

3.10 Wildlife

3.10.1 Introduction

This section analyzes the proposed project's potential impacts related to wildlife resources. It describes existing conditions in the project area and summarizes the overall federal, state, and local regulatory framework for wildlife resources, and it analyzes the potential for the proposed project to affect these resources.

3.10.2 Existing Conditions

The existing conditions related to wildlife in the study area (defined below) were determined by reviewing existing information and conducting a field survey.

3.10.2.1 Study Area

The project area covers approximately 1,500 acres, and is just west of State Route 70 and across the river from the Thermalito Afterbay Outlet (Figure 2-1). For the purposes of this initial study, the study area for wildlife resources consisted of the project area, the Feather River bed and bank in the southwest and northeast corners of the project area, and an additional 250-foot buffer around the project area limits to assess potential indirect effects on sensitive biological resources.

The study area is a highly disturbed floodplain that has been hydrologically disconnected from the Feather River by gold dredging and excavation of borrow pits during construction of the Oroville Dam. This floodplain is disconnected from the Feather River during times of low flow by a berm along the northern and western boundaries of the study area, which is adjacent to the river. During high flow events, water enters and exits the study area via a system of inflow and outflow weirs. Stormwater runoff also enters the project area from the east. A network of interior channels and disconnected ponds occurs in the study area. The bottoms of these interior channels and ponds are, in many places, lower in elevation than the Feather River. Based upon review of historical aerial photographs, the major interior channels were excavated after the construction of Oroville Dam and have remained largely unchanged since then. Additional details of the study area hydrology can be found in Chapter 3.3, *Hydrology*. (Peterson Brustad 2015:6, 9.)

3.10.2.2 Review of Existing Information

The sources below were used to develop a list of special-status wildlife species and to identify other sensitive biological resources (e.g., known nest sites) that could be affected by the proposed project (Table 3.10-1).

- A California Natural Diversity Database (CNDDDB) query for records within 5 miles of the study area (Oroville, Palermo, Gridley, Honcut, Biggs, and Shippee U.S. Geological Survey [USGS] 7.5-minute quadrangles (California Department of Fish and Wildlife 2016a).
- A U.S. Fish and Wildlife Service (USFWS) list of endangered, threatened, and proposed species for the study area (U.S. Fish and Wildlife Service 2016).

- California Department of Water Resources (DWR) data from field surveys conducted in the study area between 2003 and 2016 (California Department of Water Resources 2016).

3.10.2.3 Field Survey

ICF biologists conducted a field survey on October 22, 2015, by walking and driving accessible portions of the study area. The purpose of the field survey was to complete a habitat-based site assessment for special-status species identified as having the potential to occur in the study area.

3.10.2.4 Wildlife Habitat – Land Cover Type Associations

This section describes the locations of land cover types identified in the study area and the relationship between land cover types and the wildlife habitats and species they support. There are eight land cover types in the study area, as described in Section 3.9, *Vegetation and Wetlands*, and shown in Figure 3.9-1. These land cover types are: riparian forest, riparian scrub-shrub, freshwater emergent wetland, stream, pond, channel, ruderal, and developed/disturbed areas. Photographs of the study area showing some of the land cover types are available in Appendix 1-A. Wildlife habitats associated with land cover types found in the study area are described below.

Riparian Forest

Riparian forest dominates much of the study area and provides wildlife with dispersal and migration corridors, foraging areas, cover, and breeding habitat. Many species of birds, mammals, reptiles, and amphibians are known to use riparian communities and other woody vegetation communities located in proximity to watercourses (Mayer and Laudenslayer 1988). Riparian trees provide suitable nesting and roosting habitat for a variety of raptors, egrets, herons, songbirds, and bats. Birds known to nest in these communities include red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), American kestrel (*Falco sparverius*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), Nuttall's woodpecker (*Picoides nuttallii*), western scrub jay (*Aphelocoma californica*), western yellow-billed cuckoo (*Coccyczus americanus*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), black phoebe (*Sayornis nigricans*), warbling vireo (*Vireo gilvus*), yellow-rumped warbler (*Dendroica coronata*), wrentit (*Chamaea fasciata*), and house wren (*Troglodytes aedon*). Riparian forest also provides foraging habitat for numerous species of migratory and wintering birds.

Bat species associated with riparian habitats include California myotis (*Myotis californicus*), Yuma myotis (*Myotis yumanensis*), hoary bat (*Lasiurus cinereus*), western red bat (*Lasiurus blossevillii*), and pallid bat (*Antrozous pallidus*). Other mammal species known to use riparian forest include beaver (*Castor canadensis*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), black-tailed deer (*Odocoileus hemionus columbianus*), raccoon (*Procyon lotor*), and muskrat (*Ondatra zibethicus*). Reptiles, including common garter snake (*Thamnophis sirtalis*), western fence lizard (*Sceloporus occidentalis*), and western pond turtle (*Emys marmorata*), and amphibians, including Sierran tree frog (*Pseudacris sierra*), California toad (*Anaxyrus boreas halophilus*), and bullfrog (*Lithobates catesbeianus*), also are associated with this land cover type. Additionally, valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*; VELB) has potential to occur on elderberry shrubs that have stems 1 inch or greater in diameter.

Riparian Scrub-Shrub

The riparian scrub-shrub vegetation occurs along perennial drainages and is intermixed with taller riparian forest trees in the study area. Because of its association with and/or proximity to riparian forest, wildlife use of riparian scrub-shrub is similar to riparian forest. However, because the vegetation in areas of scrub-shrub lack large, mature trees of riparian forests, smaller birds are more likely to use these areas for nesting. Many of the wildlife species listed above as occurring in riparian forest also occur in riparian scrub-shrub.

Freshwater Emergent Wetland

Freshwater emergent wetland occurs throughout the western and wettest portion of the study area. Freshwater emergent wetlands provide food, cover, and water for a variety of amphibians, reptiles, birds, and mammals (Mayer and Laudenslayer 1988:124). Wildlife species that utilize freshwater emergent habitat include Sierran treefrog, western aquatic garter snake (*Thamnophis couchii*) (Zeiner et al. 1988:78, 216), great blue heron, great egret, Virginia rail (*Rallus limicola*), and red-winged blackbird (*Agelaius phoeniceus*) (Zeiner et al. 1990a:32, 34, 176, 638).

Stream

The only stream in the study area is the lower Feather River, which originates at the Oroville Dam and meanders south to its confluence with the Sacramento River near Verona and drains the western slope of the Sierra Nevada Mountains and the Sutter Buttes. Streams with well-vegetated (riparian) areas provide food, water, and migration and dispersal corridors, as well as escape, nesting, and thermal cover for many wildlife species (Mayer and Laudenslayer 1988). Wildlife species associated with stream and riparian habitats include Sierran treefrog, California newt (*Taricha torosa*), Anna's hummingbird (*Calypte anna*), black phoebe, raccoon, and striped skunk (Zeiner et. al 1988, 1990a, 1990b). Bank swallow (*Riparia riparia*) are associated with the friable, unvegetated banks that occur along the Feather River.

Pond

The ponds scattered throughout the study area are remnants of gravel-mining activities and the use of the area as a borrow site during construction of Oroville Dam. Ponds and other open water areas provide essential foraging habitat for a variety of birds, including waterfowl such as northern shoveler (*Anas clypeata*), northern pintail (*Anas acuta*), common goldeneye (*Bucephala clangula*), mallard (*Anas platyrhynchos*), common merganser (*Mergus merganser*), ruddy duck (*Oxyura jamaicensis*), gadwall (*Anas strepera*), and cinnamon teal (*Anas cyanoptera*); other water birds such as eared grebe (*Podiceps nigricollis*), double-crested cormorant (*Phalacrocorax auritus*), and American white pelicans (*Pelecanus erythrorhynchos*); and land birds such as bald eagle (*Haliaeetus leucocephalus*), , and belted kingfisher (*Megaceryle alcyon*).

Reptiles and amphibians, including western pond turtle, common garter snake, western aquatic garter snakes, Sierran tree frog, California toad, and bullfrog, use ponds for breeding, foraging, and cover.

Bats that forage for insects over open water include California myotis, Yuma myotis, hoary bat, and western red bat. Additionally, terrestrial mammals such as black-tailed deer, raccoon, striped skunk, and Virginia opossum use open water habitats as water sources. Aquatic and semi-aquatic mammals

that occur in open water habitats include beaver, river otter (*Lutra canadensis*), mink (*Mustela vison*), and muskrat.

Interior Channel

The study area contains a network of interior channels. The interior channels are similar to ditches, which can provide food, water, cover, and dispersal corridors for various wildlife species, such as Sierran treefrog, California newt, great egret, raccoon, and striped skunk if vegetation is present within and along the banks and water is present for an adequate duration. Banks of ditches or channels could be used by California ground squirrel (*Spermophilus beecheyi*) and western fence lizard (*Sceloporus occidentalis*). Ditches or channels that contain water through mid-fall, have suitable prey, and adequate cover and foraging habitat have the potential to support giant garter snake (*Thamnophis gigas*; U.S. Fish and Wildlife Service 2015).

Developed/Disturbed

The developed/disturbed cover type includes existing roads, parking lots, scraped areas, and areas where vegetation has been removed. These areas provide limited habitat for wildlife but may support common species such as northern mockingbird (*Mimus polyglottos*), rock pigeon, mourning dove, house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), western scrub jay, Botta's pocket gopher (*Thomomys bottae*), California ground squirrel, house mouse (*Mus musculus*), black rat (*Rattus rattus*), and coyote (*Canis latrans*). Semi-developed areas containing grass, trees, or water sources (small ponds and ditches) may support additional wildlife species.

Ruderal

Ruderal vegetation occurs in limited parts of the southeastern study area. This cover type is primarily at the edges of ponds, where there are openings in the riparian forest. Similar to developed lands, these areas support mostly common wildlife species, although scattered elderberry shrubs, which may support VELB, are present in ruderal areas in the study area.

3.10.2.5 Special-Status Wildlife Species

Special-status wildlife species are defined as animals that are legally protected under the Federal Endangered Species Act (ESA), California Endangered Species Act (CESA), or other regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as follows.

- Species that are listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11 for listed animals and various notices in the Federal Register (FR) for proposed species).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (80 FR 80583, December 24, 2015).
- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (California Department of Fish and Wildlife 2016a).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).

- Animals listed as California species of special concern on California Department of Fish and Wildlife's (DFW's) Special Animals List (California Department of Fish and Wildlife 2016b).
- Animals that are fully protected in California under the California Fish and Game Code (Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Bats identified as medium or high priority on the Western Bat Working Group regional priority species matrix (Western Bat Working Group 2007).

Based on the USFWS (2016) species list and CNDB (California Department of Fish and Wildlife 2016a) records search within 5 miles of the study area, 18 special-status wildlife species were identified as having potential to occur in the study area. Of the 18 special-status wildlife species identified, 12 have a moderate or high potential to occur in the study area given their known range, reports of occurrence, and/or the presence of suitable habitat. These species include VELB, western pond turtle, giant garter snake, Swainson's hawk, northern harrier (*Circus cyaneus*), bald eagle, western yellow-billed cuckoo, western burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), bank swallow, tricolored blackbird (*Agelaius tricolor*), and silver-haired bat (*Lasionycteris noctivagans*). The remaining six special-status wildlife species were determined to have low or no potential to occur. Five additional species were added as having at least a moderate potential to occur in the affected area based on species habitat requirements and professional judgment (white-tailed kite, yellow warbler [*Setophaga petechia*]), pallid bat, hoary bat, and western red bat). All wildlife species considered are listed in Table 3.10-1, which contains their regulatory status, distribution, habitat requirements, and a rationale for their potential to occur in the study area. The 17 special-status wildlife species that have a high or moderate potential to occur in the study area are discussed briefly below.

Table 3.10-1. Special-Status Wildlife Species Identified As Having Potential to Occur in OWA Study Area

| Common and Scientific Names | Status ^a Federal/ State/Other | Geographic Distribution | Habitat Requirements | Potential Occurrence in Biological Study Area |
|---|--|---|--|---|
| Invertebrates | | | | |
| Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i> | T/-/- | Streamside habitats below 3,000 feet throughout the Central Valley. | Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant. | High—suitable habitat present; species occurrences (CNDDDB) near the study area. |
| Vernal pool fairy shrimp <i>Branchinecta lynchi</i> | T/-/- | Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County. | Common in vernal pools; also found in sandstone rock outcrop pools. | None—no suitable habitat present. |
| Vernal pool tadpole shrimp <i>Lepidurus packardi</i> | E/-/- | Shasta County south to Merced County. | Vernal pools and ephemeral stock ponds. | None—no suitable habitat present. |
| Amphibians | | | | |
| California red-legged frog <i>Rana draytonii</i> | T/SSC/- | Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County. | Permanent and semi-permanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods. | None—considered extirpated from the valley floor (U.S. Fish and Wildlife Service 2002). |
| Reptiles | | | | |
| Western pond turtle <i>Actinemys marmorata</i> | -/SSC/- | Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada. | Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. | High—suitable habitat present. |

| Common and Scientific Names | Status ^a Federal/ State/Other | Geographic Distribution | Habitat Requirements | Potential Occurrence in Biological Study Area |
|---|--|---|--|---|
| Giant garter snake <i>Thamnophis gigas</i> | T/T/- | Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno. | Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter. | Moderate—suitable habitat present; no CNDDB occurrences in study area but numerous occurrences within 5 miles of the study area; one occurrence within 0.13 mile of the study area (California Department of Fish and Wildlife 2016a). |
| Birds | | | | |
| Greater sandhill crane <i>Grus canadensis tabida</i> | -/T/- | Breeds in Siskiyou, Modoc, Lassen, Plumas, and Sierra Counties. Winters in the Central Valley, southern Imperial County, Lake Havasu National Wildlife Refuge, and the Colorado River Indian Reserve. | Summers in open terrain near shallow lakes or freshwater marshes. Winters in plains and valleys near bodies of fresh water. | Low—limited suitable wintering habitat; one occurrence within 5 miles of the study area (California Department of Fish and Wildlife 2016a). |
| Swainson's hawk <i>Buteo swainsoni</i> | -/T/- | Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County. | Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields. | High—suitable nesting and foraging habitat; one nesting territory approximately 0.19 mile south of the study area (DWR 2016) that is also recorded in the CNDDB and one additional CNDDB occurrence approximately 2.5 miles southeast of the study area (California Department of Fish and Wildlife 2016a). |
| Northern harrier <i>Circus cyaneus</i> | -/SSC/- | Occurs throughout lowland California. Has been recorded in fall at high elevations. | Nests and forages in grasslands, meadows, marshes, and seasonal and agricultural wetlands. | Moderate—suitable foraging habitat, limited suitable nesting habitat; one occurrence within 5 miles of the study area (California Department of Fish and Wildlife 2016a). |

| Common and Scientific Names | Status ^a Federal/ State/Other | Geographic Distribution | Habitat Requirements | Potential Occurrence in Biological Study Area |
|---|--|---|---|--|
| White-tailed kite <i>Elanus leucurus</i> | -/FP/- | Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border. | Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging. | Moderate—suitable nesting and foraging habitat; no CNDDB occurrences within 5-miles of the study area. |
| Bald eagle <i>Haliaeetus leucocephalus</i> | -/E, FP/- | Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County. | In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean. | High—suitable nesting and foraging habitat along Feather River; active (2016) nest approximately 0.8 mile south of the study area (Martin pers. comm.). |
| California black rail <i>Laterallus jamaicensis coturniculus</i> | -/T/- | Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties. Also occurs along the lower western slopes of the Sierra Nevada foothills in Butte, Yuba, Nevada, and Placer Counties. | Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations. | Low—freshwater emergent marsh in the study area consists of large, dense, stands of water primrose and tall emergent vegetation such as cattails; occurrences of black rail within 5–10 miles of the study area in Butte County (Richmond et al. 2008). |
| Western yellow-billed cuckoo <i>Coccyzus americanus</i> | C/E/- | Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers. | Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant. | Moderate—cottonwood/black willow riparian forest in the study area is comprised of relatively small patches and narrow bands of vegetation and is not likely suitable for nesting. Migratory habitat is present in all riparian forest in the study area; no CNDDB occurrences within 5 miles of the study area. |

| Common and Scientific Names | Status ^a Federal/ State/Other | Geographic Distribution | Habitat Requirements | Potential Occurrence in Biological Study Area |
|--|--|---|---|---|
| Western burrowing owl <i>Athene cunicularia hypogea</i> | -/SSC/- | Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast. | Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows. | Moderate—suitable foraging habitat; limited suitable nesting habitat; no CNDDB occurrences in the study area. |
| Loggerhead shrike <i>Lanius ludovicianus</i> | -/SSC/- | Resident and winter visitor in lowlands and foothills throughout California. Rare on coastal slope north of Mendocino County, occurring only in winter. | Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. | Moderate—suitable nesting and foraging habitat; no CNNDB occurrences in the study area but DFW staff have observed a shrike near the OWA Headquarters, approximately 3.5 miles northeast of the study area (Stone pers. comm.). |
| Bank swallow <i>Riparia riparia</i> | -/T/- | Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley, and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County. | Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam. | High—suitable nesting habitat adjacent to the study area; four occurrences within 5 miles of the study area along the Feather River (California Department of Fish and Wildlife 2016a). |
| Yellow warbler <i>Dendroica petechial</i> | -/SSC/- | Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes in the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. | Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; also may use oaks, conifers, and urban areas near stream courses. | Moderate—suitable nesting and foraging habitat; no CNDDB occurrences in the study area. |

| Common and Scientific Names | Status ^a Federal/ State/Other | Geographic Distribution | Habitat Requirements | Potential Occurrence in Biological Study Area |
|---|--|---|---|---|
| Tricolored blackbird <i>Agelaius tricolor</i> | -/T/- | Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties. | Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony. | High—suitable nesting and foraging habitat present; one occurrence that overlaps with the northeast corner of the study area and 10 additional occurrences within 5 miles of the study area (California Department of Fish and Wildlife 2016a). |
| Mammals | | | | |
| Western red bat <i>Lasiurus blossevillii</i> | -/SSC/ WBWG: High priority | Scattered throughout much of California at lower elevations. | Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees in the foliage. Found in fruit orchards and sycamore riparian habitats in the Central Valley. | Moderate—suitable roosting and foraging habitat; no CNDBB occurrences within 5 miles of the study area (probably because of the lack of bat surveys in this area). |
| Hoary bat <i>Lasiurus cinereus</i> | -/- WBWG: Moderate priority | Occurs throughout California from sea level to 13,200 feet. | Found primarily in forested habitats. Also found in riparian areas and in park and garden settings in urban areas. Day roosts in foliage of trees. | Moderate—suitable roosting and foraging habitat; no CNDBB occurrences have been recorded within 5 miles of the study area (probably due to the lack of bat surveys in this area). |
| Silver-haired bat <i>Lasionycteris noctivagans</i> | -/-WBWG: Moderate priority | Found from the Oregon border south along the coast to San Francisco Bay and along the Sierra Nevada and Great Basin region to Inyo County. Also occurs in southern California from Ventura and San Bernardino Counties south to Mexico. Has been recorded in Sacramento, Stanislaus, Monterey, and Yolo Counties. | During spring and fall migrations, may be found anywhere in California. Summer habitats include coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. | Moderate—suitable roosting and foraging habitat; two occurrences within 5 miles of the study area (California Department of Fish and Wildlife 2016a). |

| Common and Scientific Names | Status ^a Federal/ State/Other | Geographic Distribution | Habitat Requirements | Potential Occurrence in Biological Study Area |
|---|--|--|---|--|
| Pallid bat <i>Antrozous pallidus</i> | -/SSC/ WBWG: High priority | Occurs throughout California, except the high Sierra, from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations. | Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts. | Moderate—suitable roosting and foraging habitat; no CNDDB occurrences have been recorded within 5 miles of the study area (possibly due to the lack of bat surveys in this area). |
| Western mastiff bat <i>Eumops perotis californicus</i> | -/SSC/ WBWG: High priority | Occurs along the western Sierra primarily at low to mid-elevations and widely distributed throughout the southern coast ranges. Recent surveys have detected the species north to the Oregon border. | Found in a wide variety of habitats from desert scrub to montane conifer. Roosts and breeds in deep, narrow rock crevices, but also may use crevices in trees, buildings, and tunnels. | Low—uncommon in the Central Valley and roost sites primarily associated with crevices in cliff faces and boulders. One occurrence within 5 miles of the study area (California Department of Fish and Wildlife 2016a). |

^a Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act.

T = listed as threatened under the Federal Endangered Species Act.

C = candidate species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

- = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

FP = fully protected under the California Fish and Game Code.

SSC = species of special concern in California.

- = no listing.

Other

WBWG = Western Bat Working Group 2007. Available: <http://www.wbwg.org/spp_matrix.html>.

Moderate priority = species status is unclear because of a lack of data; this designation indicates a level of concern that should warrant (1) closer evaluation and more research of the species and possible threats and (2) conservation actions benefiting the species.

High priority = species are imperiled or at high risk of imperilment.

^b Tricolored blackbird was emergency listed as a candidate state-threatened species by the California Fish and Game Commission in December 2015.

Valley Elderberry Longhorn Beetle

VELB is found only in association with its host plant, elderberry, which is commonly found in riparian forests and adjacent uplands in the Central Valley and foothills (U.S. Fish and Wildlife Service 1999a). Elderberries often grow vegetatively from rhizomes, resulting in shrubs that frequently have common root systems with multiple main stems (Talley et al. 2006) and multiple root crowns. Adult beetles are present from March through early June; they feed on elderberry foliage and mate. Females lay their eggs in bark crevices or at the junctions of stems. After hatching, the larva burrows into the stem to feed on pith as it develops first into a pupa and then a mature adult that emerges by chewing an exit hole. The life cycle of VELB ranges from 1 to 2 years (Barr 1991:4–5).

The study area supports approximately 190 shrubs or shrub clusters that provide suitable VELB habitat (Figure 3.10-1). Additionally, the study area contains a known VELB occurrence in the northwest corner (California Department of Fish and Game 2016a).

Western Pond Turtle

Aquatic habitats used by western pond turtles include ponds, lakes, marshes, rivers, streams, and irrigation ditches with a muddy or rocky bottom in grassland, woodland, and open forest areas (Stebbins 2003:250). Western pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris (Jennings et al. 1992:11). Western pond turtles move to upland areas adjacent to watercourses to deposit eggs and overwinter (Jennings and Hayes 1994:98). Turtles have been observed overwintering several hundred meters from aquatic habitat. In the southern portion of their range and along the central coast, western pond turtles are active year-round. In the remainder of their range, western pond turtles typically become active in March and return to overwintering sites by October or November (Jennings et al. 1992:11).

There is one record of a western pond turtle occurrence within approximately 5 miles of the study area (California Department of Fish and Game 2016). Interior channels and ponds in and adjacent to the study area provide suitable aquatic habitat for western pond turtle. Riparian forest and ruderal habitat adjacent to aquatic habitat provide suitable hibernacula and nesting habitat.

Giant Garter Snake

Historically, giant garter snake was found throughout the Central Valley from Butte County in the north to Kern County in the south. Currently, giant garter snake is only known to occur in nine discrete populations in the Sacramento and San Joaquin Valleys in Butte, Colusa, Fresno, Glenn, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties (U.S. Fish and Wildlife Service 2015:8–10).

Giant garter snakes inhabit marshes, ponds, small lakes, low-gradient streams with silt substrates, irrigation ditches, drainage canals, rice fields, as well as adjacent upland areas in the Central Valley. Suitable aquatic habitat consists of slow-moving or static water that is present from March through November with a mud substrate and the presence of prey (amphibians or fish) (U.S. Fish and Wildlife Service 2015:3). They do not occur in larger rivers and wetlands with sand, gravel, or rock substrates (U.S. Fish and Wildlife Service 1999b:22). Emergent and bankside vegetation that provides cover from predators and for thermoregulation is also required. Other components of

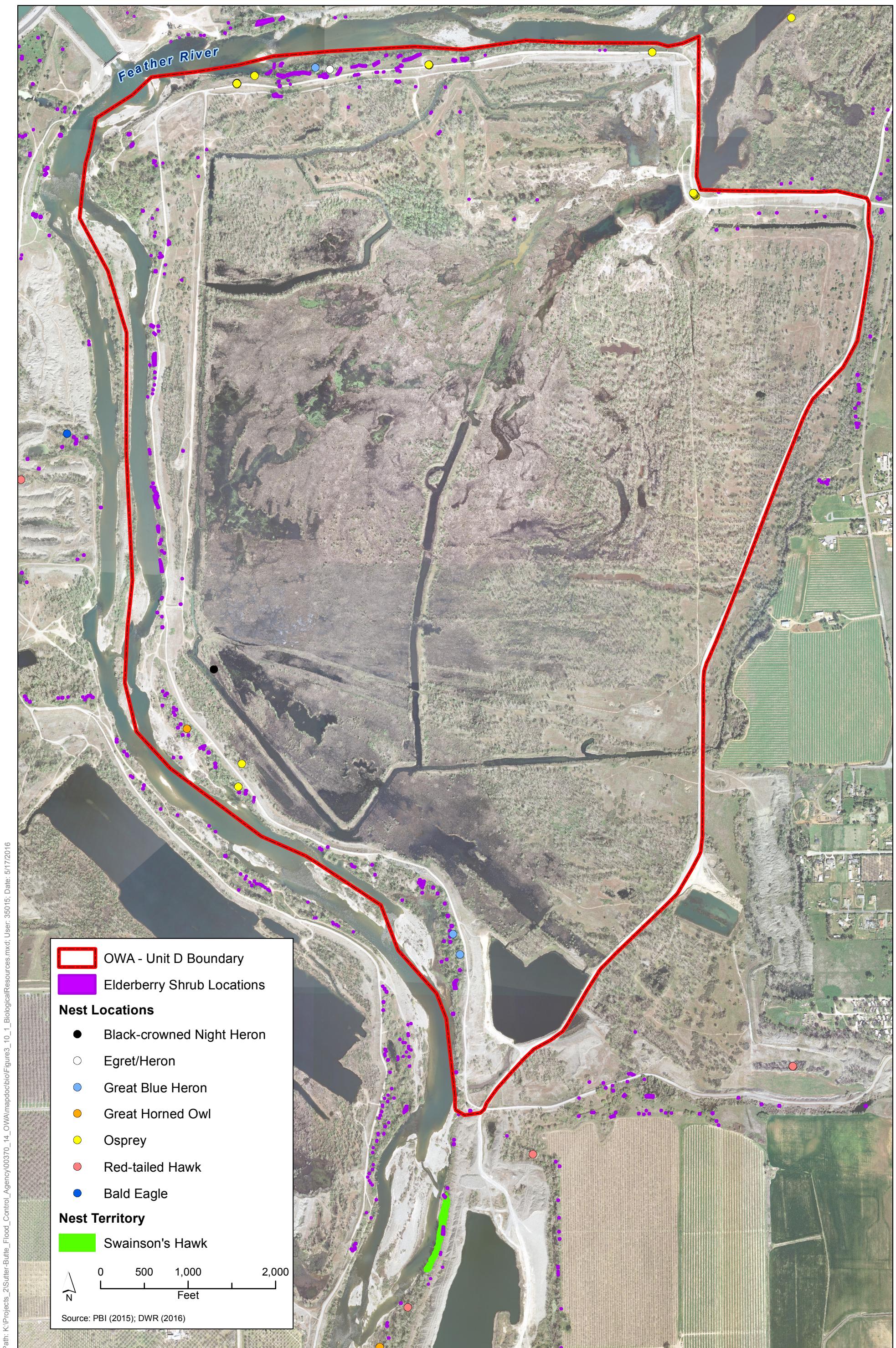


Figure 3.10-1
Biological Resources in the Study Area

suitable aquatic habitat are the absence of a continuous riparian canopy, basking sites with supportive vegetation (such as folded tule clumps) adjacent to escape cover, the absence of predatory fish, and upland refugia (in locations where recurrent flooding occurs) (U.S. Fish and Wildlife Service 2015:3). Riparian woodland is generally considered unsuitable habitat because of the lack of basking sites, excessive shade, and lack of prey (U.S. Fish and Wildlife Service 1999b:22).

Giant garter snakes use upland habitat (land that is not typically inundated during the active season and is adjacent to aquatic habitat) for basking to regulate body temperature, for cover, and to mammal burrows to avoid predation, shed skin, and cool their bodies during hot days. Suitable upland habitat characteristics are available bankside vegetation cover (typically cattails or tule) from predators, permanent shelter, such as bankside cracks and crevices, holes, or small mammal burrows, and areas that are not overgrazed. During the colder winter months, giant garter snake over-winter in mammal burrows, rip rap, or other cover up to 820 feet from aquatic habitat (U.S. Fish and Wildlife Service 2015:3, 5).

Results of a recent USGS study indicate that giant garter snakes utilize burrows in upland areas during their active period more than previously assumed (Halstead et al. 2015). Previously, conducting construction activities during the active period was considered a minimization measure because giant garter snakes were expected to be associated primarily with aquatic habitat during the active period. However, USGS found that at least one-half of giant garter snake activity during the active season occurs in terrestrial environments, although primarily within 33 feet of wetlands (Halstead et al. 2015). The vast majority (i.e., 90%) of the snakes were females that were in burrows within 66 feet of water during the active season (Halstead et al. 2015).

Giant garter snakes begin emerging from winter retreats around April 1 and are most active from early spring through mid-fall. Seasonal activity in some years and locations may begin as early as March 1. Around October 1, giant garter snakes move underground into mammal burrows, crevices, or other voids in the earth to avoid cool autumn and winter temperatures (U.S. Fish and Wildlife Service 2015:5).

There are no CNDB records of occurrences of giant garter snake in the study area; however, there are 5 records of occurrences within 5 miles of the study area. The closest occurrence is approximately 0.13 mile from the study area (California Department of Fish and Wildlife 2016a). Suitable aquatic habitat in the study area consists of interior channels, ponds, and freshwater emergent wetlands. There is limited suitable upland habitat (ruderal areas within 200 feet of aquatic habitat) in the study area and adjacent to the study area. Riparian forest and shrub/scrub are not considered suitable habitat because of the lack of basking sites, excessive shade, and lack of prey. Consequently, giant garter snakes (if present) are expected primarily to be associated with aquatic features.

Swainson's Hawk

Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation (California Department of Fish and Game 1992:41). The majority of Swainson's hawks winter in South America, although some winter in the United States. Swainson's hawk arrives in California in early March to establish nesting territories and breed (California Department of Fish and Game 1994). They usually nest in large, mature trees. Most nest sites (87%) in the Central Valley are found in riparian habitats (Estep 1989:35), primarily because trees are more available. Swainson's hawks also nest in mature roadside trees and in

isolated trees in agricultural fields or pastures. The breeding season is from March through August (Estep 1989:12, 35).

There is an active Swainson's hawk territory approximately 0.19 mile south of the study area (California Department of Water Resources 2016) (Figure 3.10-1). This area is mapped as a nest location in the CNDDDB (California Department of Fish and Wildlife 2016a). There is one additional CNDDDB record for a Swainson's hawk nest approximately 2.5 miles southeast of the study area. The study area and adjacent areas contain numerous suitable nest trees for Swainson's hawks. Ruderal areas provide suitable foraging habitat for Swainson's hawks in the study area.

Northern Harrier

Northern harrier is a year-round resident throughout the Central Valley and is often associated with open grassland habitats and agricultural fields. Nests are found on the ground in tall, dense herbaceous vegetation (MacWhirter and Bildstein 1996). Northern harrier nests from April to September, with peak activity in June and July. The breeding population has been reduced, particularly along the southern coast of California, because of the destruction of wetland habitat, native grassland, and moist meadows and from the burning and plowing of nesting areas during early stages of breeding (Zeiner et al. 1990a:124).

There is one record of an occurrence of a nesting northern harrier within 5 miles of the study area (California Department of Fish and Wildlife 2016a). Northern harriers could nest and forage in freshwater emergent wetland and in densely-vegetated ruderal areas in the study area.

White-Tailed Kite

White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland, wetland, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands (Dunk 1995:6, 8). White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the tops of dense oaks, willows, and other trees. The breeding season lasts from February through October and peaks between May and August. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands (Zeiner et al. 1990a:120).

There are no records of nesting white-tailed kites within 5 miles of the study area (California Department of Fish and Game 2016a). The study area and adjacent areas contain numerous suitable nest trees for white-tailed kites. Freshwater emergent wetland and ruderal areas could provide suitable foraging habitat for white-tailed kites in the study area. Because white-tailed kite is fully protected, removal of occupied nest trees during the breeding season and activities that may result in loss of white-tailed kites are prohibited.

Bald Eagle

Bald eagle is a permanent resident and uncommon winter migrant in California (Zeiner et al. 1990a:122). The species breeds at coastal areas, rivers, lakes, and reservoirs with forested shorelines or cliffs in northern California. Wintering bald eagles are associated with aquatic areas containing some open water for foraging. Bald eagles nest in trees in mature and old growth forests that have some habitat edge and are somewhat close (within 1.25 miles) to water with suitable foraging opportunities. Although nests can be closer, the average distance of bald eagle nests to

human development and disturbance is more than 1,640 feet (Buehler 2000:6). The breeding season is February through July (Zeiner et al. 1990a:122).

Each year from 2005 through 2016, a pair of bald eagles has occupied a territory approximately 0.8 mile south of the southwest corner of the study area along the Feather River. This pair has utilized several nest sites within this area, with one active nest in 2016. In addition, in 2012 this pair constructed, but to date have not nested in, an alternate nest location that is less than 1,000 feet west of the study area along the Feather River (Martin pers. comm.) (Figure 3.10-1). The Feather River provides suitable foraging habitat, and the riparian forest along the river provides suitable nesting habitat for bald eagles.

Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo occurs at isolated sites in the Sacramento Valley in northern California and along the Kern and Colorado River systems in southern California during the breeding season and winters primarily in South America. Western yellow-billed cuckoos arrive at breeding grounds starting in mid- to late May and depart for wintering grounds between late August and mid-September. Once initiated, the breeding cycle is extremely rapid and requires only 17 days from egg-laying to fledging of young. Birds generally prefer open woodland with clearings and low, dense, scrubby vegetation often associated with watercourses. Western yellow-billed cuckoos occupy various woodlands, riparian forests, and thickets along streams and marshes, and successional shrubland. The suggested minimum patch size to benefit the species is approximately 50–100 acres, with a minimum width of 300 feet (Riparian Habitat Joint Venture 2004). Western yellow-billed cuckoos feed primarily on large insects, including caterpillars, katydids, cicadas, grasshoppers, and crickets in open areas, woodlands, orchards, and areas adjacent to streams (Hughes 1999).

There are no records of occurrences of western yellow-billed cuckoo in the study area (California Department of Fish and Wildlife 2016). The cottonwood/black willow riparian forest in the study area consists of relatively small patches and narrow bands of vegetation and is not likely suitable for nesting; however, migratory habitat is present in all riparian forest in the study area. Western yellow-billed cuckoo may also forage throughout the study area.

Western Burrowing Owl

Western burrowing owls prefer open grasslands and shrublands with perches and burrows. They usually live and nest in the old burrows of California ground squirrels or other small mammals (Zeiner et al. 1990a:332) but also can nest in piles of wood or other debris. Burrows can be found on the sides of hills, along roadside embankments, on levees, along irrigation canals, near fence lines, and on or near other raised areas of land. The breeding season for burrowing owls extends from February 1 through August 31 (California Department of Fish and Game 2012).

There is one CNDB record of burrowing owl within 5 miles of the northern extent of the study area (California Department of Fish and Wildlife 2016a). Ruderal areas in the study area provide suitable foraging habitat for burrowing owls. They also may nest in burrows in ruderal areas and along the edges of the levee roads in the study area.

Loggerhead Shrike

Loggerhead shrikes occur in open habitats with scattered trees, shrubs, posts, fences, utility lines, or other types of perches. Nests are built in trees or shrubs with dense foliage and are usually well

hidden. Loggerhead shrikes search for prey from perches and frequently impale their prey on thorns, sharp twigs, or barbed-wire. The nesting period for loggerhead shrikes is March through June (Zeiner et al. 1990a:546).

There are no CNDDDB records of loggerhead shrike nests within 5 miles of the study area (California Department of Fish and Game 2016a). However, the study area is within the range of this species and contains suitable trees for nesting and limited suitable foraging habitat (ruderal areas).

Bank Swallow

Bank swallows nest in burrows in erodible soils on vertical or near-vertical banks and bluffs in lowland areas dominated by rivers, streams, lakes, and oceans. Bank swallows generally dig new burrows each year, especially if the bank or cliff face used for nesting the previous year has collapsed from erosion or human activities and no old burrows remain. They breed from April through July and depart for wintering grounds in South America between mid-August and mid-September. Foraging habitats include lakes, ponds, rivers and streams, meadows, fields, pastures, and occasionally forest and woodlands. Bank swallow is an aerial feeder, taking flying or jumping insects from dawn to dusk (Garrison 1999).

There are 4 CNDDDB records of bank swallow within 5 miles of the study area (California Department of Fish and Wildlife 2016a). Although bank swallows are unlikely to nest in most of the study area, they may nest nearby along the Feather River. Suitable foraging habitat is present in and adjacent to the study area.

Yellow Warbler

Yellow warbler is a migrant and summer resident from late March through early October in California; it is largely extirpated as a breeder in the Sacramento Valley. Yellow warblers are found in riparian vegetation near streams and meadows. The breeding season is from April through late July (Shuford and Gardali 2008:332–334). Nests are generally placed 2–16 feet above the ground in young deciduous trees or in shrubs (Zeiner et al. 1990a:568). Yellow warblers may make several attempts at nesting throughout the season, but typically only produce one group of hatchlings per year (Shuford and Gardali 2008:336).

There are no CNDDDB records of yellow warbler within 5 miles of the study area (California Department of Fish and Wildlife 2016a). The riparian forest and riparian scrub-shrub in the study area provide suitable nesting and foraging habitat for yellow warbler.

Tricolored Blackbird

Tricolored blackbird is a highly colonial species that is largely endemic to California. Tricolored blackbird breeding colony sites require open, accessible water; a protected nesting substrate, including either flooded, thorny, or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony. Tricolored blackbird breeding colonies occur in freshwater marshes dominated by tules (*Scirpus* spp.) and cattails (*Typha* spp.), in Himalayan blackberries, and in silage and grain fields (Beedy and Hamilton 1997:3–4). The breeding season is from late February to early August (Beedy and Hamilton 1999). Tricolored blackbird foraging habitats in all seasons include annual grasslands, dry seasonal pools, agricultural fields (such as large tracts of alfalfa with continuous mowing schedules, and recently tilled fields), cattle feedlots, and dairies. Tricolored blackbirds also forage occasionally in riparian scrub habitats and

along marsh borders. Weed-free row crops and intensively managed vineyards and orchards do not serve as regular foraging sites. Most tricolored blackbirds forage within 3 miles of their colony sites but commute distances of up to 8 miles have been reported (Beedy and Hamilton 1997:5).

There are 11 CNDDDB records of tricolored blackbird breeding sites within 5 miles of the study area (California Department of Fish and Wildlife 2016a). Suitable breeding habitat for tricolored blackbirds is present in freshwater emergent marsh in the study area. Tricolored blackbirds may forage in ruderal areas in the study area.

Western Red Bat

Western red bat occurs throughout much of California at lower elevations. It is found primarily in riparian and wooded habitats but also occurs seasonally in urban areas (Brown and Pierson 1996). Western red bats roost in the foliage of trees that often are located on the edge of habitats adjacent to streams, fields, or urban areas. This species breeds in August and September, and young are born in May through July (Zeiner et al. 1990b:60).

There are no CNDDDB records of western red bat within 5 miles of the study area (California Department of Fish and Wildlife 2016a), most likely because of a lack of survey data. Riparian forest in the study area provides suitable roosting habitat for western red bat. Suitable foraging habitat is located throughout the study area.

Hoary Bat

Hoary bats occur throughout California but are thought to have a patchy distribution in the southeastern deserts (Zeiner et al. 1990b:62). Hoary bats are found primarily in forested habitats, including riparian forests, and may occur in park and garden settings in urban areas. Day roost sites are in the foliage of coniferous and deciduous trees (Brown and Pierson 1996). Woodlands with medium to large trees with dense foliage provide suitable maternity roost sites (Zeiner et al. 1990b:62). Mating occurs in the fall, and after delayed fertilization, young are born May–June (Zeiner et al. 1990b:62; Brown and Pierson 1996).

There are no CNDDDB records of hoary bats within 5 miles of the study area (California Department of Fish and Wildlife 2016a), most likely because of a lack of survey data. Riparian forest in the study area provides suitable roosting habitat, and suitable foraging habitat is located throughout the study area.

Silver-Haired Bat

Silver-haired bats occur primarily in the northern portion of California and at higher elevations in the southern and coastal mountain ranges (Brown and Pierson 1996) but may occur anywhere in California during their spring and fall migrations. They are associated with coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats (Zeiner et al. 1990b:54). Silver-haired bats roost in trees almost exclusively in the summer, and maternity roosts typically are located in woodpecker hollows. Maternal colonies range from several to about 75 individuals (Brown and Pierson 1996). Mating occurs in the fall, and after delayed fertilization, young are born during June–July (Zeiner et al. 1990b:54; Brown and Pierson 1996). Winter roost sites include hollow trees, rock crevices, mines, caves, and houses. Silver-haired bats have also been found hibernating in leaf litter (Brown and Pierson 1996).

There is one CNDDB record of silver-haired bat within 5 miles of the study area (California Department of Fish and Wildlife 2016a). Riparian forest in the study area provides suitable roosting habitat, and suitable foraging habitat is located throughout the study area.

Pallid Bat

Pallid bat is found throughout most of California at low to middle elevations (6,000 feet). Pallid bats are found in a variety of habitats, including desert, brushy terrain, coniferous forest, and non-coniferous woodlands. In central and northern California, the species is associated with oak, ponderosa pine, redwood, and giant sequoia habitats. Pallid bats forage among vegetation and above the ground surface, eating large ground-dwelling arthropods and large moths. Daytime roost sites include rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are commonly under bridges but are also in caves and mines (Brown and Pierson 1996). Hibernation may occur during late November through March. Pallid bats breed from late October through February (Zeiner et al. 1990b:70), and one or two young are born in May or June (Brown and Pierson 1996).

There are no CNDDB records of pallid bat within 5 miles of the study area (California Department of Fish and Wildlife 2016a). Riparian forest in the study area provides suitable nesting and foraging habitat for this species.

3.10.3 Regulatory Setting

This section summarizes key Federal, state, and local regulatory information that applies to wildlife.

3.10.3.1 Federal

The following Federal policies related to wildlife may apply to implementation of the proposed project. These policies include the National Environmental Policy Act, which was previously discussed in Section 3.9.2.1 of *Vegetation and Wetlands*.

Federal Endangered Species Act

The Federal ESA protects fish and wildlife species and their habitats that have been identified by National Marine Fisheries Service (NMFS) or USFWS as threatened or endangered. *Endangered* refers to species, subspecies, or distinct population segments (DPSs) that are in danger of extinction through all or a significant portion of their range. *Threatened* refers to species, subspecies, or DPSs that are likely to become endangered in the near future.

ESA is administered by USFWS and NMFS. In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fish, and USFWS is responsible for other listed species. Provisions of Sections 9 and 7 of ESA are relevant to this project and are summarized below.

Section 9: ESA Prohibitions

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered. Take of threatened species also is prohibited under Section 9, unless otherwise authorized by Federal regulations.¹ *Take*, as defined by ESA, means “to harass, harm, pursue, hunt, shoot, wound,

¹ In some cases, exceptions may be made for threatened species under ESA Section 4(d); in such cases, USFWS or NMFS issues a “4(d) rule,” describing protections for the threatened species and specifying the circumstances under which take is allowed.

kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Harm* is defined as "any act that kills or injures the species, including significant habitat modification."

Section 7: ESA Authorization Process for Federal Actions

Section 7 of the ESA provides a means for authorizing take of threatened and endangered species by Federal agencies. Under Section 7, the Federal agency conducting, funding, or permitting an action (the lead Federal agency, such as U.S. Army Corps of Engineers) must consult with NMFS or USFWS, as appropriate, to ensure that the proposed project would not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment (BA) to evaluate the nature and severity of the expected effect. In response, NMFS or USFWS issues a biological opinion (BO), with a determination that the proposed project either:

- may jeopardize the continued existence of one or more listed species (*jeopardy finding*) or result in the destruction or adverse modification of critical habitat (*adverse modification finding*), or
- would not jeopardize the continued existence of any listed species (*no jeopardy finding*) or result in adverse modification of critical habitat (*no adverse modification finding*).

The BO issued by NMFS or USFWS may stipulate discretionary *reasonable and prudent* conservation measures. If the project would not jeopardize a listed species, USFWS or NMFS issues an incidental take statement to authorize the proposed activity.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects migratory bird species from take. *Take*, under the MBTA, is defined as an action or an attempt to pursue, hunt, shoot, capture, collect, or kill (50 CFR 10.12). The definition differentiates between "intentional" take (take that is the purpose of the activity in question) and "unintentional" take (take that results from, but is not the purpose of, the activity in question).

Executive Order 13186 (signed January 10, 2001) directs each Federal agency taking actions that would have or likely would have a negative effect on migratory bird populations to work with USFWS to develop a memorandum of understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse effects on migratory bird resources when conducting Federal agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The executive order is designed to assist Federal agencies in their efforts to comply with the MBTA; it does not constitute any legal authorization to take migratory birds.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires consultation with USFWS and the state fish and wildlife agencies where the waters of any stream or other body of water are proposed, authorized,

permitted, or licensed to be impounded, diverted, or otherwise controlled or modified under a Federal permit or license. Consultation is in progress for the purpose of preventing loss of and damage to wildlife resources, led by USFWS in coordination with NMFS and DFW.

3.10.3.2 State

California Environmental Quality Act and CESA apply to wildlife but were discussed in Section 3.9.2.1 of *Vegetation and Wetlands* and thus not repeated here. Other state policies related to wildlife that may apply to implementation of the proposed project are discussed below.

California Fish and Game Code

As discussed in Chapter 8, Section 1602 of the California Fish and Game Code requires project proponents to notify DFW before any project diverts, obstructs, or changes the natural flow, bed, channel, or bank of any river, stream, or lake. When an existing fish or wildlife resource may be substantially adversely affected, DFW is required to propose reasonable changes to the project to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

The California Fish and Game Code provides protection from take for a variety of species, referred to as fully protected species. Section 5050 lists protected amphibians and reptiles. Section 5515 prohibits take of fully protected fish species. Section 3511 prohibits take of fully protected bird species. Fully protected mammals are protected under Section 4700. The California Fish and Game Code defines *take* as "hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited.

DFW implemented the MBTA by adopting Fish and Game Code Section 3513. Fish and Game Code Sections 3503, 3503.5, and 3800 provide additional protections for birds. Section 3503 prohibits the destruction of nests and eggs. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Section 3800 prohibits take of any nongame birds (i.e., birds that are not resident game birds, migratory game birds, or fully protected birds). Many bird species could nest in the affected area or vicinity. The nests would be protected under these sections of the California Fish and Game Code.

3.10.3.3 Local

Butte Regional Conservation Plan

The Butte Regional Conservation Plan is a program to provide regional conservation strategies for covered special-status species and sensitive natural communities in the lowland and foothill region of Butte County plan area, which includes the study area. However, SBFCA is not a permit applicant, and its activities are not covered under the BRCP.

Butte County General Plan 2030

The policies below are taken from the Conservation and Open Space Element of the Butte County General Plan 2030, adopted in October 2010 and amended in November 2012 (County of Butte 2012:235–240). These policies are designed to guide planning related to and affecting habitat and biological resources, including vegetation and wetlands, within Butte County's jurisdiction.

Goal COS-6: Engage in cooperative planning efforts to protect biological resources.

- COS-P6.1 The County shall coordinate with applicable federal, State, regional and local agencies on natural resources and habitat planning.

Goal COS-7: Conserve and enhance habitat for protected species and sensitive biological communities.

- COS-P7.1 Conservation easements that protect habitat areas, habitat corridors and sensitive biological resources shall be promoted.
- COS-P7.2 Clustered development patterns shall be encouraged in order to conserve habitat for protected species and biological resources.
- COS-P7.3 Creeks shall be maintained in their natural state whenever possible, and creeks and floodways shall be allowed to function as natural flood protection features during storms.
- COS-P7.6 New development projects shall include setbacks and buffers along riparian corridors and adjacent to habitat for protected species, except where permitted in the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) Planning Area and where such development is consistent with the conditions of the HCP/NCCP, upon the future adoption of the [Butte Regional] HCP/NCCP.
- COS-P7.7 Construction barrier fencing shall be installed around sensitive resources on or adjacent to construction sites. Fencing shall be installed prior to construction activities and maintained throughout the construction period.
- COS-P7.8 Where sensitive on-site biological resources have been identified, construction employees operating equipment or engaged in any development-associated activities involving vegetation removal or ground disturbing activities in sensitive resource areas shall be trained by a qualified biologist and/or botanist who will provide information on the on-site biological resources (sensitive natural communities, special status plant and wildlife habitats, nests of special-status birds, etc.), avoidance of invasive plant introduction and spread, and the penalties for not complying with biological mitigation requirements and other state and federal regulations.
- COS-P7.9 A biologist shall be retained to conduct construction monitoring in and adjacent to all habitats for protected species when construction is taking place near such habitat areas.

Goal COS-8: Maintain and promote native vegetation.

- COS-P8.1 Native plant species shall be protected and planting and regeneration of native plant species shall be encouraged, wherever possible, in undisturbed portions of development sites.
- COS-P8.2 New landscaping shall promote the use of xeriscape and native tree and plant species, including those valued for traditional Native American cultural uses.

Goal COS-9: Protect identified special-status plant and animal species.

- COS-P9.1 A biological resources assessment shall be required for any proposed development project where special-status species or critical habitat may be present. Assessments shall be carried out under the direction of Butte County. Additional focused surveys shall be conducted during the appropriate season if necessary. Upon adoption of the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP), assessment requirements of the [Butte Regional] HCP/NCCP shall be implemented for development projects within the [Butte Regional] HCP/NCCP area.
- COS-P9.2 If special-status plant or animal species are found to be located within a development site, proponents of the project shall engage in consultation with the appropriate federal, state and regional agencies and mitigate project impacts in accordance with state and federal law. Upon adoption of the Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP), mitigation requirements of the [Butte Regional] HCP/NCCP shall be implemented for development projects within the [Butte Regional] HCP/NCCP area. Examples of mitigation may include:

- a. Design the proposed project to avoid and minimize impacts.
- b. Restrict construction to specific seasons based on project-specific special-status species issues (e.g. minimizing impacts to special-status nesting birds by constructing outside of the nesting season).
- c. Confine construction disturbance to the minimum area necessary to complete the work.
- d. Mitigate for the loss of special-status species by purchasing credits at an approved conservation bank (if a bank exists for the species in question), funding restoration or habitat improvement projects at existing preserves in Butte County, or purchasing or donating mitigation lands of substantially similar habitat.
- e. Maintain a minimum 100-foot buffer on each side of all riparian corridors, creeks and streams for special-status and common wildlife.
- f. Establish setbacks from the outer edge of special-status species habitat areas.
- g. Construct barriers to prevent compaction damage by foot or vehicular traffic.

Oroville Wildlife Area and Oroville/Spenceville Management Plans

Although these plans were prepared by California Department of Fish and Game (now DFW), they are included with the local regulatory information because they are considered local policies.

The Oroville Wildlife Area Management Plan (California Department of Fish and Game 1978) was prepared to ensure the preservation and enhancement of fish and wildlife resources of the OWA and for reasonable use and enjoyment by the public. The objectives of the OWA as stated in this plan are to: 1) maintain and improve fish and wildlife resources of the area for their intrinsic and ecological values; 2) maintain and improve the environmental quality and amenity of the area; and 3) provide for the recreational, scientific, and educational use of the area.

General Plans identified in the Oroville Wildlife Area Management Plan that are relevant to the proposed project are as follows.

- 1) Promote openings in thick brush to improve herbaceous growth.
- 2) Promote evergreen cover.
- 3) Promote growth of food producing trees and shrubs.
- 4) Plant herbaceous species to increase food production.
- 5) Promote better water distribution and quality.
- 6) Develop high ground (refuge islands during flooding).
- 7) Provide better nesting habitat and reproduction sites.
- 8) Control vegetation to reduce undesirable species.

The Oroville Wildlife Area Management Plan was updated in 1985 as the Oroville/Spenceville Management Plan (California Department of Fish and Game 1985). The objectives of the OWA as stated in the updated plan are to: 1) preserve, protect, and perpetuate habitats required by fish and wildlife; and 2) provide recreational opportunities for the people of the State of California, including hunting, fishing, nature study, photography, and other compatible outdoor activities. Management recommendations that were included in the Oroville/Spenceville Management Plan that are relevant to the proposed project are as follows.

1. Heron and egret rookeries should be protected on both areas.
2. All confirmed raptor nesting sites should be protected.

DFW is developing an updated management plan for OWA (California Department of Water Resources 2007). However, because that plan has not yet been developed or approved, it does not apply to the proposed project and is not discussed further. When the license is issued for Federal Energy Regulatory Commission Project No. 2100, a new OWA management plan will be developed.

3.10.4 Environmental Effects

Potential impacts of the proposed project on wildlife are discussed in the context of State CEQA Guidelines Appendix G checklist items.

- a. ***Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?***

Impact WILD-1: Potential Mortality or Disturbance of VELB and its Habitat (Elderberry Shrubs) as a result of Vegetation Management and Project Construction (less than significant with mitigation for all components)

Removal or disturbance of elderberry shrubs as a result of invasive species removal and riparian planting activities and construction of hydraulic improvements and recreation enhancements in the project area could result in the mortality or disturbance of VELB, which would be a significant impact. The specific potential impacts for the three project components are discussed below.

Vegetation Management: Mechanical or hand removal treatments for invasive species within the existing riparian forest and riparian scrub-shrub vegetation communities in the project area would reduce competition and enhance the habitat for elderberry shrubs. However, removal or disturbance of elderberry shrubs could inadvertently result from invasive species removal activities. The installation of the riparian woodland, riparian scrub-shrub, and gravel understory plantings and irrigation lines in existing riparian habitat could disrupt or damage the roots and subsequent health of elderberry shrubs. Soil disturbance during interior channel grading activities adjacent to shrubs may affect the roots and subsequent health of elderberry shrubs. These would be potentially significant impacts. Implementation of Mitigation Measures WILD-MM-1 through WILD-MM-4 will reduce this potential impact to a less-than-significant level.

Hydraulic Improvements: Construction of hydraulic improvements, including the rock gabion inflow weir, rock slope placement along the existing outflow weir, notch connections to the river, fish barrier berm, interior channel grading, and interior road culvert crossings would occur in areas where elderberry shrubs have been previously mapped (California Department of Water Resources 2016) or have the potential for elderberry shrubs to occur. Construction activities associated with hydraulic improvements could result in the removal or disturbance of elderberry shrubs and the potential mortality or disturbance of VELB if present. Dust generated during construction is not expected to affect valley elderberry longhorn beetle or its habitat because studies conducted by Talley et al. (2006b) and Talley and Holyoak (2009) have shown that dust accumulations do not affect the presence of the beetle or have effects on the shrubs. Other construction impacts, such as noise and vibration, may directly affect adult VELB or exposed larvae or eggs. Soil disturbance

adjacent to shrubs may affect the roots and subsequent health of elderberry shrubs. Shrubs located farther from the construction area and those sheltered by surrounding vegetation are expected to have fewer construction-related impacts than shrubs that are closer to the construction area and in more open areas. The removal or disturbance of elderberry shrubs would be considered a significant impact on VELB. Implementation of Mitigation Measures WILD-MM-1 through WILD-MM-4 will reduce this impact to a less-than-significant level.

Recreation Features: Construction of parking lots, footbridges, and a concrete pad for the existing portable restrooms, and the grading of river access areas would occur in areas where elderberry shrubs have been previously mapped (California Department of Water Resources 2016) or that have the potential for elderberry shrubs to occur. Construction-related impacts would be similar to those described for hydraulic improvements and would be considered a significant impact on VELB. Implementation of Mitigation Measures WILD-MM-1 through WILD-MM-4 will reduce this impact to a less-than-significant level.

Mitigation Measure WILD-MM-1: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Before any work occurs in the project area, including grading, a qualified biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid impacts on sensitive biological resources (e.g., riparian habitat, special-status species, special-status wildlife habitat) and the penalties for not complying with permit requirements. The biologist will inform all construction personnel about the life histories of special-status species with potential for occurrence on site, the importance of maintaining habitat, and the terms and conditions of the biological opinion or other authorizing document. Proof of this instruction will be submitted to USFWS, DFW, or another overseeing agency, as appropriate.

The training will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid impacts on special-status species during project construction. The construction crew leader will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Educational training will be conducted for new personnel as they are brought on the job during the construction period. General restrictions and guidelines for vegetation and wildlife that will be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the project area.
- Project-related vehicles and construction equipment will restrict off-road travel to the designated construction area.
- All food-related trash will be disposed of in closed containers and removed from the project site at least once a week during the construction period. Construction personnel will not feed or otherwise attract fish or wildlife to the project area.
- No pets or firearms will be allowed in the project area.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.

For special-status wildlife, any worker who inadvertently injures or kills a special-status wildlife species or finds one dead, injured, or entrapped will immediately report the incident to the biological monitor. The monitor will immediately notify SBFCA, who will provide verbal notification to the USFWS Endangered Species Office or the local DFW warden or biologist within 3 working days. SBFCA will follow up with written notification to USFWS or DFW within 5 working days.

Mitigation Measure WILD-MM-2: Conduct VELB Surveys Prior to Construction

Surveys of elderberry shrubs will be conducted within 100 feet of the project footprint by a qualified biologist. Surveys will be conducted in accordance with the Conservation Guidelines for VELB (U.S. Fish and Wildlife Service 1999a). Surveys will consist of counting and measuring the diameter of each stem, and examining shrubs for the presence of VELB exit holes. Survey results and an analysis of the number of elderberry seedlings/cuttings and associated native plants identified during the survey will be submitted to USFWS.

Mitigation Measure WILD-MM-3: Implement Measures to Protect VELB and its Habitat during Construction

Complete avoidance of impacts on VELB is assumed when a 100-feet-wide buffer area around elderberry shrubs is established and maintained during construction (U.S. Fish and Wildlife Service 1999a). Elderberry shrubs and clusters within 100 feet of the construction area that will not be removed will be protected during construction. A qualified biologist (i.e., with elderberry/VELB experience), will mark the elderberry shrubs and clusters that will be protected during construction. Orange construction barrier fencing will be placed along the edges of designated buffer areas. The buffer area distances will be proposed by the biologist and approved by USFWS. No construction activities will be permitted in the buffer areas other than the activities necessary to erect the fencing. Signs will be posted along fencing for the duration of construction and will contain the following information.

This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.

When an elderberry shrub's dripline is within 10 feet of the work area, k-rails or concrete blocks will be placed at the dripline to provide additional protection to the shrub from construction equipment and activities. Temporary fences around the elderberry shrubs and k-rails/concrete blocks at shrub driplines will be installed as the first order of work. Temporary fences will be furnished, constructed, maintained, and later removed, as shown on the plans, as specified in the special provisions, and as directed by the project engineer. Temporary fencing will be 4 feet (1.2 meters) high, commercial-quality woven polypropylene, orange in color.

Buffer area fences around elderberry shrubs will be inspected weekly by a qualified biologist during ground-disturbing activities and monthly after ground-disturbing activities until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around elderberry shrubs throughout construction. Biological inspection reports will be provided to the project lead and USFWS.

SBFCA will ensure that the project site will be watered down as necessary to prevent dust from becoming airborne and accumulating on elderberry shrubs in and adjacent to the project site.

Mitigation Measure WILD-MM-4: Compensate for Impacts on VELB and its Habitat

It is expected that the number of blue elderberry and associated riparian native trees/shrubs being installed as part of the riparian plantings will be sufficient to meet the compensatory requirements for any elderberries that are affected by the proposed project. If the restoration plantings are not considered sufficient compensation by USFWS, SBFCA will do the following.

Before construction begins, SBFCA will compensate for direct impacts on elderberry shrubs by transplanting shrubs that cannot be avoided to a USFWS-approved conservation area or mitigation bank. Elderberry seedlings or cuttings and associated native species will also be planted in the conservation area. Each elderberry stem measuring 1 inch or greater in diameter at ground level that is adversely affected (i.e., transplanted or destroyed) will be replaced in the conservation area, with elderberry seedlings or cuttings at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems). The numbers of elderberry seedlings/cuttings and associated riparian native trees/shrubs to be planted as replacement habitat are determined by stem size class of affected elderberry shrubs, presence or absence of exit holes, and whether the shrub is located in a riparian or non-riparian area. Stock of either seedlings or cuttings will be obtained from local sources. The numbers of elderberry seedlings/cuttings and associated riparian native trees/shrubs will be determined based data collected during implementation of Mitigation Measure WILD-MM-2.

At the discretion of USFWS, shrubs that are unlikely to survive transplantation because of poor condition or location may be exempted from transplantation. In cases where transplantation is not possible, minimization ratios would be increased to offset the additional habitat loss.

The relocation of the elderberry shrubs will be conducted according to USFWS-approved procedures outlined in the Conservation Guidelines (U. S. Fish and Wildlife Service 1999a). Elderberry shrubs within the project area that cannot be avoided will be transplanted during the shrub's dormant phase (i.e., when it is not flowering or fruiting, typically November through the first 2 weeks of February). A qualified biological monitor will remain onsite while the shrubs are being transplanted.

Impact WILD-2: Potential Mortality or Disturbance of VELB and its Habitat (Elderberry Shrubs) as a Result of Project Operation (no impact for vegetation management and recreation features; less than significant with mitigation for hydraulic improvements)

The alteration of project area hydrology would cause increased frequency and depth of flooding that could result in the loss of elderberry shrubs. If elderberry shrubs are present in areas of increased flooding, project operation could result in mortality of these plants. The specific potential impacts for the three project components and their respective impact determinations are discussed below.

Vegetation Management: Maintenance of the restoration plantings during the operational phase of the project is considered a related, but separate action and is not analyzed as part of the proposed project. Therefore, there would be no impact associated with vegetation management under the proposed project.

Hydraulic Improvements: Elderberry shrubs have been found to be intolerant of long periods of inundation and there is evidence that they die very quickly after even short periods of flooding (River Partners 2008). Talley et al. (2006) noted in their report assisting the USFWS 5-year review of the species that elderberry shrubs respond negatively to saturated soil conditions and that they can only tolerate temporary root crown inundation. No elderberry shrubs have been mapped within the 2-year flooding area for the proposed project (Figure 2-1 and Figure 3.10-1). However, it is unclear if this area has been thoroughly surveyed for elderberry shrubs and if the substrate and existing inundation patterns in that area allow for elderberry recruitment and/or survival. If elderberries are present in the proposed 2-year flooding area, increased frequency and depth of flooding could result in the mortality of elderberries which would be a potentially significant impact. Implementation of Mitigation Measures WILD-MM-2 and WILD-MM-5, and if necessary, WILD-MM-4, will reduce this potential impact to a less-than-significant level.

Recreation Features: No operational impacts on VELB habitat are anticipated as a result of the constructed recreation features.

Mitigation Measure WILD-MM-2: Conduct VELB Surveys Prior to Construction

Mitigation Measure WILD-MM-5: Monitor Elderberries in the Inundation Areas after Construction

If elderberry shrubs are found in the 2-year flooding area during the surveys conducted under Mitigation Measure WILD-MM-2, annual monitoring of these shrubs will be conducted for a minimum of 3 years to ensure ongoing viability of the plants in this area of increased frequency and depth of inundation. If elderberry mortality is observed after 3 years, SBFCA will provide additional compensation as outlined in Mitigation Measure WILD-MM-4.

Impact WILD-3: Potential Mortality or Disturbance of Western Pond Turtle as a Result of Project Construction (less than significant with mitigation for all components)

Aquatic and upland (overwintering, nesting) habitat for western pond turtle may be removed or temporarily disturbed by the removal of invasive vegetation and the construction of hydraulic improvements and recreation enhancements in the project area. Western pond turtles may be killed, injured, or disturbed by activities that remove suitable aquatic or upland habitat as a result of project implementation. Declines in populations of western pond turtles throughout the species range have been documented (Jennings and Hayes 1994). Loss of individuals in the project area could diminish the local population and lower reproductive potential, which could contribute to the further decline of this species. The loss of upland nesting sites or eggs also would decrease the local population. The specific potential impacts for the three project components are discussed below.

Vegetation Management: Mechanical or hand removal treatments would be used for water primrose, giant reed, and scarlet wisteria. The freshwater emergent wetland, open water channels, and pond habitats in which invasive species removal would occur provide suitable aquatic habitat for western pond turtle. Therefore, invasive vegetation removal activities have the potential to kill, injure, or disturb western pond turtles if they are present in the project area. This would be a potentially significant impact. Implementation of Mitigation Measures WILD-MM-1 and WILD-MM-6 will reduce this potential impact to a less-than-significant level. The removal of invasive plants, including approximately 500 acres of water primrose, would ultimately improve water quality and increase suitable aquatic habitat for western pond turtle.

Installation of riparian woodland and riparian scrub-shrub plantings would occur within 1,000 feet of potential suitable aquatic habitat for western pond turtle. Planting activities could result in the destruction of pond turtle nests containing eggs or young individuals if affected areas are being used for egg deposition. This would be a potentially significant impact. Implementation of Mitigation Measures WILD-MM-1 and WILD-MM-6 will reduce this potential impact to a less-than-significant level.

Hydraulic Improvements: Construction of hydraulic improvements, including the rock gabion inflow weir, rock slope placement along the existing outflow weir, notch connections to the river, fish barrier berm, and interior road culvert crossings, would occur in ponds, riparian forest and riparian scrub-shrub which provide suitable aquatic and upland habitat for western pond turtle. The interior channel grading would also occur in suitable aquatic habitat for western pond turtle. Construction activities (such as grading and movement of heavy equipment) could result in the mortality or injury of western pond turtles and the destruction of pond turtle nests containing eggs or young individuals if affected areas are being used for egg deposition. This would be a potentially significant impact. Implementation of Mitigation Measures WILD-MM-1 and WILD-MM-6 will reduce this potential impact to a less-than-significant level.

Recreation Features: Construction of the parking lot and concrete pad for the existing portable restrooms at the north end of the project area, and the grading of the northern river access area would occur in areas where the land cover type is developed/disturbed and therefore would have a low potential to affect western pond turtle. The parking lot regrade at the south end of the project area and the grading of the southern river access area would occur in developed/disturbed, riparian forest, and riparian shrub/scrub habitat and therefore have some potential to result in impacts on western pond turtle and its upland habitat. Construction-related impacts would be similar to those described under hydraulic improvements and would be considered a significant impact on western pond turtle. Implementation of Mitigation Measures WILD-MM-1 and WILD-MM-6 will reduce this potential impact to a less-than-significant level.

Mitigation Measure WILD-MM-1: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-6: Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Construction Activities if Turtles are Observed

One week before and within 24 hours of beginning work in suitable aquatic habitat, a qualified biologist (one who is familiar with different species of turtles) will conduct surveys for western pond turtle. The surveys should be timed to coincide with the time of day and year when turtles are most likely to be active (during the cooler part of the day between 8:00 a.m. and 12:00 p.m. during spring and summer). Prior to conducting the surveys, the biologist should locate the microhabitats for turtle basking (logs, rocks, brush thickets) and determine a location to quietly observe turtles. Each survey should include a 30-minute wait time after arriving onsite to allow startled turtles to return to open basking areas. The survey should consist of a minimum 15-minute observation time per area where turtles could be observed. If western pond turtles are observed during either survey, a biological monitor should be present during construction activities in the aquatic habitat where the turtle was observed and will capture and remove, if possible, any entrapped turtle. The biological monitor will also be mindful of suitable nesting and overwintering areas in proximity to suitable aquatic habitat and periodically inspect these

areas for nests and turtles. The biological monitor's DFW scientific collecting permit will include capture and relocation of turtles.

Impact WILD-4: Potential Mortality or Disturbance of and Loss of Suitable Habitat for Giant Garter Snake as a Result of Project Construction (less than significant with mitigation for all components)

Construction of the proposed project would result in the permanent loss of up to 2.44 acres and the temporary loss or disturbance of up to 33.18 acres of suitable aquatic habitat for giant garter snake. Construction of the proposed project would also result in the permanent loss of up to 0.64 acre of suitable upland habitat for giant garter snake and temporary loss or disturbance of up to 9.78 acres of suitable upland habitat for giant garter snake (Table 3.10-2; Figure 3.10-2). Aquatic and upland habitat for giant garter snake would be removed or temporarily disturbed by the removal of invasive plants and the construction of hydraulic improvements and recreation enhancements in the project area. Vegetation management and construction activities in suitable habitat could result in the injury, mortality, or disturbance of giant garter snakes. Loss of habitat and potential injury or mortality of snakes are considered significant impacts because the project could reduce the local population size of a federally and state-listed species.

Temporarily affected aquatic and upland habitat would be restored to pre-project conditions within one season (a season is defined as the calendar year between May 1 and October 1 [U.S. Fish and Wildlife Service 1997]), as described in Mitigation Measure WILD-MM-8, and would not be expected to substantially limit the availability of habitat for giant garter snake in the vicinity of the study area. It is anticipated that the 500 acres of water primrose removal would be sufficient to meet the compensatory mitigation requirements for the permanent and temporary losses of suitable aquatic and upland habitat for giant garter snake that would result from the proposed project. Water primrose removal would substantially enhance the value of aquatic habitat in the project area by increasing open water foraging habitat and improving water quality and prey availability for the species (Hansen et al. 2010). If restoration and enhancement of aquatic habitat is not considered adequate compensation, permanently impacted habitat for giant garter snake would be compensated for through purchasing preservation credits at a USFWS- and DFW- approved mitigation bank (Mitigation Measure WILD-MM-9). Permanent and temporary losses of suitable aquatic and upland habitat for giant garter snake within the study area are summarized in Table 3.10-2.

Disturbance or degradation of suitable aquatic habitat for giant garter snake in or adjacent to the study area could occur from fuel or oil leaks or spills during construction activities adjacent to aquatic habitat. These potential impacts would be avoided by installing sediment and construction barrier fencing and installing sediment fencing where staging areas are within 200 feet of aquatic habitat (Mitigation Measure WILD-MM-7), and by implementing a spill prevention, control, and countermeasure plan (see Section 2.4.3 in Chapter 2, *Project Description*).

Construction activities associated with vegetation management, hydraulic improvements, and recreation features in and adjacent to suitable habitat could result in the injury, mortality, or disturbance of giant garter snakes. Giant garter snakes could be injured or crushed by construction equipment working in or near suitable aquatic and upland habitat. Snakes could also be killed by construction vehicles traveling though the study area. Fuel or oil spills from construction equipment into aquatic habitat could also cause illness or mortality of giant garter snakes. Noise and vibrations

from construction equipment, and presence of human activity during construction activities may also disturb giant garter snakes within the study area.

Most construction activities will be limited to the snake's active period (May 1–October 1) when the potential for direct mortality is reduced because snakes can actively move and avoid danger. However, giant garter snakes, if present in burrows or other suitable cover in upland habitat during the active season, could be injured or killed by construction equipment. Mitigation Measure WILD-MM-11 will be implemented to reduce the potential for mortality and compensate for temporary impacts on upland habitat during the active season. Additionally, the annual construction schedule extends from April 15 through November 1 (see Section 2.3.5.1 in Chapter 2, *Project Description*). Giant garter snakes, if present, in the upland habitat could be injured or killed during work within the snake's dormant period. If components of the project must be completed during the inactive season, Mitigation Measure WILD-MM-10 will be implemented to reduce the potential for mortality in uplands within 200 feet of aquatic habitat during this time period.

Results of a USGS study indicate that giant garter snakes utilize burrows in upland areas during their active period more than previously assumed (Halstead et al. 2015). Previously, conducting construction activities during the active period was considered a minimization measure because giant garter snakes were expected to be associated primarily with aquatic habitat during the active period. However, USGS found that at least one-half of giant garter snake activity during the active season occurs in terrestrial environments, although primarily within 33 feet of wetlands (Halstead et al. 2015). The vast majority (i.e., 90%) of the snakes were females that were in burrows within 66 feet of water during the active season (Halstead et al. 2015). Giant garter snakes, if present in burrows or other suitable cover in upland habitat during the active season, could be injured or killed by construction equipment. Mitigation Measure WILD-MM-11 will be implemented to reduce the potential for mortality and compensate for temporary impacts on upland habitat during the active season. Because the proposed project has the potential to result in take of giant garter snake, SBFCA will consult with USFWS and DFW to obtain the necessary take permits prior to the start of construction.

The proposed project will result in overall improved aquatic habitat for giant garter snake. The riparian plantings will increase potential prey habitat for the species. The removal of invasive aquatic species such as water primrose will increase the open water foraging habitat for giant garter snake and improve both water quality and prey availability for the species.

The specific potential impacts for the three project components and their respective impact determinations are discussed below.

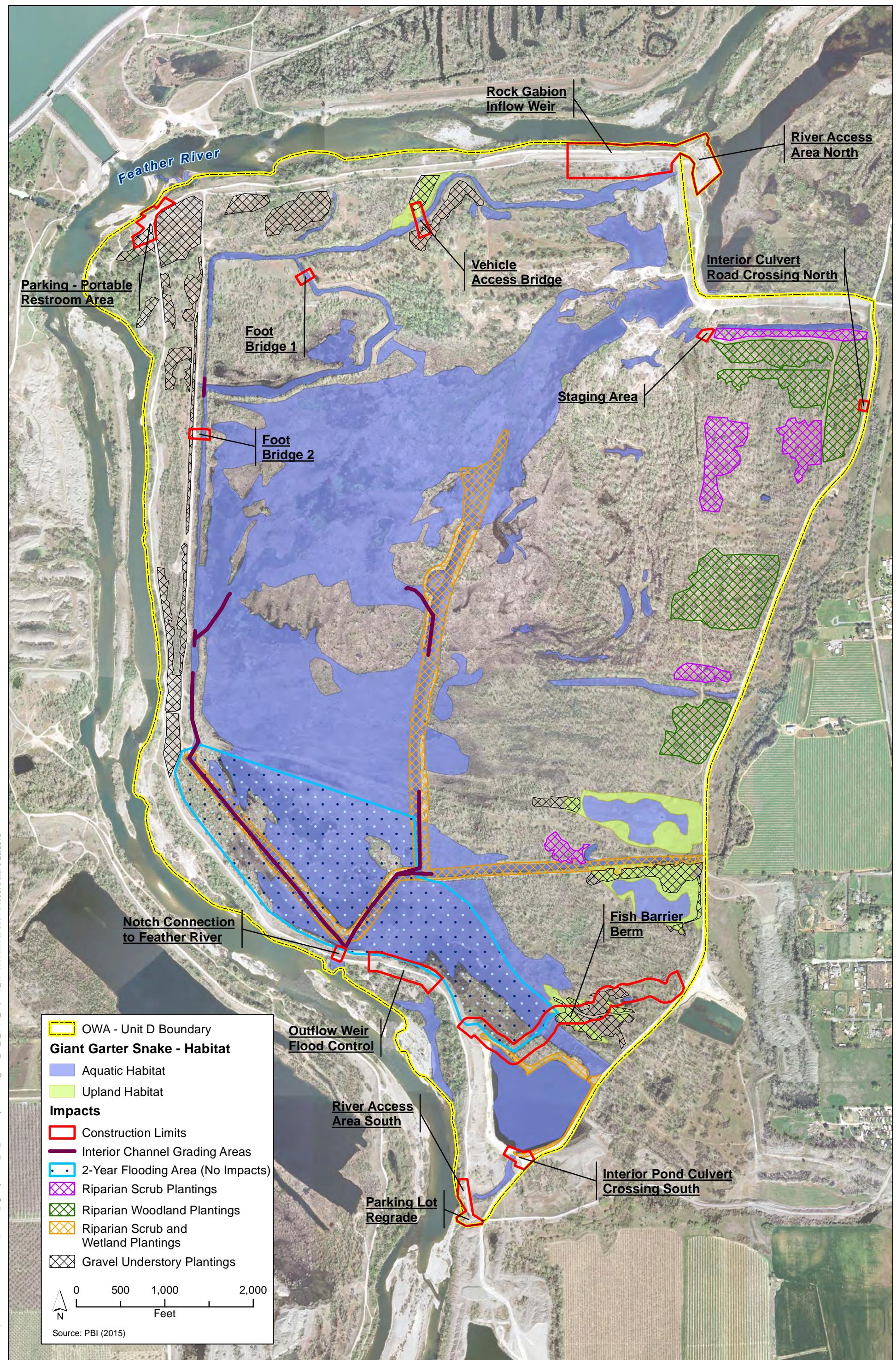


Figure 3.10-2
Impacts on Giant Garter Snake Habitat

Table 3.10-2. Impacts on Giant Garter Snake Habitat in the Study Area

| Impacts | Aquatic Habitat (acres) | Upland Habitat (acres) ^a |
|--|-------------------------|-------------------------------------|
| Permanent | | |
| Fish Barrier Berm | 1.86 | 0.42 |
| Rock Gabion Inflow Weir | 0.07 | 0 |
| Interior Pond Culvert Crossing South | 0.08 | 0 |
| Notch Connection to Feather River | 0 | 0 |
| Outflow Weir Flood Control | 0.09 | 0 |
| Footbridges and Vehicle Access Bridges | 0.34 | 0.22 |
| River Access Area North | 0 | 0 |
| <i>Total Permanent</i> | <i>2.44</i> | <i>0.64</i> |
| Temporary^b | | |
| Riparian Scrub Plantings | 0.14 | 0 |
| Riparian Woodland Plantings | 0 | 0 |
| Riparian Scrub and Wetland Plantings | 33.01 | 1.02 |
| Gravel Understory Plantings | 0.03 | 8.76 |
| <i>Total Temporary</i> | <i>33.18</i> | <i>9.78</i> |
| Habitat Restoration and Enhancement | 500 | - |

^a Upland habitat impacts are suitable terrestrial habitat calculated within 200 feet of aquatic habitat

^b Interior channel grading would also result in the temporary disturbance of approximately 5,997 linear feet (1,828 meters) of suitable aquatic habitat for giant garter snake.

Vegetation Management: Mechanical or hand removal treatments would be used for water primrose, giant reed, and scarlet wisteria. The open water channels, and pond habitats in which invasive species removal would occur provide suitable aquatic habitat for giant garter snake. Removal of invasive vegetation, therefore, has the potential to kill, injure, or disturb giant garter snakes if they are present in the project area. This would be a potentially significant impact. Mechanically removing water primrose will increase the open water foraging habitat for GGS and improve both water quality and prey availability for the species, ultimately benefiting giant garter snake. During the snake's active period (between May 1 and October 1), potential for injury and mortality are lessened because snakes are actively moving and avoiding danger. Giant garter snakes are more vulnerable to danger during their inactive period because they are occupying underground burrows or crevices and are more susceptible to direct impacts, especially during excavation. Implementation of Mitigation Measure WILD-MM-1 and Mitigation Measures WILD-MM-7 through WILD-MM-11 will reduce this potential impact to a less-than-significant level. Mechanically removing water primrose will increase the open water foraging habitat for GGS and improve both water quality and prey availability for the species, ultimately benefiting giant garter snake.

Installation of riparian woodland and riparian scrub plantings would primarily occur within existing riparian forest and riparian shrub-scrub upland habitats, which do not provide suitable upland habitat for the species. However, some plantings would occur within suitable aquatic and upland habitat (e.g. ruderal habitat within 200 feet of suitable aquatic habitat) for giant garter snake. Planting activities would result in the temporary disturbance of up to 33.18 acres of aquatic habitat and up to 9.78 acres of upland habitat (Table 3.10-2; Figure 3.10-2). If planting activities were to occur during the inactive season (between October 2 and April 30) when snakes are occupying

underground burrows or crevices, snakes could be killed, or injured if affected areas are being used for hibernation. This would be a potentially significant impact. Implementation of Mitigation Measure WILD-MM-1 and Mitigation Measures WILD-MM-7 through WILD-MM-10 will reduce this potential impact to a less-than-significant level. The riparian plantings would ultimately improve giant garter snake habitat within the project area by increasing habitat for prey species during the active season.

Hydraulic Improvements: Construction of the hydraulic improvements would result in the permanent loss of up to 2.01 acres of suitable aquatic habitat and up to 0.42 acre of suitable upland habitat for giant garter snake. Permanent impacts on aquatic and upland habitats would result from the construction of the fish barrier berm, rock gabion inflow weir, and the southern interior pond culvert crossing (Table 3.10-2; Figure 3.10-2). Permanent impacts on upland habitat would also result from construction of the outflow weir flood control structure. The interior channel grading would also result in the temporary disturbance of approximately 5,997 linear feet (1,828 meters) of suitable aquatic habitat for giant garter snake. As described above, construction activities associated with hydraulic improvements in and adjacent to suitable habitat could result in the injury, mortality, or disturbance of giant garter snakes. This would be a significant impact. Implementation of Mitigation Measure WILD-MM-1 and Mitigation Measures WILD-MM-7 through WILD-MM-11 will reduce this potential impact to a less-than-significant level.

Recreation Features: Construction of the recreation features would result in the permanent loss of up to 0.34 acre of aquatic habitat and 0.22 acre of upland habitat for giant garter snake. Permanent impacts on aquatic and upland habitat would result from the construction of the footbridges and vehicle access bridges (Table 3.10-2; Figure 3.10-2). Construction-related impacts would be similar to those described above and would be considered a significant impact on giant garter snake. Mitigation Measure WILD-MM-1 and Mitigation Measures WILD-MM-7 through WILD-MM-11 will reduce this potential impact to a less-than-significant level.

Mitigation Measure WILD-MM-7: Avoid and Minimize Construction Impacts on Giant Garter Snake

The following measures will be implemented to avoid and minimize impacts on giant garter snake and its habitat.

- To the maximum extent possible, all construction activity in giant garter snake aquatic and upland habitat within 200 feet of aquatic habitat will be conducted during the snake's active period (between May 1 and October 1). During this timeframe, potential for injury and mortality are lessened because snakes are actively moving and avoiding danger. Giant garter snakes are more vulnerable to danger during their inactive period because they are occupying underground burrows or crevices and are more susceptible to direct impacts, especially during excavation.
- Because the interior channels cannot be dewatered due to the high water table at OWA, grading improvements will be monitored by a USFWS- and DFW-approved biologist during work in and along the channels when they are inundated.
- For work that cannot be conducted between May 1 and October 1, additional protective measures will be determined during consultation with USFWS and DFW.
- To reduce the likelihood of snakes entering the construction area, SBFCA will install exclusion fencing and orange construction barrier fencing along the edge of the construction

area that is within 200 feet of suitable habitat. The exclusion and barrier fencing will be installed during the active period for giant garter snakes (May 1 to October 1) to reduce the potential for injury and mortality during this activity. The exclusion fencing will consist of 3-feet-tall silt fencing buried 4–6 inches below ground level. One-way escape routes will be installed in the silt fence, or gaps will be left in the fencing during initial clearing and grubbing, to allow snakes to escape from the project area. Sandbags will be placed along the gaps to protect water quality and the gaps will be replaced with fencing once initial ground clearing is complete. To prevent snakes and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed such that there is a 1-foot gap between the ground and the bottom of the orange construction fencing. The fencing requirements will be included in the construction specifications and a USFWS- and DFW-approved biological monitor will be onsite to direct and monitor exclusion fence installation. The exclusion fencing will ensure that giant garter snakes are excluded from the construction area and that suitable upland and aquatic habitat is protected throughout construction. If the installation of exclusion fencing is not feasible, a full-time biological monitor will be present during all construction activities.

- A USFWS- and DFW-approved biologist will conduct a preconstruction survey in suitable habitat no more than 24 hours before construction. Prior to construction activities each morning, construction personnel will inspect exclusion and orange barrier fencing to ensure they are both in good working order. If any snakes are observed in the construction area during this inspection or at any other time during construction, the USFWS- and DFW-approved biologist will be contacted to survey the site for snakes. The project area will be re-inspected and surveyed whenever a lapse in construction activity of 2 weeks or more has occurred. If a snake (believed to be a giant garter snake) is encountered during construction, activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed.
- Vegetation clearing within 200 feet of the banks of suitable giant garter snake aquatic habitat will be limited to the minimum area necessary. Avoided giant garter snake habitat within or adjacent to the project area will be flagged and designated as an environmentally sensitive area, to be avoided by all construction personnel.
- The movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat will be confined to designated haul routes to minimize habitat disturbance.
- To avoid entrapment of giant garter snake, thereby preventing injury or mortality resulting from falling into trenches, all excavated areas more than 1 foot deep will be provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each workday. If escape ramps cannot be provided, then holes or trenches will be covered with plywood or other hard material.

Mitigation Measure WILD-MM-8: Restore Temporarily Disturbed Giant Garter Snake Aquatic and Upland Habitat to Pre-Project Conditions

Upon completion of the construction, SBFCA will restore temporarily affected suitable upland habitat for giant garter snake to pre-project conditions. Restoration of aquatic vegetation and annual grassland will be detailed in a mitigation and monitoring plan that will be reviewed and approved by USFWS prior to the start of construction.

Mitigation Measure WILD-MM-9: Compensate for Permanent Loss of Giant Garter Snake Habitat

It is anticipated that the 500 acres of water primrose removal would be sufficient to meet the compensatory mitigation requirements for the permanent loss of 2.44 acres of aquatic and 0.64 acre of upland habitats, the temporary disturbance of 33.18 acres of aquatic and 9.78 acres of upland habitats for giant garter snake, and the temporary disturbance of approximately 5,997 linear feet (1,828 meters) of suitable aquatic habitat for giant garter snake. Water primrose removal will substantially enhance the value of aquatic habitat in the project area by increasing open water foraging habitat and improving water quality and prey availability for the species). If restoration and enhancement of aquatic habitat is not considered adequate compensation, SBFCA will compensate for the permanent loss of suitable aquatic and upland habitat for giant garter snake by purchasing preservation credits at a USFWS- and DFW-approved mitigation bank. The amount of compensation will be determined through consultation with USFWS and DFW. The habitat at the conservation bank will be protected in perpetuity for giant garter snake. Prior to the start of construction, SBFCA will provide funding to the mitigation bank for preservation credits. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and before any construction activities are initiated. SBFCA will provide USFWS and DFW with copies of the credit sale agreement and fund transfer.

Mitigation Measure WILD-MM-10: Implement Additional Measures during Work in Suitable Habitat during the Giant Garter Snake Dormant Period

SBFCA will implement the following additional protective measures when work must occur during the giant garter snake dormant period (i.e., between October 2 and April 30), when snakes are more vulnerable to injury and mortality.

- A full-time, USFWS-approved biological monitor will be onsite for the duration of any earthmoving construction activities (not including driving along existing access roads or moving equipment within the study area) after October 1.
- All vegetation within 200 feet of aquatic habitat will be cleared prior to the giant garter snake hibernation period (i.e., vegetation clearing must be completed by October 1 for work the following winter).
- Exclusion fencing will be installed around the perimeter of the work area where construction activities associated with weir installation activities would take place. The fencing will enclose the work area to the maximum extent possible to prevent giant garter snakes from entering the work area. Fencing will be installed during the active period for giant garter snakes (May 1–October 1) to reduce the potential for injury and mortality during fence installation. The USFWS-approved biological monitor will work with the contractor to determine where fencing should be placed and will monitor fence installation. The exclusion fencing will consist of 3-feet-tall erosion fencing buried 4–6 inches below ground level. The exclusion fencing will minimize opportunities for giant garter snake hibernation in the adjacent upland area.
- A USFWS- and DFW-approved biologist will assist the contractor in avoiding disturbance of burrows in upland habitat during both the active and dormant periods. If burrows cannot be avoided, they will be carefully excavated by hand by a USFWS- and DFW-approved biologist. The burrow will be visually examined before hand-excavation begins. Flexible tubing (such

as pipe insulation) or empty water bottles will be placed in the burrow to keep it open while the burrow is excavated with hand tools. Once the burrow is excavated to the end of the tube or water bottles, the burrow will be visually examined and then the tubing or water bottles will be reinserted further into the burrow and the next section will be excavated. If a giant garter snake is found inside the burrow, excavation will stop and the biologist will immediately contact USFWS and DFW. A biologist with a 10(a)1(A) permit for giant garter snake will be contacted to relocate the snake to another suitable burrow outside of the work area.

- Temporarily disturbed habitat will be revegetated with native species when construction activities are complete.

Mitigation Measure WILD-MM-11: Monitor Work in Giant Garter Snake Upland Habitat during the Active Period and/or Compensate for Temporary Loss of Suitable Giant Garter Snake Habitat

One or more biological monitors will be present during ground disturbing activities and vegetation removal in upland habitat during the active period and mitigation for temporary effects on upland habitat will be provided at a 0.5:1 ratio or mitigation for temporary effects on upland habitat will be provided at a 1:1 ratio without the monitoring requirement. For the proposed modifications, SBFCA will provide monitoring and compensate for the temporary loss of 0.64 acre of suitable upland habitat for giant garter snake by purchasing credits up to 0.64 acre at a USFWS- and DFW-approved conservation bank. The habitat at the conservation bank will be protected in perpetuity for giant garter snake. Prior to the start of construction, SBFCA will provide funding to the conservation bank for giant garter snake habitat credits. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and before any construction activities are initiated. SBFCA will provide the USFWS and DFW with copies of the credit sale agreement and fund transfer.

Impact WILD-5: Potential Mortality or Disturbance of and Loss of Suitable Habitat for Giant Garter Snake as a result of Project Operation (no impact for vegetation management and recreation features; less than significant for hydraulic improvements)

The operation of the proposed project would be expected to result in a less-than-significant impact on giant garter snake. The specific potential impacts for the three project components and their respective impact determinations are discussed below.

Vegetation Management: Maintenance of the restoration plantings during the operational phase of the project is considered a related, but separate action and is not analyzed as part of the proposed project. Therefore, there would be no impact associated with vegetation management under the proposed project.

Hydraulic Improvements: The new notch connections will increase the area and duration of floodplain inundation resulting from reconnection of the project area to the Feather River. Hydraulic modeling results for the 2-year flood event show backwater from the Feather River extending into the project area to create approximately 150 acres of inundated floodplain habitat (Figure 2-3). However, suitable aquatic habitat for giant garter snake within the 2-year flooding area is already inundated under existing conditions between approximately November and March each year. Therefore, any increase in duration of flooding as a result of the new notch connections during this time period would not result in a significant impact on giant garter snake.

Recreation Features: No operational impacts on giant garter snake are anticipated as a result of the constructed recreation features.

Impact WILD-6: Potential Mortality or Disturbance of and Loss of Suitable Nesting Habitat for Swainson's Hawk as a result of Project Construction (less than significant with mitigation for all components)

Vegetation management activities and construction of hydraulic improvements and recreation features are anticipated to occur between April 15 and November 1, which is during the breeding season of Swainson's hawks (March through August). Construction activities and removal of riparian forest and riparian shrub/scrub vegetation could result in the loss or disturbance of Swainson's hawk habitat during the nesting season. Removal of nests or suitable nesting habitat and construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Removal of active nest trees or anticipated disturbance that may result in nest abandonment would require an incidental take permit from DFW. Loss of potential nesting habitat consisting of up to 90.2 acres of riparian forest and riparian shrub/scrub vegetation would be compensated for by the enhancement of 150 acres of riparian woodland and riparian scrub with new plantings. Loss of Swainson's hawk eggs or nests and nest abandonment as the result of project activities would be considered significant impacts. The specific potential impacts for the three project components are discussed below.

Vegetation Management: Mechanical or hand removal treatments for invasive species within the existing riparian forest and riparian scrub-shrub vegetation communities and installation of the riparian woodland, riparian scrub-shrub, and gravel understory plantings would occur in potentially suitable Swainson's hawk nesting habitat. Noise and visual disturbance from these activities during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment if Swainson's hawks were nesting in the area. This would be a significant impact. Implementation of Mitigation Measure WILD-MM-1 and Mitigation Measures WILD-MM-12 through WILD-MM-14 will reduce this impact to a less-than-significant level.

Hydraulic Improvements: Construction of hydraulic improvements, including the inflow and outflow weirs, notch connections to the river, fish barrier berm, and interior road culvert crossings, would occur in potentially suitable Swainson's hawk nesting habitat. A limited amount of the interior channel grading, primarily in the southeast part of the project area, would also abut potential nesting habitat. Construction of the hydraulic improvements would require removal of riparian habitat, resulting in the direct permanent loss of up to 6.8 acres of riparian forest and 0.1 acre of riparian scrub-shrub in the project area. Temporary losses of riparian vegetation could occur within the larger designated construction areas, and interior channel grading could affect several additional acres of riparian vegetation, depending on how equipment would access the channels. The extent of this loss would depend on equipment access needs, but could be up to 4.7 acres of riparian forest and 0.9 acre of riparian scrub-shrub. The loss of potential Swainson's hawk nesting habitat would be mitigated by implementation of the vegetation management project component that would enhance 150 acres of riparian woodland and riparian scrub. Removal of nests or suitable nesting habitat and construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Removal of active nest trees or anticipated disturbance that may result in nest abandonment would require an incidental take permit from DFW. Loss of Swainson's hawk eggs or nests and any activities resulting in nest abandonment would be considered significant impacts. Implementation of Mitigation Measures WILD-MM-1 and

Mitigations Measures WILD-MM-12 through WILD-MM-14 will reduce this impact to a less-than-significant level.

Recreation Features: Construction of recreation features, including the vehicle access bridge, the two footbridges, and the parking lot regrade, would occur in areas mapped as riparian forest and riparian scrub-shrub which would be potentially suitable nesting habitat for Swainson's hawk. Construction would require removal of riparian vegetation, resulting in the direct permanent loss of up to 1.0 acre of riparian forest and less than 0.1 acre of riparian scrub-shrub in the project area. Temporary losses of riparian vegetation could occur within the larger designated construction areas. The extent of this loss would depend on equipment access needs, but could be up to 0.3 acre of riparian forest and 0.2 acre of riparian scrub-shrub. The loss of potential Swainson's hawk nesting habitat would be mitigated by implementation of the vegetation management project component that would enhance 150 acres of riparian woodland and riparian scrub-shrub. Removal of nests or suitable nesting habitat and construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Removal of active nest trees or anticipated disturbance that may result in nest abandonment would require an incidental take permit from DFW. Loss of Swainson's hawk eggs or nests and any activities resulting in nest abandonment would be considered significant impacts. Implementation of Mitigation Measure WILD-MM-1 and Mitigation Measures WILD-MM-12 through WILD-MM-14 will reduce this impact to a less-than-significant level.

Mitigation Measure WILD-MM-12: Conduct Vegetation Removal and Riparian Planting Activities Outside of the Breeding Season for Birds

To the maximum extent feasible, SBFCA will schedule vegetation (trees, shrubs, ruderal areas) removal/trimming and riparian planting activities during the nonbreeding season of birds (September 1–January 31). If these activities cannot be scheduled in accordance with this timeframe, preconstruction/preactivity surveys for nesting birds and additional protective measures will be implemented (see Mitigation Measure WILD-MM-13). SBFCA will not remove trees with active Swainson's hawk or other active raptor nests. Because white-tailed kite is fully protected, removal of trees with active nests and activities that may result in loss of white-tailed kites is prohibited.

Mitigation Measure WILD-MM-13: Conduct Focused Surveys for Nesting Swainson's Hawk Prior to Construction and Implement Protective Measures during Construction

Because construction is anticipated to begin during the Swainson's hawk nesting season, surveys for nesting Swainson's hawks will be conducted in the spring 1 year before construction and in the spring of the year of construction. Focused surveys for Swainson's hawk will be conducted in the project area and in a buffer area up to 0.25 mile around the project area. The size of the buffer area surveyed will be based on the type of habitat present and line of sight from the construction area to surrounding suitable breeding habitat. Buffer areas containing unsuitable nesting habitat and/or with an obstructed line of sight to the project area will not be surveyed. Biologists will focus on suitable nest trees within and immediately adjacent to the project area that have the highest likelihood for disturbance. The number of surveys needed to determine the status of nesting will be dependent on the conditions during the surveys and behavior of the hawks. If needed, biologists will coordinate with DFW regarding the extent and number of surveys. Surveys would generally be conducted between February and July. Survey methods and results will be reported to DFW.

If active nests are found, SBFCA will maintain a 0.25-mile buffer or other distance determined appropriate through consultation with DFW, between construction activities and the active nest(s) until it has been determined that young have fledged. In addition, a qualified biologist (experienced with raptor behavior) will be present on site (daily) during construction activities occurring during the breeding season to watch for any signs of stress. If nesting birds are observed to exhibit agitated behavior indicating that they are experiencing stress, construction activities will cease until the qualified biologist, in consultation with DFW, determines that young have fledged.

Impact WILD-7: Potential Mortality or Disturbance of Nesting Special-Status and Non-Special Status Birds and Removal of Suitable Breeding Habitat as a Result of Project Construction (less than significant with mitigation for all components)

Special-status birds that may nest in the riparian forest in and adjacent to the study area include white-tailed kite, bald eagle, and yellow warbler. Bank swallow may nest adjacent to the construction area in the banks of the Feather River. Northern harrier may nest in ruderal areas in or adjacent to the construction area. Loggerhead shrike may nest in shrubs and trees in more open portions of the construction area. Tricolored blackbirds may nest in blackberry brambles or freshwater emergent wetland. Several non-special-status birds (e.g., egret, heron, red-tailed hawk) are known to nest in or near the study area (Figure 3.10-1) and numerous other non-special-status birds also may nest in these areas. Because construction activities are anticipated to occur between April 15 and November 1, impacts on nesting birds may occur. Vegetation removal and other construction activities during the breeding season (generally February 1 through August 31) could result in the mortality or disturbance of nesting birds in and adjacent to the construction area. The removal of riparian forest, riparian shrub/scrub, ruderal areas, and freshwater emergent wetland would reduce the amount of available nesting habitat for special-status and non-special-status birds.

Because white-tailed kite is fully protected, removal of trees with active nests and activities that may result in loss of white-tailed kites are prohibited. Removal of nests or suitable nesting habitat (trees, shrubs, ruderal areas, field crops) and construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Such losses could affect the local population of special-status and non-special-status species and would be considered a significant impact. The specific potential impacts for the three project components are discussed below.

Vegetation Management: Removal of vegetation in or adjacent to riparian forest, riparian shrub/scrub, ruderal areas, and freshwater emergent wetland during the breeding season (generally February 1 through August 31) could result in the mortality or disturbance of nesting birds. This would be a significant impact. Implementation of Mitigation Measures WILD-MM-12 and WILD-MM-14 will reduce this impact to a less-than-significant level.

Hydraulic Improvements: Construction activities associated with hydraulic improvements (including the construction of the rock gabion inflow weir, interior culvert crossings, the notch connection to the Feather River, and the fish barrier berm) in or adjacent to riparian forest, riparian shrub/scrub, ruderal areas, and freshwater emergent wetland during the breeding season (generally February 1 through August 31) could result in the mortality or disturbance of nesting birds. This would be a significant impact. Implementation of Mitigation Measure WILD-MM-12 and WILD-MM-14 will reduce this impact to a less-than-significant level.

Recreation Features: Construction of the parking areas and concrete pad for the existing portable restrooms, the north and south river access, and the foot and vehicle access bridges in or adjacent to riparian forest, riparian shrub/scrub, ruderal areas, and freshwater emergent wetland during the breeding season (generally February 1 through August 31) could result in the mortality or disturbance of nesting birds. This would be a significant impact. Implementation of Mitigation Measures WILD-MM-12 and WILD-MM-14 will reduce this impact to a less-than-significant level.

Mitigation Measure WILD-MM-14: Conduct Nesting Surveys for Special-Status and Non-Special Status Birds and Implement Protective Measures during Construction

SBFCA will retain qualified wildlife biologists with knowledge of the relevant species to conduct nesting surveys before the start of construction. A minimum of three separate surveys will be conducted between February 1 and June 1. Surveys will include a search of all suitable nesting habitat (trees, shrubs, ruderal areas, field crops) in the areas affected by vegetation management activities and by construction of hydraulic improvements and recreation features. For tricolored blackbird, multiple surveys will be conducted March through May to determine if a colony is nesting or near the construction area. In addition, a 500-feet-wide area around the affected areas will be surveyed for nesting raptors, and a 50-feet-wide buffer area will be surveyed for other nesting birds. If no active nests are detected during these surveys, no additional measures are required.

If active nests are found in the survey area, no-disturbance buffers will be established around the nest sites to avoid disturbance or destruction of the nest site until the end of the breeding season (approximately September 1) or until a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of the buffer areas will be determined by the biologist in coordination with USFWS and DFW and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. Larger buffer areas or other protective measures may be required for state-listed and candidate species (e.g. bald eagle, bank swallow, tricolored blackbird) to ensure that mortality does not occur if SBFCA does not obtain an incidental take permit for these species.

If it is determined that a breeding colony of tricolored blackbird may be affected by the project, SBFCA will consult with DFW to obtain the necessary take permit and/or determine additional avoidance and minimization measures to implement during construction.

Impact WILD-8: Potential Injury, Mortality, or Disturbance of Tree-Roosting Bats and Removal of Roosting Habitat a result of Project Construction (no impact for vegetation management; less than significant with mitigation for hydraulic improvements and recreation features)

Vegetation management activities and construction of hydraulic improvements and recreation features are anticipated to occur during the maternity season of bats (April 1 through September 15) and be completed by the beginning of the hibernation period (November 1). The construction of hydraulic improvements and recreation features would result in the loss of trees, which provide suitable roosting habitat (cavities, crevices, furrowed bark, and foliage) for special-status bats (western red bat and pallid bat) and bats for which conservation actions are warranted (hoary bat and silver-haired bat) (Western Bat Working Group 2007). Tree removal/trimming and

noise or other construction activities could result in the injury, mortality, or disturbance of roosting bats, if present in cavities, crevices, furrowed bark, or foliage of trees. Mortality of tree-roosting bats during the maternity season or hibernation period that results from tree removal/trimming or other disturbances could affect the local populations of these species and would be considered a significant impact. The specific potential impacts for the three project components and their respective impact determinations are discussed below.

Vegetation Management: Tree removal/trimming would not be conducted as part of vegetation management activities. Therefore, there would be no impact associated with vegetation management under the proposed project.

Hydraulic Improvements: The construction of hydraulic improvements including the inflow and outflow weirs, notch connections to the river, fish barrier berm, and interior road culvert crossings, would result in the loss of trees, which provide suitable roosting habitat (cavities, crevices, furrowed bark, and foliage) for special-status bats (western red bat and pallid bat) and bats for which conservation actions are warranted (hoary bat and silver-haired bat) (Western Bat Working Group 2007). Tree removal/trimming and noise or other construction activities could result in the injury, mortality, or disturbance of roosting bats, if present in cavities, crevices, furrowed bark, or foliage of trees. Mortality of tree-roosting bats during the maternity season or hibernation period that results from tree removal/trimming or other disturbances could affect the local populations of these species and would be considered a significant impact. Implementation of Mitigation Measures WILD-MM-1 and WILD-MM-15 will reduce this impact to a less-than-significant level.

Recreation Features: The construction of recreation features, including the vehicle access bridge, the two footbridges, and the parking lot regrade, would result in the loss of trees, which provide suitable roosting habitat (cavities, crevices, furrowed bark, and foliage) for special-status bats (western red bat and pallid bat) and bats for which conservation actions are warranted (hoary bat and silver-haired bat) (Western Bat Working Group 2007). Tree removal/trimming and noise or other construction activities could result in the injury, mortality, or disturbance of roosting bats, if present in cavities, crevices, furrowed bark, or foliage of trees. Mortality of tree-roosting bats during the maternity season or hibernation period that results from tree removal/trimming or other disturbances could affect the local populations of these species and would be considered a significant impact. Implementation of Mitigation Measures WILD-MM-1 and WILD-MM-15 will reduce this impact to a less-than-significant level.

Mitigation Measure WILD-MM-15: Identify Suitable Roosting Habitat for Bats and Implement Avoidance and Protective Measures

If tree removal/trimming cannot be conducted between September 15 and October 30, qualified biologists will examine trees to be removed or trimmed for suitable bat roosting habitat before removal/trimming. High-quality habitat features (large tree cavities, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch, etc.) will be identified and the area around these features searched for bats and bat sign (guano, culled insect parts, staining, etc.). Riparian woodland, orchards, and stands of mature broadleaf trees should be considered potential habitat for solitary foliage-roosting bat species. If habitat cannot be adequately surveyed and/or if DFW requires identification of bat species in the project area, passive monitoring using full spectrum bat detectors may be needed. Survey methods should be discussed with DFW prior to the start of surveys.

Measures to avoid and minimize impacts to sensitive bats species will be determined in coordination with DFW and may include the following.

- Tree removal will be avoided between April 1 and September 15 (the maternity period) to avoid impacts on pregnant females and active maternity roosts (whether colonial or solitary).
- All tree removal will be conducted between September 15 and October 30, which corresponds to a time period when bats have not yet entered torpor or would be caring for nonvolant young.
- Trees will be removed in pieces rather than felling an entire tree.
- If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed until September 15 or a qualified biologist has determined the roost is no longer active.

If avoidance of nonmaternity roost trees is not possible, and tree removal or trimming must occur between October 30 and August 31, qualified biologists will monitor tree trimming/removal. If possible, tree trimming/removal should occur in the late afternoon or evening when it is closer to the time that bats would normally arouse. Prior to removal/trimming, each tree will be shaken gently and several minutes should pass before felling trees or limbs to allow bats time to arouse and leave the tree. The biologists should search downed vegetation for dead and injured bats. The presence of dead or injured bats that are species of special concern will be reported to DFW. The biologist will prepare a biological monitoring report, which will be provided to SBFCA and DFW.

Impact WILD-9: Disturbance to or Loss of Common Wildlife Species and Their Habitats (less than significant for all components)

The study area contains both natural and human-influenced habitats that support common invertebrates, amphibians, reptiles, and terrestrial and aquatic mammals (most birds are protected under the MBTA). These non-special-status species also could be directly and indirectly affected by project construction. Although they are not afforded the same levels of protection and do not have the same agency consultation requirements under applicable laws, regulations, and policies described in the regulatory section, common species would generally receive some protection from measures prescribed for special-status animals. The resulting impact is considered less than significant for all project components, and no mitigation is required.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The proposed project's potential impacts on riparian habitat or other sensitive natural communities are discussed in Section 3.9, *Vegetation and Wetlands*, and 3.11, *Fisheries and Aquatics*.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

The proposed project's potential impacts on federally protected wetlands are discussed in Section 3.9, *Vegetation and Wetlands*.

d. *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Impact WILD-10: Interfere with the movement of a native wildlife species (less than significant for all components)

Terrestrial wildlife species may use the interior channels or the riparian forest in the study area as a movement corridor; smaller, more localized movement corridors may also be present. During project construction, movement through the project area would be temporarily impeded by the placement of physical barriers (fencing) used to protect resources within or near the construction footprint. The placement of fencing during the construction period has the potential to trap or injure common species, and could cause exposure or death. Additionally, animals may avoid movement through the project area because of the extensive amount of noise and human activity associated with construction. The project area would be available as a movement corridor upon completion of project construction. No permanent barriers would be installed as part of the proposed project. This impact is considered less than significant, and no mitigation is required.

e. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

The proposed project does not conflict with the Butte County General Plan 2030. The proposed project is consistent with the objectives, general plans, and management recommendations included in the Oroville Wildlife Area and the Oroville/Spenceville Management Plans, as described above. The proposed project would enhance the value of habitat for special-status and common wildlife species habitat through the removal of invasive species and replanting of riparian woodland and shrub habitat. During construction, there may be a minor temporary impact on recreational activities that are identified in the OWA wildlife management plan objectives because of construction noise or equipment; however, recreational opportunities at the OWA would not be affected over the long term and may be of greater value due to the enhanced habitat conditions as a result of the proposed project. There would be no impact.

f. *Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?*

There are no adopted HCP/NCCPs applicable to the proposed project. At the time of preparation of this document, the BRCP was still in draft form, and SBFCA activities are not covered under the BRCP. Therefore, the proposed project will not conflict with provisions of this plan, and there would be no impact.