of California mule deer winters at lower elevations outside the biological study area in Butte and Tehama counties. Traditional migration routes occur in the immediate vicinity of the biological study area, to the north and south of Lake Almanor.

The biological study area contains several water bodies that fall under the jurisdiction of the Corps and that may fall under the State's jurisdiction (see Chapter 5, Regulatory Framework). The primary water bodies are the North Fork Feather River and its tributary streams and reservoirs. As described above in the vegetation and wildlife communities' descriptions, wetlands are found along the perimeters of reservoirs and scattered throughout the biological study area. These wetlands may also fall under the regulatory jurisdiction of the Corps or State.

### **Local Plant and Wildlife Communities**

Plant and wildlife communities in the activity areas include Sierran mixed conifer forest and lacustrine (see descriptions of these communities above). The Canyon dam activity area has been previously disturbed and is mostly devoid of vegetation with relatively small patches of Sierran mixed conifer forest along the western boundary. Lacustrine habitat (Lake Almanor) dominates the northern portion of the Canyon dam activity area. The Prattville intake activity area is composed primarily of lacustrine habitat (Lake Almanor), with Sierran mixed conifer forest along the southwestern boundary. The Caribou intakes activity area is composed primarily of lacustrine (Butt Valley reservoir) habitat, with Sierran mixed conifer forest along the western and southern boundaries. Freshwater emergent wetlands may be present along the shorelines of Lake Almanor and Butt Valley reservoir in the activity areas.

The plant and wildlife communities in and near the activity areas have the potential to support a variety of special-status species. The list of special-status species that could occur in the biological study area (Appendix G) was further evaluated to assess which species could occur or have habitat in the activity areas. This assessment was based on the results of Garcia and Associates' surveys and information on the species' habitat requirements. Conclusions regarding species' potential to occur in the biological study area and the activity areas are based on the knowledge of local professional biologists and historic survey information.

### ***Special-Status Plants***

Of the 58 special-status plant species that may occur in the biological study area, 42 species were identified as potentially occurring in the activity areas (Table 6.7-2). Suitable habitat for the Webber's ivesia, a threatened species under the Federal and California ESA, is present in the activity areas. Several other special-status plants also have potential to occur in the activity areas. No other federally or state-listed plant species are expected to occur in the activity areas.

Table 6.7-2 lists these species and describes their general habitat requirements, recorded occurrences within the biological study area, and the potential for the species to occur in the activity areas. Each plant species was placed into one of the following two groups:

- **Habitat Present:** Suitable habitat is present for the species in one or more of the activity areas, and the species has a reasonable chance of occurring.
- **Absent:** The species is not expected to occur in the activity areas based on a lack of documented occurrences in the area, results of field surveys, and/or a lack of suitable habitat.

Table 6.7-2. Occurrence Potential for Special-Status Plants in the Activity Areas

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup> (FED/STATE/ USFS)	GENERAL HABITAT	POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS
<b>Federally or State-Listed and Candidate Species</b>			
Webber's ivesia <i>Ivesia webberi</i>	T/1B.1/S	Great Basin scrub, lower montane coniferous forest, and pinyon and juniper woodland at elevations of 3,280–6,807 feet. Flowers May–July.	<b>Habitat Present.</b> This species has not been recorded in the biological study area (California Department of Fish and Wildlife 2014). However, suitable habitat is present in the activity areas.
Slender Orcutt grass <i>Orcuttia tenuis</i>	T/E,1B.1/–	Vernal pools at elevations of 115–5,775 feet. Flowers May–September.	<b>Absent.</b> Vernal pool habitat is not present in the activity areas.
Layne's ragwort <i>Senecio (Packera) layneae</i>	T/R,1B.2/–	Chaparral, cismontane woodland at elevations of 650–3,300 feet.	<b>Absent.</b> This species has not been recorded in the biological study area (California Department of Fish and Wildlife 2014). Suitable habitat is not present in the activity areas.
Greene's tuctoria <i>Tuctoria greenei</i>	E/R,1B.2/–	Vernal pools, valley and foothill grassland at elevations of 100–3,500 feet.	<b>Absent.</b> Vernal pool habitat is not present in the activity areas.
<b>Other Special-Status Species</b>			
Jepson's onion <i>Allium jepsonii</i>	–/1B.2/S	Chaparral, cismontane woodland, and lower montane coniferous forest at elevations of 984–4,330 feet. Flowers April–August.	<b>Habitat Present.</b>
Constance's rockcress <i>Arabis constancei</i>	–/1B.1/–	Chaparral, lower montane coniferous forest, and upper montane coniferous forest at elevations of 3,198–6,644 feet. Flowers May–July.	<b>Habitat Present.</b>
Lemmon's milkvetch <i>Astragalus lemmonii</i>	–/1B.2/S	Great Basin scrub, meadows and seeps, marshes and swamps at elevations of 4,200–7,200 feet.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Modoc milkvetch <i>Astragalus pulsiferae</i> var. <i>coronensis</i>	–/4.2/S	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland at elevations of 4,400–6,200 feet.	<b>Habitat Present.</b>

**Table 6.7-2. Occurrence Potential for Special-Status Plants in the Activity Areas**

<b>COMMON NAME SCIENTIFIC NAME</b>	<b>STATUS<sup>1</sup> (FED/STATE/ USFS)</b>	<b>GENERAL HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS</b>
Pulsifer's milkvetch <i>Astragalus pulsiferae</i> var. <i>pulsiferae</i>	-/1B.2/S	Great Basin scrub, lower montane coniferous forest, and pinyon and juniper woodland at elevations of 4,265–5,905 feet. Flowers May–August.	<b>Habitat Present.</b>
Suksdorf's milkvetch <i>Astragalus pulsiferae</i> var. <i>suksdorfii</i>	-/1B.2/S	Great Basin scrub, lower montane coniferous forest, and pinyon and juniper woodland at elevations of 4,265–6,561 feet. Flowers May–August.	<b>Habitat Present.</b> Habitat is present in the activity areas and the species has been recorded in the vicinity of the Prattville intake activity area (California Department of Fish and Wildlife 2014).
Webber's milkvetch <i>Astragalus webberi</i>	-/1B.2/S	Lower montane coniferous forest at elevations of 2,624–4,101 feet. Flowers May–July.	<b>Habitat Present.</b> Habitat is present at the Caribou intakes activity area; however, the other two activity areas are above the elevation limits of this species.
Big-scale balsamroot <i>Balsamorhiza</i> <i>macrolepis</i> var. <i>macrolepis</i>	-/1B.2/S	Chaparral, cismontane woodland, and valley and foothill grassland/sometimes serpentinite at elevations of 295–5,101 feet. Flowers March–June.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Dwarf resin birch <i>Betula glandulosa</i>	-/2B.2/-	Bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps, and subalpine coniferous forest/mesic at elevations of 4,265–7,546 feet. Flowers May–June.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Constance's rock cress <i>Boechnera constancei</i>	-/1B.1/S	Chaparral, lower montane coniferous forest at elevations of 3,200–6,600 feet.	<b>Habitat Present.</b>
Scalloped moonwort <i>Botrychium</i> <i>crenulatum</i>	-/2B.2/S	Bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps, and upper montane coniferous forest at elevations of 4,160–10,761 feet. Flowers June–September.	<b>Habitat Present.</b>
Stalked moonwort <i>Botrychium</i> <i>pedunculatum</i>	-/2B.1/S	Meadows and seeps, upper montane coniferous forest within granitic, volcanic and andesitic habitats.	<b>Habitat Present.</b>

**Table 6.7-2. Occurrence Potential for Special-Status Plants in the Activity Areas**

<b>COMMON NAME SCIENTIFIC NAME</b>	<b>STATUS<sup>1</sup> (FED/STATE/ USFS)</b>	<b>GENERAL HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS</b>
Watershield <i>Brasenia schreberi</i>	-/2B.3/-	Freshwater marshes and swamps.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Green bug-on-a-stick <i>Buxbaumia viridis</i>	-/1B.3/S	Occurs on large diameter logs in advanced decay in riparian habitat in coniferous forest. Low to alpine elevations.	<b>Absent.</b> Suitable riparian habitat is not present in the activity areas.
Mud sedge <i>Carex limosa</i>	-/2B.2/-	Bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps, and upper montane coniferous forest at elevations of 3,937–8,858 feet. Flowers June–August.	<b>Habitat Present.</b>
Sheldon's sedge <i>Carex sheldonii</i>	-/2B.2/-	Lower montane coniferous forest, marshes and swamps, and riparian scrub at elevations of 3,937–6,601 feet. Flowers May–August.	<b>Habitat Present.</b>
Mildred's clarkia <i>Clarkia mildrediae</i> ssp. <i>mildrediae</i>	-/1B.3/S	Cismontane woodland and lower montane coniferous forest at elevations of 804–5,610 feet. Flowers May–August.	<b>Habitat Present.</b>
Mosquin's fairyfan <i>Clarkia mosquinii</i>	-/1B.1/S	Cismontane woodland and lower montane coniferous forest at elevations of 607–3,999 feet. Flowers May–July.	<b>Habitat Present.</b> Habitat is present at the Caribou intakes activity area; however, the other two activity areas are above the elevation limits of this species.
Clustered lady's slipper <i>Cypripedium fasciculatum</i> Wats.	-/4.2/S	Lower montane coniferous forest and North Coast coniferous forest at elevations of 328–7,989 feet. Flowers March–August.	<b>Habitat Present.</b>
Mountain lady's slipper <i>Cypripedium montanum</i> Lindl.	-/4.2/S	Broad-leaved upland forest, cismontane woodland, lower montane coniferous forest, and North Coast coniferous forest at elevations of 607–7,300 feet. Flowers March–August.	<b>Habitat Present.</b>
Branched collybia <i>Dendrocollybia racemosa</i>	-/-/S	Grows on decayed remains of decayed mushrooms, or in duff of mixed hardwood conifer forests.	<b>Habitat Present.</b>

**Table 6.7-2. Occurrence Potential for Special-Status Plants in the Activity Areas**

<b>COMMON NAME SCIENTIFIC NAME</b>	<b>STATUS<sup>1</sup> (FED/STATE/ USFS)</b>	<b>GENERAL HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS</b>
English sundew <i>Drosera anglica</i>	-/2B.3/-	Bogs, fens, meadows, and seeps at elevations of 4,265–6,562 feet. Flowers June–September.	<b>Absent.</b> Suitable habitat is not present in the activity areas. However, the species has been recorded in the vicinity of the Prattville intake activity area (California Department of Fish and Wildlife 2014).
California twisted spikerush <i>Eleocharis torticulmis</i>	-/1B.3/S	Bogs and fens, meadows and seeps, lower montane coniferous forest at elevations of 3,300–3,900 feet.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Clifton's eremogone <i>Eremogone cliftonii</i>	-/1B.3/S	Chaparral, lower montane coniferous forest, and upper montane coniferous forest within openings and usually granitic areas at elevations of 1,492-5,807 feet. Flowers April-September.	<b>Habitat Present.</b>
Tracy's eriastrum <i>Eriastrum tracyi</i>	-/3.2/S	Chaparral and cismontane woodland at elevations of 1,033-5,396 feet. Flowers May-July.	<b>Habitat Present.</b>
Plumas rayless daisy <i>Erigeron lassenianus</i> <i>var. deficiens</i>	-/1B.3/-	Gravelly, sometimes serpentinite, sometimes disturbed sites within lower montane coniferous forest at elevations of 4,461-6,496 feet. Flowers June-September.	<b>Habitat Present.</b>
Schoolcraft's wild buckwheat <i>Eriogonum microthecum</i> <i>var. schoolcraftii</i>	-/1B.2/S	Sandy to rocky areas within Great Basin scrub and pinyon and juniper woodland at elevations of 4,265-5,741 feet. Flowers July-September.	<b>Habitat Present.</b>
Ahart's buckwheat <i>Eriogonum umbellatum</i> <i>var. ahartii</i>	-/1B.2/S	Cismontane woodland at elevations of 1,300–6,500 feet.	<b>Habitat Present.</b>
Brook pocket moss <i>Fissidens aphelotaxifolius</i>	-/2B.2/S	Lower montane coniferous forest, upper montane coniferous forest at elevations of 0–7,200 feet.	<b>Habitat Present.</b>
Caribou coffeeberry <i>Frangula purshiana</i> <i>ssp. ultramafica</i>	-/1B.2/S	Lower montane coniferous forest, upper montane coniferous forest, chaparral at elevations of 2,700–6,330 feet.	<b>Habitat Present.</b>

**Table 6.7-2. Occurrence Potential for Special-Status Plants in the Activity Areas**

<b>COMMON NAME SCIENTIFIC NAME</b>	<b>STATUS<sup>1</sup> (FED/STATE/ USFS)</b>	<b>GENERAL HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS</b>
Butte County fritillary <i>Fritillaria eastwoodiae</i>	-/3.2/S	Chaparral, cismontane woodland, and lower montane coniferous forest at elevations of 164–4,921 feet. Flowers March–June.	<b>Habitat Present.</b>
Veined water lichen <i>Hydrothyria venosa</i>	-/1B.3/-	Grows on rock and gravel within cool, spring-fed montane streams that do not experience heavy scour.	<b>Habitat Present.</b>
Dudley's rush <i>Juncus dudleyi</i>	-/2B.3/-	Lower montane coniferous forest in mesic areas at elevations of 1,492-6,561 feet. Flowers July-August.	<b>Habitat Present.</b>
Santa lucia dwarf rush <i>Juncus luciensis</i>	-/1B.2/S	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, and vernal pool at elevations of 984-6,692 feet. Flowers April-July.	<b>Habitat Present.</b>
Cantelow's lewisia <i>Lewisia cantelovii</i>	-/1B.2/S	Broad-leafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest at elevations of 1,083–4,495 feet. Flowers May–October.	<b>Habitat Present.</b> Suitable habitat is present in the activity areas and the species has been recorded in UNFFR Project area (Pacific Gas and Electric Company 2002a).
Tufted loosestrife <i>Lysimachia thyrsiflora</i>	-/2B.3/-	Meadows and seeps, marshes and swamps, and upper montane coniferous forest at elevations of 3,198-5,495 feet. Flowers May-August.	<b>Habitat Present.</b>
Broad-nerved moss <i>Meesia uliginosa</i>	-/2B.2/S	Bogs and fens, meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest at elevations of 4,265–9,199 feet. Flowers in October.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Elongate copper moss <i>Mielichhoferia elongata</i>	-/2B.2/S	Cismontane woodland.	<b>Habitat Present.</b>
Follett's monardella <i>Monardella follettii</i>	-/1B.2/S	Lower montane coniferous forest at elevations of 1,969–6,562 feet. Flowers June–September.	<b>Habitat Present.</b>

**Table 6.7-2. Occurrence Potential for Special-Status Plants in the Activity Areas**

<b>COMMON NAME SCIENTIFIC NAME</b>	<b>STATUS<sup>1</sup> (FED/STATE/ USFS)</b>	<b>GENERAL HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS</b>
Stebbins's monardella <i>Monardella stebbinsii</i>	-/1B.2/S	Broad-leaved upland forest, chaparral, and lower montane coniferous forest at elevations of 2,559–3,609 feet. Flowers July–September.	<b>Absent.</b> Although this species has been recorded in the biological study area (Pacific Gas and Electric Company 2002a), suitable habitat is not present in the activity areas.
Tall alpine-aster <i>Oreostemma elatum</i>	-/1B.2/S	Bogs, fens, meadows, seeps, and upper montane coniferous forest at elevations of 3,297–6,890 feet. Flowers June–August.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Lewis Rose's ragweed <i>Packera eurycephala</i> var. <i>lewisrosei</i>	-/1B.2/-	Chaparral, cismontane woodland, and lower montane coniferous forest/serpentine at elevations of 899–6,201 feet. Flowers March–July.	<b>Habitat Present.</b>
Close-throated beardtongue <i>Penstemon personatus</i>	-/1B.2/S	Chaparral, lower montane and upper montane coniferous forest at elevations of 3,494–6,955 feet. Flowers June–September.	<b>Habitat Present.</b>
Susanville beardtongue <i>Penstemon sudans</i>	-/1B.3/S	Great Basin scrub, lower montane coniferous forest, and pinyon and juniper woodland at elevations of 3,937–7,956 feet. Flowers June–July.	<b>Habitat Present.</b>
Olive phaeocollybia <i>Phaeocollybia olivacea</i>	-/-/S	Scattered or in arcs in mixed forests in coastal lowlands.	<b>Habitat Present.</b>
Sierra blue grass <i>Poa sierrae</i>	-/1B.3/S	Openings in lower montane coniferous forest at elevations of 1,197–4,921 feet. Flowers April–June.	<b>Habitat Present.</b>
Sticky goldenweed <i>Pyrrocoma lucida</i>	-/1B.2/S	Great Basin scrub, lower montane coniferous forest, meadows and seeps at elevations of 2,297–6,397 feet. Flowers July–October.	<b>Habitat Present.</b>
Columbia yellow cress <i>Rorippa columbiae</i>	-/1B.2/S	Meadows and seeps, pinyon and juniper woodland, playas, and vernal pools at elevations of 3,937–5,906 feet. Flowers May–September.	<b>Absent.</b> Suitable habitat is not present in the activity areas.

**Table 6.7-2. Occurrence Potential for Special-Status Plants in the Activity Areas**

<b>COMMON NAME SCIENTIFIC NAME</b>	<b>STATUS<sup>1</sup> (FED/STATE/ USFS)</b>	<b>GENERAL HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS</b>
Hall's scurf-pea <i>Rupertia hallii</i>	-/1B.2/S	Cismontane woodland and lower montane coniferous forest at elevations of 1,788–7,382 feet. Flowers June–August.	<b>Habitat Present.</b>
Marsh skullcap <i>Scutellaria galericulata</i>	-/2B.2/-	Lower montane coniferous forest, meadows, seeps, marshes, and swamps at elevations up to 6,890 feet. Flowers June–September.	<b>Habitat Present.</b> Suitable habitat is present in the activity areas and the species has been recorded in The UNFFR Project area (Pacific Gas and Electric Company 2002a).
Feather River stonecrop <i>Sedum albormarginatum</i>	-/1B.2/-	Chaparral and lower montane coniferous forest at elevations of 853–6,398 feet. Flowers May–June.	<b>Habitat Present.</b> Suitable habitat is present in the activity areas and the species has been recorded in The UNFFR Project area (Pacific Gas and Electric Company 2002a).
Western campion <i>Silene occidentalis</i> ssp. <i>longistipitata</i>	-/1B.2/-	Chaparral and lower and upper montane coniferous forest at elevations of 3,281–6,562 feet. Flowers June–August.	<b>Habitat Present.</b>
Flat-leaf bladderwort <i>Utricularia intermedia</i>	-/2B.2/-	Bogs, fens, meadows, seeps, marshes, and swamps at elevations of 3,937–8,858 feet. Flowers July–August.	<b>Absent.</b> Although this species has been recorded in the biological study area (Pacific Gas and Electric Company 2002a), suitable habitat is not present in the activity areas.
Cream-flowered bladderwort <i>Utricularia ochroleuca</i>	-/2B.2/-	Meadows, seeps, marshes, and swamps at elevations of 4,708–4,724 feet. Flowers June–July.	<b>Absent.</b> Although this species has been recorded in the biological study area (Pacific Gas and Electric Company 2002a), suitable habitat is not present in the activity areas.

<sup>1</sup> Status CodesFed (Federal Government/USFWS)

E = Endangered    T = Threatened    C = Candidate    – = no federal status

State (State of California/CDFW)

E = Endangered    R = Rare    – = no state status

1B = Plants rare, threatened, or endangered in California and elsewhere

2B = Plants rare, threatened, or endangered in California, but more common elsewhere

3 = Plants about which we need more information – a review list

4 = Plants of limited distribution – a watch list

0.1 – Seriously threatened in California (high degree/immediacy of threat)

0.2 – Fairly threatened in California (moderate degree/immediacy of threat)

0.3 – Not very threatened in California (low degree/immediacy of threat or no current threats known)

USFS (U.S. Forest Service, Region 5)

S = Forest Service Sensitive    – = no Region 5 status

### Special-Status Wildlife

Of the 37 special-status wildlife species that may occur in the biological study area, seven species may use the vegetation communities in and near the activity areas for foraging, breeding, nesting, or roosting. No federally or state-listed wildlife species are expected to breed or nest in the activity areas. Table 6.7-3 lists the species, their general habitat requirements, recorded occurrences within the biological study area, and the potential for the species to occur in the activity areas. Detailed species accounts for those species with suitable habitat in the activity areas are provided after the table.

Each species was placed into one of the following three groups:

- **Habitat Present:** Suitable habitat is present for the species in one or more of the activity areas, and the species has a reasonable chance of occurring.
- **Absent as Breeder:** This species is not expected to breed in the activity area because the area is not within the species' known breeding range or there is a lack of suitable habitat. However, the species may occur as a winter migrant and/or forage in the activity area.
- **Absent:** The species is not expected to occur based on a lack of documented occurrences in the area, results of field surveys, and/or a lack of suitable habitat.

**Table 6.7-3. Occurrence Potential for Special-Status Wildlife in the Activity Areas**

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup> (FED/STATE/ USFS)	GENERAL HABITAT	POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS
<b>Federally and State-Listed and Candidate Species</b>			
California red-legged frog <i>Rana aurora</i> <i>draytonii</i>	T/SC/-	Requires aquatic habitat for breeding. Adults use dense, shrubby or emergent, vegetation associated with deep-water pools with fringes of cattails and dense stands of overhanging vegetation.	<b>Absent.</b> Suitable habitat is not present in the activity areas, and the species has not been recorded within the biological study area (Pacific Gas and Electric Company 2002b; California Department of Fish and Wildlife 2014).
Mountain yellow-legged frog <i>Rana muscosa</i>	C/E/-	Ponds, dams, lakes, and streams at moderate to high elevations.	<b>Absent.</b> Suitable habitat is not present in the activity areas, and the species was not detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002b).
Conservancy fairy shrimp <i>Branchinecta</i> <i>conservatio</i>	E/-/-	Vernal pools, swales, and ephemeral freshwater habitats.	<b>Absent.</b> Vernal pool habitat is not present in the activity areas.

Table 6.7-3. Occurrence Potential for Special-Status Wildlife in the Activity Areas

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup> (FED/STATE/ USFS)	GENERAL HABITAT	POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/--	In, on or near their host plant, elderberry shrubs ( <i>Sambucus</i> spp.) from Shasta County to Fresno County.	<b>Absent.</b> Although elderberry shrubs were detected in portions of the biological study area during surveys of the UNFFR Project area, no elderberry shrubs were documented in or near the activity areas (Pacific Gas and Electric Company 2002c).
Willow flycatcher <i>Empidonax traillii</i>	--/E/S	Wet meadow and montane riparian habitats; dense willow thickets required for nesting and roosting.	<b>Absent.</b> The species has been recorded in the biological study area (Pacific Gas and Electric Company 2006); however, suitable habitat is not present in the activity areas.
American peregrine falcon <i>Falco peregrinus anatum</i>	--/E, FP/--	Forages in many habitats; requires cliffs for nesting.	<b>Absent.</b> The species has been recorded in the biological study area (Pacific Gas and Electric Company 2002c); however, suitable habitat is not present in the activity areas.
Greater sandhill crane <i>Grus canadensis tabida</i>	--/T, FP/S	Wetlands required for breeding; forage in nearby pastures, fields, meadows.	<b>Absent.</b> This species has been recorded in the biological study area (California Department of Fish and Wildlife 2014); however, suitable habitat is not present in the activity areas.
Bald eagle <i>Haliaeetus leucocephalus</i>	D/E, FP/S	Requires large bodies of water, or free-flowing rivers with abundant fish and adjacent snags and large trees for perching and nesting.	<b>Absent as Breeder.</b> The species has been recorded in numerous locations in the biological study area (California Department of Fish and Wildlife 2014) and suitable foraging habitat is present in the activity areas. However, the level of human activity precludes nesting in the activity areas.
Pacific fisher <i>Martes pennanti pacifica</i>	C/SC/S	Intermediate to large dense stages of coniferous forests and deciduous riparian habitats with greater than 50% canopy closure.	<b>Absent.</b> Suitable habitat is not present in the activity areas and the species was not detected in the UNFFR Project area during surveys in 1994, 1998, and 2000 (Federal Energy Regulatory Commission 2004).

**Table 6.7-3. Occurrence Potential for Special-Status Wildlife in the Activity Areas**

<b>COMMON NAME SCIENTIFIC NAME</b>	<b>STATUS<sup>1</sup> (FED/STATE/ USFS)</b>	<b>GENERAL HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS</b>
Sierra Nevada red fox <i>Vulpes vulpes necator</i>	-/T/S	Red fir and lodgepole pine forests in the sub-alpine zone and alpine fell-fields of the Sierra Nevada.	<b>Absent.</b> This species was recorded on the western shore of Lake Almanor in 1973 (California Department of Fish and Wildlife 2014); however, the biological study area is at the species' lower elevational limit and suitable habitat is not present in the activity areas.
<b>Other Special-Status Species</b>			
Foothill yellow- legged frog <i>Rana boylei</i>	-/SC/S	Rocky streams in a variety of habitats. Found in Coast Ranges.	<b>Absent.</b> Suitable habitat is not present in the activity areas. The species was not detected in the UNFFR Project area during surveys in 2001 (Pacific Gas and Electric Company 2002b).
Cascades frog <i>Rana cascadae</i>	-/SC/S	Open coniferous forests along the sunny, rocky banks of ponds, lakes, streams, and meadow potholes. From 2,600–9,000 feet in elevation in the Cascades and Trinity Mountains.	<b>Absent.</b> Suitable habitat is not present in the activity areas, and the species was not detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002b).
Northern leopard frog <i>Rana pipiens</i>	-/SC/-	Permanent or semi-permanent water in many habitats.	<b>Absent.</b> Suitable habitat is not present in the activity areas, and the species was not detected in the UNFFR Project area during surveys in 2001 (Pacific Gas and Electric Company 2002b).
Western pond turtle <i>Actinemys marmorata</i>	-/SC/S	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site near the aquatic site.	<b>Habitat Present.</b> Suitable habitat is present in activity areas.
California floater <i>Anodonta californiensis</i>	-/-/S	Fresh water shallow muddy or sandy habitat in large rivers, reservoirs, and lakes at low elevations.	<b>Absent.</b> Suitable habitat is not present in the activity areas, and the species was not detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c).

Table 6.7-3. Occurrence Potential for Special-Status Wildlife in the Activity Areas

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup> (FED/STATE/ USFS)	GENERAL HABITAT	POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS
Nugget pebblesnail <i>Fluminicola seminalis</i>	-/-/S	Cool, clear, flowing water and gravel-cobble substrate in large creeks and rivers or on soft, mud substrates in large spring pools.	<b>Absent.</b> Although the species was detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c), suitable habitat is not present in the activity areas, and the species is not considered Sensitive within the activity areas (i.e., the Plumas National Forest).
Great Basin rams-horn <i>Helisoma newberryi newberryi</i>	-/-/S	Large lakes and slow rivers with a muddy substrate.	<b>Absent.</b> Suitable habitat is present in the activity areas. However, the species was not detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c) and it is not considered Sensitive within the activity areas (i.e., the Plumas National Forest).
Black juga <i>Juga nigrina</i>	-/-/S	Seepages and creeks in ephemeral water.	<b>Absent.</b> Although the species was detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c), suitable habitat is not present in the activity areas, and the species is not considered Sensitive within the activity areas (i.e., the Plumas National Forest).
Scalloped juga <i>Juga occata</i>	-/-/S	Large rivers, in cold, moving waters, often spring-influenced with stable boulder and cobble substrate.	<b>Absent.</b> Suitable habitat is not present in the activity areas, and the species was not detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c).
Kneecap lanx <i>Lanx patelloides</i>	-/-/S	Sacramento River system, including Sacramento, McCloud, and Pit Rivers and their larger tributaries.	<b>Absent.</b> Suitable habitat is not present in the activity areas. Also, the species was not detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c) and it is not considered Sensitive within the activity areas (i.e., the Plumas National Forest).

**Table 6.7-3. Occurrence Potential for Special-Status Wildlife in the Activity Areas**

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup> (FED/STATE/ USFS)	GENERAL HABITAT	POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS
Montane peaclam <i>Pisidium ultramontanum</i>	-/-/S	Large lakes and rivers, often spring-influenced in areas with gravel substrate.	<b>Absent.</b> Suitable habitat is present in the activity areas. However, the species was not detected during surveys of the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c) and it is not considered Sensitive within the activity areas (i.e., the Plumas National Forest).
Northern goshawk <i>Accipiter gentiles</i>	-/SC/S	Breeds in dense, mature conifer and deciduous forests, interspersed with meadows, other openings and riparian areas; nesting habitat includes north-facing slopes near water.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Golden eagle <i>Aquila chrysaetos</i>	-/FP/-	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	<b>Absent as Breeder.</b> Suitable habitat is present in the biological study area. The species may forage in the proposed construction areas.
Vaux's swift <i>Chaetura vauxi</i>	-/SC/-	Prefers redwood and Douglas-fir habitats, nests in hollow trees and snags or, occasionally, in chimneys; forages aerially.	<b>Absent.</b> Suitable nesting habitat is not present in the activity areas.
Northern harrier <i>Circus cyaneus</i>	-/SC/-	Forages in marshes, grasslands, and ruderal habitats; nests in extensive marshes and wet fields.	<b>Absent.</b> Suitable habitat is not present in the activity areas.
Yellow warbler <i>Dendroica petechia</i>	-/SC/-	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	<b>Absent.</b> Riparian habitat is not present in the activity areas.
Yellow-breasted chat <i>Icteria virens</i>	-/SC/-	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	<b>Absent.</b> Riparian habitat is not present in the activity areas.
California spotted owl <i>Strix occidentalis occidentalis</i>	-/SC/S	Dense, multi-layered mixed conifer, redwood, and Douglas-fir habitats with large overstory trees.	<b>Absent.</b> Numerous records of the species occur within the biological study area. However, the Sierran mixed conifer communities in the activity areas are not suitable habitat because of the high levels of human disturbance.

**Table 6.7-3. Occurrence Potential for Special-Status Wildlife in the Activity Areas**

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup> (FED/STATE/ USFS)	GENERAL HABITAT	POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS
Pallid bat <i>Antrozous pallidus</i>	-/SC/S	Forages over many habitats; roosts in buildings, large trees with hollows, rocky outcrops, and rocky crevices in mines and caves.	<b>Habitat Present.</b> Sierran mixed conifer communities provide potentially suitable roosting habitat in the activity areas. Focused bat surveys in the UNFFR Project area in 2001 detected no evidence of this species (Pacific Gas and Electric Company 2002c).
Ringtail cat <i>Bassariscus astutus</i>	-/FP/-	Riparian habitats and in brush stands of most forest and shrub habitats. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows or woodrat nests.	<b>Habitat Present.</b> Sierran mixed conifer communities in the activity areas may provide suitable habitat. The species has been recorded in the biological study area (Pacific Gas and Electric Company 2002c).
Townsend's western big-eared bat <i>Corynorhinus townsendii</i>	-/SC/S	Roosts in colonies in caves, mines, tunnels, or buildings in mesic habitats. Habitat must include appropriate roosting, maternity and hibernacula sites free from disturbance by humans.	<b>Habitat Present.</b> Sierran mixed conifer communities provide potentially suitable roosting habitat in the activity areas. Focused bat surveys in the UNFFR Project area in 2001 detected no evidence of this species (Pacific Gas and Electric Company 2002c).
Spotted bat <i>Euderma maculatum</i>	-/SC/-	Occurs in a variety of habitat types. Prefers cracks/crevices in high cliffs and canyons for roosting.	<b>Absent.</b> Suitable roosting habitat is not present in the activity areas, and focused bat surveys in the UNFFR Project area in 2001 detected no evidence of this species (Pacific Gas and Electric Company 2002c).
Western red bat <i>Lasiurus blossevillii</i>	-/SC/S	Prefers sites with a mosaic of habitats that includes trees for roosting and open areas for foraging. Strongly associated with riparian habitat.	<b>Absent.</b> Riparian habitat is not present in the activity areas.
White-tailed jackrabbit <i>Lepus townsendii townsendii</i>	-/SC/-	Principally occurs in open forests and sagebrush-grassland associations.	<b>Absent.</b> Suitable habitat is not present in the activity areas.

**Table 6.7-3. Occurrence Potential for Special-Status Wildlife in the Activity Areas**

COMMON NAME SCIENTIFIC NAME	STATUS <sup>1</sup> (FED/STATE/ USFS)	GENERAL HABITAT	POTENTIAL FOR OCCURRENCE IN THE ACTIVITY AREAS
American marten <i>Martes americana</i>	-/-/S	Mixed evergreen forests with abundant cavities for denning and nesting and open areas for foraging.	<b>Absent.</b> Activity areas are below the core elevational range for the species (United States Forest Service 2001) and the species was not detected in the UNFFR Project area during surveys in 1994, 1998, and 2000 (Federal Energy Regulatory Commission 2004).
Fringed myotis <i>Myotis thysanodes</i>	-/-/S	Roosts in caves, mines, and buildings in desert-scrub, oak woodlands, and pinyon woodlands between 4,000 and 7,000 feet.	<b>Absent.</b> Suitable roosting habitat is not present in the activity areas.
American badger <i>Taxidea taxus</i>	-/SC/-	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	<b>Absent.</b> Suitable habitat is not present in the activity areas.

<sup>1</sup>Status Codes:

Federal and State Codes: E = Endangered T = Threatened C = Candidate SC = Species of Special Concern  
D = Delisted FP = California Fully Protected Species

USFS Codes: S = Sensitive

Sources: Zeiner et al. 1990a, 1990b, 1990c; Jennings and Hayes 1994; Shuford and Gardali 2008; California Department of Fish and Wildlife 2008, 2014

### **Western Pond Turtle (*Actinemys marmorata*)**

The western pond turtle is a California Species of Special Concern and USFS Sensitive species. The name “pond” turtle is somewhat misleading as the species is more often associated with rivers and streams. Within their aquatic habitat, western pond turtles are associated with areas that contain underwater refugia such as rocks, submerged vegetation, or holes along a bank (Hays et al. 1999). They also require basking sites, such as partially submerged logs, rocks, mats of floating vegetation, and open mud banks. In colder areas, the turtles may hibernate under water in bottom mud or in upland sites that are near water and have deep layers of duff. This species is known to travel large distances through upland habitat for nesting and overwintering. Nests are typically located in open areas with good sun exposure and few shrubs or trees and within 660 feet of a body of water. Overwintering and aestivation sites often occur in upland areas with deep layers of duff or leaf litter.

The following information regarding the distribution and suitability of habitat for the western pond turtle in the vicinity of the activity areas is excerpted from *Results of 2001 Surveys for Northern Leopard Frog (*Rana pipiens*), Cascades Frog (*Rana cascadae*), Foothill Yellow-Legged Frog (*Rana boylei*), Mountain Yellow-Legged Frog (*Rana muscosa*), California Red-Legged Frog (*Rana aurora draytonii*), and Western Pond Turtle (*Clemmys marmorata*) within the Upper North Fork Feather River Project Area* (Pacific Gas and Electric Company 2002b).

In July 2001, Garcia and Associates conducted a survey for western pond turtles that included Butt Valley reservoir and approximately 20.5 miles of shoreline along the southern, western, and northern shores of Lake Almanor. Several areas of floating aquatic and emergent vegetation, which provide basking opportunities, were present along the northern shore near Chester, the western shore north of the Almanor West development, and in a cove along the southern shore southeast of Prattville. Other than these areas, basking opportunities on Lake Almanor were limited to the semi-horizontal roots of partially submerged stumps. However, at higher pool levels, shoreline woody debris would also be available for basking. Overall, western pond turtles have a moderate potential to occur at Lake Almanor, although turtles were not observed anywhere along the lake margin.

Because of the lake level fluctuations at Butt Valley reservoir, there is little wetland development along the shoreline. Numerous logs and partially submerged stumps within the coves located primarily along the western shore provide potential basking sites for western pond turtles. Western pond turtles were not found during the survey; however, Butt Valley reservoir provides potential habitat for this species.

**Pallid Bat (*Antrozous pallidus*)**

The pallid bat is a California Species of Special Concern and USFS Sensitive species. The pallid bat inhabits low elevation (6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forests (>7,000 feet) (Sherwin and Rambaldini 2005). The species is most abundant in xeric (dry or desert-like) ecosystems. Pallid bats will roost alone, in small groups (2 to 20), or gregariously (hundreds of individuals) (Sherwin and Rambaldini 2005). They typically use separate day and night roosts (Hermanson and O'Shea 1983), and, in general, day roosts are in more enclosed, protected spaces than are night roosts. Day and night roosts include: crevices in rocky outcrops and cliffs; caves; mines; trees (e.g., basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards); and various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (Sherwin and Rambaldini 2005). Roosts generally have unobstructed entrances and exits and are high above the ground, warm, and inaccessible to terrestrial predators (Sherwin and Rambaldini 2005). However, pallid bats have also been found roosting on or near the ground under burlap sacks, rags, stone piles, and baseboards (Sherwin and Rambaldini 2005).

Pallid bats were not detected during surveys of PG&E facilities in the UNFFR Project area in 2001 (Pacific Gas and Electric Company 2002c). However, large trees with cavities provide suitable roosting habitat.

**Townsend's Big-Eared Bat (*Corynorhinus townsendii*)**

The Townsend's big-eared bat is a California Species of Special Concern and USFS Sensitive species. It is associated with a variety of different habitat types, including coniferous forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitats (Sherwin and Piaggio 2005). Colonies hibernate from early fall through early spring to escape the harsh conditions of winter (Gruver and Keinath 2006). Townsend's big-eared bats roost pendant-like on the ceilings of caves and abandoned mines (Sherwin and Piaggio 2005). They have also been reported roosting in buildings, bridges, rock crevices, and hollow trees (Sherwin and Piaggio 2005). The species exhibits high fidelity to roost sites but is very susceptible to human disturbance while roosting, particularly maternal colonies (Humphrey and Kunz 1976, Pierson and Rainey 1998, Sherwin and Piaggio 2005). Once disturbed, Townsend's big-eared

bats are likely to abandon their roost sites and seek alternative roosts (Humphrey and Kunz 1976, Pierson and Rainey 1998, Sherwin and Piaggio 2005).

Probable evidence of Townsend's big-eared bats was documented in the UNFFR Project area in 2001 within the historic Caribou townsite downstream of Belden dam (in the building known as the PG&E clubhouse) (Pacific Gas and Electric Company 2002c). No additional sightings of the species have been recorded in the vicinity of Belden dam; however, large trees with cavities provide suitable roosting habitat.

### **Ringtail Cat (*Bassariscus astutus*)**

The ringtail cat is a California Fully Protected species. It occurs in various riparian habitats and brush stands of most forest and shrub habitats. Nocturnal and primarily carnivorous, ringtails forage for food on the ground, among rocks, and in trees, usually near water. Hollow trees and logs, cavities in rocky areas, and other recesses are used for cover.

Sierran mixed conifer forests in the activity areas may support ringtail cats. Ringtail cats were detected in the UNFFR Project area during carnivore surveys in 2000 in support of PG&E's application to FERC to relicense the UNFFR Project (Pacific Gas and Electric Company 2002c).

## **6.7.2 Environmental Impacts and Mitigation Measures**

### **Methodology**

Impacts on biological resources were analyzed using a combination of quantitative and qualitative methods and professional judgment. Studies prepared for PG&E in support of its relicensing application were used to establish the baseline conditions for the discussion of the environmental setting and to determine the potential for sensitive biological resources, particularly special-status species, to occur and be affected by construction activities or implementation of the Proposed UNFFR Project or either alternative. The analysis focuses primarily on the potential for activities to affect special-status species and their habitat. The analysis addresses direct effects such as direct disturbance, injury, and mortality, as well as indirect effects through loss and degradation of habitat and other factors.

### **Thresholds of Significance**

Impacts on vegetation would be significant if the Proposed UNFFR Project, Alternative 1, or Alternative 2 would:

- substantially reduce the number, or restrict the range, of a special-status plant species; or
- conflict with any adopted policies, ordinances, or plans related to the protection of native or special-status plant species.

Impacts on wetlands or other sensitive communities would be significant if the Proposed UNFFR Project, Alternative 1, or Alternative 2 would:

- result in a substantial loss of riparian habitat or other sensitive natural community, such as wetlands, identified in local or regional plans, policies, or regulations; or
- substantially affect federally protected wetlands, or waters of the United States, as defined by Section 404 of the Clean Water Act (CWA) through direct removal, filling, hydrological interruption, or other means.

Impacts on wildlife would be significant if the Proposed UNFFR Project, Alternative 1, or Alternative 2 would:

- substantially reduce the habitat of a wildlife species;
- substantially reduce the number or restrict the range of a special-status wildlife species;
- substantially disrupt or block major terrestrial wildlife migration or travel corridors; or
- conflict with any adopted policies, ordinances, or plans relating to the protection of native or special-status wildlife species.

### Impacts and Mitigation Measures

This section discusses the anticipated impacts of the Proposed UNFFR Project and each alternative on vegetation, wildlife, and sensitive biological resources and identifies mitigation measures for significant impacts. Table 6.7-4 compares the final level of significance of each impact (with incorporation of mitigation measures if appropriate).

**Table 6.7-4. Summary of Vegetation, Wildlife, and Sensitive Biological Resources (BR) Impacts**

IMPACT	PROPOSED UNFFR PROJECT	ALTERNATIVE 1	ALTERNATIVE 2
<b>Impact BR-1:</b> Construction activities associated with the UNFFR Project could affect special-status plants or their habitat through removal of individuals, habitat modification, or spread of invasive plants.	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
<b>Impact BR-2:</b> Construction activities associated with the UNFFR Project could affect western pond turtles or their habitat through impacts on individuals, disturbance, or habitat modification.	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
<b>Impact BR-3:</b> Construction activities associated with the UNFFR Project could affect special-status bats or their habitat through impacts on individuals, disturbance, or habitat modification.	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
<b>Impact BR-4:</b> Construction activities associated with the UNFFR Project could affect ringtail cats or their habitat through impacts on individuals, disturbance, or habitat modification.	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
<b>Impact BR-5:</b> Construction activities associated with the UNFFR Project could result in adverse effects on federally protected wetlands.	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
<b>Impact BR-6:</b> Implementation of the UNFFR Project could restrict movement of wildlife species through the activity areas.	Less than significant	Less than significant	Less than significant

**Impact BR-1: Construction activities associated with the UNFFR Project could affect special-status plants or their habitat through removal of individuals, habitat modification, or spread of invasive plants.**

***Proposed UNFFR Project and Alternatives 1 and 2***

Special-status plants that could occur at the activity areas and be affected by construction activities include one federal threaten species, Webber's ivesia, and numerous species that are considered special-status, but are not formally listed, by the state and other agencies (see Table 6.7-2). Most of the habitat in the activity areas is of low quality for special-status plants; however, focused surveys have not been conducted to determine the presence/absence of the special-status plants. No federally or state-listed plant species would be affected.

Construction activities associated with the Proposed UNFFR Project and each alternative have the potential to disturb soils and vegetation. Construction activities could crush or damage special-status plants or modify suitable habitat (i.e., through soil compaction). Construction activities could also increase the potential for invasive plants or noxious weeds to become established in the disturbed areas, reducing the suitability of the habitats for special-status plant and wildlife species.

Construction activities associated with the Prattville intake thermal curtain (both alternatives) and Canyon dam outlet structure modifications (Alternative 1 only) would disturb soils and vegetation along the shore of Lake Almanor as vehicles and equipment access the staging area and lay down materials. Vegetation removal would not be necessary at the Lake Almanor activity area, and most activities would take place on Lake Almanor instead of on land. Staging activities at Prattville intake would occur primarily in previously disturbed areas (barren habitat) along the shore in the vicinity of the Marvin Alexander day use area. Staging activities at Canyon dam would occur primarily in previously disturbed areas on the northern side of State Route 89 along the northern/upstream face of Canyon dam. These activities are not expected to affect special-status plants because the work would be done in barren or previously disturbed areas where the plants are not likely to occur. No impacts to Sierran mixed conifer forests are anticipated at the Lake Almanor activity area.

Construction activities associated with the Caribou intakes thermal curtain (both alternatives) would disturb soils and vegetation along the shore of Butt Valley reservoir and would require vegetation removal along the western shore for construction of an access road. These activities would affect previously disturbed habitat along Butt Valley dam and Sierran mixed conifer habitat along the western shore of Butt Valley reservoir. The removal of vegetation for road construction at Butt Valley reservoir would remove habitat for special-status plants and could remove special-status plants, if present. These activities could adversely affect special-status plant species, resulting in an impact that would be potentially **significant without mitigation**.

***Mitigation Measures***

**Mitigation Measure BR-1a: Prevent Weed Introduction**

PG&E will implement measures throughout the construction phase to prevent the spread of weeds. These measures include, but are not limited to:

- When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed.

- Limit any import or export of fill to materials that are known to be weed free.
- Thoroughly wash all construction equipment prior to it entering the worksite. Inspect equipment to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds.
- Use a mix of native grasses, forbs, and non-persistent non-native species for seeding disturbed areas that would be subject to infestation by non-native and invasive plant species. Where appropriate, use a heavy application of mulch to discourage introduction of invasive plant species. Planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of establishing a self-sustaining population of native plant species.

**Mitigation Measure BR-1b: Avoid Disturbance of Special-Status Plants**

PG&E will protect populations or individuals of special-status plants in the activity areas. To the extent feasible, ground-disturbing activities (e.g., vehicle traffic, equipment staging, and vegetation removal) in upland areas shall be limited to areas of barren habitat. Habitat types to be avoided shall be clearly delineated using exclusion fencing or flagging. If ground disturbance in non-barren habitat is expected, PG&E shall retain a qualified botanist prior to the onset of the first season of construction to conduct pre-construction surveys of suitable habitat to determine if special-status plant species occur within the activity areas or adjacent habitats (out to approximately 10 feet). A minimum of two surveys shall be conducted during the blooming periods of potentially occurring plants, if one survey would not encompass the blooming period of all potentially occurring plants, to determine: (1) if the species is present; and (2) the quality, location, and extent of any individual or populations of special-status plants.

If a special-status plant species is found within 10 feet of potential disturbance areas, the following measure will be implemented:

- Prior to the start of disturbance, exclusionary fencing will be erected around the known occurrence. If necessary, a qualified botanist shall be present to assist with locating these special-status plant populations. The exclusionary fencing will be periodically inspected throughout construction and be repaired as necessary. All fencing shall be removed at the end of construction.

If a population cannot be fully avoided, PG&E will retain a qualified botanist to: (1) determine appropriate salvage and relocation measures; and (2) implement these measures in coordination with USFWS, CDFW, or USFS staff, as appropriate.

***Significance after Mitigation***

These mitigation measures fall outside the purview of the State Water Board. However, PG&E has agreed to implement Mitigation Measures BR-1a and BR-1b, as proposed in an email dated March 3, 2014 (Appendix H). The implementation of Mitigation Measures BR-1a and BR-1b would reduce potential impacts on special-status plants to **less than significant**.

**Impact BR-2: Construction activities associated with the UNFFR Project could affect western pond turtles or their habitat through impacts on individuals, disturbance, or habitat modification.**

***Proposed UNFFR Project and Alternatives 1 and 2***

Construction activities have the potential to disturb suitable lacustrine habitat for the western pond turtle (a special-status species) and could affect nests along the shore. In-water activities to install the thermal curtains at Lake Almanor and Butt Valley reservoir would include the installation of bin walls, foundations, anchors, and curtains that could disturb or injure pond turtles in the water. Similar disturbance could occur during modification of the Canyon dam outlet structure. Staging and vehicle/equipment access on the shore, as well as anchoring of the curtains to the shore, could disturb turtle nests or injure turtles basking or nesting along the shore. Construction activities could also degrade water quality of the lake and reservoir or soils along the shore through increased erosion and sedimentation or hazardous materials spills or leaks. These activities could adversely affect western pond turtle, and the impact would be potentially **significant without mitigation**.

***Mitigation Measures***

**Mitigation Measure BR-2: Avoid Disturbance of Western Pond Turtle**

PG&E shall be required to avoid disturbance of western pond turtles and minimize the potential for direct impacts. To determine the presence of pond turtles, including their nests, in the Lake Almanor and Butt Valley reservoir activity areas, PG&E shall retain a qualified biologist to conduct at least one pre-construction survey within one week prior to the onset of construction. The survey shall be conducted within the portion of the activity areas that contains suitable nesting habitat (i.e., open, gently sloping areas that are sparsely vegetated and have compact soil) and that are within 660 feet of the shoreline. If a pond turtle nest is found, the biologist shall flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the nest will be excavated by the biologist and reburied at a suitable location outside of the construction limits.

If a pond turtle is observed within the construction limits during construction, PG&E shall temporarily halt construction activities until the turtle has moved to a safe location outside of the construction limits. If a nest is encountered during construction, a qualified biologist shall assess the status of the nest to determine if it is active and coordinate with CDFW on the need for avoidance of the nest or the best approach to relocate the nest outside the construction limits.

**Mitigation Measures Geology, Geomorphology, and Soils (GGS)-1: Approval of construction activities by the State Water Board (Turbidity and Total Suspended Solids) and Water Quality (WQ)-8: Approval of Construction Activities by the State Water Board (Hazardous Materials)**

See sections 6.3.2 and 6.5.2 for mitigation measures associated with construction activities related to the Proposed UNFFR Project and alternatives. These mitigation measures would reduce the potential for impacts on aquatic habitat during construction activities.

### ***Significance after Mitigation***

Implementation of Mitigation Measures BR-2, GGS-1, and WQ-8 would reduce potential impacts on western pond turtles and their habitat to **less than significant**.

**Impact BR-3: Construction activities associated with the UNFFR Project could affect special-status bats or their habitat through impacts on individuals, disturbance, or habitat modification.**

### ***Proposed UNFFR Project and Alternatives 1 and 2***

Construction activities could disrupt roosting and foraging activities of two special-status bats: Townsend's big-eared and pallid bats. Staging and construction activities, including vehicle access and equipment use, would create noise and other disturbances that could discourage use of suitable bat habitat in or near the activity areas and could disrupt roosting activities. The removal of Sierran mixed conifer forests in the activity areas could disrupt roosting activities. Bats foraging in the vicinity would likely avoid the activity areas during construction and use suitable foraging habitat in the nearby vicinity instead. No long-term adverse impacts on foraging habitat are anticipated.

Although construction activities at Lake Almanor would not require the removal of potential roosts (i.e., large trees in Sierran mixed conifer forests), noise and visual disturbances associated with construction activities could disrupt bats roosting within and directly adjacent to activity areas. Tree removal necessary for any road construction at Butt Valley reservoir could disrupt bat maternity colonies, if present in cavities in the removed trees, and kill or injure individual bats. This could affect the species' population and reproductive success. Potential construction-related impacts on roosting special-status bats would be **significant without mitigation**.

### ***Mitigation Measure***

#### **Mitigation Measure BR-3: Avoid Disturbance of Special-Status Bat Roosts**

PG&E shall be required to implement measures to avoid disturbance of special-status bat roosts or hibernacula in or near the activity areas during construction. To determine the presence of bat roosts or hibernacula, PG&E shall retain a qualified biologist to conduct a pre-construction survey of suitable habitat (Sierran mixed conifer forest) within the activity areas and immediately adjacent suitable habitat as applicable, as determined by the qualified biologist. Activities that could disturb active roosts of special-status bats shall not proceed until the surveys have been completed. If no active roosts are found, no further action is needed. If an active special-status bat maternity roost or hibernaculum is found, the tree or structure occupied by the roost will be retained, if feasible. Because some bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost during the bat maternity roost season (March 1–July 31). CDFW will be notified of any active bat maternity roosts in the disturbance zones.

If the tree or structure with an active special status bat maternity roost cannot be avoided, it will be removed or demolished before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The following disturbance protocol will be implemented for trees with non-breeding bat roost on the same day that removal will occur:

- Create noise and disturbance at the tree base such that roosting bats would experience vibration. Disturbance should be nearly continuous for two minutes, then another five minutes should pass with no disturbance to allow bats time to evacuate the tree. Create disturbance for another minute, and then wait another minute before felling the tree.

### ***Significance after Mitigation***

This mitigation measure falls outside the purview of the State Water Board. However, PG&E has agreed to implement Mitigation Measure BR-3, as proposed in an email dated March 3, 2014 (Appendix H). Implementation of Mitigation Measure BR-3 would reduce potential impacts on special-status bats to **less than significant**.

**Impact BR-4: Construction activities associated with the UNFFR Project could affect ringtail cats or their habitat through impacts on individuals, disturbance, or habitat modification.**

### ***Proposed UNFFR Project and Alternatives 1 and 2***

Construction activities could disturb ringtail cats, which are a California fully protected species, and affect potential foraging and denning habitat. Sierran mixed conifer forests occur in the activity areas and may provide foraging habitat for the ringtail cat. This species may also use the cavities and snags in mixed conifer trees and other large trees for denning habitat. Staging and construction activities, including vehicle access and equipment use, would create noise and other disturbances that could discourage use of nearby habitat and could disrupt denning activities. Cats foraging in the vicinity would likely avoid the activity areas during construction and use suitable foraging habitat in the nearby vicinity instead. Any tree removal necessary for road construction at Butt Valley reservoir could result in the take of ringtail cats if they are denning in cavities in trees or snags that would be removed. Potential impacts on the ringtail cat would be potentially **significant without mitigation**.

### ***Mitigation Measure***

#### **Mitigation Measure BR-4: Avoid Disturbance of Ringtail Cats**

PG&E shall be required to implement measures to avoid disturbance of active ringtail cat dens in or adjacent to the activity areas. To determine the presence of active dens, PG&E shall retain a qualified biologist to conduct a pre-construction survey for ringtail cats, including their dens, within suitable habitat (Sierran mixed conifer forest) in and adjacent to the activity areas. Activities that could result in disturbance to active dens shall not proceed until the survey has been completed. If no active dens are found, no further action is needed.

If an active ringtail cat den is found, the tree occupied by the den shall be retained, if feasible. If tree removal is necessary, it shall commence outside of the breeding season (February 1 to August 30). Trees with dens that need to be removed shall first be disturbed at dusk, just prior to removal that same evening, to allow ringtail cats to escape during the darker hours. If a non-breeding den is found in a tree scheduled to be removed, the individuals will be safely evicted under the direction of a qualified biologist.

### ***Significance after Mitigation***

This mitigation measure falls outside the purview of the State Water Board. However, PG&E has agreed to implement Mitigation Measure BR-4, as proposed in an email dated

March 3, 2014 (Appendix H). Implementation of this measure would reduce potential impacts on ringtail cats to **less than significant**.

**Impact BR-5: Construction activities associated with the UNFFR Project could result in adverse effects on wetlands.**

***Proposed UNFFR Project and Alternatives 1 and 2***

Wetlands have not been delineated in any of the activity areas. Although construction activities along the shores are not expected to result in the loss of wetlands, the potential for impacts exists. The State Water Board must be conservative in making its determination of impacts associated with the Proposed UNFFR Project and the alternatives in order to ensure the protection of designated beneficial uses and water quality objectives. Due to the location and nature of each construction activity, the potential for the UNFFR Project to impact wetlands is potentially significant without mitigation.

***Mitigation Measure***

***Mitigation Measure BR-5: Implement Wetland Delineation and Construction Plan***

To prevent the loss of wetlands, a formal wetland delineation, consistent with Corps procedures and regulations, shall be conducted in the activity areas prior to beginning construction. PG&E shall submit a construction plan to the Deputy Director for the Division of Water Rights (Deputy Director) for approval. The Deputy Director may require modifications as part of the approval. After approval, PG&E shall implement the plan. At a minimum, the plan will: describe and map delineated wetlands and the project design(s); describe how PG&E will comply with current State and Federal requirements (e.g., policies, orders, or regulations) pertaining to wetlands; identify management practices that will be used to minimize the discharge of sediment into waterways and water bodies and prioritize use of wildlife-friendly best management practices (BMPs); and describe how PG&E will comply with the basin plan water quality objectives designed to protect the beneficial uses of waters within the watershed basin. Based on this plan, impacts to wetlands that cannot be avoided will be mitigated through onsite or offsite habitat enhancement or creation of habitat in coordination with the relevant resource agencies.

***Significance after Mitigation***

Implementation of Mitigation Measure BR-5 would reduce potential impacts on wetlands to **less than significant**.

**Impact BR-6: Construction activities associated with the UNFFR Project could restrict movement of wildlife species through the activity areas.**

***Proposed UNFFR Project and Alternatives 1 and 2***

Lake Almanor, Butt Valley reservoir, and the surrounding vegetation communities provide habitat and movement corridors for a wide variety of wildlife species, such as migratory waterfowl and deer. Lake Almanor and Butt Valley reservoir also provide habitat for migratory birds. The activity areas are outside of the traditional deer migratory corridors. Construction disturbance could temporarily alter foraging patterns of resident wildlife species and disrupt wildlife movement in the area. Long-term impediments to wildlife movement are not anticipated. Therefore, the impacts would be **less than significant**.