

3.2.4 Terrestrial Resources

3.2.4.1 Overview

In addition to this introductory information, this section is divided into six subsections. Section 3.2.4.2 discusses botanical resources, including vegetation types, special-status plants¹ and non-native invasive plants (NNIP);² Section 3.2.4.3 discusses wildlife resources, including wildlife habitat. Section 3.2.4.4 discusses special-status wildlife.³ Section 3.2.4.5 discusses commercially valuable wildlife species.⁴ Section 3.2.4.6 discusses wetland, riparian and littoral habitats.⁵ Section 3.2.4.7 describes known or potential Project effects on terrestrial resources.

SSWD prepared this section based on its collection of existing, relevant and reasonably available information on terrestrial resources. Specifically, SSWD found 22 source documents regarding terrestrial resource conditions. These are listed below and cited throughout this section:

- Cal-IPC 2015
- CDFA 2015b
- CDFW 2015b
- CDFW 2015a
- CDFW 2015e
- CDFW 2015g
- CDFW 2015h
- CDFW 2015i

¹ For the purpose of this PAD, a special-status botanical species is a species that has a reasonable possibility of being affected by Project O&M or associated recreation and meets one or more of the following criteria: 1) listed by the Sacramento, CA, USFWS as a Species of Concern (USFWS-S); 2) listed on Cal Fish and Wildlife's list of California Rare (SR) species under the Native Species Plant Protection Act; 3) Fully Protected (FP) under California law; 4) listed as threatened or endangered under CESA; or 5) listed on the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants. Botanical species listed as threatened or endangered, or a candidate or proposed for listing, under the ESA are discussed separately in Section 3.2.5.

² For the purpose of this PAD, NNIP are defined as those plant species listed as noxious weeds by the California Department of Food and Agriculture (CDFA). State-designated noxious weeds are typically assigned one of three ratings: 1) A-list species are mandated for eradication or control; 2) B-list species are widespread plants that agricultural commissioners may designate for local control efforts; and 3) C-list species are considered too widespread to control (CDFA 2015b). Aquatic invasive plants, including algae, are discussed in Section 3.2.3.

³ For the purpose of this PAD, a special-status wildlife species is a species that has a reasonable possibility of being affected by Project O&M or associated recreation and meets one or more of the following criteria: 1) protected under the Bald and Golden Eagle Protect Act; 2) protected under the MBTA; 3) designated by USFWS as a Bird of Conservation Concern (BCC); 4) listed by the Sacramento, CA, USFWS as a USFWS-S; 5) listed by NMFS as a Species of Concern (NMFS-SC); 6) designated by Cal Fish and Wildlife as a Species of Special Concern (SSC); 7) listed as threatened or endangered, or a candidate or proposed for listing under CESA; or 8) Fully Protected under California law. Wildlife species listed as threatened or endangered, or a candidate or proposed for listing, under the ESA are discussed separately in Section 3.2.5.

⁴ For the purpose of this PAD, a commercially-valuable wildlife species is any species listed as a 'Harvest species' by Cal Fish and Wildlife. Per the Cal Fish and Wildlife, a "Harvest species" is "game birds (Fish and Game Code § 3500); Game Mammals (Fish and Game Code § 3950) and Fur-bearing Mammals and Non-game animals as designated in the California Code of Regulations" (CDFW 2014c).

⁵ Aquatic reptiles, mollusks and snails are discussed in Section 3.2.3.

- CDFW 2015j
- CDFW 2015k
- CDFW 2015l
- CNPS 2015
- DiTamaso and Healy 2007
- FWN 2015b
- NRCS 2015
- Sycamore Associates 2013a
- Sycamore Associates 2013b
- Three Rivers Levee Improvement Authority 2006
- Forest Service 2014
- USFWS 2008
- USFWS 2010a
- USFWS 2015a
- USFWS 2015b

3.2.4.2 Botanical Resources

3.2.4.2.1 CalVeg Mapping (Forest Service 2014)

SSWD assessed upland vegetation with information from the Forest Service CalVeg mapping system, which is publicly available data. The data were mapped using a GIS database and overlaid in layers. The area depicted included the existing FERC Project Boundary. CalVeg classifications within this area were quantified using GIS.

The area within the existing FERC Project Boundary encompasses 2,863.9 ac. The Project falls within the Central Valley CalVeg zone (i.e., Zone 5). Three vegetation alliances, plus Water, represent 97.4 percent of the area within the existing FERC Project Boundary: Water (50.4%); Annual Grass-Forbs (23.0%); Blue Oak (20.2%); and Grey Pine (3.8%). None of the remaining CalVeg alliances represented more than 1.5 percent of the total area (Forest Service 2014). The CalVeg classifications and acreages within the existing FERC Project Boundary are summarized in Table 3.2.4-1, and are shown in Figure 3.2.4-1.

Table 3.2.4-1. Acres of each CalVeg vegetation classification within the Camp Far West Hydroelectric FERC Project Boundary.

CalVeg Zone	Regional Dominance (by alliance)	Total Acres (ac)	Percent of Total Area
Central Valley	TREE-DOMINATED ALLIANCES		
	Blue Oak	579.1	20.2%
	Grey Pine	109.1	3.8%
	Interior Live Oak	41.8	1.5%
	Interior Mixed Hardwoods	15.1	0.5%
	SHRUB-DOMINATED ALLIANCES		
	Lower Montane Mixed Chaparral	2.3	0.1%
	DEVELOPED/NON-HERBACEOUS ALLIANCES		
	Annual Grass-Forbs	658.1	23.0%
	Water	1,442.2	50.4%
	Barren/Rock	4.0	0.1%
	Urban or Developed	12.2	0.4%
Total		2,863.9	100.0%

Source: Forest Service 2014

Page Left Blank

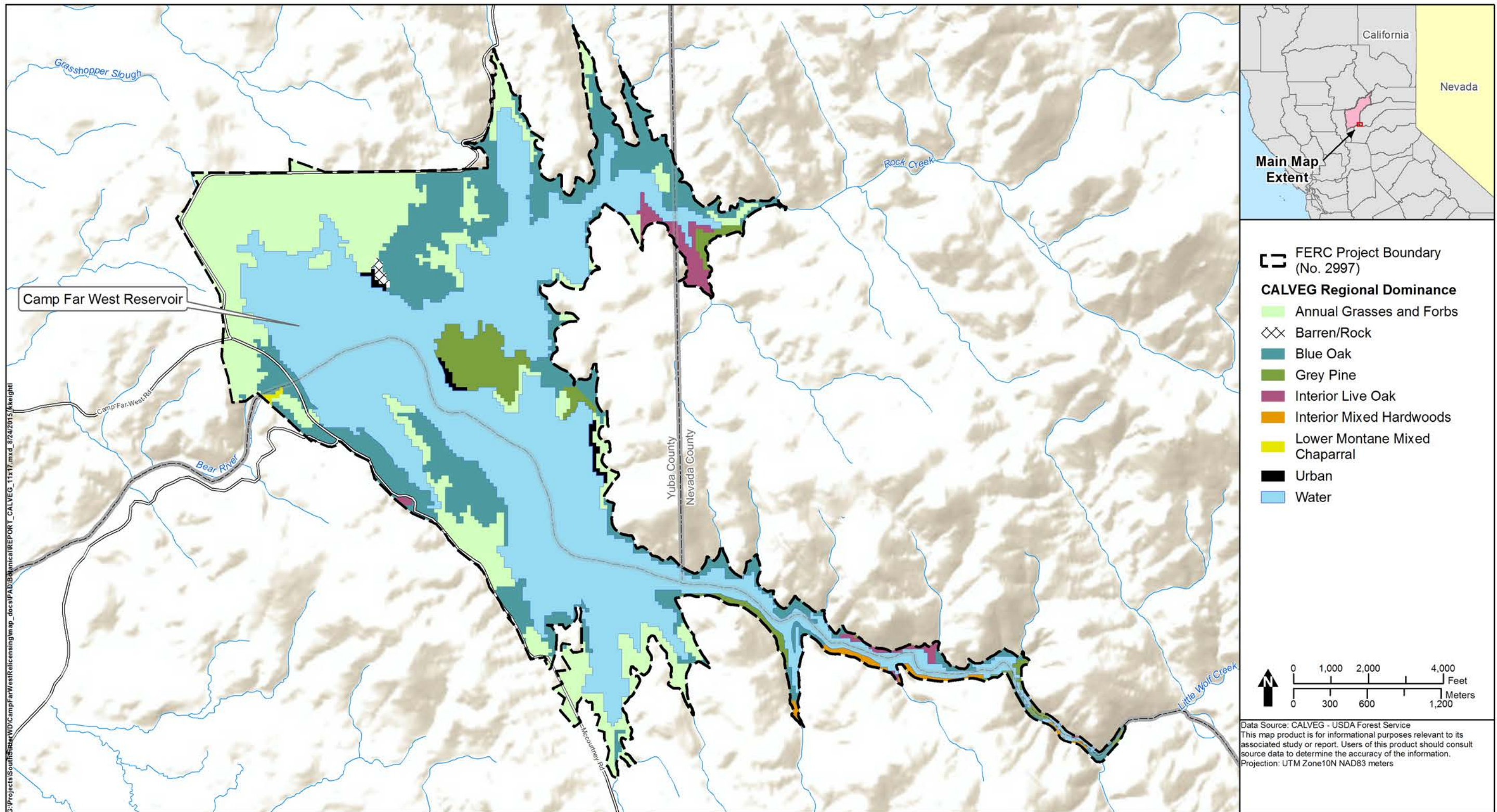


Figure 3.2.4-1. CalVEG Classifications within the existing FERC Project Boundary for the Camp Far West Hydroelectric Project.

Page Left Blank

3.2.4.2.1.1 Tree-Dominated Alliances

Overall, tree-dominated habitats cover 26 percent (745.1 ac) of the existing FERC Project Boundary. The four CalVeg tree-dominated alliances are Blue Oak, Grey Pine, Interior Live Oak, and Interior Mixed Hardwood. A discussion of each tree-dominated habitat is provided below (Forest Service 2014).

- Blue Oak Alliance (QD). This alliance makes up 20.2 percent (579.1 ac) of the total area within the existing FERC Project Boundary. The Blue Oak Alliance occurs on the fringes of the Central Valley zone. It is often found adjacent to the Grey Pine Alliance on gentle slopes below 3,300 ft. On steeper south aspects, interior live oak (*Quercus wislizenii*) may become more abundant. In deeper soils or on more shaded sites, blue oak (*Quercus douglasii*) may be replaced with black oak (*Quercus kelloggii*). Wedgeleaf ceanothus (*Ceanothus cuneatus*), whiteleaf manzanita (*Arctostaphylos viscida*), and poison oak (*Toxicodendron diversilobum*) are scattered throughout this alliance. CalVeg identified areas of Blue Oak Alliance throughout the FERC Project Boundary, including large swaths in both the NSRA and SSRA (Figure 3.2.4-1). Photos from the recreation areas in Section 3.2.6 show sparse stands of mature trees extending to the edge of the reservoir.
- Grey Pine Alliance (PD). This alliance makes up 3.8 percent (109.1 ac) of the total area within the existing FERC Project Boundary. The Grey Pine Alliance is dominated by grey pine (*Pinus sabiniana*), but is diverse in structure with a mixture of hardwoods such as black oak, blue oak, canyon live oak (*Quercus chrysolepis*), and interior live oak, and low-elevation chaparral shrubs, such as wedgeleaf ceanothus, whiteleaf manzanita, and common manzanita (*Arctostaphylos manzanita*). In addition to occasional sparse conifers on these sites, such as ponderosa pine (*P. ponderosa*) and Douglas-fir (*Pseudotsuga menziesii*), patches of annual grasses are found within or adjacent to grey pine stands. Grey Pine Alliance was identified predominantly on the eastern shoreline of Camp Far West Reservoir. The largest area is located on a peninsula into the reservoir, directly between two recreation developments. There are also identified patches on the most eastern, narrow, more ‘riverine’ section of the reservoir. (Figure 3.2.4-1.)
- Interior Live Oak Alliance (QW). This alliance makes up 1.5 percent (41.8 ac) of the total area within the existing FERC Project Boundary. Interior live oak is another shade-tolerant evergreen. The Interior Live Oak Alliance has been identified in semi-open or closed stands. Mapped elevations are generally less than 3,400 ft. As elevation increases, the associated hardwoods, black oak and canyon live oak, become more prevalent on cooler north and east aspects, and form their own alliances at these elevations. Ponderosa pine and to a lesser extent, grey pine are typical conifer associates of this type. There are three main areas of Interior Live Oak Alliance within the existing FERC Project Boundary: 1) along McCourtney Road between the SSRA and the dam; 2) along the narrow, more ‘riverine’ area of the reservoir; and 3) the largest area on the southern shoreline on the northeast corner of the boundary (Figure 3.2.4-1).
- Interior Mixed Hardwood Alliance (NX). This alliance makes up 0.5 percent (15.1 ac) of the total area within the existing FERC Project Boundary. This Interior Mixed Hardwood

Alliance includes any combinations of non-dominant interior live oak, canyon live oak, valley oak (*Quercus lobata*), or blue oak. Shrubs commonly found in the Lower Montane Mixed Chaparral Alliance, such as wedgeleaf ceanothus, poison oak, and whiteleaf manzanita, may also occur on these sites. Trees in the Montane Mixed Hardwood Alliance, such as black oak, may be present, but do not form the majority elements in the mixture. Overstory conifers mainly include Douglas-fir, ponderosa pine, and gray pine. All of the Interior Mixed Hardwood Alliance found within the existing FERC Project Boundary is located within the narrow, more 'riverine' area of the reservoir (Figure 3.2.4-1).

3.2.4.2.1.2 Shrub-Dominated Alliances

Lower Montane Mixed Chaparral, the only shrub-dominated habitat, comprised 0.1 percent (2.3 ac) of the area within the existing FERC Project Boundary. A discussion of this shrub-dominated alliance is provided below (Forest Service 2014).

- Lower Montane Mixed Chaparral Alliance (CQ). This alliance is a floristically-diverse type associated with conifer alliances, such as Grey Pine. Canyon live oak is the typical hardwood of the vicinity. Included in the mixture are combinations of whiteleaf manzanita, common manzanita, wedgeleaf ceanothus, Lemmon's ceanothus (*Ceanothus lemmonii*), chaparral whitethorn (*C. leucodermis*), chamise (*Adenostoma fasciculatum*), Fremont's silktassel (*Garrya fremontii*), wavyleaf silktassel (*G. elliptica*), birch-leaf mountain mahogany (*Cercocarpus betuloides*), poison oak, shrub oaks (*Quercus* spp.), hoary coffeeberry (*Frangula californica* ssp. *tomentella*), and other lower elevation shrub species. Only one area of this alliance is present within the existing FERC Project Boundary, near the dam in the middle northwestern section of the Project (Figure 3.2.4-1).

3.2.4.2.1.3 Upland Herbaceous Alliances

Annual Grasses and Forbs, the only upland herb-dominated habitat, comprised 23.0 percent (658.1 ac) of the area within the existing FERC Project Boundary. A discussion of this upper herbaceous alliance is provided below (Forest Service 2014).

- Annual Grasses and Forbs Alliance (HG). These grasslands are dominated by cheatgrass (*Bromus tectorum*) and other non-native species, often occurring as a direct result of fire or over-grazing within Eastside Pine or Mixed Conifer-Fir Alliance sites or sagebrush (*Artemisia* spp.) areas. This alliance is the most commonly encountered type of the Central Valley zone, being identified in most mapped areas. In the Central Valley zone, vernal pools occur throughout this alliance, hosting species such as toothed downingia (*Downingia cuspidata*), Douglas' meadowfoam (*Limnanthes douglasii*), California goldfields (*Lasthenia californica*), winged water-starwort (*Callitriche marginata*), popcorn flower (*Plagiobothrys* spp.), Johnny-Tuck (*Triphysaria eriantha*), common bur medic (*Medicago polymorpha*), and linanthus (*Linanthus* spp.). Annual grasslands are

present in most areas of the existing FERC Project Boundary, with the exception of the narrow, 'riverine' section of the Project in the most eastern corner (Figure 3.2.4-1).

3.2.4.2.1.4 Developed/Non-vegetated Alliances

Overall, developed/non-vegetated habitats comprised 50.9 percent (1,458.4 ac) of the area, with water as the dominant habitat type. A discussion of developed/non-vegetated habitat is provided below (Forest Service 2014).

- Water (WA). This alliance makes up 50.4 percent (1,442.2 ac) of the total area in the existing FERC Project Boundary. Water is labeled in CalVeg mapping in those cases in which permanent sources of surface water are identified within a landscape unit of sufficient size to be mapped. The category includes lakes, streams and canals of various sizes, bays and estuaries, and similar water bodies. These areas are considered to have a minimum of vegetation components, except along the edges, which may be mapped as types such as Wet Meadows, Tule-Cattail freshwater marshes, or Pickleweed-Cordgrass saline or mixed marshes. Islands within water bodies may be mapped according to their terrestrial dominant vegetation types.
- Urban/Developed (UB). This alliance makes up 0.4 percent (12.2 ac) of the area within the existing FERC Project Boundary. This category applies to landscapes that are dominated by urban structures, residential units, or other developed land use elements such as highways, city parks, cemeteries, and the like. In those cases in which the managed landscapes may have a considerable vegetation component, other land use categories may be more appropriate, such as Ornamental Conifer and Hardwood mixtures within city parks.
- Barren (BA). This alliance makes up 0.1 percent (4.0 ac) of the total area in the boundary. Barren landscapes are generally devoid of vegetation and include areas such as exposed bedrock, cliffs, interior sandy or gypsum areas, and the like. The Alliance does not include barren areas considered as modified or developed, as in urban areas.

3.2.4.2.2 Special-Status Plants

Both documented and potentially occurring special-status plants in the Project Vicinity are described below based on the results of queries to the Cal Fish and Wildlife's CNDDDB (CDFW 2015b); USFWS' Information, Planning, and Conservation System (IPaC) Trust Resources Report for Nevada, Placer and Yuba counties (USFWS 2015a); the CNPS' Inventory of Rare and Endangered Plants database (CNPS 2015); the Camp Far West Project's Biological Assessment (Sycamore Associates 2013a); and Cal Fish and Wildlife's list of State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2015a). Database queries included all USGS 1:24,000 topographic quadrangles that include the existing FERC Project Boundary and Project Vicinity. Quadrangles containing the existing FERC Project Boundary include Camp Far West and Wolf. Quadrangles immediately adjacent to the Project Boundary quadrangles include Auburn, Browns Valley, Gold Hill, Grass Valley, Lake Combie, Lincoln, Rough and Ready, Sheridan, Smartsville, and Wheatland.

Table 3.2.4-2 lists the 13 special-status plants known to occur or with the potential to occur in the Project Vicinity, five of which were in quadrangles containing the FERC Project Boundary.

Table 3.2.4-2. Special-status plants known or with the potential to occur in the Camp Far West Hydroelectric Project Vicinity.

Common Name/ Scientific Name	Status ¹	Flowering Period	Elevation Range (ft)	Habitat Requirements	USGS Quadrangles	Known From Project
FOUND WITHIN QUADRANGLES THAT INCLUDE THE FERC PROJECT BOUNDARY						
Mexican mosquito fern (<i>Azolla mexicana</i>)	CRPR 4.2	Aug	100-330	Marshes and swamps, ponds, slow water	Wolf	Yes, one occurrence found in Seep 3, which was located along the NSRA shoreline (Sycamore Associates 2013a)
Brandegee's clarkia (<i>Clarkia biloba</i> ssp. <i>Brandegeeae</i>)	CRPR 4.2	May-Jul	200-3,000	Chaparral, cismontane woodland, often roadcuts	Wolf, Camp Far West, Auburn, Gold Hill, Rough and Ready, Lake Combie, Grass Valley	Yes, two small occurrences along the south side of 'riverine' reach of the reservoir (Sycamore Associates 2013a)
Stinkbells (<i>Fritillaria agrestis</i>)	CRPR 4.2	Mar-Jun	32-5,100	Chaparral, cismontane woodland, valley and foothill grasslands, clay and sometimes serpentinite	Camp Far West	No
Humboldt lily (<i>Lilium humboldtii</i> ssp. <i>humboldtii</i>)	CRPR 4.2	May-Jul	295-4,200	Chaparral, cismontane woodland, lower montane woodland	Wolf, Auburn, Grass Valley, Lake Combie	No
Brazilian watermeal (<i>Wolffia brasiliensis</i>)	CRPR 2B.3	Apr-Dec	65-330	Marshes and swamps (assorted shallow freshwater)	Camp Far West	No
<i>Subtotal</i>	5					
FOUND WITHIN QUADRANGLES THAT DO NOT INCLUDE THE FERC PROJECT BOUNDARY						
Big-scale balsamroot (<i>Balsamorhiza macrolepis</i>)	CRPR 1B.2	Mar-Jun	300-4,600	Chaparral, cismontane woodland, and valley and foothill grassland (sometimes serpentine)	Lincoln	No, though potential habitat present (Sycamore Associates 2013a)
Sierra foothills brodiaea (<i>Brodiaea sierra</i>)	CRPR 4.3	May-Aug	164-3,100	Chaparral, cismontane woodland, usually serpentinite or gabbroic	Rough and Ready, Grass Valley, Smartville ²	Yes, one occurrence along south side of 'riverine' reach of reservoir (Sycamore Associates 2013a)
Dwarf downingia (<i>Downingia pusilla</i>)	CRPR 2B.2	Mar-May	0-1,400	Valley and foothill grassland, vernal pools	Sheridan, Lincoln, Browns Valley	No
Boggs Lake hedge-hyssop (<i>Gratiola heterosepala</i>)	CRPR 1B.2, SE	Apr-Aug	30-7,880	Marshes, swamps, and vernal pools	Lincoln	No
Ahart's dwarf rush (<i>Juncus leiospermus</i> var. <i>ahartii</i>)	CRPR 1B.2	Mar-May	100-750	Valley and foothill grassland	Lincoln	No
Legenere (<i>Legenere limosa</i>)	CRPR 1B.1	Apr-Jun	0-2,900	Vernal pools	Browns Valley	No
Brown beaked rush (<i>Rhynchospora capitellata</i>)	CRPR 2B.2	Jul-Aug	150-6,600	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane forest	Grass Valley	No

Table 3.2.4-2. (continued)

Common Name/ Scientific Name	Status ¹	Flowering Period	Elevation Range (ft)	Habitat Requirements	USGS Quadrangles	Known From Project
FOUND WITHIN QUADRANGLES THAT DO NOT INCLUDE THE FERC PROJECT BOUNDARY (cont'd)						
Pincushion navarretia (<i>Navarretia myersii</i> ssp. <i>Myersii</i>)	CRPR 1B.1	Apr-May	65-1,085	Vernal pools, often acidic	Lincoln	No
<i>Subtotal</i>				8		
Total				13		

Sources: CNPS 2015 Sycamore Associates 2013a

¹ Special-status (CDFW 2015e, USFWS 2015a):

CRPR: California Rare Plant Rank (CNPS 2015)

1B: Species considered rare, threatened or endangered in California and elsewhere

2B: Species considered rare, threatened or endangered in California but more common elsewhere

3: More information needed about this species; review list

4: Limited distribution; watch list

.1: Species seriously threatened in California

.2: Species moderately threatened in California

.3: Species not very threatened in California

SE = State Endangered

² At this time, information from the surveys done by Sycamore Associates were presumably not yet updated in the CNPS nine quad search.

3.2.4.2.3 Non-Native Invasive Plants

Both known and potential NNIP occurrences are listed in Table 3.2.4-3, based on queries of the List of California State Weeds (NRCS 2015), the California Invasive Plant Inventory Database (Cal-IPC 2015), Encycloweedia (CDFA 2015b), and the 2013 Biological Assessment for Camp Far West (Sycamore Associates 2013a). Based on these searches, Table 3.2.4-3 lists the 38 NNIPs known to occur or with the potential to occur in the Project Vicinity, six of which are known to occur in the existing FERC Project Boundary.

Table 3.2.4-3. NNIP known to occur or potentially occurring in the Camp Far West Hydroelectric Project Vicinity.

Common Name/ Scientific Name	CDFW Status	Flowering Period	Elevation(ft)	Habitat	Known From Project
KNOWN TO OCCUR WITHIN THE EXISTING FERC PROJECT BOUNDARY					
Barb goatgrass (<i>Aegilops triuncialis</i>)	B	May-Aug	Below 3,300	Disturbed sites, cultivated fields, roadsides	Yes, on complete plant list from 2013 Biological Assessment (BA) survey (Sycamore Associates 2013a)
Italian thistle (<i>Carduus pycnocephalus</i>)	B	May-Jul	Below 3,300	Roadsides, pastures, waste areas	Yes, on complete plant list from 2013 BA survey (Sycamore Associates 2013a)
Yellow starthistle (<i>Centaurea solstitialis</i>)	C	Jun-Dec	Below 4,300	Pastures, roadsides, disturbed grassland or woodland	Yes, on complete plant list from 2013 BA survey (Sycamore Associates 2013a)
Rush skeletonweed (<i>Chondrilla juncea</i>)	A	May-Dec	Below 2,000	Disturbed areas	Yes, on complete plant list from 2013 BA survey (Sycamore Associates 2013a)
Bermudagrass (<i>Cynodon dactylon</i>)	C	Jun-Aug	Below 3,000	Disturbed areas	Yes, on complete plant list from 2013 BA survey (Sycamore Associates 2013a)
Klamathweed (<i>Hypericum perforatum</i>)	C	Jun-Sep	Below 5,000	Rangeland areas, pastures, fields, roadsides, forest clearings, burned areas	Yes, on complete plant list from 2013 BA survey (Sycamore Associates 2013a)
<i>Subtotal</i>				6	

Table 3.2.4-3. (continued)

Common Name/ Scientific Name	CDEA Status	Flowering Period	Elevation(ft)	Habitat	Known From Project
NOT KNOWN TO OCCUR WITHIN THE EXISTING FERC PROJECT BOUNDARY					
Russian knapweed (<i>Acroptilon repens</i>)	A	May-Sept	Below 6,200	Fields, roadsides, cultivated ground, disturbed areas	No
Camelthorn (<i>Alhagi maurorum</i>)	A	Jun-Aug	Below 1,640	Agricultural areas, riverbanks	No
Alligatorweed (<i>Alternanthera philoxeroides</i>)	A	Jun-Oct	Below 700	Shallow water, wet soils, ditches, marshes, pond margins, slow-moving watercourse	No
Capeweed (<i>Arctotheca calendula</i>)	A	Mar-Jun	Below 820	Disturbed sites	No
Plumeless thistle (<i>Carduus acanthoides</i>)	A	May-Aug	Below 4,300	Roadsides, pastures, waste areas	No
Musk thistle (<i>Carduus nutans</i>)	A	Jun-Jul	330-4,000	Roadsides, pastures, waste areas	No
Slenderflower thistle (<i>Carduus tenuiflorus</i>)	C	May-Jul	Below 3,300	Disturbed sites, roadsides, pastures, annual grasslands, waste areas	No
Woolly distaff thistle (<i>Carthamus lanatus</i>)	B	July-Aug	Below 3,600	Disturbed sites	No
Purple starthistle (<i>Centaurea calcitrapa</i>)	B	Jul-Oct	Below 3,300	Disturbed areas	No
Diffuse knapweed (<i>Centaurea diffusa</i>)	A	Jun-Sep	Below 7,600	Fields, roadsides	No
Spotted knapweed (<i>Centaurea stoebe</i> ssp. <i>micranthos</i>)	A	July-Aug	Below 8,500	Open disturbed sites, grasslands, forested areas, roadsides	No
Squarrose knapweed (<i>Centaurea virgate</i> var. <i>squarrosa</i>)	A	Jun-Aug	Below 4,600	Degraded rangelands	No
Canada thistle (<i>Cirsium arvense</i>)	B	Jun-Sep	Below 5,900	Disturbed areas	No
Artichoke thistle (<i>Cynara cardunculus</i>)	B	Apr-Jul	Below 1,640	Disturbed sites, open sites in grasslands, pasture, chaparral, riparian areas, abandoned agricultural fields	No
Scotch broom (<i>Cytisus scoparius</i>)	C	Mar-Jun	Below 3,300	Disturbed areas	No
Water hyacinth (<i>Eichhornia crassipes</i>)	C	Jun-Oct	Below 650	Ponds, sloughs, waterways	No
Medusahead (<i>Elymus caput-medusae</i>)	C	Apr-Jul	Below 6,900	Disturbed sites, grassland, openings in oak woodlands and chaparral	No
Oblong spurge (<i>Euphorbia oblongata</i>)	B	Apr-Aug	Below 3,300	Waste areas, disturbed sites, roadsides, fields	No
Leafy spurge (<i>Euphorbia virgate</i>)	A	Jun-Sep	Below 4,600	Waste areas, disturbed sites, roadsides, fields	No
Japanese knotweed (<i>Fallopia japonica</i>)	B	Jul-Oct	Below 3,300	Disturbed moist sites, roadsides, and riparian and wetland areas, upland sites where water tables are shallow	No
Giant knotweed (<i>Fallopia sachalinensis</i>)	B	Jul-Oct	Below 1,640	Disturbed moist sites, roadsides, and riparian and wetland areas	No
French broom (<i>Genista monspessulana</i>)	C	Mar-May	Below 1,600	Disturbed areas	No
Hydrilla (<i>Hydrilla verticillata</i>)	A	Jun-Aug	Below 650	Ditches, canals, ponds, reservoirs, lakes	No
Dyer's woad (<i>Isatis tinctoria</i>)	B	Apr-Jun	Below 3,300	Roadsides, fields, disturbed sites	No
Hairy whitetop (<i>Lepidium appelianum</i>)	B	Apr-Oct	Below 6,600	Disturbed open sites, fields, pastures	No
Lense-podded whitetop (<i>Lepidium chalepense</i>)	B	Apr-Aug	Below 5,000	Disturbed open sites, fields, pastures	No

Table 3.2.4-3. (continued)

Common Name/ Scientific Name	CDFA Status	Flowering Period	Elevation(ft)	Habitat	Known From Project
NOT KNOWN TO OCCUR WITHIN THE EXISTING FERC PROJECT BOUNDARY (cont'd)					
White-top (<i>Lepidium draba</i>)	B	Apr-Aug	Below 5,000	Disturbed, generally saline soils, fields	No
Dalmation toadflax (<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>)	A	May-Sep	Below 3,300	Disturbed places, pastures, fields	No
Purple loosestrife (<i>Lythrum salicaria</i>)	B	Jun-Sep	Below 5,300	Seasonal wetlands, ditches, cultivated fields	No
Scotch thistle (<i>Onopordum acanthium</i>)	A	Jul-Sep	Below 5,300	Disturbed areas	No
Tansy ragwort (<i>Senecio jacobaea</i>)	B	Jul-Sep	Below 5,000	Disturbed sites, waste places, roadsides, fields	No
Gorse (<i>Ulex europaeus</i>)	B	Nov-Jul	Below 1,300	Disturbed areas	No
<i>Subtotal</i>				32	
Total				38	

Sources: NRCS 2015; Cal-IPC 2015; CDFA 2015b and DiTomaso and Healy 2007.

3.2.4.3 Wildlife Habitat

Based on the general vegetation classifications described in Section 3.2.4.2, SSWD classified wildlife habitats in the existing FERC Project Boundary using Cal Fish and Wildlife’s California Wildlife Habitat Relationships (CWHR) system, Version 9.0 (CDFW 2015g). Table 3.2.4-4 presents the eight CWHR habitat types identified in the existing FERC Project Boundary, and the corresponding CalVeg vegetation classification system (Forest Service 2014, de Becker and Sweet 1988, CDFW 2015g). Descriptions of the CalVeg types and the methods used by SSWD for vegetation mapping are presented in Section 3.2.4.2. The two most dominant habitat types present are Lacustrine and Annual Grassland, which cover 50.4 percent and 23.0 percent of the boundary, respectively. The third most represented habitat is Blue Oak Woodland, which covers 21.1 percent of the area. The five remaining habitat types, Barren, Blue Oak-Foothill Pine, Montane Hardwood, Mixed Chaparral, and Urban, account for less than 6 percent of all habitat types identified in the existing FERC Project Boundary. Due to crossover between CalVeg and CWHR, Interior Mixed Hardwood and Interior Live Oak CalVeg types transferred to the same CWHR habitat type. This crossover accounts for the eight CWHR types.

Table 3.2.4-4. Wildlife habitat types in the existing Camp Far West Hydroelectric Project FERC Boundary and their equivalent vegetation community types.

CWHR Types	CalVeg Types	Acres (ac) ¹	Percent
Annual Grassland (AGS)	Annual Grasses and Forbs	658.1	23.0%
Barren (BAR)	Barren/Rock	4.0	0.1%
Blue Oak Woodland (BOW)	Blue Oak	579.1	21.1%
Blue Oak-Foothill Pine (BOP)	Grey Pine	109.1	3.8%
Montane Hardwood (MHW)	Interior Mixed Hardwood, Interior Live Oak	56.9	2.0%
Mixed Chaparral (MCH)	Lower Montane Mixed Chaparral	2.3	0.1%
Urban (URB)	Urban or Developed	12.2	0.4%
Lacustrine (LAC)	Water	1,442.2	50.4%
8 CWHR Types	9 CalVeg Types	2,863.9	100.0%

Sources: de Becker and Sweet 1988, CDFW 2015g, Forest Service 2014

¹ Rounded to nearest ac

In addition to classifying wildlife habitat, the CWHR model predicts wildlife use based on habitat type, age class, size class, canopy closure or cover, and occurrence of specific habitat elements (e.g., natural or manmade features such as cliffs, springs, or transmission lines) that may influence thermal cover, forage, prey availability, nesting, escape cover, and breeding.

This analysis indicates that the existing FERC Project Boundary supports a diversity of wildlife habitats and associated wildlife species. Using the identified habitat types and the CWHR system, SSWD identified 28 special-status terrestrial vertebrate wildlife species that potentially may occur within the existing FERC Project Boundary (CDFW 2015g). These species include 1 reptile, 21 birds, and 6 mammals. These species and their special-status are:

- Coast horned lizard (*Phrynosoma blainvillii*) – SSC
- Tricolored blackbird (*Agelaius tricolor*) – SSC and BCC
- Grasshopper sparrow (*Ammodramus savannarum*) – SSC
- Golden eagle (*Aquila chrysaetos*) – FP and BCC
- Short-eared owl (*Asio flammeus*) – SSC
- Long-eared owl (*Asio otus*) – SSC
- Burrowing owl (*Athene cunicularia*) – SSC and BCC
- Swainson's hawk (*Buteo swainsoni*) – CESA (threatened)
- Vaux's swift (*Chaetura vauxi*) – SSC
- Black tern (*Chlidonias niger*) – SSC
- Northern harrier (*Circus cyaneus*) – SSC
- Olive-sided fly catcher (*Contopus cooperi*) – SSC and BCC
- Black swift (*Cypseloides niger*) – SSC and BCC
- White-tailed kite (*Elanus leucurus*) – FP
- Common loon (*Gavia immer*) – SSC
- Bald eagle (*Haliaeetus leucocephalus*) – CESA (endangered), FP and BCC
- Loggerhead shrike (*Lanius ludovicianus*) – SSC
- California black rail (*Laterallus jamaicensis coturniculus*) – ST, FP and BCC
- American white pelican (*Pelecanus erythrorhynchos*) – SSC
- Purple martin (*Progne subis*) – SSC
- Bank swallow (*Riparia riparia*) – ST
- Yellow warbler (*Setophaga petechia*) – SSC and BCC
- Pallid bat (*Antrozous pallidus*) – SSC

- Townsend's big-eared bat (*Corynorhinus townsendii*) – SSC
- Spotted bat (*Euderma maculatum*) – SSC
- Western mastiff bat (*Eumops perotis*) – SSC
- Western red bat (*Lasiurus blossevillii*) – SSC
- American badger (*Taxidea taxus*) - SSC

Although CWHR-generated lists are a useful tool for predicting general species occurrence, they should be interpreted cautiously because errors of omission (e.g., excluding a species that is present) and commission (e.g., including a species that is absent) are likely when this broad-scale model is used for localized applications.

3.2.4.4 Special-status Wildlife Species

3.2.4.4.1 Special-status Wildlife Species with the Potential to Occur in the Project Area

Table 3.2.4-5 presents a list of special-status wildlife species that occur, or have the potential to occur, in the existing FERC Project Boundary. Cal Fish and Wildlife's CNDDDB was used as the primary source to identify previously reported occurrences of special-status species and sensitive habitats in the Project Vicinity (CDFW 2015b). A secondary source used to identify special-status wildlife species was USFWS' Division of Migratory Bird Management's Birds of Conservation Concern 2008 (USFWS 2008). Two other sources were the Camp Far West Biological Assessment (Sycamore Associates 2013a) and the USFWS' IPaC Trust Resource Report (USFWS 2015a). Potential occurrences of special-status wildlife species and their corresponding temporal and spatial information were also derived from a query of the CWHR database (CDFW 2015g). Habitat types known to occur within the Project Area (listed in Table 3.2.4-4) were used as the search criteria within CWHR (CDFW 2015g). Descriptions of suitable habitat types were synthesized from species accounts found online at NatureServe[®] and the CWHR life history database. Temporal data provided in Table 3.2.4-5 correspond to the seasonal occurrence of the species within the Project Area. Spatial data correspond to the habitat types typically supporting each species. Additional sources of information were queried for potentially occurring special-status species. These additional sources included Cal Fish and Wildlife's *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2015h), and *List of State Fully Protected Animals* (CDFW 2015i). Table 3.2.4-5 includes 30 wildlife species: 1 reptile, 23 birds, and 6 mammals. This list includes: five species listed as both SSC and BCC (tricolored blackbird, burrowing owl, black swift, yellow warbler, and olive-sided fly catcher); two species listed as ST only (Swainson's hawk and bank swallow); one species listed as FP only (white-tailed kite); one species listed as SE, FP and BCC (bald eagle); one species listed as FP and BCC (golden eagle); and one species listed as ST, FP, and BCC (California black rail). The other 19 species are listed only as SSC.

Table 3.2.4-5. Special-Status wildlife species (i.e., reptiles, birds, and mammals) occurring or potentially occurring in the Camp Far West Hydroelectric Project Area.

Common Name/ Scientific Name	Status ¹	Suitable Habitat Type	Temporal and Spatial Distribution ²	Occurrence in Project Area	Known From Project
REPTILES					
Coast horned lizard (<i>Phrynosoma blainvillii</i>)	SSC	Utilization of a variety of habitats, including scrubland, grassland, coniferous woods, and broadleaf woodlands; typically it is found in areas with sandy soil, scattered shrubs, and ant colonies, such as along the edges of arroyo bottoms or dirt roads.	Yearlong: AGS, BOP, BOW, MCH	Project Vicinity: Potentially occur within suitable habitat.	There are no documented occurrences of coast horned lizard on the Project, but suitable habitat exists (Sycamore Associates 2013a)
BIRDS					
Tricolored blackbird (<i>Agelaius tricolor</i>)	SSC & BCC	Fresh-water marshes of cattails, tule (<i>Schoenoplectus acutus</i>), and sedges. Nests in vegetation of marshes or thickets, sometimes nests on the ground. Historically strongly tied to emergent marshes; in recent decades much nesting has shifted to non-native vegetation.	Yearlong: AGS, URB	Project Vicinity: Potentially occur within suitable habitat	No, and no suitable nesting habitat was observed during BA surveys (Sycamore Associates 2013a)
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	SSC	Prefer grasslands of intermediate height for breeding and are often associated with clumped vegetation interspersed with patches of bare ground.	Summer: AGS	Project Vicinity: Camp Far West	No, and no suitable nesting habitat was observed during BA surveys (Sycamore Associates 2013a)
Golden eagle (<i>Aquila chrysaetos</i>)	FP & BCC	Generally open country, in prairies, arctic and alpine tundra, open wooded country, and barren areas, especially in hilly or mountainous regions.	Yearlong: AGS, BAR, BOP, BOW, MHW, MCH, URB	The species was identified as having the potential to occur within the Project Vicinity (CDFW 2015g).	No
Short-eared owl (<i>Asio flammeus</i>)	SSC	Broad expanses of open land with low vegetation for nesting and foraging are required.	Yearlong: AGS, URB Winter: BOP, BOW, MCH	Project Vicinity: Potentially occur within suitable habitat	No
Long-eared owl (<i>Asio otus</i>)	SSC	Riparian bottomland forest with over story of willows (<i>Salix</i>) and cottonwoods (<i>Populus deltoids</i>); riparian forest along stream corridors (often dominated by live oak trees). Wooded areas with dense vegetation needed for roosting and nesting, adjacent open areas needed for hunting.	Yearlong: AGS, BOP, BOW, MCH, MHW	Project Vicinity: Potentially occur within suitable habitat	No, and no suitable nesting habitat was observed during BA surveys (Sycamore Associates 2013a)
Burrowing owl (<i>Athene cunicularia</i>)	SSC & BCC	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas near human installations.	Yearlong: AGS, BAR, BOW, MCH, URB	Project Vicinity: Potentially occur within suitable habitat	Suitable habitat was observed around the perimeter of the reservoir, but no occurrences were documented (Sycamore Associates 2013a)
Redhead (<i>Aythya Americana</i>)	SSC	Open water on lakes, ponds, and reservoirs.	Winter: LAC	Project Vicinity: Potentially occur within suitable habitat	No

Table 3.2.4-5. (continued)

Common Name/ Scientific Name	Status ¹	Suitable Habitat Type	Temporal and Spatial Distribution ²	Occurrence in Project Area	Known From Project
BIRDS (cont'd)					
Swainson's hawk (<i>Buteo swainsoni</i>)	ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs and agricultural or ranch (CDFW 2015d).	Summer: AGS, BAR, BOP, BOW, MCH, MHW, URB	This species was found adjacent to the Project Vicinity within the Nicolaus, Sheridan, Wheatland and Verona quads (CDFW 2015g)	Potential nesting habitat is located in the Project, but there are no documented occurrences (Sycamore Associates 2013a)
Vaux's swift (<i>Chaetura vauxi</i>)	SSC	Found in mature forests, but also forages and migrates over open country.	Summer: BOP, LAC, MCH, MHW, URB	Project Vicinity: Potentially occur within suitable habitat	No
Black tern (<i>Chlidonias niger</i>)	SSC	Marshes, along sloughs, rivers, lakeshores, and impoundments, or in wet meadows.	Summer: LAC	Project Vicinity: Potentially occur within suitable habitat	No
Northern harrier (<i>Circus cyaneus</i>)	SSC	Marshes, meadows, grasslands, and cultivated fields.	Yearlong: AGS, BOP, BOW, LAC, BAR, URB Winter: MCH	Project Vicinity: Wheatland, Camp Far West.	Northern harrier was observed during BA surveys (Sycamore Associates 2013a)
Olive-sided flycatcher (<i>Contopus cooperi</i>)	SSC & BCC	Non-breeding habitat includes a variety of forest, woodland, and open areas with scattered trees, especially where tall dead snags are present. Primary habitat is mature, evergreen montane forest. Birds breed in various forest and woodland habitats.	Migrant: BOP Summer: MCH, MHW	Project Vicinity: Potentially occur within suitable habitat	No
Black swift (<i>Cypseloides niger</i>)	SSC & BCC	Nests in moist crevices or caves, or on cliffs near waterfalls in deep canyons. Forages widely over many habitats.	Summer: AGS, BAR, BOP, BOW, LAC, MCH, MHW, URB	Project Vicinity: Potentially occur within suitable habitat	No
White-tailed kite (<i>Elanus leucurus</i>)	FP	Savanna, open woodland, marshes, partially cleared lands and cultivated fields, mostly in lowland situations.	Yearlong: AGS, BAR, BOP, BOW, MCH, URB	The species was identified as having the potential to occur within the Project Vicinity (CDFW 2015g).	This species was observed during BA surveys (Sycamore Associates 2013a)
Common loon (<i>Gavia immer</i>)	SSC	Lakes containing both shallow and deep water.	Winter: LAC	Project Vicinity: Potentially occur within suitable habitat	No

Table 3.2.4-5. (continued)

Common Name/ Scientific Name	Status ¹	Suitable Habitat Type	Temporal and Spatial Distribution ²	Occurrence in Project Area	Known From Project
BIRDS (cont'd)					
Bald eagle (<i>Haliaeetus leucocephalus</i>)	SE, FP & BCC	Breeding habitat usually includes areas close to coastal areas, bays, rivers, lakes, or other bodies of water that reflect the general availability of primary food sources. Preferentially roosts in conifers or other sheltered sites in winter in some areas (NatureServe 2009).	Yearlong: AFS, BAR, BOP, BOW, LAC, MHW, Winter: MCH	The species is known to occur within the Project Vicinity (Sycamore Associates 2013a)	Bald eagles and a nest were observed during BA surveys on 'riverine' arm of reservoir (Sycamore Associates 2013a) A bald eagle was observed at the SSRA on September 15, 2015 during SSWD's bat surveys
Loggerhead shrike (<i>Lanius ludovicianus</i>)	SSC	Open country with scattered trees and shrubs, savanna, desert scrub, and, occasionally, open woodland; often perches on poles, wires or fence posts	Yearlong: AGS, BOP, BOW, URB	Project Vicinity: Potentially occur within suitable habitat	No
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	ST, FP, BCC	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays (CDFW 2015g)	Yearlong: LAC	The species was found within the Project Vicinity in the Camp Far West and Wolf quads (CDFW 2015g).	Neither the species nor suitable habitat was observed during BA surveys (Sycamore Associates 2013a)
American white pelican (<i>Pelecanus erythrorhynchos</i>)	SSC	Rivers, lakes, reservoirs, estuaries, bays, marshes; sometimes inshore marine habitats.	Summer: BAR Yearlong: LAC	Project Vicinity: Potentially occur within suitable habitat	This species was observed during BA surveys (Sycamore Associates 2013a)
Purple martin (<i>Progne subis</i>)	SSC	A wide variety of open and partly open situations, frequently near water or around towns.	Summer: AGS, BOP, BOW, LAC, MHW, URB	Project Vicinity: Potentially occur within suitable habitat	No
Bank swallow (<i>Riparia riparia</i>)	ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert (CDFW 2015g).	Summer: AGS, BAR, LAC, URB Migrant: MCH	This species was found near the Project Vicinity, within the Camp Far West, Nicolaus and Verona quads (CDFW 2015g).	Neither species nor suitable habitat was observed during BA surveys (Sycamore Associates 2013a)
Yellow warbler (<i>Setophaga petechial</i>)	SSC & BCC	Open scrub, second-growth woodland, thickets, farmlands, and gardens, especially near water; riparian woodlands, especially of willows, in the West.	Summer: BOP, BOW, MCH, MHW, URB	Project Vicinity: Camp Far West	Neither species nor suitable habitat was observed during BA surveys (Sycamore Associates 2013a)
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	SSC	Fresh-water marshes of cattail, tule, or bulrushes. Nests in wet grasses, reeds, cattails. Also in open cultivated lands, pastures and fields.	Yearlong: LAC Summer: AGS	Project Vicinity: Potentially occur within suitable habitat	No

Table 3.2.4-5. (continued)

Common Name/ Scientific Name	Status ¹	Suitable Habitat Type	Temporal and Spatial Distribution ²	Occurrence in Project Area	Known From Project
MAMMALS					
Pallid bat (<i>Antrozous pallidus</i>)	SSC	Arid deserts and grasslands, often near rocky outcrops and water. Less abundant in evergreen and mixed conifer woodland. Usually roosts in rock crevice or building, less often in cave, tree hollow, mine, etc.	Yearlong: AGS, BAR, BOP, BOW, MCH, MHC, URB	Project Vicinity: Potentially occur within suitable habitat	No
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	SSC	Maternity and hibernation colonies typically are in caves and mine tunnels. Prefers relatively cold places for hibernation, often near entrances and in well-ventilated areas.	Summer: AGS Yearlong: BAR, BOP, BOW, MCH, MHW, URB	Project Vicinity: Potentially occur within suitable habitat	Neither species nor suitable habitat was observed during BA surveys (Sycamore Associates 2013a)
Spotted bat (<i>Euderma maculatum</i>)	SSC	Possibly occupies coniferous stands in summer and migrates to lower elevations in late summer/early fall.	Yearlong: AGS, BOP, BOW, URB	Project Vicinity: Potentially occur within suitable habitat	No
Western mastiff bat (<i>Eumops perotis</i>)	SSC	Roosts in crevices and shallow caves on the sides of cliffs and rock walls, and occasionally buildings. Roosts usually high above ground with unobstructed approach. Most roosts are not used throughout the year. May alternate between different day roosts.	Yearlong: AGS, BAR, BOP, BOW, MCH, MHW, URB	Project Vicinity: Potentially occur within suitable habitat	No
Western red bat (<i>Lasiurus blossevillei</i>)	SSC	Roosts in foliage, forages in open areas (sea level up through mixed conifer forests).	Yearlong: AGS, BOP, BOW, URB Summer: LAC, MCH, MHW	Project Vicinity: Potentially occur within suitable habitat	Neither species nor suitable habitat was observed during BA surveys (Sycamore Associates 2013a)
American badger (<i>Taxidea taxus</i>)	SSC	Prefers open areas and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow.	Yearlong: AGS, BAR, BOP, BOW, MCH, MHW	Project Vicinity: Potentially occur within suitable habitat	No
Total			30		

Source: CDFW 2015g

¹ Status:

- SSC = California Species of Special Concern (CDFW 2015j)
- BCC= Bird of Conservation Concern (USFWS 2008)
- ST = State Threatened
- FP = Fully Protected
- SE = State Endangered

² CWHR Habitat Types:

- AGS = Annual Grass
- BAR = Barren
- BOP = Blue Oak Foothill Pine
- BOW = Blue Oak Woodland
- LAC = Agriculture Ponds, Water Features, General Water (i.e., lakes, ponds, reservoirs, diversion impoundments)
- MCH = Mixed Chaparral
- MHW = Montane Hardwood
- URB = Urban

3.2.4.4.2 Special-status Bat Survey

In September 2015, SSWD evaluated all Project recreation facilities⁶ within the Project Area for evidence of bat activity. At each location, SSWD surveyed the exterior and interior of buildings for active bat roosts and signs of historic use via the presence of guano and staining resulting from urine and body oils. Any observed bat use (i.e., not just special-status bats, but all bat species) was documented on a standard data sheet, photographed and the location was recorded with a GPS unit. Table 3.2.4-6 summarizes the Project recreation facilities that were included in the survey.

Table 3.2.4-6. List of Project facilities and recreation facilities that were surveyed by SSWD in September 2015 for evidence of bat use and results of the survey.

Project Facility	Access Point	Signs of Bat Use
CAMP FAR WEST – SOUTH RECREATION AREA		
Store	Small hole in wall	Staining – possibly from birds
Restroom 1	Open entrance doors, eaves, corrugated roof	None
Storage shed	Garage door, eaves, holes in screens	Some staining – possibly from birds
Restroom 2	Open entrance doors, holes in roof	Staining – possibly from birds
Restroom 3	Open entrance doors, corrugated roof	None
Restroom 4	Open entrance doors, holes in screens, corrugated roof	None
CAMP FAR WEST – NORTH RECREATION AREA		
Store	None	N/A ¹
Restroom 1	Open entrance doors, holes in screens, corrugated roof	None
Restroom 2	Open entrance doors, holes in screens, corrugated roof	None
Restroom 3	None	N/A ¹
Restroom 4	Open entrance doors, holes in screens, corrugated roof	Staining – possibly from birds
Old snack bar	Walls – several holes, eaves	None
ADDITIONAL STRUCTURES		
1967 bridge – Camp Far West Road	Deck	Unknown (Could not access)

¹ Not applicable.

The following types of bat roosts were considered during SSWD’s survey:

- **Maternity Roosts.** A maternity roost is a man-made or natural structure that provides protection from the elements and predators, and provides the correct thermal environment for young rearing. Maternity roosts tend to be warmer in temperature because breeding females need to maintain a high metabolism to aid in lactation. Juvenile bats need to keep warm to maintain a metabolic rate that allows for rapid growth. Maternity roost thermal requirements are species dependent but generally remains between 70°F and 90°F, however big-eared bat nursery roosts have been discovered in sites where ambient temperatures are as low as 60°F. Species that form large colonies can be found raising young in mines with ambient temperatures as low as 56°F, but often prefer 66°F or higher (Tuttle and Taylor 1998).
- **Day Roosts.** A day roost is a man-made or natural structure where bats are able to spend the non-active period of the day resting or in torpor, depending on weather conditions.

⁶ The Camp Far West Powerhouse was not accessible during the survey.

Day roosts provide shelter from the elements and safety from predators (Tuttle and Taylor 1998).

- **Night Roost.** A night roost is a man-made or natural structure where bats may rest between foraging bouts, digest prey, escape from predators, shelter from weather, and possibly for social purposes. Night roosts are typically sites or structures that retain heat to aid the bat in maintaining the higher metabolism necessary for digestion (Tuttle and Taylor 1998).
- **Winter Hibernacula.** These are man-made or natural structures used by bats during colder winter months. During this time, bats enter torpor, receiving nourishment from their fat storage gained during summer months. Many species will awaken for brief periods of time to stretch, but will resume torpor. Bats, such as the Townsend's big-eared bat, will hibernate for short periods of time and will often resume feeding behavior during warm winter spells. Airflow and temperature are key determinants in use of structures, such as tunnels and adits, as hibernacula. Temperatures within these roost sites are generally below 53°F at the onset of hibernation, and remain between 34°F and 50°F by midwinter. Structures that have a varying temperature regime allow bats to find suitable temperatures during warm or cold winters (Tuttle and Taylor 1998).

No bats were seen during the survey of Project facilities. The facilities may be suitable for roosting, though there was no presence of guano and the staining seen was most likely from birds. A few of the screens that cover exterior windows of several facilities were damaged, providing possible points of entry for bats. SSWD has not installed bat exclusionary devices on any Project facilities.

3.2.4.5 Commercially-Valuable Wildlife Species

One amphibian, 34 birds, and 21 mammal species that have been designated as commercially-valuable by Cal Fish and Wildlife have the potential to occur within the existing FERC Project Boundary (CDFW 2015k). Table 3.2.4-7 lists these species (CDFW 2015g). Table 3.2.4-7 also includes temporal and spatial information and descriptions of suitable habitat used by each of the species. CWHR system habitat types listed in Table 3.2.4-4 were used to query the CWHR computer program in order to obtain temporal and spatial information for each species (CDFW 2015g). Temporal data correspond to the seasonal occurrence of the species within the existing FERC Project Boundary. Spatial data provided in the table correspond to the habitat types typically supporting each species; this spatial data can be used in conjunction with vegetation descriptions and mapping presented in the CalVeg mapping section of this PAD (Section 3.2.4.2). Descriptions of suitable habitat types were synthesized from species accounts found online at NatureServe® and the Cal Fish and Wildlife's CWHR life history database (NatureServe 2015).

Table 3.2.4-7. Commercially-valuable wildlife species occurring or potentially occurring in the Camp Far West Hydroelectric Project Boundary.

Common Name/ Scientific Name	Suitable Habitat Type	Temporal and Spatial Distribution ¹	Known From Project
AMPHIBIANS			
American bullfrog (<i>Lithobates catesbeianus</i>)	Ponds, swamps, lakes, reservoirs, marshes, brackish ponds. May disperse from water in wet weather and sometimes are found in temporary waters hundreds of meters from permanent water. Non-native.	Yearlong: AGS, BOP, BOW, LAC, MCH, MHW, URB	Potentially occur within suitable habitat.
BIRDS			
Chukar (<i>Alectoris chukar</i>)	Rocky hillsides, mountain slopes with grassy vegetation, open and flat desert with sparse grasses, and barren plateaus. Non-native.	Yearlong: AGS	Potentially occur within suitable habitat.
Wood duck (<i>Aix sponsa</i>)	Inland waters near woodlands such as swamps and marshes.	Yearlong: BOP, BOW, LAC, MHW, URB	Potentially occur within suitable habitat.
Northern pintail (<i>Anas acuta</i>)	Lakes, rivers, marshes and ponds in grasslands, barrens, dry tundra, open boreal forest, or cultivated fields. Most breeding associated with seasonal and semi-permanent wetlands.	Yearlong: AGS, LAC, URB Winter- LAC	Potentially occur within suitable habitat.
American wigeon (<i>Anas Americana</i>)	Open water on lakes, ponds, reservoirs and backwaters.	Yearlong: AGS, LAC, URB	Potentially occur within suitable habitat.
Northern shoveler (<i>Anas clypeata</i>)	Open water on lakes, ponds and reservoirs.	Yearlong: AGS, LAC	Potentially occur within suitable habitat.
Green-winged teal (<i>Anas crecca</i>)	Open water on lakes, ponds, reservoirs and in marshes.	Yearlong: AGS Winter- LAC, URB	Potentially occur within suitable habitat.
Cinnamon teal (<i>Anas cyanoptera</i>)	Shallow open water on lakes, ponds, reservoirs and in marshes.	Yearlong: AGS, LAC	Potentially occur within suitable habitat.
Blue-winged teal (<i>Anas discors</i>)	Open water on lakes, ponds, reservoirs and in marshes.	Summer: AGS Yearlong- LAC	Potentially occur within suitable habitat.
Eurasian wigeon (<i>Anas Penelope</i>)	Winters primarily in freshwater (marshes, lakes) and brackish situations in coastal areas, but migrates extensively through inland regions; occurs in shallow water and fields and meadows.	Winter: AGS, LAC, URB	Potentially occur within suitable habitat.
Mallard (<i>Anas platyrhynchos</i>)	Primarily shallow waters such as ponds, lakes, marshes, and flooded fields.	Yearlong: AGS, LAC, URB	Potentially occur within suitable habitat.
Gadwall (<i>Anas strepera</i>)	Open water on lakes, ponds, reservoirs and backwaters.	Yearlong: AGS, LAC	Potentially occur within suitable habitat.
Greater white-fronted goose ² (<i>Anser albifrons</i>)	Wetlands, grain fields, grassy fields, marshes, lakes and ponds. Breeds on arctic tundra on edge of marshes, lakes, sloughs, rivers.	Winter: AGS, LAC	Potentially occur within suitable habitat.
Lesser scaup (<i>Aythya affinis</i>)	Open water on lakes, ponds and reservoirs.	Summer: AGS Yearlong: LAC	Potentially occur within suitable habitat.
Redhead ³ (<i>Aythya Americana</i>)	Open water on lakes, ponds and reservoirs.	Winter: LAC	Potentially occur within suitable habitat.
Ring-necked duck (<i>Aythya collaris</i>)	Open water on lakes, ponds, and reservoirs.	Yearlong: LAC	Potentially occur within suitable habitat.
Greater scaup (<i>Aythya marila</i>)	Open water and on emergent wetlands. Breeds primarily in tundra and northern borders of the taiga.	Winter: LAC	Potentially occur within suitable habitat.

Table 3.2.4-7. (continued)

Common Name/ Scientific Name	Suitable Habitat Type	Temporal and Spatial Distribution ¹	Occurrence in Project Area
BIRDS (cont'd)			
Canvasback (<i>Aythya valisineria</i>)	Open water on lakes, ponds, reservoirs, and marshes.	Winter: LAC	Potentially occur within suitable habitat.
Canada goose (<i>Branta canadensis</i>)	Overhead while migrating, marshes with tall grass and sedges near water.	Yearlong: AGS, LAC, URB	Potentially occur within suitable habitat.
Bufflehead (<i>Bucephala albeola</i>)	Lakes, ponds, rivers and seacoasts. Breeds in tree cavities in mixed coniferous-deciduous woodland near lakes and ponds.	Yearlong: LAC	Potentially occur within suitable habitat.
Common goldeneye (<i>Bucephala clangula</i>)	Open water on lakes, ponds and reservoirs.	Winter: LAC	Potentially occur within suitable habitat.
California quail ² (<i>Callipepla californica</i>)	Lower elevations and transition zone of mixed conifer forest between 1,200 and 7,000 ft elevation.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
Snow goose (<i>Chen caerulescens</i>)	Freshwater wetlands, wet prairies and extensive sandbars, foraging in pastures, cultivated lands and flooded fields.	Winter: AGS, LAC	Potentially occur within suitable habitat.
Ross's goose (<i>Chen rossii</i>)	Marshy lakes, wet prairies, foraging in grassy areas, pastures and cultivated fields.	Winter: AGS, LAC	Potentially occur within suitable habitat.
Band-tailed pigeon (<i>Columba fasciata</i>)	Lower elevations and transition zone of mixed conifer forest between 1,200 and 5,500 ft elevation.	Winter: BOP, BOW, MCH Yearlong: MHW, URB	Potentially occur within suitable habitat.
American crow (<i>Corvus brachyrhynchos</i>)	Open and partly open country: agricultural lands, suburban areas, orchards, and tidal flats.	Yearlong: AGS, BOP, BOW, LAC, MHW, URB	Potentially occur within suitable habitat.
American coot (<i>Fulica americana</i>)	Open water areas, along lake shores and stream edges, and in marshes.	Winter: AGS Yearlong: LAC, URB	Potentially occur within suitable habitat.
Common gallinule (<i>Gallinula galeata</i>)	Freshwater marshes, canals, quiet rivers, lakes, ponds, mangroves, primarily in areas of emergent vegetation and grassy borders. Nests usually among marsh plants over water, occasionally in shrub in or near water.	Yearlong: LAC, URB	Potentially occur within suitable habitat.
Wild turkey (<i>Meleagris gallopavo</i>)	Pinyon-Juniper woodlands. Non-native.	Yearlong: AGS, BOP, BOW, MCH, MHW	Potentially occur within suitable habitat.
Hooded merganser (<i>Mergus cucullatus</i>)	Open water on lakes, ponds and reservoirs.	Winter: LAC, URB	Potentially occur within suitable habitat.
Common merganser (<i>Mergus merganser</i>)	Open water on lakes, ponds and reservoirs.	Yearlong: LAC Winter: URB	Potentially occur within suitable habitat.
Red-breasted merganser (<i>Mergus serrator</i>)	Open water on lakes, ponds and reservoirs.	Winter: LAC	Potentially occur within suitable habitat.
Ruddy duck (<i>Oxyura jamaicensis</i>)	Open water on lakes, ponds, reservoirs and Marshes.	Yearlong: LAC	Potentially occur within suitable habitat.
Ring-necked pheasant (<i>Phasianus colchicus</i>)	Open country (especially cultivated areas, scrubby wastes, open woodland and edges of woods), grassy steppe, desert oases, riverside thickets, swamps and open mountain forest. Non-native.	Yearlong: AGS, BOP, MCH, URB	Potentially occur within suitable habitat.
Mourning dove (<i>Zenaida macroura</i>)	Lower elevations and transition zone of mixed conifer forest between 1,200 and 5,500 ft elevation.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat

Table 3.2.4-7. (continued)

Common Name/ Scientific Name	Suitable Habitat Type	Temporal and Spatial Distribution ¹	Occurrence in Project Area
MAMMALS			
Coyote (<i>Canis latrans</i>)	Wide range of habitats in its extensive range, from open prairies of the west to the heavily forested areas of the Northeast; sometimes found in cities.	Yearlong: AGS, BAR, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
American beaver (<i>Castor canadensis</i>)	Readily occupy artificial ponds, reservoirs, and canals, if food is available.	Yearlong: AGS, BOW, LAC	Potentially occur within suitable habitat.
Virginia opossum (<i>Didelphis virginiana</i>)	Very adaptable; may be found in most habitats. Prefers wooded riparian habitats. Also in suburban areas. Abandoned burrows, buildings, hollow logs, and tree cavities are generally used for den sites.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
Bobcat (<i>Felis rufus</i>)	Various habitats including deciduous-coniferous woodlands and forest edge, hardwood forests, swamps, forested river bottomlands, brushlands, deserts, mountains, and other areas with thick undergrowth.	Yearlong: AGS, BOP, BOW, MCH, MHW	Potentially occur within suitable habitat.
Black-tailed jackrabbit ³ (<i>Lepus californicus</i>)	Open plains, fields, and deserts; open country with scattered thickets or patches of shrubs.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
Striped skunk (<i>Mephitis mephitis</i>)	Semi-open country with woodland and meadows interspersed, brushy areas, bottomland woods. Frequently found in suburban areas.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
Long-tailed weasel (<i>Mustela frenata</i>)	Wide variety of habitats, usually near water. Favored habitats include brushland and open woodlands, field edges, riparian grasslands, swamps, and marshes.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
American mink (<i>Mustela vison</i>)	Favors forested permanent or semi permanent wetlands with abundant cover, marshes, and riparian zones.	Yearlong: LAC	Potentially occur within suitable habitat.
Mule deer (<i>Odocoileus hemionus</i>)	Early to intermediate successional stages of most forest, woodland, and brush habitats interspersed with herbaceous openings, dense brush or tree thickets, riparian areas, and abundant edge.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
Common muskrat (<i>Ondatra zibethicus</i>)	Fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. Rare or absent in artificial impoundments with fluctuating water levels.	Yearlong: LAC	Potentially occur within suitable habitat.
Raccoon (<i>Procyon lotor</i>)	Various habitats; usually in moist situations, often along streams and shorelines.	Yearlong: AGS, BOP, BOW, LAC, MCH, MHW, URB	Potentially occur within suitable habitat.
Western gray squirrel (<i>Sciurus griseus</i>)	Dependent upon mature stands of mixed conifer and oak habitats, closely associated with oaks.	Yearlong: BOP, BOW, MCH, MHW	Potentially occur within suitable habitat.
Western spotted skunk ² (<i>Spilogale gracilis</i>)	Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
Audubon's cottontail (<i>Sylvilagus audubonii</i>)	Various habitats; dry uplands as well as low valleys and canyons. May inhabit open grasslands, brushlands, edges of foothill woodlands, willow thickets, sometimes in cultivated fields or under buildings.	Yearlong: AGS, BOP, BOW, MCH, URB	Potentially occur within suitable habitat.
Wild pig (<i>Sus scrofa</i>)	Densely forested mountainous terrain, brushlands, dry ridges, swamps; sometimes in fields, marshes. Often in mixed hardwood forest with permanent water source. Seasonal changes in habitat use are linked to food availability. Non-native	Yearlong: AGS, BOP, BOW, MCH, MHW	Potentially occur within suitable habitat.

Table 3.2.4-7. (continued)

Common Name/ Scientific Name	Suitable Habitat Type	Temporal and Spatial Distribution ³	Occurrence in Project Area
MAMMALS (cont'd)			
Brush rabbit ² (<i>Sylvilagus bachmani</i>)	Dense scrub and brushy edges of habitats, chaparral, and cactus. Also brushy areas on sand dunes and in bramble thickets. Usually near dense vegetative cover. Seldom uses burrows.	Yearlong: AGS, BOP, BOW, MCH, MHW	Potentially occur within suitable habitat.
Douglas' squirrel (<i>Tamiasciurus douglasii</i>)	Coniferous forests, in upper pine belt and in fir, spruce, and hemlock forests.	Yearlong: MHW	Potentially occur within suitable habitat.
American badger ³ (<i>Taxidea taxus</i>)	Prefers open areas and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow.	Yearlong: AGS, BAR, BOP, BOW, MCH, MHW	Potentially occur within suitable habitat.
Gray fox (<i>Urocyon cinereoargenteus</i>)	Often found in woodland and shrubland in rough, broken country.	Yearlong: AGS, BOP, BOW, MCH, MHW, URB	Potentially occur within suitable habitat.
Black bear (<i>Ursus americanus</i>)	Occur in fairly dense, mature stands of many forest habitats mostly above 3,000 ft elevation, and feed in a variety of habitats including brushy stands of forest, valley foothill riparian and wet meadows.	Yearlong: AGS, BOP, MCH, MHW Summer: LAC	Potentially occur within suitable habitat.
Red fox ¹ (<i>Vulpes vulpes</i>)	Various open and semi-open habitats. Usually avoids dense forest, although open woodlands frequently are used.	Yearlong: AGS, BAR, MCH	Potentially occur within suitable habitat.
Total		56	

Sources: CDFW 2015g; NatureServe® 2015

² Subspecies designated as special-status

³ Species designated as special-status

¹ CWHR Habitat Types:

AGS = Annual Grass

BAR = Barren

BOP = Blue Oak Foothill Pine

BOW = Blue Oak Woodland

LAC = Agriculture Ponds, Water Features, General Water (i.e., lakes, ponds, reservoirs, diversion impoundments)

MCH = Mixed Chaparral

MHW = Montane Hardwood

URB = Urban

Of the commercially-valuable (i.e., harvestable) species that are known to occur or have the potential to occur in the existing FERC Project Boundary, eight are also designated as special-status wildlife species (Table 3.2.4-5). According to the CDFW (2015g) the special-status designation of six of those species is assigned to subspecies that may, but are unlikely to, occur within the Project. These subspecies include: tule greater white-fronted goose (*Anser albifrons elgasi*) (SSC); Catalina California quail (*Callipepla californica catalinensis*) (SSC); San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) (SSC); Sierra Nevada red fox (*Vulpes vulpes necator*) (ST); Channel Islands spotted skunk (*Spilogale gracilis amphiala*) (SSC); and riparian brush rabbit (*Sylvilagus bachmani riparius*) (FE and SE). The two remaining commercially-valuable species that have also been given a special-status designation are redhead (*Aythya americana*) (SSC) and American badger (*Taxidea taxus*) (SSC) (CDFW 2015g), which have a potential to occur within the Project Area.

SSWD does not allow hunting within the FERC Project Boundary.

3.2.4.5.1 Mule Deer

California mule (*Odocoileus hemionus californicus*) and black-tailed deer (*Odocoileus hemionus columbianus*) are among the most visible and widespread species found in most habitats throughout California. Deer are California's most popular game mammal, with most hunting opportunities occurring on public lands (CDFG 1998a). Deer are free-ranging animals whose habitat requirements can result in conflicts with humans. Deer are an integral component in the food chain from their role as grazers to prey species to California's top carnivores. Deer inhabit about 70 percent of California's wildlands in a variety of habitats (CDFW 2015l). Approximately 50 percent of the deer range is public land administered by the federal government and 45 percent of the range is privately-owned (CDFG 1998a). The deer population in California has fallen in the years between 1991 and 2014 from approximately 850,000 to approximately 450,000 (CDFW 2015l).

The deer living in the Project Area were classified as part of the Camp Beale Herd in 1952 and included in the 1983 Mother Lode Deer Herd Management Plan (CDFG 1983). Both subspecies inhabit and are considered residents in the area and do not migrate like other herds in California. The Mother Lode Deer Herd occupies approximately 3,660 square miles over an elevation range from sea level to 3,000 ft in the foothills of the Sierra Nevada.

In the past forty years, Cal Fish and Wildlife has developed and updated deer management strategies in California. In 1976, California Department of Fish and Game developed *A Plan for California Deer* (CDFG 1976). The primary goal of the plan was to restore deer populations to the record high numbers of the 1960s, and the plan included habitat and management goals for deer populations by herd units. In the plan, 79 deer herd plans were identified with separate management objectives for each herd and plans were completed and implemented by the mid-1980s. The herd units were based primarily on administrative boundaries (e.g., county lines, regional boundaries, and roads), deer behavior (i.e., migratory or resident), and subspecies (i.e., mule deer or black-tailed deer) (CDFW 2015l). The Mother Lode Deer Herd Management Plan, one of the 79 separate plans, was completed in July 1983.

At the end of a meeting in January 1997 and at the request of the California Fish and Game Commission, California Department of Fish and Game, the Forest Service, and the USDO, Bureau of Land Management concluded with a collective recommendation that an overall assessment of deer populations and deer habitat conditions was needed to help identify key problems on an area-by-area basis. In 1998, California Department of Fish and Game combined the 45 hunt zones in California into 11 Deer Assessment Units based on similarities in habitat and environmental and ecological factors rather than the artificial boundaries of the hunt zones. The Central Sierra Deer Assessment Units covers the area of the Project and includes about 10,500 square miles from the Feather River drainage south to Yosemite National Park. The reported deer herd in the area in 1998 was between 50,000 to 90,000 (CDFG 1998a).

In March of 2013, the California Deer Conservation and Management Plan was developed by Cal Fish and Wildlife. To determine how changing conditions may be impacting deer, Cal Fish and Wildlife plans to assess habitat conditions and populations based on population data and current habitat assessments. A goal of the 2015 California Deer Conservation and Management Plan is to develop Deer Conservation Units (DCU) by taking a landscape level approach to deer planning categorizing California deer herd units into 10 DCUs. The Project is located on the boundary of the Sierra Nevada and Central Valley DCUs. The development of the Sierra Nevada DCU is scheduled for November 2015 and implementation for March 2016. The development of the Central Valley DCU will begin in March 2016 and be implemented in July 2016 (CDFW 2015).

3.2.4.6 Wetlands, Riparian, and Littoral Habitats of the Project Area

Few sources of information are available from which to describe wetland, riparian, and littoral habitats within the existing FERC Project Boundary. USFWS' National Wetlands Inventory (NWI) maps (USFWS 1987) are the only maps showing the distribution, extent, and types of Palustrine and Riverine wetlands, and Lacustrine littoral zones used. However, NWI maps based on aerial imagery are typically not verified by ground surveys and provide no information on plant species associated with the mapped areas.

Figure 3.2.4-2, contains a map showing NWI-mapped wetlands, riparian, and littoral habitats within the existing FERC Project Boundary.

Page Left Blank

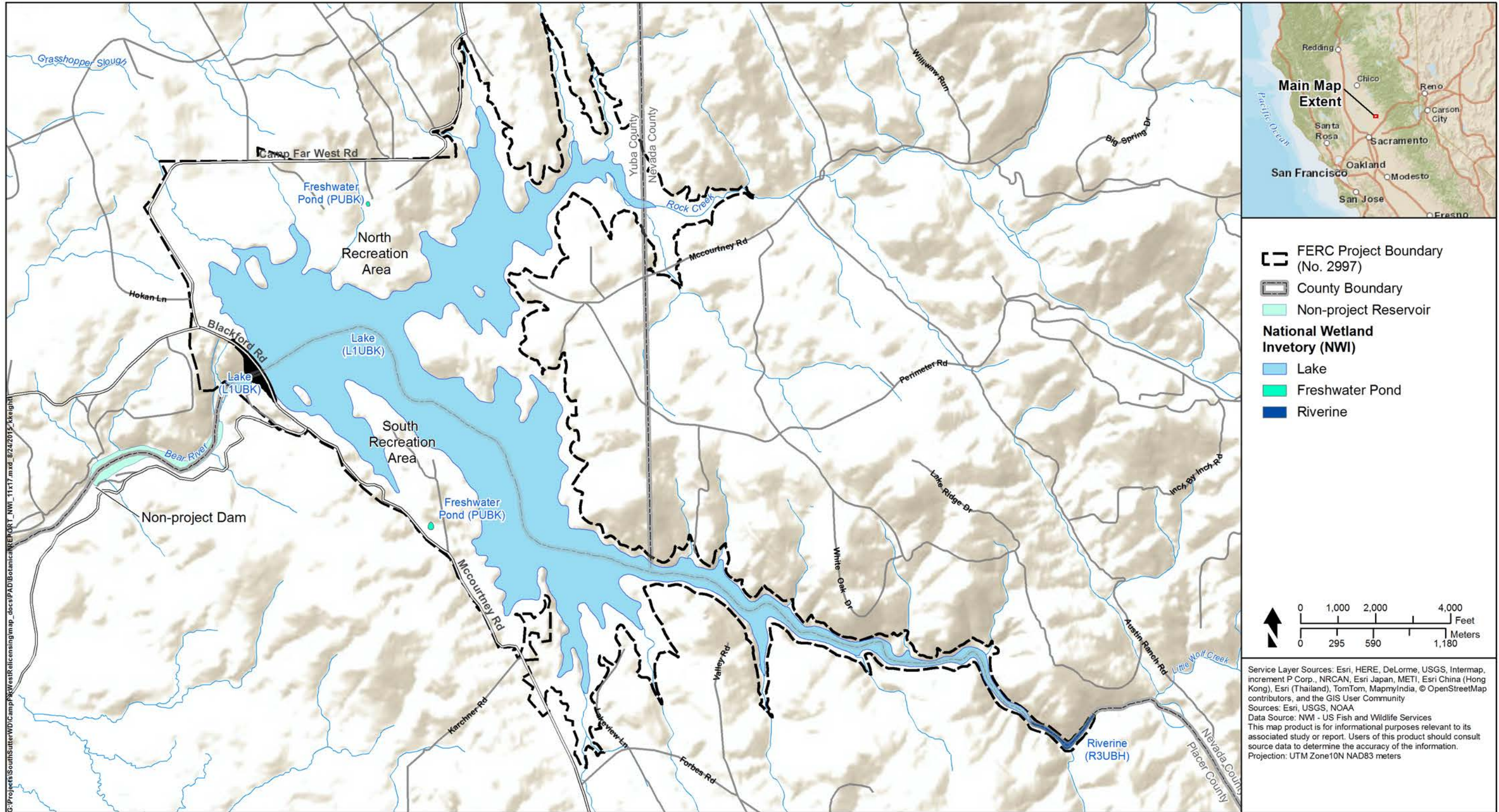


Figure 3.2.4-2. NWI-mapped wetlands, riparian, and littoral habitats within the existing Camp Far West Hydroelectric Project Boundary.

Page Left Blank

3.2.4.6.1 Wetlands

Wetlands are transitional lands that occur between uplands and aquatic systems. However, wetlands also may include certain shallow aquatic areas and are more accurately defined according to the following attributes (Cowardin et al. 1979):

- at least periodically, the land supports predominantly hydrophytes (i.e., vegetation associated with moist soil conditions)
- the substrate is predominantly un-drained hydric soil (i.e., soil characterized by anaerobic conditions)
- the substrate is non-soil (i.e., boulder, bedrock or similar substrate) and is saturated with water or covered by shallow water at sometime during the growing season of each year

Areas of deep, permanent water are not included under the definition of wetland. Ponds, swamps, marshes, bogs, springs, fens, and wet meadows are examples of wetlands.

All wetlands discussed in this section are categorized as Palustrine, Riverine, or Lacustrine by Cowardin et al. (1979). Eight major classes of Palustrine wetlands have been described, and one of these is found within the existing FERC Project Boundary (Figure 3.2.4-2). Additionally, seven major classes of Riverine wetlands have been described, and one of these is found within the existing FERC Project Boundary. Nine classes of Lacustrine wetlands have been described, and one of these occurs within the existing FERC Project Boundary.

The three NWI wetland classes that may be found in the boundary are listed in Table 3.2.4-8. This table also provides the total linear ft of the three NWI-mapped wetland classes within the boundary. Following the table, more detailed descriptions of the three defined NWI wetland classes are provided, including their known occurrence within the boundary, based on mapping of wetland types by NWI.

Table 3.2.4-8. NWI Palustrine, Riverine, and Lacustrine wetland classes within the Camp Far West Hydroelectric Project Area.¹

Type	Definition	Within FERC Project Boundary (ac)
RIVERINE UNCONSOLIDATED BOTTOM		
R3UBH	Riverine upper perennial, unconsolidated bottom, permanently flooded	5.1
PALUSTRINE UNCONSOLIDATED BOTTOM		
PUBK	Palustrine, unconsolidated bottom, artificially flooded	0.8
LACUSTRINE UNCONSOLIDATED BOTTOM		
L1UBK	Lacustrine limnetic, unconsolidated bottom, artificially flooded	1,202.3
Total	--	1,208.2

Source: USFWS 2010a

¹ Note that the Project Area exceeds the area within the existing FERC Project Boundary.

3.2.4.6.1.1 Riverine Unconsolidated Bottom (RUB)

Riverine unconsolidated bottom wetlands are characterized by 25 percent or more exposed sand, gravel, or small stones, and 30 percent or less vegetative cover contained within an open conduit either naturally or artificially created which periodically or continuously contains moving water (Cowardin et al. 1979). NWI mapped RUB wetlands cover approximately 5.11 ac and 4,645.14 linear ft within the existing FERC Project Boundary (Table 3.2.4-7), and occurs at one location: on the southern tip of Camp Far West Reservoir just north of Little Wolf Creek.

3.2.4.6.1.2 Palustrine Unconsolidated Bottom (PUB)

Palustrine unconsolidated bottom wetlands are characterized by 25 percent or more exposed sand, gravel, or small stones, and 30 percent or less vegetative cover in nontidal wetlands dominated by trees, shrubs, and persistent emergents (Cowardin et al. 1979). NWI mapped PUB wetlands cover approximately 0.79 ac and 926.6 ft within the existing FERC Project Boundary (Table 3.2.4-7), and occurs at two locations: one occurrence is roughly centered between Camp Far West Road and the NSRA, the second occurrence is settled between McCourtney Road and west of the turnoff for the SSRA.

3.2.4.6.1.3 Lacustrine Unconsolidated Bottom (LUB)

Lacustrine unconsolidated bottom wetlands are characterized by 25 percent or more exposed sand, gravel, or small stones, and 30 percent or less vegetative cover in permanently flooded lakes and reservoirs (Cowardin et al. 1979). NWI mapped Lacustrine wetlands cover approximately 1,202.3 ac and 128,867.9 ft within the existing FERC Project Boundary (Table 3.2.4-7), and occurs at two locations: one small area downstream of the Camp Far West Dam and Camp Far West Reservoir.

3.2.4.6.1.4 Additional Information for Wetlands

A wetland delineation was performed for the entirety of the Camp Far West Reservoir in 2013, which identified five seasonal wetlands (0.077-ac), 10 seasonal wetland swales (0.22-ac), nine seeps (0.457-ac), eleven emergent wetlands (1.018 ac), six irrigated wetlands (1.484 ac) and one scrub-shrub wetland (0.236-ac). None of the identified wetlands were determined to be caused by or receiving water from the reservoir or any other Project-related sources (Sycamore Associates 2013b).

The seasonal wetlands were scattered around the margin of the reservoir, but their water was provided by runoff during the rainy season. Three of the wetlands were in ditches related to ground disturbance. Plant species located in the seasonal wetlands included dallisgrass (*Paspalum dilatatum*), dock (*Rumex* sp.), Italian ryegrass (*Festuca perennis*), and English plantain (*Plantago lanceolata*), all non-native species. There were hydric soils present (Sycamore Associates 2013b).

The ten seasonal swales were also scattered around the reservoir margin and derived their water from surface runoff. The most common plant species in the swales included spiny-fruit buttercup (*Ranunculus muricatus*), common toad rush (*Juncus bufonius*), Italian ryegrass,

whitetip clover (*Trifolium variegatum*), beardstyle (*Pogogyne* sp.), water chickweed (*Montia fontana*), and Carter’s buttercup (*Ranunculus bonariensis* var. *trisepalus*). Hydric soils were located at the swale sites (Sycamore Associates 2013b).

The nine seeps were all groundwater-dependent and scattered around the reservoir margins. They were dominated by perennial rushes (*Juncus* spp.) and pennyroyal (*Mentha pulegium*), as well as annuals such as seep-spring monkeyflower (*Mimulus guttatus*) and Italian ryegrass. Hydric soils were also present (Sycamore Associates 2013b).

The eleven emergent wetlands on the reservoir margin are influenced by groundwater and dry season hydrology inputs, with some surface water dependency. Sedges (*Carex* spp.), creeping spikerush (*Eleocharis macrostachya*), small mannagrass (*Glyceria declinata*), rushes, and pennyroyal were the most common vegetation at these sites. Indicators for hydric soils were located at the emergent wetlands (Sycamore Associates 2013b).

All of the irrigated wetlands receive water from non-Project sources, including the Wolf Hannaman Ditch, rural residence and livestock pastures and a Nevada Irrigation District ditch. These areas would not be wetlands without the presence of water from man-made irrigation (Sycamore Associates 2013b).

Finally, the scrub-shrub wetland is located near Lakeview Lane on the southernmost arm of the Camp Far West reservoir. Willows (*Salix* spp.) and Himlayan blackberry (*Rubus armeniacus*) makeup the majority of the vegetation. Water may be provided by a retention pond just uphill of the site (Sycamore Associates 2013b).

3.2.4.6.1.5 Wetlands Downstream of Camp Far West Dam

The NWI identified the following nine wetland classes on the Bear River downstream of Camp Far West Reservoir to the confluence of the Feather River: FFQ1C, PABFx, L1UBK, PEM1A, PFC1A, PUBK, R2UBH, R2USA and R2USC (USFWS 2015b). Two of these wetland classes (L1UBK and PUBK) were also found within the existing FERC Project Boundary. Table 3.2.4-9 includes a definition of each additional class of wetlands found along the Bear River.

Table 3.2.4-9. NWI Palustrine, Riverine, and Lacustrine wetland classes in the Bear River from Camp Far West Dam to the Feather River.

Type	Definition
CAMP FAR WEST TO NON-PROJECT DIVERSION DAM	
Lacustrine Unconsolidated Bottom	
L1UBK	Lacustrine limnetic, unconsolidated bottom, artificially flooded
NON-PROJECT DIVERSION DAM TO FEATHER RIVER	
Palustrine Forested	
PFO1C	Palustrine, forested, seasonally flooded
PFO1A	Palustrine, forested, temporary flooded
Palustrine Aquatic Bed	
PABFx	Palustrine, aquatic bed, semipermanently flooded
Palustrine Unconsolidated Bottom	
PUBK	Palustrine, unconsolidated bottom, artificially flooded
Palustrine Emergent	
PEM1A	Palustrine, emergent, temporary flooded
Lacustrine Unconsolidated Bottom	

Table 3.2.4-9. (continued)

Type	Definition
L1UBK	Lacustrine limnetic, unconsolidated bottom, artificially flooded
Riverine Unconsolidated Bottom	
R2UBH	Riverine, unconsolidated bottom
Riverine Unconsolidated Shore	
R2USA	Riverine, unconsolidated shore, temporary flooded
R2USC	Riverine, unconsolidated shore, seasonally flooded

Source: USFWS 2010a

3.2.4.6.2 Riparian Habitat

The term “riparian” applies to the vegetation and other biological resources “...contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic [rivers, streams, or drainage ways] and lentic [lakes] water bodies...” (USFWS 1997a). Although the term has traditionally been applied only to lotic systems, in the western U.S. “riparian” is also used to describe the distinctive vegetation associated with the moister conditions around lentic reservoirs. Wetlands and riparian areas may overlap (e.g., riparian wetlands), but not all riparian areas are wetlands and not all wetlands are riparian areas.

No riparian habitat was identified in the existing FERC Project Boundary in the NWI. A 2013 wetland delineation of Camp Far West identified riparian vegetation only on Rock Creek, upstream of the reservoir, where it would not be affected by water fluctuations. Vegetation in that area included white alder (*Alnus rhombifolia*), California button willow (*Cephalanthus occidentalis*), Himalayan blackberry, and torrent sedge (*Carex nudata*). The area of the Bear River was specifically noted as having little to no riparian vegetation (Sycamore Associates 2013b).

3.2.4.6.2.1 Riparian Habitat Below Camp Far West Reservoir

The NWI did not show any riparian areas along the Bear River below Camp Far West Dam to the confluence with the Feather River (USFWS 2015b).

3.2.4.6.3 Littoral Habitat

In Lacustrine or lake systems, the littoral habitat corresponds to the shallow water area beginning at the lowest depth at which rooted aquatic plants can occur, regardless of whether plants are present. Cowardin et al. (1979) describes the littoral zone as the wetland habitats which extend to a depth of 6.6 ft below the low water line. Submerged bars, beaches, and flats are examples of littoral habitats. Emergent wetlands along the shallow edges of lakes are technically littoral, but are classified in the NWI system as Palustrine.

As stated above, 11 emergent wetlands on the reservoir margin were identified during wetland delineation. These are influenced by groundwater and dry season hydrology inputs, with some surface water dependency. Sedges, creeping spikerush, small mannagrass, rushes, and pennyroyal were the most common vegetation at these sites. Indicators for hydric soils were located at the emergent wetlands (Sycamore Associates 2013b).

3.2.4.7 Known or Potential Project Effects

Provided below is a list of known or potential Project effects on terrestrial resources. The list was developed based on responses to SSWD's PAD Information Questionnaire and SSWD's current understanding of the issues.

- From Responses to SSWD's PAD Information Questionnaire:
 - Effects of Project O&M by disturbing habitat for and displacing special-status plants, such as big-scale balsamroot, Sierra foothills brodiaea, dwarf downingia, stinkbells, Boggs Lake hedge-hyssop, Ahart's dwarf rush, dubious pea, legenere, Humboldt lily, pincushion navarretia, Brazilian watermeal, and natural communities (identified by Cal Fish and Wildlife). All of these species, with the exception of dubious pea, have been identified as having the potential to occur in the Project Area.
 - Effects of Project O&M to water quality and quantity that may affect the growth, reproduction, and extent of populations of special status plants and natural communities (identified by Cal Fish and Wildlife).
 - Effects of Project O&M on the spread of invasive plant species (identified by Cal Fish and Wildlife).
 - Effects of Project O&M on water quantity and quality that may adversely affect the plant diversity, quantity, composition, and extent of wetland, riparian, and littoral habitats (identified by Cal Fish and Wildlife).
 - Effects of Project O&M that may impact migration, foraging, and nesting of birds species including special-status species such as bald eagle, golden eagle, Swainson's hawk, and California black rail (identified by Cal Fish and Wildlife). All of these species have been identified as having the potential to occur in the Project Area, and bald eagle are known to occur and nest within the FERC Project Boundary.
 - Effects of Project O&M, especially related to transmission lines, that may present collision and electrocution hazards to bird species, including special-status species such as bald eagle, golden eagle, Swainson's hawk, and California black rail (identified by Cal Fish and Wildlife). All of these species have been identified as having the potential to occur on the Project, and bald eagle are known to occur and nest within the FERC Project Boundary.
 - Effects of Project O&M on disturbing bat colonies roosting within the Project structures (identified by Cal Fish and Wildlife). No bat colonies are known to roost within Project structures. Five special-status bat species were identified as having the possibility to occur in the Project Area.
 - Effects of Project O&M on deer movement (identified by Cal Fish and Wildlife).

- From SSWD:
 - No additional potential Project effects.

3.2.4.8 List of Attachments

There are no attachments to this section.