
5.4 BIOLOGICAL RESOURCES

This section describes the existing biological resources, including special-status species and sensitive habitat, known to occur and/or have the potential to occur in the Planning Area. It includes a summary of the regulations and programs that provide protective measures to special-status species, an analysis of impacts to biological resources that could result from Project implementation, and a discussion of mitigation measures necessary to reduce impacts to a less than significant level, where feasible.

5.4.1 EXISTING SETTING

REGIONAL SETTING

The Planning Area is located in the California Dry Steppe ecological province. This province occurs on the flat alluvial plain between the Sierra Nevada and Coast Ranges in the Central Valley of California. The California Dry Steppe province is characterized by hot summers and mild winters with precipitation largely occurring during the winter months (December–February). The landscape consists of broad, flat valleys bordered by sloping alluvial fans, slightly dissected terraces, and the lower foothills of the surrounding mountain ranges (McNab et al. 2007).

The California Dry Steppe province is composed of only one ecological section, the Great Valley; therefore, the geomorphology is the same as described for the province as a whole. The Great Valley, or Central Valley as it is more commonly called, was once dominated by natural grasses; however, a long history of plowing, fire suppression, and grazing related to agricultural conversion has eliminated these habitats with the exception of a few remaining areas. Many slow-moving rivers flow through the Central Valley, to the delta region east of the San Francisco Bay. These river systems have been altered with levees, dams, and channels to regulate the flows throughout the year (McNab et al. 2007).

LAND COVER TYPES IN THE PLANNING AREA

The Planning Area consists of a mix of urban, agricultural, and natural land cover types. Agricultural lands are divided into subcategories including cropland, irrigated pasture, vineyard, and orchard. Natural land covers include annual grasslands, mixed riparian scrub, mixed riparian woodland, valley oak riparian woodland, blue oak woodland, seasonal wetlands, vernal pools, freshwater marshes, open water, and streams. Land cover type and land uses in the Planning Area are shown in **Figure 5.4-1**.

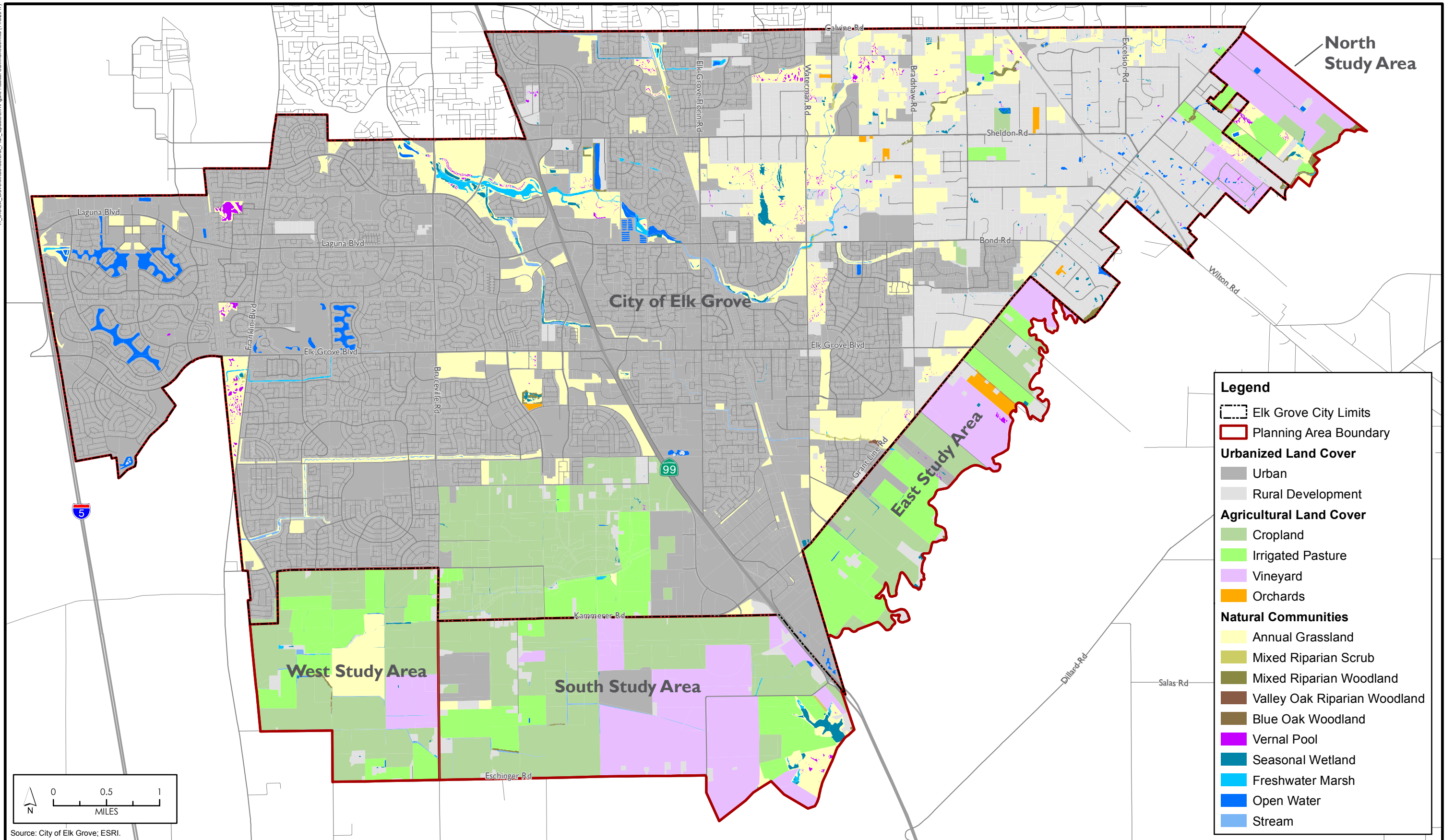
Each cover type is described below based upon the California Department of Fish and Wildlife's (CDFW) *A Guide to Wildlife Habitats of California* (2017a), and Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986). The location and extent of land cover types in the Planning Area is based upon the South Sacramento County Habitat Conservation Plan (Sacramento County 2018) land cover GIS database and is updated as needed.

Table 5.4-1 summarizes the acreages of agricultural and natural community land cover types in the Planning Area.

5.4 BIOLOGICAL RESOURCES

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T:\GIS\Elk_Grove\MXD\General_Plan_Update\ER\Figure_Habitat_Communities.mxd (11/8/2017)



Source: City of Elk Grove; ESRI.

Figure 5.4-1
Vegetative Communities/Land Uses

5.4 BIOLOGICAL RESOURCES

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**TABLE 5.4-1
ACRES OF LAND COVER TYPES IN THE PLANNING AREA**

Land Cover Type	Existing City Limits	North Study Area	East Study Area	South Study Area	West Study Area	Total
Aquatic Land Cover Types						
Freshwater Marsh	85	1	1	7	2	96
Open Water	234	4	1	2	2	243
Seasonal Wetland	105	4	11	30	6	156
Stream	107	2	0	16	17	142
Vernal Pool	79	4	2	3		88
Agricultural Land Cover Types						
Cropland	1,654	58	551	1,506	986	4,755
Irrigated Pasture	469	107	583	402	471	2,032
Orchards	28		41			69
Vineyard	112	337	341	1,162	156	2,108
Natural Land Cover Types						
Annual Grassland	3,243	58	4	126	193	3,624
Blue Oak Woodland			1			1
Mixed Riparian Scrub	20	1	1	3	1	26
Mixed Riparian Woodland	47	16	0	5	4	72
Valley Oak Riparian Woodland	2					2

The following discussion describes each land cover type and associated general wildlife communities. Sensitive species associations with the land cover types is discussed in the section entitled Special-Status Species.

Urbanized Land Cover Types

Urban

Urban land cover encompasses the majority of the Planning Area. These areas are heavily modified from natural habitat and consist of roadways, buildings and structures, routinely disturbed areas, recreation fields, lawns, and landscaped vegetation. Vegetation in this community is generally dominated by ornamental and invasive species including eucalyptus, Italian cypress (*Cupressus sempervirens*), Washington fan palms (*Washingtonia robusta*), and various pines. Turf grass and English ivy (*Hedera helix*) are frequently used as groundcover. Native trees, such as oaks (*Quercus* sp.), California sycamore (*Platanus racemosa*) and Northern California black walnut (*Juglans hindsii*) can be found interspersed in urban areas.

Due to the high disturbance, urban areas are considered low quality habitat for wildlife. However, migratory birds and other common species may utilize the habitat, such as common raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), and northern mockingbird (*Mimus polyglottos*).

5.4 BIOLOGICAL RESOURCES

Rural Development

Rural development primarily consists of rural residences and generally occurs in the eastern portion of the Planning Area. Residential properties in this community are lower density than urban housing, with lots ranging from 2 to 10 acres. Annual grassland is common around the properties and may contain vernal pools, seasonal wetlands, ditches, and other water features that are not found in the urban setting.

The low density of man-made structures results in a higher habitat value than that of urban areas. In addition, the remnants of vernal pool complexes are found throughout this community.

Agricultural Lands

Cropland

In the Planning Area, cropland encompasses both irrigated hayfields and row and field crops. Crop types may include wheat (*Triticum aestivum*), alfalfa (*Medicago sativa*), safflower (*Carthamus tinctorius*), sorghum (*Sorghum bicolor*), tomato (*Lycopersicon esculentum*), and various other vegetables. This cover type varies in structure, height, and density and is generally surrounded by agricultural weeds, including mustard (*Brassica* sp.), filarees (*Erodium* sp.) and English plantain (*Plantago lanceolata*).

Due to the frequency of disturbance, cropland generally does not provide suitable breeding habitat for wildlife. However, croplands are known to provide foraging habitat for a variety of species, including white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), mourning dove, Brewer's blackbird (*Euphagus cyanocephalus*), and the State-listed threatened Swainson's hawk (*Buteo swainsoni*). Other species that may use cropland for foraging and cover include sandhill cranes (*Grus canadensis*), gophers, garter snakes (*Thamnophis* sp.), deer, rabbits, mice, and squirrels.

Irrigated Pasture

Irrigated pasture typically includes a mix of native and nonnative perennial grasses and legumes that provide 100 percent canopy closure. The height of the vegetation varies based on season and intensity of livestock grazing. Common species in pasture include ryegrass (*Festuca* sp. and *Lolium* sp.), dallisgrass (*Paspalum* sp.), annual bluegrass (*Poa annua*), and clovers (*Trifolium* sp.).

Species utilization of irrigated pasture is similar to that of cropland.

Vineyard

Vineyards generally occur along the southern and eastern edge of the Planning Area. Vineyards typically comprise a single species such as grape, raspberry, or kiwifruit. The understory is generally bare due to herbicide application; however, some invasive species may be present.

Conversion to vineyard has resulted in the loss of foraging habitat for Swainson's hawk and other raptors. Deer and rabbits are known to forage on the vines while squirrels and various birds will forage on the fruit. Some wildlife has been known to utilize the shade during hot weather.

Orchard

Similar to vineyards, orchards are typically made up of one deciduous tree species (almonds, apricots, cherries, etc.). Planted in rows, the tree crowns typically touch, and the understory is generally bare but may contain some weedy species. Wildlife utilize orchards in a similar manner as vineyards.

Eucalyptus stands are included in this community and are defined by a monotypic stand with closed canopy. There are several dense stands in the western portion of the Planning Area that were planted as windbreaks. Eucalyptus stands provide suitable nesting habitat for raptors and other birds.

Natural Communities

Annual Grassland

Annual grassland land cover in the Planning Area is characterized by open grassland that is dominated by annual nonnative grass and forb species. Native grasslands have disappeared due to overgrazing and encroachment of exotic species. Annual grasslands occur in patches throughout the Planning Area, generally in the rural areas. Oak and eucalyptus trees are scattered throughout this community. Vernal pools, seasonal wetlands, and streams are found in annual grasslands.

Common grass species include Italian ryegrass (*Lolium multiflorum*), wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum jubatum*), medusahead (*Taeniatherum caput-medusae*), and dallisgrass. Forbs species are intermixed, including bindweed (*Convolvulus arvensis*), rose clover (*Trifolium hirtum*), vetch (*Vicia* sp.), spiny-fruit buttercup (*Ranunculus muricatus*), and curly dock (*Rumex crispus*).

Annual grasslands provide cover, foraging habitat, and breeding habitat for a wide variety of species including raptors, seed-eating birds, mammals, amphibians, and reptiles. Species that may be observed in this community include, but are not limited to, western fence lizard (*Sceloporus occidentalis*), gophers, black-tailed hares (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), and common garter snake (*Thamnophis sirtalis*).

Special-status species that may be observed in the annual grassland in the Planning Area include burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), northern harrier, and badger (*Taxidea taxus*). Various special-status species may use this community solely for foraging, including Swainson's hawk, peregrine falcon, white-tailed kite, and golden eagle. Nesting birds may utilize trees scattered throughout annual grasslands.

Mixed Riparian Scrub

Mixed riparian scrub land cover type is often interspersed with mixed riparian woodland found in the floodplain waterways throughout the Planning Area. This community typically consists of a mixture of sandbar willow (*Salix interior*), Arroyo willow (*S. lasiolepis*), red willow (*S. laevigata*), Gooding's willow (*S. gooddingii*), and interspersed mixed riparian woodland trees (see below). Other shrubs associated with this community include blue elderberry (*Sambucus cerulean*) and buttonbush (*Cephalanthus occidentalis*).

5.4 BIOLOGICAL RESOURCES

Dense stands of mixed riparian scrub typically lack an understory while more open areas support an understory of native and nonnative species including tamarisk (*Tamarix* sp.) and giant European reed (*Arundo donax*).

Riparian scrub supports a variety of wildlife due to the combination of surface water, layered vegetation, and high nutrient availability. This community provides high-quality cover, foraging opportunity, and nesting habitat. Cavity nesting species, such as bats, squirrels, and certain bird species, are typically found in riparian scrub. Mammals associated with riparian areas include Virginia opossum, raccoon, striped skunk (*Mephitis mephitis*), and beaver (*Castor canadensis*). Common amphibians found in and along the drainages include western toad (*Bufo boreas*) and Pacific chorus frog (*Pseudacris regilla*). Riparian areas provide cover and nesting habitat for many species of bird, including northern flicker (*Colaptes auratus*), California quail (*Callipepla californica*), northern mockingbird, towhees (*Pipilo* spp.), and cedar waxwing (*Bombycilla cedrorum*), as well as raptors such as red-shouldered hawk (*Buteo lineatus*) and great-horned owl (*Bubo virginianus*).

Mixed Riparian Woodland

Mixed riparian woodland is a diverse and multilayered land cover type that is typically found along waterways in the Planning Area and is often intermixed with mixed riparian scrub. This community is associated with low-velocity flows, floodplains, streams, and basins. In the Planning Area, this community is dominated by various willow species, Fremont cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), box elder (*Acer negundo*), and Northern California black walnut. Mid-story species include Himalayan blackberry (*Rubus armeniacus*), poison oak (*Toxicodendron diversilobum*), wild grape (*Vitis californica*), coyote bush (*Baccharis pilularis*) and tall flat sedge (*Cyperus eragrostis*). The understory is similar to that of mixed riparian scrub.

Wildlife is known to utilize mixed riparian woodland in a similar manner as mixed riparian scrub.

Valley Oak Riparian Woodland

This land cover type typically intergrades with annual grasslands and borders along streams, agricultural fields, and ditches in the Planning Area. This community is almost exclusively valley oaks and is represented by a partially closed canopy. Historically this community was more common but now only occurs in small pockets along streams and drainages. Other canopy species found in this community include California sycamore, California black walnut, interior live oak (*Quercus wislizeni*), and blue oak (*Quercus douglasii*). Understory consists of poison oak, blue elderberry, wild grape, and California blackberry (*Rubus ursinus*).

Due to the open nature of this community, species utilization is similar to that of blue oak woodland (discussed below) and annual grassland. Swainson's hawk and other nesting birds will nest in valley oak riparian woodland.

Blue Oak Woodland

Blue oak woodland is characterized by a canopy composed predominantly of blue oak with an understory dominated by annual grassland species. There is one small pocket of blue oak woodland in the southern portion of the Planning Area near Deer Creek. Many species, such as western gray squirrel (*Sciurus griseus*) and black-tailed deer (*Odocoileus hemionus*), forage in oak woodland. Raptors may use the oak trees for nesting and additional wildlife utilization is similar to that found in adjacent annual grassland.

Seasonal Wetland

Seasonal wetlands are defined as ephemeral wetlands that pond during the rainy season and are dry by summer. Wetlands are created either by seasonally wet natural depressions and swales or through artificial impoundments. Seasonal wetlands are found throughout the Planning Area, but more so in rural areas. This community can occur in isolated patches and within the banks of streams, creeks, ponds, and lakes.

Hydrophytic grasses, herbs, and forbs dominate seasonal wetlands. Common species include curly dock, fiddle leaf dock (*Rumex pulcher*), rabbitsfoot grass, perennial ryegrass (*Polypogon monspeliensis*), tall flatsedge, and a variety of other sedges and rushes. During the wet season, wetlands provide seasonal habitat for invertebrates, birds, and mammals. Occasionally, seasonal wetlands may provide suitable habitat for vernal pool associates, including rare plants and special-status vernal pool crustaceans.

Vernal Pool

Vernal pools are a subset of seasonal wetlands often found in annual grasslands. This community includes vernal pool swales that interconnect pools, creating large complexes. Vernal pools exhibit a four-stage hydraulic cycle: a wetting phase, an inundation phase, a waterlogged phase, and a dry phase.

Low-growing annual species are found in vernal pools, including California goldfields (*Lasthenia californica*), Fremont's goldfields (*Lasthenia fremontii*), downingia (*Downingia* sp.), water pygmyweed (*Crassula aquatica*), hyssop loosestrife (*Lythrum hyssopifolia*), brass buttons (*Leptinella squalida*), and coyote thistle (*Eryngium vaseyi*). Special-status plants, including legenera (*Legenere limosa*) and dwarf downingia (*Downingia pusilla*), may be found in vernal pools.

Vernal pools provide an important habitat for a variety of plants and animals. Several aquatic crustaceans and insects are dependent on vernal pools, including clam shrimp (*Cyzicus californicus*), seed shrimp (*Cypria* sp.) and the special-status vernal pool fairy shrimp and vernal pool tadpole shrimp.

Freshwater Marsh

Freshwater marshes are characterized by erect, rooted herbaceous hydrophytic species. In the Planning Area, this community typically occurs in and along the edge of streams, lakes, and other bodies of water. Freshwater marshes are typically perennial wetlands but may dry out for short periods.

Freshwater marshes support both moist soil plants (upper edges) and species adapted to perennially inundated conditions (lower margins). Marsh habitats in the Planning Area are typically dominated by bulrush (*Schoenoplectus* sp.), broad-leaved cattail (*Typha latifolia*), narrow-leaved cattail (*Typha angustifolia*), floating water primrose (*Ludwigia peploides*), water plantain (*Alisma plantago-aquatica*), smartweed (*Polygonum* sp.), and bog rush. One special-status plant, Sanford's arrowhead (*Sagittaria sanfordii*), may occur in this community.

This community provides habitat for a variety of wildlife species. Fish often use marsh habitats as nurseries. Belted kingfisher, great blue heron, great egret, and other bird species may forage in this community. Beavers are often found in marshes throughout the Planning Area.

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Open Water

Open water refers to perennially wet lakes, ponds, basins, and dammed stream channels in the Planning Area. Floating aquatic plants such as water lilies (*Nymphaeaceae* sp.) and smartweed occur in the shallow areas. Weedy species, such as floating primrose and water hyacinth (*Eichhornia crassipes*), create dense mats over standing water. This community supports fish, aquatic reptiles, and various waterfowl.

Stream

Streams are characterized by intermittent to continually flowing water. They typically originate at some elevated source, such as a spring or lake, and flow downhill at a rate relative to the slope or gradient. There are three stream classifications throughout the Planning Area: perennial, intermittent, and ephemeral.

Perennial streams are areas that are inundated with water throughout the year and frequently support floating or emergent hydrophytic vegetation, similar to that in a freshwater marsh or open water. Perennial streams in the Planning Area include Laguna Creek, Elk Grove Creek, Strawberry Creek, Shed A Channel, Franklin Creek (previously Shed B Channel), an unnamed channel north of Laguna Boulevard, and portions of Whitehouse and Sheldon Creeks.

Intermittent streams are characterized as areas that are seasonally inundated with water and frequently support a mix of vegetation typically found in freshwater marsh and seasonal wetlands. Intermittent streams in the Planning Area include Toad Creek (aka Laguna Creek Tributary #1), portions of Sheldon Creek, other tributaries to Laguna Creek, and portions of Whitehouse Creek.

An ephemeral stream only contains flowing water for a short duration after precipitation events. Groundwater is not a source of water for ephemeral streams; therefore, runoff from rainfall is the primary water source.

Wildlife utilization in the Planning Area for this community is variable and dependent upon hydroperiod, vegetation, and surrounding land use. Perennial streams are utilized by wildlife similar to that of freshwater marsh and riparian communities. Ephemeral streams are used similar to that of annual grasslands.

Sensitive Habitats

This section identifies sensitive natural communities that are of special concern to resource agencies and local groups.

Vernal Pools

Due to the unique plant and wildlife species that utilize this community, vernal pools are considered sensitive terrestrial communities by the CDFW and local environmental groups. There are several nearby protected areas that are devoted to protecting vernal pools. These include the Sacramento County Vernal Pool Prairie Preserve Area, Mather Field Regional Park, and Stones Lake National Wildlife Refuge, a portion of which overlaps with the Planning Area.

Wetlands and Other Waters of the United States

Jurisdictional waters of the United States (WoUS), along with isolated wetlands, provide a variety of functions for plants and wildlife. Wetlands and other water features provide habitat, foraging, cover, and migration and movement corridors for both special-status and common species. In addition, these features physically convey surface water flows capable of handling large stormwater events. Large storms can produce extreme flows that cause bank cutting and sedimentation of open waters and streams. Vegetation and other features in jurisdictional waters can slow these flows and lessen the effects of these large storm events, protecting habitat and other resources. The US Army Corps of Engineers (USACE) asserts jurisdiction over all WoUS. Streams are also regulated under Section 404 of the Clean Water Act and Section 1600 of the California Fish and Game Code.

Riparian Communities

Riparian woodland and scrub communities are rapidly dwindling in the Central Valley. Riparian communities are diverse and multilayered and provide important nesting and foraging habitat for numerous species native to the Central Valley. In addition, dense cover and linear nature make riparian communities important for wildlife movement. Riparian areas are considered sensitive terrestrial communities and are typically under the jurisdiction of the CDFW. In addition, trees typically found in riparian areas (oaks, sycamores, and black walnuts) are protected under Chapter 19.12, Tree Preservation and Protection, of the Elk Grove Municipal Code.

Oak Woodland

Oak woodlands are locally important and often considered sensitive terrestrial communities by the CDFW. In addition, oak trees are protected under both the Elk Grove Municipal Code and Sacramento County Code. Oak woodland is scarce in the Planning Area; however, stands of oak woodland are protected as part of preserves noted above.

Swainson's Hawk Foraging Habitat

Upland communities such as annual grassland, cropland, and irrigated pasture are considered special habitat because of their role in Swainson's hawk foraging. Although not all "natural," these communities are afforded protection under Chapter 16.130, Swainson's Hawk Impact Mitigation Fees, of the Elk Grove Municipal Code. As part of its mitigation program, the City has received easements on several parcels of land throughout the Planning Area. These easements are monitored to ensure that agricultural practices, such as grazing, are consistently providing suitable foraging habitat. Recent conversion of cropland to vineyard and orchard in the Planning Area has resulted in loss of foraging habitat as well as habitat fragmentation.

Stone Lakes National Wildlife Refuge

Stone Lakes National Wildlife Refuge bounds the Planning Area to the west and partially overlaps the Planning Area west of Franklin Boulevard between Elk Grove Boulevard and Whitelock Parkway. The Wetlands Preserve Unit, the portion of the refuge that overlaps with the Planning Area, consists of a 90-acre grassland and vernal pool complex. The refuge conserves a range of scarce Central Valley habitats, including vernal pools, riparian corridors, marshes, and grasslands. Several special-status species are known to occur in the refuge; the refuge also facilitates wildlife movements and serves as an important stop along the Pacific Flyway for migrating shorebirds and wintering waterfowl. Much of the surface water in the Planning Area

5.4 BIOLOGICAL RESOURCES

drains into the Stone Lakes area. The urbanized and agricultural land upstream of the refuge can lead to water quality issues in the refuge, and negative impacts on wildlife.

Cosumnes River Preserve

The Cosumnes River Preserve is not situated within the Planning Area; however, it is located directly south. The preserve includes riverine, vernal pool, grassland, and wetland communities, as well as one of California's largest remaining valley oak riparian woodlands. The preserve provides important habitat for a variety of local and migratory species, such as waterfowl and fish. The preserve is managed by a team of government and nongovernment agencies, including the CDFW, the Bureau of Land Management, Ducks Unlimited, and the Nature Conservancy.

Bufferlands

The Bufferlands are not located in the Planning Area; however, they border the Planning Area to the northwest and Laguna Creek flows through the Bufferlands before draining into Stone Lakes National Wildlife Refuge. The Bufferlands are roughly 2,650 acres of wetlands, oak woodland, and riparian communities that act as a barrier between the operations of the Sacramento Regional Wastewater Treatment Plant and the neighboring residential communities of Elk Grove and Sacramento. The Bufferlands are actively managed by the Sacramento Regional County Sanitation District and are home to a diverse array of species.

WILDLIFE MOVEMENT CORRIDORS

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to (a) sustain species with specific foraging requirements, (b) preserve a species' distribution potential, and (c) retain diversity among many wildlife populations.

With the exception of the City of Sacramento to the north, the Planning Area is bounded on all sides by agricultural uses and open space. Most of the central and northern portions of the Planning Area have been built out. In the urban areas, streams and riparian corridors provide corridors for wildlife. The edges of the Planning Area and adjacent open spaces facilitate local and regional movement.

Stone Lakes National Wildlife Refuge is located to the west of the City, and the Cosumnes River-Deer Creek riparian corridor is located southwest of the City. These areas likely provide the most suitable wildlife corridors in the area. The mosaic of habitat at Stone Lakes is known to provide habitat for local and migratory species. The riparian corridor around Deer Creek and the Cosumnes River provides dense cover and is relatively removed from human activity.

Available data on movement corridors and linkages was accessed via CDFW's (2017c) BIOS 5 Viewer. Data reviewed included the Essential Connectivity Areas map layer and the Missing Linkages in California map layer. The Cosumnes River corridor is a documented essential connectivity area, as is Stone Lakes National Wildlife Refuge.

SPECIAL-STATUS SPECIES

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their persistence in a given area or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as the CDFW, the US Fish and Wildlife Service (USFWS), and private organizations such as the California Native Plant Society (CNPS). The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this biological review, special-status species are defined by the following codes:

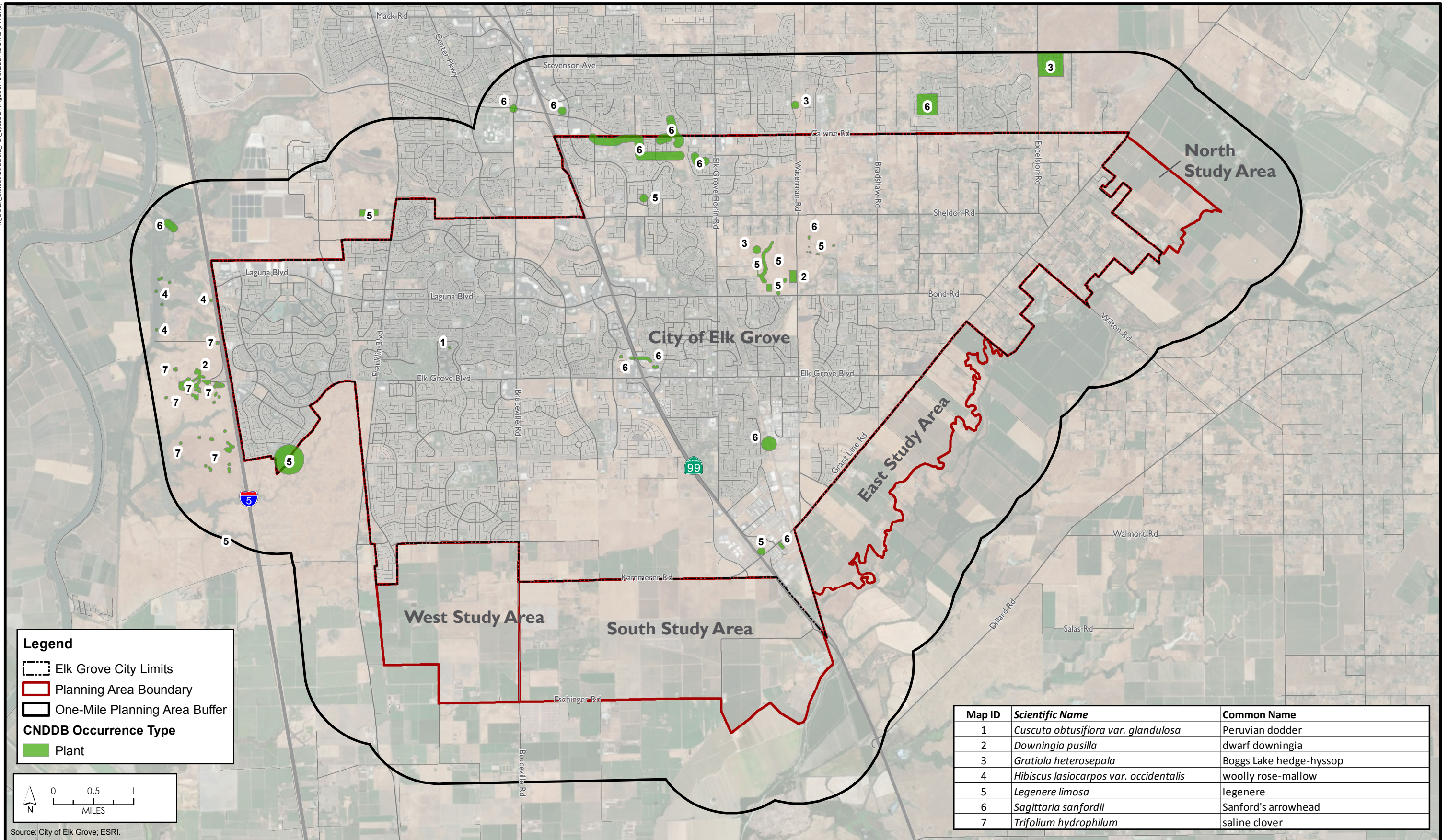
- Listed, proposed, or candidates for listing under the federal Endangered Species Act (ESA) (50 Code of Federal Regulations [CFR] 17.11 – listed; 61 Federal Register [FR] 7591, February 28, 1996, candidates)
- Listed or proposed for listing under the California Endangered Species Act (CESA) (Fish and Game Code [FGC] 1992 Section 2050 et seq.; 14 California Code of Regulations [CCR] Section 670.1 et seq.)
- Designated as Species of Special Concern by the CDFW
- Designated as Fully Protected by the CDFW (FGC Sections 3511, 4700, 5050, 5515)
- Species that meet the definition of rare or endangered under CEQA (14 CCR Section 15380) including CNPS List Rank 1b and 2

The USFWS, CDFW, and CNPS database queries identified several special-status species with the potential to occur in the Planning Area. **Table 5.4-2** provides a summary of all special-status species identified in the database results, a description of the habitat requirements for each species, and conclusions regarding the potential for each species to be affected by the proposed Project. The California Natural Diversity Database (CNDDB) results within 1 mile of the Planning Area are depicted on **Figures 5.4-2** and **5.4-3**.

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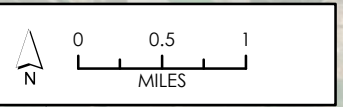
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T:\GIS\Elk_Grove\MapData\General_Plan_Update\ER\Figure 5.4-2 CNDDDB Plants.mxd (3/14/2018)



Legend

- Elk Grove City Limits
- Planning Area Boundary
- One-Mile Planning Area Buffer
- CNDDDB Occurrence Type**
- Plant



Map ID	Scientific Name	Common Name
1	<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder
2	<i>Downingia pusilla</i>	dwarf downingia
3	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop
4	<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	woolly rose-mallow
5	<i>Legenere limosa</i>	legenere
6	<i>Sagittaria sanfordii</i>	Sanford's arrowhead
7	<i>Trifolium hydrophilum</i>	saline clover

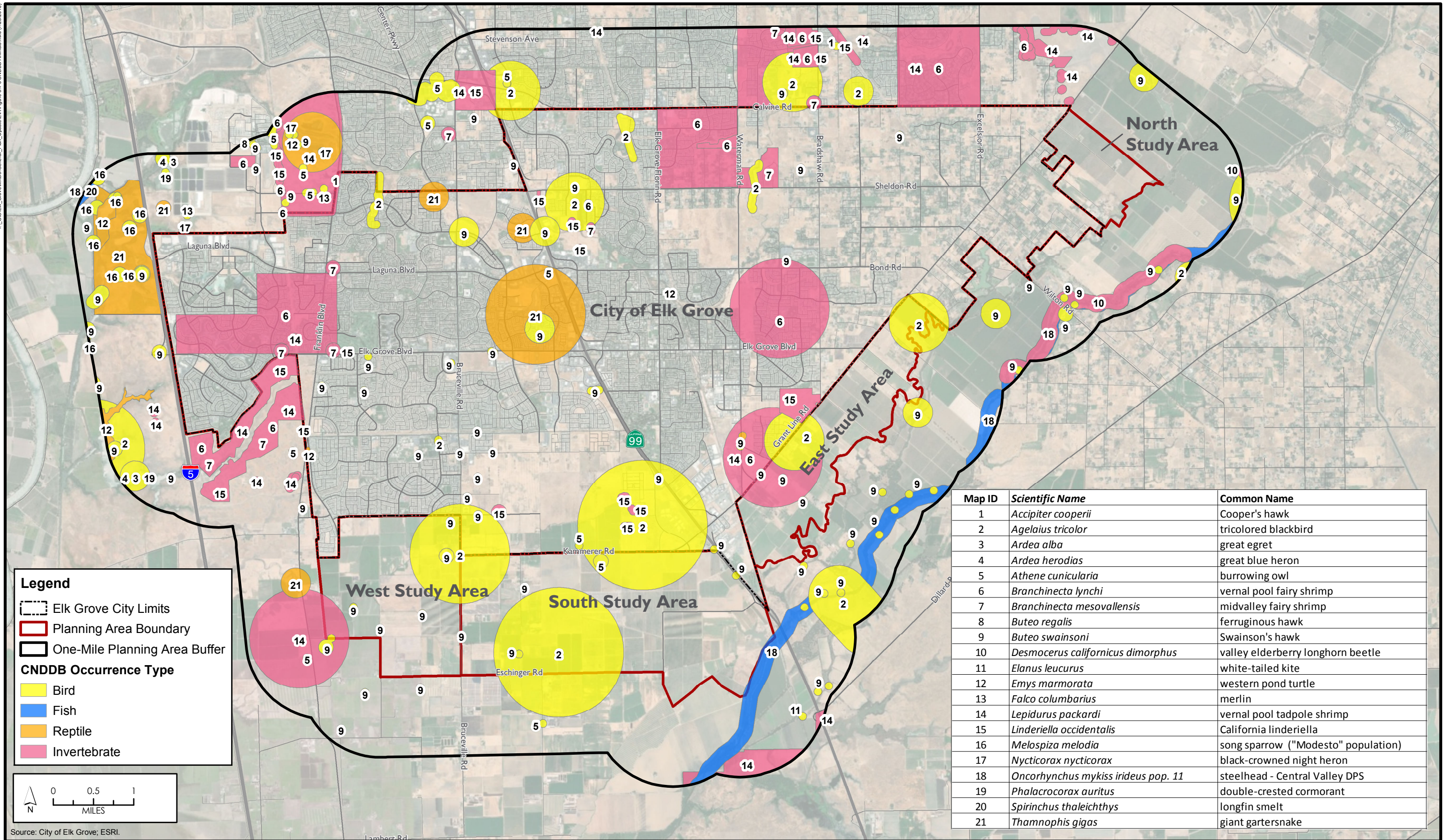
Source: City of Elk Grove; ESRI.

Figure 5.4-2
Recorded Occurrences of Special-Status Plant Species within One-Mile of the Planning Area

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T:\GIS\Elk_Grove\MapDocs\General_Plan_Update\ER\Figure 5.4-3 CNDDDB Animals.mxd (7/25/2018)



Map ID	Scientific Name	Common Name
1	<i>Accipiter cooperii</i>	Cooper's hawk
2	<i>Agelaius tricolor</i>	tricolored blackbird
3	<i>Ardea alba</i>	great egret
4	<i>Ardea herodias</i>	great blue heron
5	<i>Athene cunicularia</i>	burrowing owl
6	<i>Branchinecta lynchi</i>	vernal pool fairy shrimp
7	<i>Branchinecta mesovallensis</i>	midvalley fairy shrimp
8	<i>Buteo regalis</i>	ferruginous hawk
9	<i>Buteo swainsoni</i>	Swainson's hawk
10	<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle
11	<i>Elanus leucurus</i>	white-tailed kite
12	<i>Emys marmorata</i>	western pond turtle
13	<i>Falco columbarius</i>	merlin
14	<i>Lepidurus packardii</i>	vernal pool tadpole shrimp
15	<i>Linderiella occidentalis</i>	California linderiella
16	<i>Melospiza melodia</i>	song sparrow ("Modesto" population)
17	<i>Nycticorax nycticorax</i>	black-crowned night heron
18	<i>Oncorhynchus mykiss irideus pop. 11</i>	steelhead - Central Valley DPS
19	<i>Phalacrocorax auritus</i>	double-crested cormorant
20	<i>Spirinchus thaleichthys</i>	longfin smelt
21	<i>Thamnophis gigas</i>	giant gartersnake

Source: City of Elk Grove; ESRI.

Figure 5.4-3
Recorded Occurrences of Special-Status Animal Species within One-Mile of the Planning Area

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**TABLE 5.4-2
SPECIAL-STATUS SPECIES OCCURRENCE DATA**

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
Plants							
<i>Astragalus tener</i> var. <i>tener</i>	Ferris' milk-vetch	—	—	1B.1	Vernally mesic meadows and seeps, and subalkaline flats in valley and foothill grasslands. Elev: 7-246 ft (2-75 m). Blooms: Apr-May (CNPS 2017).	N	Nearest record of this species is nearly 10 miles west of the Planning Area. These occurrences are all west of the Sacramento River (CDFW 2017b).
<i>Brasenia schreberi</i>	watershield	—	—	2B.3	Freshwater marshes and swamps. Elev: 98-7,218 ft (30-2,200 m). Blooms: June-Sept (CNPS 2017).	N	Planning Area below species elevation range. One 40-year-old record of these species in Stone Lakes (CDFW 2017b).
<i>Carex comosa</i>	bristly sedge	—	—	2B.1	Marshes, swamps, lake margins, and valley and foothill grassland. Elev: 0-2,051 ft (0-625 m). Blooms: May-Sept (CNPS 2017).	Y	Known populations in Stone Lakes just west of the Planning Area (CDFW 2017b).
<i>Castilleja campestris</i> ssp. <i>succulenta</i>	succulent owl's-clover	FT	SE	1B.1	Acidic vernal pools. Elev: 164-2,461 ft (50-750 m). Blooms: Apr-May (CNPS 2017).	N	Planning Area below species elevation range. No known occurrence in the vicinity (CDFW 2017b).
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	—	—	2B.1	Coastal, fresh or brackish marshes and swamps. Elev: 0-656 ft (0-200 m). Blooms: July-Sept (CNPS 2017).	N	All CNDDDB records occur in marshes in the Delta. Nearest occurrence is nearly 6 miles south of the Planning Area in Walnut Grove (CDFW 2017b).
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	—	—	2B.2	Freshwater marshes and swamps. Elev: 49-919 ft (15-280 m). Blooms: July-Oct (CNPS 2017).	N	One 20-year-old occurrence near Laguna Lake; however, presence was not confirmed and requires "more fieldwork" (CDFW 2017b, 2017d). No other occurrences in the region.
<i>Downingia pusilla</i>	dwarf downingia	—	—	2B.2	Vernal pools and mesic valley and foothill grasslands. Elev: 3-1,459 ft (1-445 m). Blooms: Mar-May (CNPS 2017).	Y	Populations recorded in and adjacent to the Planning Area.

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	—	SE	1B.2	Clay soils in marshes, swamps, lake margins, and vernal pools. Elev: 33-7,792 ft (10-2,375 m). Blooms: Apr-Aug (CNPS 2017).	Y	Populations recorded in and adjacent to the Planning Area.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	woolly rose-mallow	—	—	1B.2	Freshwater marshes and swamps. Elev: 0-394 ft (0-120 m). Blooms: June-Sept (CNPS 2017).	Y	Populations recorded immediately west of the Planning Area.
<i>Juglans hindsii</i>	Northern California black walnut	—	—	1B.1	Riparian forest/woodland. Elev: 0-1,444 ft (0-440 m). Blooms: Apr-May (CNPS 2017).	Y	Individuals (likely planted or remnant orchard stock) occur in the Planning Area; however, no native riparian stands are present.
<i>Juncus leiospermus</i> var. <i>ahartii</i>	Ahart's dwarf rush	—	—	1B.2	Mesic valley and foothill grasslands. Elev: 98-751 ft (30-229 m). Blooms: Mar-May (CNPS 2017).	N	Planning Area below species elevation range. One 40-year-old record of these species in Stone Lakes (CDFW 2017b).
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	—	—	1B.2	Freshwater and brackish marshes and swamps. Elev: 0-13 ft (0-4 m). Blooms: May-Sept (CNPS 2017).	N	All CNDDDB records occur in the Delta. Nearest occurrence is over 5 miles south of the Planning Area in Snodgrass Slough north of Walnut Grove (CDFW 2017b).
<i>Legenere limosa</i>	legenere	—	—	1B.1	Vernal pools. Elev: 3-2,887 ft (1-880 m). Blooms: Apr-June (CNPS 2017).	Y	Populations recorded in and adjacent to the Planning Area.
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	—	—	1B.2	Alkaline flats in valley and foothill grasslands. Elev: 7-656 ft (2-200 m). Blooms: Mar-May (CNPS 2017).	Y	Populations recorded west of Planning Area in Stone Lakes (CDFW 2017b).
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	—	SR	1B.1	Riparian scrub, and brackish or freshwater marshes and swamps. Elev: 3-33 ft (0-10 m). Blooms: Apr-Nov (CNPS 2017).	N	Nearest populations recorded along the Sacramento Deep Water Ship Channel. Other occurrences near Walnut Grove (CDFW 2017b).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Limosella australis</i>	Delta mudwort	—	—	2B.1	Usually mud banks in riparian scrub, and freshwater or brackish marshes and swamps. Elev: 0-10 ft (0-3 m). Blooms: May-Aug (CNPS 2017).	N	All CNDDDB records occur in the Delta. Nearest occurrence is over 5 miles south of the Planning Area in Snodgrass Slough north of Walnut Grove (CDFW 2017b).
<i>Orcuttia tenuis</i>	slender Orcutt grass	FT	SE	1B.1	Vernal pools. Elev: 115-5,774 ft (35-1,760 m). Blooms: May-Oct (CNPS 2017).	Y	Populations mapped just north of Planning Area (CDFW 2017b).
<i>Orcuttia viscida</i>	Sacramento Orcutt grass	FE	SE	1B.1	Vernal pools. Elev: 98-328 ft (30-100 m). Blooms: Apr-Sept (CNPS 2017).	N	Planning area outside known species range (USFWS 2005).
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	—	—	1B.2	Assorted shallow freshwater marshes and swamps. Elev: 0-2,133 ft (0-650 m). Blooms: May-Oct (CNPS 2017).	Y	Populations mapped within waterways in the Planning Area; however, several records are suspected misidentifications, as species is easily confused with water plantain (<i>Alisma</i> spp.) when no flowers are present (CDFW 2017b).
<i>Scutellaria galericulata</i>	marsh skullcap	—	—	2B.2	Lower montane coniferous forest, meadows, seeps, marshes, and swamps. Elev: 0-6,890 ft (0-2,100 m). Blooms: June-Sept (CNPS 2017).	N	All CNDDDB records occur in the Delta. Nearest occurrence is over 5 miles south of the Planning Area just north of Walnut Grove (CDFW 2017b).
<i>Scutellaria laterifolia</i>	side-flowering skullcap	—	—	2B.2	Marshes, swamps, mesic meadows, and seeps. Elev: 0-1,640 ft (0-500 m). Blooms: July-Sept (CNPS 2017).	N	All CNDDDB records occur in the Delta. Nearest occurrence is over 5 miles south of the Planning Area just north of Walnut Grove (CDFW 2017b).
<i>Symphotrichum lentum</i>	Suisun Marsh aster	—	—	1B.2	Brackish and freshwater marshes and swamps. Elev: 0-10 ft (0-3 m). Blooms: May-Nov (CNPS 2017).	N	Nearest populations recorded along the Sacramento Deep Water Ship Channel. Other occurrences south, throughout the Delta (CDFW 2017b).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Trifolium hydrophilum</i>	saline clover	—	—	1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), and vernal pools. Elev: 0-984 ft (0-300 m). Blooms: Apr-June (CNPS 2017).	Y	Numerous populations recorded west of Planning Area in Stone Lakes (CDFW 2017b).
Invertebrates							
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FT	—		Found only in vernal pools and ephemeral wetlands. Distributed throughout the Central Valley, including Sacramento County (USFWS 2005).	Y	Vernal pools and seasonal wetlands throughout the Planning Area provide suitable habitat for this species. Several occurrences mapped within the Planning Area (CDFW 2017b).
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	FT	—		Dependent on hostplant, elderberry (<i>Sambucus</i> spp.), which generally grows in riparian woodlands and upland habitats of the Central Valley. Current distribution in the Central Valley from Shasta County to Fresno County (USFWS 1999).	Y	Elderberry shrubs occur throughout the Planning Area and may act as host plants for this species. No occurrences within Planning Area; however, records are present in riparian areas along the Cosumnes River just east of the Planning Area (CDFW 2017b).
<i>Lepidurus packardi</i>	vernal pool tadpole shrimp	FE	—		Wide variety of ephemeral wetland habitats, including vernal pools. Distributed throughout Central Valley and San Francisco Bay Area (USFWS 2005).	Y	Vernal pools and seasonal wetlands throughout the Planning Area provide suitable habitat for this species. Several occurrences mapped within and adjacent to the Planning Area (CDFW 2017b).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
Fish							
<i>Hypomesus transpacificus</i>	delta smelt	FT	SE		Distribution includes the Sacramento River below Isleton, San Joaquin River below Mossdale, and Suisun Bay. Spawning areas include the Sacramento River below Sacramento, Mokelumne River system, Cache Slough, the delta, and Montezuma Slough (USFWS 1996).	N	Planning Area outside known species range (UC Davis 2015).
	Critical Habitat, delta smelt	X	—			N	Critical habitat is located adjacent to the Planning Area; however, it is not present in the Planning Area.
<i>Lampetra ayresii</i>	river lamprey	—	SSC		Adults require clean, gravelly riffles in permanent streams for spawning, while the ammocoetes require sandy backwaters or stream edges in which to bury themselves, where water quality is continuously high and temperatures do not exceed 25°C (Moyle et al. 1995).	Y	Has been observed in Stone Lakes National Wildlife Refuge (USFWS 2006a).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Mylopharodon conocephalus</i>	hardhead	—	SSC		Small to large streams in a low- to mid-elevation environment. May also inhabit lakes or reservoirs. Their preferred stream temperature might easily exceed 20°C, though these fish do not favor low dissolved oxygen levels. Therefore, the hardhead minnow is usually found in clear deep streams with a slow but present flow. Though spawning may occur in pools, runs, or riffles, the bedding area will typically be characterized by gravel and rocky substrate (UC Davis 2015).	Y	Planning Area is within species range. Has been observed in Stone Lakes National Wildlife Refuge, including Laguna Creek and Morrison Creek (UC Davis 2015; USFWS 2006a).
<i>Oncorhynchus keta</i>	chum salmon	—	SSC		Chum salmon adults and maturing juveniles live in the open waters of the ocean, but juveniles are bottom-oriented in rivers and streams. Relatively shallow depths (13-50 cm) for spawning are preferred. Eggs and alevins occur primarily in fresh water, although spawning in intertidal areas occurs (UC Davis 2015).	N	Planning Area outside known species range (UC Davis 2015).
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT	—		Spawning habitat = gravel-bottomed, fast-flowing, well-oxygenated rivers and streams.	Y	Known to occur in large rivers adjacent to Planning Area; thus, may occur in Planning Area tributaries (UC Davis 2015).
	steelhead, central California coast	FT	—		Non-spawning = estuarine, marine waters (Busby et al. 1996).	N	Planning area outside species range (UC Davis 2015).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run chinook salmon	FT	ST		Spawning habitat = fast moving, freshwater streams and rivers. Juvenile habitat = brackish estuaries. Non-spawning = marine waters (Myers et al. 1998).	Y	Known to occur in large rivers adjacent to Planning Area; thus, may occur in Planning Area tributaries (UC Davis 2015).
	winter-run chinook salmon, Sacramento River	FE	SE			Y	Known to occur in large rivers adjacent to Planning Area; thus, may occur in Planning Area tributaries (UC Davis 2015).
	chinook salmon, Central Valley fall/late fall-run ESU ¹	—	SSC			Y	Known to occur in large rivers adjacent to Planning Area; thus, may occur in Planning Area tributaries (UC Davis 2015).
	chinook salmon, spring-run Klamath-Trinity Rivers	—	SSC			N	Planning area outside species range (UC Davis 2015).
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	—	SSC		Prefer slow-moving sections of freshwater rivers and sloughs. Most abundant in Suisun Bay and Marsh region. Largely absent from Sacramento River except during spawning (USFWS 1996).	Y	Known to occur in the Sacramento River. Planning Area is within species range.
<i>Spirinchus thaleichthys</i>	longfin smelt	FC	ST/SSC		Adults and juveniles require salt or brackish estuary waters. Spawning takes place in freshwater over sandy-gravel substrates, rocks, and aquatic plants (Moyle et al. 1995).	N	Planning area outside known species range (UC Davis 2015).

¹ Evolutionary specific unit

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
Amphibians							
<i>Ambystoma californiense</i>	California tiger salamander, central population	FT	ST		Occurs in grasslands of the Central Valley and oak savannah communities in the Central Valley, the Sierra Nevada and Coast Ranges, and the San Francisco Bay Area. Needs seasonal or semi-permanent wetlands to reproduce, and terrestrial habitat with active ground squirrel or gopher burrows (Bolster 2010).	N	Planning Area outside known species range (Nafis 2017).
<i>Rana boylei</i>	foothill yellow-legged frog	—	SSC		Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. From sea level to 6,700 ft (2,030 m) (Nafis 2017).	N	Waterways within the Planning Area do not provide suitable habitat for this species. Planning area outside known species range (Nafis 2017).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Rana draytonii</i>	California red-legged frog	FT	SSC		Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streambanks with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Breeding habitat is in permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. From sea level to 5,000 ft (1,525 m) (Nafis 2017).	N	This species is mostly extirpated from the Central Valley. Waterways within the Planning Area do not provide suitable habitat for this species (Nafis 2017).
<i>Spea hammondi</i>	western spadefoot	—	SSC		Open areas with sandy/gravelly soils. Variable habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding (Nafis 2017).	Y	Nearby occurrences are mostly associated with the foothills; however, Planning Area overlaps with species range (CDFW 2017b; Nafis 2017).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
Reptiles							
<i>Emys marmorata</i>	western pond turtle	—	SSC		Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 ft (1,800 m) (Nafis 2017).	Y	Waterways and open water within the Planning Area provide suitable habitat for this species. Occurrences in and adjacent to Planning Area (CDFW 2017b).
<i>Thamnophis gigas</i>	giant garter snake	FT	ST		Marshes, sloughs, ponds, small lakes, low gradient streams, irrigation and drainage canals, and rice fields and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November–mid-March). Ranges in the Central Valley from Butte County to Buena Vista Lake in Kern County. Endemic to valley floor wetlands (USFWS 2012).	Y	Waterways and open water within the Planning Area provide suitable habitat for this species. Historic occurrences in and adjacent to Planning Area (CDFW 2017b).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
Birds							
<i>Agelaius tricolor</i>	tricolored blackbird	—	SE		Nests in wetlands or in dense vegetation near open water. Dominant nesting substrates: cattails, bulrushes, blackberry, agricultural silage. Nesting substrate must either be flooded, spinous, or in some way defended against predators (Hamilton 2004).	Y	Dense vegetation in and along waterways provides suitable habitat for this species. Several occurrences in and around the Planning Area (CDFW 2017b).
<i>Ammodramus savannarum</i>	grasshopper sparrow	—	SSC		In the foothills and lowlands west of the Cascades/Sierras. Dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches (CDFW 2017e).	Y	No known occurrence within the Planning Area; however, grassland areas may provide suitable habitat for this species (CDFW 2017b).
<i>Aquila chrysaetos</i>	golden eagle	—	FP		Uncommon resident and migrant throughout California, except center of Central Valley. Habitat typically rolling foothills, mountain areas, sage-juniper flats, desert (CDFW 2017e).	Y	Has been observed in Stone Lakes National Wildlife Refuge (USFWS 2006a).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Athene cunicularia</i>	burrowing owl	—	SSC		Open, flat expanses with short, sparse vegetation and few shrubs, level to gentle topography and well-drained soils. Requires underground burrows or cavities for nesting and roosting. Can use rock cavities, debris piles, pipes and culverts if burrows unavailable. Habitats include grassland, shrub steppe, desert, agricultural land, vacant lots, and pastures (CDFW 2017e).	Y	Occurrences in and around the Planning Area (CDFW 2017b). Open, sparsely vegetated areas provide suitable habitat for this species.
<i>Buteo swainsoni</i>	Swainson's hawk	—	ST		Nests in stands with few trees in riparian areas, juniper-sage flats, and oak savannah in the Central Valley. Forages in adjacent grasslands, agricultural fields, and pastures (CDFW 2017e).	Y	Numerous occurrences in and around the Planning Area (CDFW 2017b). Nests in large trees throughout the Planning Area, especially in riparian corridors, annual grassland, and croplands. Forages in cropland, pastures, and annual grasslands.
<i>Chaetura vauxi</i>	Vaux's swift	—	SSC		Prefers redwood and Douglas fir habitats with nest sites in large hollow trees and snags, especially tall, burnt-out stubs (CDFW 2017e).	N	Outside species range (Shuford and Gardali 2008).
<i>Charadrius montanus</i>	mountain plover	—	SSC		Overwinters in California. Frequents open plains with low, herbaceous, or scattered shrub vegetation below 3,200 ft (1,000 m) (CDFW 2017e).	Y	No known occurrence within the Planning Area; however, grassland areas may provide suitable overwintering habitat for this species (CDFW 2017b).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Circus cyaneus</i>	northern harrier	—	SSC		Nests on the ground in patches of dense, tall vegetation in undisturbed areas. Breeds and forages in variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats, and desert sinks (Shuford and Gardali 2008). Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas (CDFW 2017e).	Y	No CNDDDB occurrences within Planning Area; however, northern harrier is known to occur in the Planning Area.
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	FT	SE		Requires large, dense tracts of riparian woodland with well-developed understories. Occurs in deciduous trees or shrubs. Prefers willow, but will also nest in orchards adjacent to streams in Sacramento Valley. Restricted to moist habitats along slow-moving waterways during breeding season (CDFW 2017e).	N	All CNDDDB occurrences in the vicinity of the Planning Area are extirpated (CDFW 2017b). Large, dense tracts of riparian woodland do not occur in the Planning Area.
<i>Elanus leucurus</i>	white-tailed kite	—	FP		Typically nests in the upper third of trees that may be 10–160 ft (33–525 m) tall. These can be open-country trees growing in isolation, or at the edge of or within a forest (Cornell 2017).	Y	No CNDDDB occurrences within Planning Area; however, white-tailed kite is known to occur in the Planning Area.
<i>Grus canadensis canadensis</i>	lesser sandhill crane	—	SSC		In summer, occurs in and near wet meadow, shallow lacustrine,	Y	Suitable habitat is present. Overwinters in irrigated pasture, cropland, and wetlands.

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Grus canadensis tabida</i>	greater sandhill crane	—	ST/FP		and fresh emergent wetland habitats. In winter, frequents moist croplands with rice or corn stubble, and open, emergent wetlands. Prefers treeless plains. Nests in remote portions of extensive wetlands or sometimes shortgrass prairies (CDFW 2017e).	Y	Suitable habitat is present. Overwinters in irrigated pasture, cropland, and wetlands.
<i>Haliaeetus leucocephalus</i>	bald eagle	—	SE		Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine. Requires large bodies of water or rivers with abundant fish and adjacent snags (CDFW 2017e).	N	Suitable habitat not present.
<i>Icteria virens</i>	yellow-breasted chat	—	SSC		Nest in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow border of streams, creeks, sloughs, and rivers. Often nests in dense thicket plants such as blackberry and willow (Shuford and Gardali 2008).	Y	No known occurrence within the Planning Area; however, riparian areas may provide suitable habitat for this species (CDFW 2017b).
<i>Ixobrychus exilis</i>	least bittern	—	SSC		Large, freshwater wetlands with dense emergent vegetation (CDFW 2017e).	Y	No known occurrence within the Planning Area; however, marshy areas may provide suitable habitat for this species (CDFW 2017b).
<i>Lanius ludovicianus</i>	loggerhead shrike	—	SSC		Breeds in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. Breeds in riparian areas in the Central Valley (Shuford and Gardali 2008).	Y	No known occurrence within the Planning Area; however, suitable habitat is present (CDFW 2017b).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Laterallus jamaicensis</i>	black rail	—	ST		Yearlong resident of saline, brackish, and fresh emergent wetlands (CDFW 2017e).	N	Planning area outside known species range (CDFW 2017e).
<i>Melospiza melodia</i>	song sparrow (“Modesto” population)	—	SSC		Breeds and winters in riparian, fresh or saline emergent wetland, and wet meadows. Breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and fresh or saline emergent vegetation (CDFW 2017e).	Y	Numerous populations recorded west and south of the Planning Area (CDFW 2017b).
<i>Progne subis</i>	purple martin	—	SSC		Woodland and forest habitats with numerous suitable nest cavities, open air space above nest sites, and aerial insect prey (Shuford and Gardali 2008). Nests mostly in old woodpecker cavities, but also in human-made structures. Nests often located in tall, isolated tree/snag (CDFW 2017d).	Y	No records of this species in the Planning Area; however, there are several records of this species nesting in man-made structures north of the Planning Area in the City of Sacramento (CDFW 2017b).
<i>Riparia riparia</i>	bank swallow	—	ST		Riparian areas with sandy, vertical bluffs or riverbanks. Also nests in earthen banks and bluffs, as well as sand and gravel pits (CDFW 2017e).	N	Suitable habitat not present.
<i>Setophaga petechia</i>	yellow warbler	—	SSC		Riparian vegetation along streams and in wet meadows. Willow cover and Oregon ash important predictors of abundance in Northern California (CDFW 2017e).	Y	Riparian scrub and woodlands provide suitable nesting habitat for this specie.

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Sternula antillarum browni</i>	California least tern	FE	SE/FP		Nests and roosts in colonies on open beaches, forages near shore ocean waters and in shallow estuaries and lagoons (USFWS 2006b).	N	Suitable habitat not present.
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE	SE		Obligate riparian breeder. Cottonwood willow, oak woodlands, and mule fat scrub along watercourses (USFWS 1998a).	N	Only known occurrence in recent years in the vicinity of the Planning Area is in Yolo County along Putah Creek (CDFW 2017c).
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	—	SSC		Nests in marshes with tall, emergent vegetation (e.g., tules and cattails) adjacent to deep water (Shuford and Gardali 2008).	Y	Freshwater marshes provide suitable habitat for this specie.
Mammals							
<i>Lasiurus blossevillii</i>	western red bat	—	SSC		Roosting habitat includes forests and woodlands, often in edge habitats adjacent to streams, fields, or urban areas (CDFW 2017e).	Y	Trees and human structures provide suitable habitat for this spece.
<i>Sylvilagus bachmani riparius</i>	riparian brush rabbit	FE	SE		Inhabits the brushy understory of valley riparian forests. Prefers an open canopy that allows understory shrubs (rose, grape, and blackberry) to grow and act as cover. Distribution has been reduced to a few small, fragmented populations, the largest of which is along the Stanislaus River (USFWS 1998b).	N	Planning area outside known specie range (CDFW 2017e).

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Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Potential to Occur in the Planning Area?	Comments
<i>Taxidea taxus</i>	American badger	—	SSC		Open shrub, forest, and herbaceous habitats with friable soils. Associated with treeless regions, prairies, park lands, and cold desert areas. Range includes most of California, except the North Coast (CDFW 2017e).	Y	Open, undeveloped areas throughout the Planning Area provide suitable habitat for this specie.

Key	
Federal & State Status	CNPS Rare Plant Rank
(FE) Federal Endangered	<i>Rareness Ranks</i>
(FT) Federal Threatened	(1A) Presumed Extinct in California, and Either Rare or Extinct Elsewhere
(FC) Federal Candidate	(1B) Rare, Threatened, or Endangered in California and Elsewhere
(FD) Federally Delisted	(2A) Presumed Extirpated in California, but More Common Elsewhere
(SE) State Endangered	(2B) Rare, Threatened, or Endangered in California, but More Common Elsewhere
(ST) State Threatened	(3) More Species Information Needed
(SSC) State Species of Special Concern	(4) Limited Distribution
(SCT) State Candidate Threatened	<i>Threat Ranks</i>
(FP) Fully Protected	(0.1) Seriously threatened in California
	(0.2) Fairly threatened in California
	(0.3) Not very threatened in California

5.4 BIOLOGICAL RESOURCES

Special-Status Plant Species

Based on database search results, 10 special-status plant species have the potential to occur in the Planning Area. Each special-status plant species that is considered in the impact analysis is described below based on the data obtained from the CNPS (2017) Inventory of Rare, Threatened, and Endangered Plants of California.

Bristly Sedge (*Carex comosa*)

Bristly sedge has a CNPS rare plant rank of 2B.1. It is not federally or State listed. This species is a perennial rhizomatous herb that blooms from May through September. It is found in a range of habitats, including coastal prairie, marshes and swamps along lake margins, and valley and foothill grassland. It occurs at elevations ranging from sea level to 2,051 feet (625 meters) above mean sea level (amsl).

Dwarf Downingia (*Downingia pusilla*)

Dwarf downingia is an annual herb with a CNPS rare plant rank of 2B.2. It is not federally or State listed. This species blooms from March through May. It is typically found growing in vernal pools or in mesic areas of valley and foothill grassland. This species ranges from sea level to 1,460 feet (445 meters) amsl. Dwarf downingia is threatened by urbanization, development, agriculture, grazing, and nonnative species.

Boggs Lake Hedge-Hyssop (*Gratiola heterosepala*)

Boggs Lake hedge-hyssop is an annual herb with a CNPS rare plant rank of 1B.2. This species has no federal listing, but is listed as endangered under the CESA. Boggs Lake hedge-hyssop blooms between April and August. It typically grows on clay soils in vernal pools and in marshes and swamps along lake margins. This species ranges from 33 to 7,792 feet (10–2,375 meters) amsl and is threatened by development, agriculture, grazing, trampling, and vehicles.

Woolly Rose-Mallow (*Hibiscus lasiocarpus* var. *occidentalis*)

Woolly rose-mallow is a perennial rhizomatous herb endemic to California. It has a CNPS rare plant rank of 1B.2 and has no federal or State listing. This species blooms from June through September and ranges in elevation from sea level to 394 feet (120 meters) amsl. It is typically found growing near freshwater marshes and swamps and is often found in riprap on the sides of levees. Woolly rose-mallow is seriously threatened by habitat disturbance, development, agriculture, recreational activities, and channelization of the Sacramento River and its tributaries.

Northern California black walnut (*Juglans hindsii*)

Northern California black walnut is a perennial deciduous tree with a CNPS rare plant rank of 1B.1 and no State or federal listing. This species blooms from April through May and ranges in elevation from sea level to 1,444 feet (440 meters) amsl. The native habitat for Northern California black walnut includes riparian forest and riparian woodland. This species has been historically cultivated as rootstock for English walnut (*Juglans regia*) orchards and very few native occurrences remain. This species is threatened by urbanization, agriculture, and hybridization with orchard trees.

Legenere (*Legenere limosa*)

Legenere is an annual herb endemic to California. It has a CNPS rare plant rank of 1B.1 and has no federal or State listing. This species blooms from April to June and ranges in elevation from sea level to 2,887 feet (880 meters) amsl. It is typically found growing in vernal pools. Legenere is threatened by grazing, road widening, nonnative plants, and development.

Heckard's Pepper-Grass (*Lepidium latipes* var. *heckardii*)

Heckard's pepper-grass is an annual herb endemic to California. It has a CNPS rare plant rank of 1B.2 and has no federal or State listing. This species blooms from March to May and ranges in elevation from 7 to 656 feet (2–200 meters) amsl. It is typically found growing on mesic, alkaline flats in valley and foothill grassland and along the edges of vernal pools.

Slender Orcutt Grass (*Orcuttia tenuis*)

Slender Orcutt grass is an annual herb that is endemic to California. It has a CNPS rare plant rank of 1B.1 and is State listed as endangered and federally listed as threatened. This species blooms from May to October and ranges in elevation from 115–5,775 feet (35–1,760 m). This species is dependent on vernal pools but may be found in artificial wetlands. This species is threatened by the decline in habitat and habitat fragmentation.

Sanford's Arrowhead (*Sagittaria sanfordii*)

Sanford's arrowhead is a California endemic herb and has a CNPS rare plant rank of 1B.2. This species has no federal or State listing. Sanford's arrowhead is a perennial rhizomatous herb that blooms between May and October. It is typically found in assorted shallow freshwater marshes and swamps at elevations ranging from sea level to 2,133 feet (650 meters) amsl. Sanford's arrowhead is threatened by grazing, development, recreational activities, nonnative plants, road widening, and channel alteration and maintenance.

Saline Clover (*Trifolium hydrophilum*)

Saline clover is an annual herb endemic to California. It has a CNPS rare plant rank of 1B.2 and has no federal or State listing. This species blooms from April through June and is found at elevations ranging from sea level to 984 feet (300 meters) amsl. Saline clover can be found growing in marshes and swamps, vernal pools, and mesic, alkaline valley, and foothill grasslands. This species is threatened by development, trampling, road construction, and vehicles.

Special-Status Wildlife Species

Based on database search results, 32 special-status wildlife species have the potential to occur in the Planning Area. Each species considered in the impact analysis is described below based on the data obtained from various published data sources.

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

The vernal pool fairy shrimp is a federally listed threatened species. Vernal pool fairy shrimp are found in disjunct, fragmented habitats distributed across the Central Valley from Shasta County to Tulare County and across the central and southern Coast Ranges from northern Solano County to Ventura County. Additional isolated occurrences have been identified in Southern California and in Oregon. Vernal pool fairy shrimp occupy a variety of different vernal pool

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habitats, from small, clear, sandstone rock pools to large, turbid, and alkaline grassland valley floor pools. Although the species has been collected from large vernal pools, including one exceeding 25 acres, it tends to occur in smaller pools and is most frequently found in pools measuring less than 0.05 acres (USFWS 2003).

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

The valley elderberry longhorn beetle is federally listed as a threatened species. This insect is endemic to the Central Valley of California and inhabits riparian and associated upland habitats where elderberry (*Sambucus mexicana* or *Sambucus racemosa* var. *microbotrys*), its host plant, grows. Specifically, its range includes the upper Sacramento Valley to the central San Joaquin Valley. The beetle's habitat consists of riparian forests whose dominant plant species include cottonwood (*Populus spp.*), sycamore, valley oak, and willow (*Salix spp.*), with an understory of elderberry shrubs. Blue elderberry shrubs in the Central Valley with basal stem diameters larger than 1 inch are considered potential habitat for this beetle by the USFWS.

Vernal Pool Tadpole Shrimp (*Lepidurus packardii*)

The vernal pool tadpole shrimp is federally listed as an endangered species. Vernal pool tadpole shrimp are found in the Central Valley from Shasta County to northern Tulare County and in the central coast range from Solano County to Alameda County. This species inhabits vernal pool or other seasonally ponded habitats. Vernal pool tadpole shrimp have been collected from vernal pools ranging in size from 6.5 square feet to 88 acres. Inhabited pools have also varied widely in temperature, pH, soil type, and geologic formation (USFWS 2005).

River Lamprey (*Lampetra ayresii*)

The river lamprey is a State Species of Special Concern. This species ranges from Alaska to the San Francisco Bay; however, detailed information about its distribution is lacking. River lamprey are known to occur in the lower Sacramento and San Joaquin Rivers system and tributaries. Historically they were known to occur in Alameda and Napa River (Moyle 2002).

Hardhead (*Mylopharodon conocephalus*)

The hardhead is a State Species of Special Concern. This species is widely distributed in low- to mid-elevation streams in the Sacramento and San Joaquin drainages. In the Sacramento drainage, hardhead are known to occur in the Sacramento River and its large tributaries (Moyle 2002).

Central Valley Steelhead (*Oncorhynchus mykiss*)

The Central Valley steelhead is federally listed as threatened. This evolutionary specific unit (ESU) includes the Sacramento and San Joaquin Rivers and their tributaries. Hatchery populations from the Coleman National Fish Hatchery and the Feather River Hatchery are included in the Central Valley steelhead ESU because of the genetic similarities that exist between them and wild steelhead populations from Deer and Mill Creeks. Central Valley steelhead mature in the ocean and arrive on the spawning grounds (i.e., rivers and tributaries of the Central Valley) nearly ready to spawn. Adult migration from the ocean to spawning grounds may occur throughout the year, with peak migration occurring in the fall or early winter. Migration in the Sacramento River takes place from as early as July and runs through April, with peak migration generally occurring from September through February. Spawning begins in late December and can extend into April. Egg incubation occurs from January through June (USFWS 1996).

Central Valley Spring-run Chinook Salmon, Sacramento River Winter-run Chinook Salmon, Central Valley Fall-run Chinook Salmon (*Oncorhynchus tshawytscha*)

The Central Valley spring-run chinook salmon is listed as State and federally threatened. The Sacramento River winter run chinook salmon is listed as State and federally endangered. The Central Valley fall run chinook salmon is a State Species of Special Concern.

The ESU includes all spawning populations of fall-run chinook salmon in the Sacramento and San Joaquin River basins and their tributaries east of Carquinez Strait, California (NOAA 2009).

Fish in this ESU enter freshwater from June through December and spawn from October through April. Eggs may incubate in the gravel through the end of May. After emergence from the gravels, fry chinook salmon rear in shallow slow water habitats commonly found along stream margins, usually near some type of object cover such as woody debris, vegetation, cobbles, and other structures. As they grow larger, juvenile chinook begin to use deeper habitats with slightly higher water velocities. Downstream migration coincides with higher flows that naturally occur in the spring.

Sacramento Splittail (*Pogonichthys macrolepodotus*)

The Sacramento splittail is a California Species of Special Concern. From November through February they typically migrate upstream to spawn. They utilize floodplains for spawning habitats and by the end of April swim back downstream into brackish estuary waters. Spawning success is thus reliant on availability of flooded habitats. Sacramento splittail have been observed in the American River and largely in the Delta, but may be found in the Sacramento River during spawning (USFWS 1996).

Western Spadefoot (*Spea hammondi*)

The Western spadefoot is a California Species of Special Concern found in the southern portion of the Coast Ranges from San Luis Obispo County south to Baja California, as well as in the Central Valley and surrounding foothills. Western spadefoots are associated primarily with grasslands at elevations up to 6,400 feet (1,950 meters). This species has been found in valley-foothill hardwood woodlands and even orchard and vineyard habitats. Western spadefoots require shallow ephemeral water bodies for reproduction. Individuals are rarely seen on the surface; most of the year is spent in underground burrows (Nafis 2017).

Western Pond Turtle (*Emys marmorata*)

Western pond turtles are a designated California Species of Special Concern. This species is associated with aquatic habitats throughout California, west of the Sierra-Cascade crest, at elevations from near sea level to 5,900 feet (1,800 meters) amsl. They are mostly absent from California's desert regions, with the exception of the Mojave River and its tributaries. The western pond turtle is found in the quiet waters of ponds, marshes, creeks, and irrigation ditches. This species requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. Nests are located in upland locations that may be a considerable distance (up to 0.25 mile) from the aquatic site (CDFW 2017c).

Giant Garter Snake (*Thamnophis gigas*)

The giant garter snake is a State- and federally listed threatened species. The giant garter snake is endemic to the Sacramento and San Joaquin Valleys. This species inhabits agricultural

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wetlands and associated waterways such as irrigation and drainage canals, rice fields, marshes, sloughs, ponds, small lakes, low-gradient streams, and adjacent uplands. Important features of these habitats include:

- Sufficient water during the snake's active season (early spring through mid-fall) to maintain an adequate prey base;
- Emergent vegetation such as cattails (*Typha* spp.) and bulrushes (*Schoenoplectus* spp.) for escape cover and foraging habitat;
- Upland habitat with grassy banks and openings to waterside vegetation for basking; and
- Adjacent upland areas that contain cover and refuge from floodwaters during the species' inactive season (USFWS 2012).

Tricolored Blackbird (*Agelaius tricolor*)

The tricolored blackbird is State-listed as endangered. Mostly a resident in California, this species is common throughout the Central Valley and coastally south of Sonoma County. Tricolored blackbirds breed near fresh water and feed in nearby grassland and cropland habitats. They prefer to nest in emergent wetlands with dense tule or cattails, but will also nest in dense thickets of blackberry (*Rubus* spp.), willow, wild rose (*Rosa californica*), or tall herbs. Tricolored blackbirds are colonial, so nesting sites must be relatively large (CDFW 2017d).

Grasshopper Sparrow (*Ammodramus savannarum*)

The grasshopper sparrow is a State Species of Special Concern. This species tends to nest on the ground in moist grasslands and meadows, and occasionally hayfields. Grasshopper sparrows forage on grass, seeds, insects, and spiders and generally forage in grasslands (CDFW 2017e).

Golden Eagle (*Aquila chrysaetos*)

The golden eagle is a California fully-protected species and is federally protected under the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and the Lacey Act. Golden eagles typically inhabit rolling foothills, mountain areas, sage-juniper flats, and desert habitats from sea level up to 11,500 feet. Nest sites are typically on cliffs and in large trees in open areas (CDFW 2017c).

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is a California Species of Special Concern and is federally protected under the Migratory Bird Treaty Act and as a bird of prey under the Raptor Recovery Act. Burrowing owls prefer nesting in mammal burrows in open areas of dry, open, rolling hills; grasslands; fallow fields; sparsely vegetated desert scrub with gullies, washes, and arroyos; and along the edges of human-disturbed lands. This species can also be found inhabiting golf courses, airports, cemeteries, vacant lots, and road embankments with friable soils for nesting. The elevation range for this species extends from 200 feet (60 meters) below mean sea level (bmsl) to 12,000 feet (3,636 meters) amsl at the Dana Plateau in Yosemite (Bates 2006).

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawks are listed by the State of California as threatened. Swainson's hawks are typically complete migrants in that they breed in North America and winter in South America. They typically arrive at their breeding grounds in early to mid-April and begin their southern migration in early September. The majority of breeding Swainson's hawk occurs in two disjunct populations in California—the Great Basin and the Central Valley—although they can be found in desert, shrubsteppe, grassland, and agricultural habitats across the State. This species is not an obligate riparian species; the correlation with riparian habitat is variable and dependent on the availability and distribution of suitable nest sites in proximity to high-value foraging habitat (Woodbridge 1998).

High-value foraging habitat is largely a function of prey abundance and availability. Different crop types support different levels of prey abundance, and the timing of tilling and harvest affects prey availability within each crop type. Alfalfa fields contain low prey abundance, but prey is accessible throughout the growing season due to the low stature of this crop type. Tomato and beet crops support a high prey density, but due to crop heights and density, prey access is limited to harvest periods. Fallow fields along with dry and irrigated pastures also provide important foraging habitat, whereas vineyards, mature orchards, and cotton fields contain low prey abundance and availability (Woodbridge 1998).

Mountain Plover (*Charadrius montanus*)

The mountain plover is a California Species of Special Concern. It is present in California mostly for overwintering between September and March. They can be found in short grasslands and plowed or furloughed fields in the Central Valley south of Sutter and Yuba Counties, as well as in the foothills west of San Joaquin and Imperial Valleys. They typically feed on large terrestrial insects. They often roost in ground depressions in areas with sparse vegetation and sagebrush landscapes. They typically breed in the Rocky Mountain and western Great Plains states (not California) from late April through June (Shuford and Gardali 2008).

Northern Harrier (*Circus cyaneus*)

The northern harrier is a State Species of Special Concern. This species is commonly found in open grasslands, agricultural areas, and marshes. Nests are built on the ground in areas where long grasses or marsh plants provide cover and protection. Harriers hunt for a variety of prey, including rodents, birds, frogs, reptiles, and insects, by flying low and slow in a traversing manner utilizing both sight and sound to detect prey items. Northern harriers are common in the Central Valley, especially during winter (Cornell 2017).

White-Tailed Kite (*Elanus leucurus*)

The white-tailed kite is a fully protected species. This species can be found in association with the herbaceous and open stages of a variety of habitat types. The white-tailed kite is found year-round in both the coastal zones and lowlands of the Central Valley in California. Nests are constructed near the top of dense oaks, willows, or other tree stands located adjacent to foraging areas. The species forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. White-tailed kites are seldom observed more than 0.5 mile (0.8 km) from an active nest during the breeding season (CDFW 2017d).

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Greater Sandhill Crane (*Grus canadensis tabida*) and Lesser Sandhill Crane (*Grus canadensis tabida*)

The greater sandhill crane is a State threatened and fully protected species. This species prefers open habitats such as cropland, irrigated pasture-grassland and valley grassland for foraging, and vernal pools, vernal swales, seasonal wetlands, seasonal impoundments, and freshwater marshes for roosting.

The lesser sandhill crane is a State Species of Special Concern and is a winter resident and migrant in California from mid-September to early April. This species prefers to forage in irrigated pasture, grain fields, and grasslands.

Yellow Breasted Chat (*Icteria virens*)

The yellow-breasted chat is a State Species of Special Concern. This species is a neotropical migrant that occurs in riparian or marsh habitats throughout California. Yellow-breasted chats are found in valley foothill riparian habitat with thickets of dense willow and brushy tangles near watercourses. Forage patterns usually involve gleaning insects, spiders, and berries from the foliage of shrubs and low trees. Nests are often low to the ground in dense shrubs along streams. They occur as summer breeding residents in the Sacramento River Valley and its tributaries (CDFW 2017c).

Least Bittern (*Ixobrychus exilis*)

The least bittern is a State Species of Special Concern. This species spends April to September in the Sacramento and San Joaquin Valleys (CDFW 2017e). It nests in emergent wetlands, typically in the cattails and tules. Least bitterns forage on small fish, aquatic and terrestrial insects, and crayfish.

Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike is a State Species of Special Concern. This species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches located in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Loggerhead shrikes skewer their prey on thorns or barbs on barbed-wire fences. The purpose of this trait may be to help kill the prey or to cache the food for later consumption. The loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. The species occurs year-round in both the coastal zones and lowlands of the Central Valley in California (CDFW 2017c).

Song Sparrow “Modesto” Population (*Melospiza melodia*)

The song sparrow is a State Species of Special Concern. This species is common around most of California and spends most of its time in riparian, fresh or saline emergent wetlands, and wet meadows. Song sparrows forage mostly on seeds but will also eat insects, spiders, and other small invertebrates. The Modesto population range occurs in the north-central portion of the Central Valley (Shuford and Girardi 2008).

Purple Martin (*Progne subis*)

The purple martin is a State Species of Special Concern. It spends its summer in a variety of wooded, low-elevation habitats. It is typically found in valley foothills, montane hardwood

conifer, and riparian habitats. This species feeds primarily on insects while flying, but occasionally forages on the ground (CDFW 2017e).

Yellow Warbler (*Setophaga petechia*)

The yellow warbler is a California Species of Special Concern. Breeding distribution includes the Coast Range in Del Norte County, east to the Modoc plateau, south along the Coast Range to Santa Barbara and Ventura Counties, along the western slope of the Sierra Nevada south to Kern County, and along the eastern side of California from Lake Tahoe south through Inyo County. Breeding habitat includes riparian woodlands from coastal and desert lowlands up to 8,000 feet amsl in the Sierra Nevada. Other breeding habitats include montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial shrub cover (CDFW 2017e).

Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*)

The yellow-headed blackbird is a State Species of Special Concern. This species breeds commonly in the Sierra Nevada, Central Valley, and selected locations along the coast. Nests are made in fresh emergent wetlands or along the edge of lakes or ponds. Yellow-headed blackbirds feed primarily on seeds and cultivated grains (Cornell 2017).

Western Red Bat (*Lasiurus blossevillii*)

The western red bat is a California Species of Special Concern. This species is common in some areas of California, occurring to the west of the Sierra Nevada/Cascade mountain ranges from Shasta County to the Mexican border. The winter range for migratory individuals and populations includes western lowlands and coastal regions south of San Francisco Bay. The migration between summer and winter ranges causes migrants to be outside of their normal range. This species prefers to roost in forests and woodlands anywhere from sea level to alpine habitat. The western red bat is not found in desert areas. They feed over grasslands, shrublands, open woodlands and forests, and croplands (CDFW 2017c).

American Badger (*Taxidea taxus*)

The American badger is a California Species of Special Concern and an uncommon resident throughout the State, except in the northern North Coast area. This species is typically associated with drier open stages of most forest, shrub, and herbaceous habitats with friable soils. Badgers find cover in burrows. American badgers regularly reuse old burrows, but some may dig a new den each night (CDFW 2017c).

5.4.2 REGULATORY FRAMEWORK

This section identifies environmental review and consultation requirements as well as permits and approvals that local, State, and federal agencies may require for future development under the General Plan.

FEDERAL

Endangered Species Act of 1973

The ESA, as amended, provides protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 United States Code (USC))

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Sections 1531–1544). The ESA defines “take” to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Title 50, Part 222, of the Code of Federal Regulations (50 CFR Section 222) further defined “harm” to include “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including feeding, spawning, rearing, migrating, feeding, or sheltering.”

ESA Section 7(a)(1) requires federal agencies to utilize their authority to further the conservation of listed species. ESA Section 7(a)(2) requires consultation with the USFWS or the National Marine Fisheries Service (NMFS) if a federal agency undertakes, funds, permits, or authorizes (termed the federal nexus) any action that may affect endangered or threatened species, or designated critical habitat. For projects that may result in the incidental “take” of threatened or endangered species, or critical habitat, and that lack a federal nexus, a Section 10(a)(1)(b) incidental take permit can be obtained from the USFWS and/or the NMFS.

Clean Water Act

The basis of the Clean Water Act (CWA) was established in 1948; however, it was referred to as the Federal Water Pollution Control Act. The act was reorganized and expanded in 1972 (33 USC Section 1251), and at this time the Clean Water Act became the act’s commonly used name. The basis of the CWA is the regulation of pollutant discharges into waters of the United States, as well as the establishment of surface water quality standards.

Section 404

The Section 404(b)(1) Guidelines (40 CFR Part 230) are mandatory criteria used for evaluating discharges of dredged or fill material into WoUS. The Guidelines prohibit discharges to WoUS where a practicable alternative exists that would have fewer adverse effects on the environment, so long as the alternative does not have other significant adverse environmental effects. Project applicants must demonstrate that impacts on WoUS have been avoided to the extent possible. Compensatory mitigation is not considered during the evaluation of potentially practicable alternatives, but is typically required for unavoidable impacts on WoUS.

The primary objective of this program is to ensure that the discharge of dredged or fill material is not permitted if a practicable alternative to the proposed activities exists that results in less impact to WoUS or the proposed activity would result in significant adverse impacts to these waters. To comply with these objectives, a permittee must document the measures taken to avoid and minimize impacts to WoUS and provide compensatory mitigation for any unavoidable impacts.

The US Environmental Protection Agency (EPA) and the USFWS are assigned roles and responsibilities in the administration of this program; however, the USACE is the lead agency in the administration of day-to-day activities, including permitting. The agencies will typically assert jurisdiction over the following waters: (1) traditional navigable waters (TNW); (2) wetlands adjacent to TNWs; (3) relatively permanent waters (RPW) that are non-navigable tributaries to TNWs and have relatively permanent flow or seasonally continuous flow (typically three months); and (4) wetlands that directly abut RPWs. Case-by-case investigations are usually conducted by the agencies to ascertain their jurisdiction over waters that are non-navigable tributaries and do not contain relatively permanent or seasonal flow, wetlands adjacent to the aforementioned features, and wetlands adjacent to but not directly abutting RPWs (USACE 2007). Jurisdiction is not generally asserted over swales or erosional features (e.g., gullies or small washes

characterized by low-volume/short-duration flow events) or ditches constructed wholly within and draining only uplands that do not have relatively permanent flows.

The extent of jurisdiction within WoUS, which lack adjacent wetlands, is determined by the ordinary high-water mark (OHWM). The OHWM is defined in 33 CFR Section 328.3(e) as the “line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” Wetlands are further defined under 33 CFR Section 328.3 and 40 CFR Section 230.3 as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”; these typically include “swamps, marshes, bogs, and similar areas.” The USACE (1987) *Corps of Engineers Wetland Delineation Manual* (1987 Manual) sets forth a standardized methodology for delineating the extent of wetlands under federal jurisdiction.

The 1987 Manual outlines three parameters that all wetlands, under normal circumstances, must contain positive indicators for it to be considered jurisdictional: (1) wetland hydrology, (2) hydrophytic vegetation, and (3) hydric soils. In 2006, the USACE issued a series of regional supplements to address regional differences that are important to the functioning and identification of wetlands. The supplements present “wetland indicators, delineation guidance, and other information” that is specific to the region. The USACE requires that wetland delineations submitted after June 5, 2007, be conducted in accordance with both the 1987 Manual and the applicable supplement.

Section 401

Under CWA Section 401 (33 USC Section 1341), federal agencies are not authorized to issue a permit and/or license for any activity that may result in discharges to WoUS, unless a state or tribe where the discharge originates either grants or waives CWA Section 401 certification. CWA Section 401 provides states or tribes with the ability to grant, grant with conditions, deny, or waive certification. Granting certification, with or without conditions, allows the federal permit/license to be issued and remain consistent with any conditions set forth in the CWA Section 401 certification. Denial of the certification prohibits the issuance of the federal license or permit, and waiver allows the permit/license to be issued without state or tribal comment. Decisions made by states or tribes are based on the proposed project’s compliance with EPA water quality standards as well as applicable effluent limitations guidelines, new source performance standards, toxic pollutant restrictions, and any other appropriate requirements of state or tribal law. In California, the State Water Resources Control Board is the primary regulatory authority for CWA Section 401 requirements (additional details below).

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Section 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Section 21). The majority of birds found in the Project vicinity would be protected under the MBTA.

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Bald and Golden Eagle Protection Act

The bald eagle and golden eagle are federally protected under the Bald and Golden Eagle Protection Act (16 USC Sections 668–668c). Under the act, it is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export, or import at any time or in any manner a bald or golden eagle, alive or dead, or any part, nest, or egg of these eagles, unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

Executive Order 13112 – Invasive Species

This executive order directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species; control and monitor existing invasive species populations; restore native species to invaded ecosystems; research and develop prevention and control methods for invasive species; and promote public education on invasive species.

Fish and Wildlife Coordination Act of 1958 (16 USC 661 et seq.)

The Fish and Wildlife Coordination Act requires that whenever any body of water is proposed or authorized to be impounded, diverted, or otherwise controlled or modified, the lead federal agency must consult with the USFWS, the State agency responsible for fish and wildlife management, and the NMFS. Section 662(b) of the act requires the lead federal agency to consider the recommendations of the USFWS and other agencies. The recommendations may include proposed measures to mitigate or compensate for potential damages to wildlife and fisheries associated with a modification of a waterway.

Executive Order 11990 Protection of Wetlands (42 FR 26961, May 25, 1977)

Executive Order 11990 requires federal agencies to provide leadership and take action to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural qualities of these lands. Federal agencies are required to avoid undertaking or providing support for new construction located in wetlands unless (1) no practicable alternative exists and (2) all practical measures have been taken to minimize harm to wetlands.

STATE

California Endangered Species Act

Under the CESA, the CDFW has the responsibility for maintaining a list of endangered and threatened species (FGC Section 2070). The CDFW also maintains a list of “candidate species,” which are species formally noticed as being under review for potential addition to the list of endangered or threatened species, and a list of “Species of Special Concern,” which serve as species “watch lists.”

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present and determine whether the proposed project will impact such species. In addition, the CDFW encourages informal consultation on any proposed project that may impact a candidate species.

“Take” of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from the CDFW would be in the form of an incidental take permit.

California Fish and Game Code

Streambed Alteration Agreement (FGC Sections 1600–1607)

State and local public agencies are subject to FGC Section 1602, which governs construction activities that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as waters of the State by the CDFW. Under FGC Section 1602, a discretionary Streambed Alteration Agreement must be issued by the CDFW prior to the initiation of construction within lands under CDFW jurisdiction.

Native Plant Protection Act

The Native Plant Protection Act (FGC Sections 1900–1913) prohibits the take, possession, or sale in the State of any plants with a State designation of rare, threatened, or endangered (as defined by the CDFW). An exception in the act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFW and give the CDFW at least 10 days to retrieve the plants before they are plowed under or otherwise destroyed (FGC Section 1913).

Birds of Prey

Under FGC Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.

Fully Protected Species

California statutes also afford “fully protected” status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be “taken,” even with an incidental take permit. FGC Sections 3505, 3511, 4700, 5050, and 5515 protect from take a number of fully protected birds, mammals, reptiles, amphibians, and fish.

California Wetlands and Other Waters

The California Natural Resources Agency and its various departments do not authorize or approve projects that fill or otherwise harm or destroy coastal, estuarine, or inland wetlands. Exceptions may be granted if all of the following conditions are met:

- The project is water-dependent.
- No other feasible alternative is available.
- The public trust is not adversely affected.
- Adequate compensation is proposed as part of the project.

5.4 BIOLOGICAL RESOURCES

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1966 (California Water Code Section 13000 et seq.; CCR Title 23, Chapter 3, Subchapter 15) is the primary State regulation that addresses water quality. The requirements of the act are implemented by the State Water Resources Control Board at the State level and by nine Regional Water Quality Control Boards (RWQCB) at the local level. The RWQCBs carry out planning, permitting, and enforcement activities related to water quality in California. The act provides for waste discharge requirements and a permitting system for discharges to land or water. Certification is required by the RWQCBs for activities that can affect water quality.

Clean Water Act, Section 401 Water Quality Certification

CWA Section 401 (33 USC Section 1341) requires that any applicant for a federal license or permit, which may result in a pollutant discharge to WoUS, obtain state certification that the discharge will comply with EPA water quality standards. The state or tribal agency responsible for issuing of the Section 401 certification may also require compliance with additional effluent limitations and water quality standards set forth in state/tribal laws. In California, the RWQCB is the primary regulatory authority for CWA Section 401 requirements.

The Central Valley RWQCB is responsible for enforcing water quality criteria and protecting water resources in the Planning Area. In addition, the RWQCB is responsible for controlling discharges to surface waters of the State by issuing waste discharge requirements or commonly by issuing conditional waivers to waste discharge requirements. The RWQCB requires that a project proponent obtain a CWA Section 401 water quality certification for CWA Section 404 permits issued by the USACE.

State Definition of Covered Waters

California Water Code Section 13050(e) defines waters of the State as “any surface water or groundwater, including saline waters, within the boundaries of the state.” Therefore, water quality laws apply to both surface water and groundwater. After the US Supreme Court decision in *Solid Waste Agency of Northern Cook County v. US Army Corps of Engineers*, 531 U.S. 159 (2001), the Office of Chief Counsel of the State Water Resources Control Board released a legal memorandum confirming the State’s jurisdiction over isolated wetlands. The memorandum stated that under Porter-Cologne, discharges to wetlands and other waters of the State are subject to State regulation, and this includes isolated wetlands. In general, the State Water Resources Control Board regulates discharges to isolated waters in much the same way as it does for WoUS, using Porter-Cologne rather than CWA authority.

LOCAL

City of Elk Grove Municipal Code

Tree Preservation and Protection

Municipal Code Chapter 19.12, Tree Preservation and Protection, strives to protect and preserve trees of local importance, including coast live oak, valley oak, blue oak, interior live oak, oracle oak, California sycamore, and California black walnut with a single trunk 6 inches diameter at breast height (dbh) or greater or multiple trunks with a combined dbh of 6 inches or greater. Chapter 19.12 requires mitigation for the removal of trees of local importance with dimensions described above, trees that have been selected for preservation, all portions of adjacent off-site

native trees that have driplines that extend onto a project site, and all off-site native trees that may be impacted by utility installation and/or improvements associated with a project. Current policies require that every inch lost will be mitigated by an inch planted or equivalent credit obtained from a tree mitigation bank.

Swainson's Hawk Impact Mitigation Fees

Municipal Code Chapter 16.130, Swainson's Hawk Impact Mitigation Fees, is aimed at mitigating impacts from typical urban development projects and requires mitigation for the loss of Swainson's hawk habitat at a 1:1 ratio. Mitigation can be achieved through purchase of City-owned credits for projects 40 acres or less. For projects larger than 40 acres, options for achieving mitigation through the code include the direct transfer to the City of a Swainson's hawk habitat conservation easement along with an easement monitoring endowment; or the purchase of credits at a CDFW-approved conservation bank. The easement must be surveyed to determine whether it is suitable Swainson's hawk foraging habitat.

OTHER

Proposed South Sacramento County Habitat Conservation Plan

The purpose of the proposed South Sacramento County Habitat Conservation Plan (SSHCP) is to encourage and simplify the process of conserving sensitive habitats for special-status species within the southern portion of the county. This would be accomplished by creating a streamlined process for incidental take authorization under both the federal and California ESA, permitting under Section 404 of the federal CWA, quality certification under Section 401 of the federal CWA, and Lake and Streambed Alteration Agreements under Section 1602 of the FGC. Land developers that convert habitat within the urban services boundary would pay a defined per-acre fee to mitigate impacts; these fees would be used to protect, restore, maintain, and monitor habitat. Species analyzed in the plan include white-tailed kite, northern harrier, tricolored blackbird, giant garter snake, vernal pool fairy shrimp, and Sanford's arrowhead. The complete list can be found on the Sacramento County Planning and Community Development Department website (Sacramento County 2018).

A public review draft of the SSHCP and Implementing Agreement, as well as the associated joint draft Environmental Impact Statement/EIR, and draft Aquatic Resources Program, were released for agency and public review on June 2, 2017. However, the SSHCP has not yet been adopted. The City is not a party to the HCP; however, it may be able to utilize the benefits of its mitigation.

California Native Plant Society

The CNPS is a nongovernmental agency that ranks native plant species according to current population distribution and threat level in regard to extinction. These data are utilized by the CNPS to create/maintain a list of native California plants that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare, Threatened, and Endangered Vascular Plants of California* (CNPS 2017). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review.

The following identifies the definitions of the CNPS ranks:

- **List 1A:** Plants believed to be extinct, and either rare or extinct elsewhere
- **List 1B:** Plants that are rare, threatened, or endangered in California and elsewhere

5.4 BIOLOGICAL RESOURCES

- **List 2A:** Plants that are presumed extirpated in California, but are more numerous elsewhere
- **List 2B:** Plants that are rare, threatened, or endangered in California, but are more numerous elsewhere

All of the plant species on Lists 1 and 2 meet the requirements of the Native Plant Protection Act Section 1901, Chapter 10, or FGC Section 2062 and Section 2067, and are eligible for State listing. Plants appearing on Lists 1 or 2 are considered to meet the criteria of CEQA Section 15380, and effects on these species are considered "significant." Classifications for plants on List 3 (plants about which we need more information) and/or List 4 (plants of limited distribution), as defined by the CNPS, are not currently protected under State or federal law. Therefore, no detailed descriptions or impact analyses were completed for species with these classifications.

5.4.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. A project is considered to have a significant effect on the environment if it will:

- 1) 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 CDFW or the USFWS.
- 2) 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 CDFW or the USFWS.
- 3) Have a substantial adverse effect on state or federally protected wetlands, including but not limited to, marsh, vernal pool, coastal, or similar through direct removal, filling, hydrological interruption, or other means.
- 4) 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.
- 5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- 6) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.
- 7) Reduce the number or restrict the range of an endangered, rare, or threatened plant or animal species or biotic community, thereby causing the species or community to drop below self-sustaining levels.

METHODOLOGY

The following evaluation of the proposed Project's potential biological resources impacts is based on a review of relevant documents, including the City's current General Plan, current and

historical mapping and aerial photographs, and a review of available information regarding current habitat types and land covers in the Planning Area.

General Plan Policies and Standards

The proposed Project contains the following policies and standards for managing future development in the Planning Area to protect biological resources.

Policy NR-1-2: Preserve and enhance natural areas that serve, or may potentially serve, as habitat for special-status species. Where preservation is not possible, require that appropriate mitigation be included in the project.

Standard NR-1-2a: Require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain special-status plant and animal species.

Standard NR-1-2b: Require development projects to retain movement corridor(s) adequate (both in size and in habitat quality) to allow for the continued wildlife use based on the species anticipated in the corridor.

Policy NR-1-3: Support the establishment of multipurpose open space areas to address a variety of needs, including but not limited to maintenance of agricultural uses, wildlife habitat, recreational open space, aesthetic benefits, and flood control. To the extent possible, lands protected in accordance with this policy should be in proximity to Elk Grove to facilitate use of these areas by Elk Grove residents, assist in mitigation of habitat loss within the City, and provide an open space resource close to the urbanized areas of Elk Grove.

Policy NR-1-4: Avoid impacts to wetlands, vernal pools, marshland, and riparian (streamside) areas unless shown to be technically infeasible. Ensure that no net loss of wetland areas occurs, which may be accomplished by avoidance, revegetation, and restoration on-site or through creation of riparian habitat corridors.

Policy NR-1-5: Encourage the retention of natural stream corridors, and the creation of natural stream channels where improvements to drainage capacity are required.

Standard NR 1-5a: Stream crossings shall be minimized and be aesthetically compatible with the natural appearance of the stream channel. The use of bridges and other stream crossings with natural (unpaved) bottoms shall be encouraged to minimize impacts to natural habitat.

Standard NR 1-5b: Uses in the stream corridors shall be limited to recreation and agricultural uses compatible with resource protection and flood control measures. Roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings.

Standard NR 1-5c: Open space lands within a stream corridor shall be required to be retained as open space as a condition of development approval for projects that include a stream corridor. Unencumbered maintenance access to the stream shall be provided.

5.4 BIOLOGICAL RESOURCES

- Policy NR-1-6:** Consider the adoption of habitat conservation plans for rare, threatened, or endangered species.
- Policy NR-1-8:** Encourage development clustering where it would facilitate on-site protection of woodlands, grasslands, wetlands, stream corridors, scenic areas, or other appropriate features such as active agricultural uses and historic or cultural resources under the following conditions and requirements. Except as provided below, clustering shall not be allowed in the Sheldon Rural Area.
- Urban infrastructure capacity is available for urban use. If clustering is allowed in the Rural Area, those properties shall be exempt from providing urban water and sewer connections in accordance with the policies of the Sheldon/Rural Area Community Plan (see Chapter 9).
 - On-site resource protection is appropriate and consistent with other General Plan policies.
 - The architecture and scale of development are appropriate for and consistent with the intended character of the area.
 - Development rights for the open space area are permanently dedicated and appropriate long-term management, with funding in perpetuity, is provided for by a public agency or another appropriate entity.
- Policy NR-2-1:** Preserve large native oak and other native tree species as well as large nonnative tree species that are an important part of the City's historic and aesthetic character.
- Policy NR-2-2:** Maximize and maintain tree coverage on public lands and in open spaces.
- Policy NR-2-3:** Ensure that trees function as an important part of the City's or a neighborhood's aesthetic character or as natural habitat on public and private land that are retained or replaced to the extent possible during the development of new structures, roadways (public and private including roadway widening), parks, drainage channels, and other uses and strictures.
- Policy NR-2-4:** Maintain and enhance an urban forest by preserving and planting trees in appropriate densities and locations to maximize energy conservation and air quality benefits.
- Policy NR-3-1:** Ensure that the quality of water resources (e.g. groundwater, surface water) is protected to the extent possible.
- Policy PT-2-6:** Locate trails which parallel streams beyond riparian corridors and wetlands to minimize wildlife impacts and restrict such trails to nonmotorized traffic.
- Policy LU-3-22:** Identify a mitigation program for critical habitat for special status species known to occur within the Study Areas. A proposed project determined to have a significant impact to habitat for special-status species shall implement all feasible mitigation measures established in the program, including but not limited to land dedication (which may be located either inside or outside the corresponding Study Area) or fee payment, or both.

Policy LU-3-9: Public, Open Space, and Conservation land uses in Open Space/Conservation Districts should meet the following guidelines:

- Provide a buffer between residential, commercial, and industrial uses.
- In areas designed to promote open space or recreational uses over conservation uses, provide nonvehicular access points within one-half mile of all residential uses.
- Be publicly accessible and, where feasible, be integrated with surrounding land uses.
- Maximize connectivity for both humans and animal life by connecting to an integrated network of passive and active open space corridors and uses.
- Contain all areas located in the 100-year or 200-year floodplain, unless this would result in “islanding” of higher-density land uses. Areas located in the 100-year or 200-year floodplain shall be retained for agriculture if it is the existing use, continues to be economically viable, and would not result in islanding of higher-density land uses.

PROJECT IMPACTS AND MITIGATION MEASURES

Impacts to Endangered, Threatened, Candidate or Rare Species (Standards of Significance 1 and 7)

Impact 5.4.1 Implementation of the proposed Project could result in adverse effects, either directly or indirectly, on species listed as endangered, threatened, rare, proposed, and candidate plants and wildlife. This impact would be **potentially significant**.

The Planning Area contains suitable habitat for plant and wildlife species listed as endangered, threatened, rare, or proposed, or candidates for listing (listed species). Species with these designations are either rare or endangered or threatened with extinction. Reasons for population declines in these species are numerous but are largely related to habitat loss. Impacts from buildout in the current City limits under the proposed Project land use designations are presented quantitatively. **Table 5.4-1** lists land cover types in the City limits and Study Areas that could be built out under proposed land use designations of the proposed Project. The land cover in the proposed Study Areas is largely undeveloped and provides large, contiguous areas of habitat for special-status species; therefore, future buildout in the proposed Study Areas would also result in impacts to listed species. Most direct impacts would occur from development of nonnative annual grassland, vernal pools, wetlands, and other WoUS, waters of the State, riparian communities, and oak woodlands; however, impacts to any community could also result in impacts on special-status species. The bolded names in **Table 5.4-3** are listed species that are associated with the land cover types in the Planning Area.

Development of parcels and associated structures in the Planning Area could result in disturbance and habitat loss for special-status bat and bird species. Indirect impacts may also occur, such as habitat modification, increased human/wildlife interactions, habitat fragmentation, encroachment by exotic weeds, and area-wide changes in surface water flows and general hydrology due to development of previously undeveloped areas.

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**TABLE 5.4-3
SPECIAL-STATUS SPECIES AND THEIR ASSOCIATED VEGETATIVE COMMUNITY**

Vegetation Community	Special-Status Species	
Urban*	Swainson's hawk (N) burrowing owl	white-tailed kite western red bat
Rural Development**	Swainson's hawk (F, N) burrowing owl mountain plover (W)	white-tailed kite western red bat
Cropland	Swainson's hawk (F) tricolored blackbird (N) golden eagle (F) burrowing owl northern harrier peregrine falcon (F)	greater sandhill crane (W) lesser sandhill crane (W) short-eared owl (F) mountain plover (W) white-tailed kite (F)
Irrigated Pasture	Swainson's hawk (F) loggerhead shrike golden eagle (F) burrowing owl northern harrier peregrine falcon (F)	greater sandhill crane (W) lesser sandhill crane (W) short-eared owl (F) mountain plover (W) white-tailed kite (F)
Vineyard	Does not provide habitat for special-status species	
Orchard	Does not provide habitat for special-status species	
Annual Grassland	dwarf downingia saline clover Swainson's hawk (F) giant garter snake (A, N) tricolored blackbird western pond turtle (A, N) loggerhead shrike short-eared owl (F) mountain plover (W) white-tailed kite (F) peregrine falcon (F)	bristly sedge Heckard's pepper grass greater sandhill crane (W) lesser sandhill crane (W) western spadefoot (A, F) grasshopper sparrow (N) golden eagle (F) burrowing owl northern harrier American badger
Blue Oak Woodland	Swainson's hawk (N) western pond turtle (A, N) loggerhead shrike white-tailed kite (N) western red bat	western spadefoot (A, F) grasshopper sparrow (N) golden eagle (F) short-eared owl (F, N) American badger
Mixed Riparian Scrub	valley elderberry longhorn beetle giant garter snake (A, N) loggerhead shrike white-tailed kite yellow-breasted chat western red bat	western pond turtle (A, N) tricolored blackbird (N) short-eared owl (F, N) peregrine falcon (N) yellow warbler

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Vegetation Community	Special-Status Species	
Mixed Riparian Woodland	Northern California black walnut Swainson's hawk (N) valley elderberry longhorn beetle loggerhead shrike white-tailed kite (N) yellow warbler	western red bat western pond turtle (A, N) tricolored blackbird (N) short-eared owl (F, N) peregrine falcon (N) yellow-breasted chat
Valley Oak Riparian Woodland	Swainson's hawk (N) valley elderberry longhorn beetle loggerhead shrike white-tailed kite (N) western pond turtle (A, N)	tricolored blackbird (N) short-eared owl (F, N) peregrine falcon (N) western red bat
Vernal Pool	Boggs Lake hedge-hyssop legenere slender Orcutt grass Vernal pool fairy shrimp Vernal pool tadpole shrimp	dwarf downingia Heckard's pepper grass saline clover western spadefoot (B)
Seasonal Wetland	bristly sedge dwarf downingia Heckard's pepper grass saline clover vernal pool fairy shrimp	vernal pool tadpole shrimp Boggs Lake hedge-hyssop legenere slender Orcutt grass western spadefoot (B)
Freshwater Marsh	bristly sedge woolly rose mallow saline clover giant garter snake (B, F) tricolored blackbird (N) western pond turtle (B, F) northern harrier least bittern yellow-headed blackbird	Boggs Lake hedge-hyssop Sanford's arrowhead greater sandhill crane (W) lesser sandhill crane (W) river lamprey golden eagle (F) short-eared owl (F) peregrine falcon (F)
Open Water	Sanford's arrowhead Giant garter snake (B, F) river lamprey Central Valley steelhead	Western pond turtle (B, F) Hardhead Chinook salmon Sacramento splittail
Stream***	bristly sedge woolly rose mallow giant garter snake (B, F) river lamprey Central Valley steelhead Boggs Lake hedge-hyssop	Sanford's arrowhead western pond turtle hardhead Chinook salmon Sacramento splittail

* Northern California black walnut is found in urban area; however, these are planted and not part of native stands.

** Rural development may include species found in annual grassland communities.

*** Includes stream banks.

****Bolded species are considered "Listed" as referenced in the impact analyses.

Source: CDFW 2017b; USFWS 2015a; data compiled by Michael Baker International 2015

KEY: A = Aestivation; B = Breeding, F = Foraging, N = Nesting, W = Wintering

Note: Species with no letters use habitat for entire life cycle, except the anadromous fish which spend portion of life in the ocean

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Much of the development planned in the current City limits would occur within existing community and specific plan areas that have been planned to avoid impacts to special-status species habitat where practicable, and were evaluated under CEQA in various documents (e.g., Laguna Ridge Specific Plan EIR, Southeast Policy Area Strategic Plan EIR). Development in these areas would continue to be subject to mitigation measures identified in those documents to reduce impacts to habitat. Other development outside of areas covered by specific plans or areas not covered by an existing project approval would be subject to the policies and standards in the General Plan Update. Development in the proposed Study Areas would be planned as part of future community plans, which would be similarly planned to avoid impacts to significant biological resources, where practicable, and would be subject to further CEQA review and the resulting program- and project-level mitigation measures to address identified impacts.

Existing Laws, Regulations, and Proposed General Plan Policies and Standards That Provide Mitigation

Future development in the Planning Area would be subject to regulations protecting biological resources at the federal, State, regional, and local levels. Pursuant to the requirements of the CESA, project applicants must determine whether any State-listed endangered or threatened species may be present and evaluate whether the proposed project will impact such species. "Take" of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from the CDFW would be in the form of an incidental take permit. However, under FGC Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.

California statutes afford "fully protected" status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be "taken," even with an incidental take permit. FGC Sections 3505, 3511, 4700, 5050, and 5515 protect from take a number of fully protected birds, mammals, reptiles, amphibians, and fish.

Individual projects would also be required to obtain permits as described above under the regulatory setting. Federal and State permitting requirements would include consultation with appropriate agencies and implementation of mitigation measures to address direct and indirect impacts to special-status species and associated habitat. The City's Tree Preservation and Protection Code (Municipal Code Chapter 19.12) and Swainson's Hawk Code (Municipal Code Chapter 16.130) provide further protection of special-status species and habitat.

Development in community and specific plan areas (e.g., Laguna Ridge Specific Plan and Southeast Area Strategic Plan) would continue to be subject to mitigation measures identified in those documents to reduce impacts to habitat.

The proposed Project includes goals, policies, and standards that would further minimize direct and indirect impacts on special-status species. Standard NR-1-2a would require a biological resources evaluation for private and public development projects to identify the potential for the presence of special-status plant and animal species. Policies PT-2-6, NR-1-2, and NR-1-3 would result in the avoidance, preservation, and/or enhancement of habitat for special-status species. Policy NR-1-4 would ensure no net loss of wetlands. Policies NR-2-1, NR-2-2, NR-2-3, and NR-2-4 would result in the preservation of trees, tree cover, and functionality of tree locations and, therefore, provide habitat for special-status nesting birds. Policy NR-3-1 would ensure the quality of water resources, which are utilized by special-status species. Policy NR-1-6 would

introduce the consideration of a habitat conservation plan, which would serve to protect special-status species. Under Policy LU-3-22, a mitigation program for critical habitat for special status species known to occur within the Study Areas would be identified. This would require that a proposed project determined to have a significant impact to habitat for special-status species must implement all feasible mitigation measures established in the program, including but not limited to land dedication (which may be located either inside or outside the corresponding Study Area) or fee payment, or both.

Conclusion

The Planning Area contains suitable habitat for plant and wildlife species listed as endangered, threatened, rare, or proposed, or candidates for listing (listed species). Future development, particularly in the Study Areas, which are largely undeveloped, could result in direct and indirect impacts on species or habitat.

Though application of existing regulations and proposed Project policies and standards would reduce impacts to listed species, individual species populations would experience habitat losses where creation and enhancement of habitat is not feasible, thereby causing an overall reduction in available habitat. Therefore, impacts to special-status species would be **potentially significant**.

Mitigation Measures

No additional feasible mitigation available beyond compliance with existing regulations and proposed General Plan policies and standards.

Implementation of existing regulations and proposed General Plan policies would help reduce direct and indirect impacts to listed species in the Planning Area. Nonetheless, an overall loss of listed species and their habitats would still occur with development in the Planning Area. Therefore, implementation of the proposed Project would result in a **significant and unavoidable** impact to special-status species.

Impacts to Non-Listed Special Status Species (Standard of Significance 1)

Impact 5.4.2 Implementation of the proposed Project could result in adverse effects, either directly or indirectly, on non-listed special status species (Species of Special Concern, fully protected, and locally important). This impact would be **potentially significant**.

As discussed in **Impact 5.4.1**, the Planning Area contains suitable habitat for many plant and wildlife species. **Table 5.4-3** lists the non-listed special-status species and their associated habitat. Fully protected species and Species of Special Concern may have declining populations but are not facing imminent extinction. **Table 5.4-3** lists land cover types in the City limits that could be built out under the proposed Project. The land cover existing in the proposed Study Areas (**Table 5.4-1**) is largely undeveloped and provides large, contiguous areas of habitat for special-status species. Future buildout in the proposed Study Areas would also result in impacts to non-listed special-status species.

As presented for listed species, redevelopment of parcels within the Planning Area that contain structures could result in disturbance and habitat loss for special-status bat and bird species. Indirect impacts may also occur, such as habitat modification, increased human/wildlife

5.4 BIOLOGICAL RESOURCES

interactions, habitat fragmentation, encroachment by exotic weeds, and area-wide changes in surface water flows and general hydrology due to development of previously undeveloped areas.

Existing Laws, Regulations, and Proposed General Plan Policies and Standards That Provide Mitigation

As described in Impact 5.4-1, above, there are numerous federal and state laws and regulations concerning protected species and habitat and permitting requirements with which project applicants would be required to comply.

The proposed Project includes goals, policies, and standards that would further minimize direct and indirect impacts on special-status species. Standard NR-1-2a would require a biological resources evaluation for private and public development projects to identify the potential for the presence of special-status plant and animal species. Policies PT-2-6, NR-1-2, and NR-1-3 would result in the avoidance, preservation, and/or enhancement of habitat for special-status species. Policy NR-1-4 would ensure no net loss of wetlands. Policies NR-2-1, NR-2-2, NR-2-3, and NR-2-4 would result in the preservation of trees, tree cover, and functionality of tree locations and, therefore, provide habitat for special-status nesting birds. Policy NR-3-1 would ensure the quality of water resources, which are utilized by special-status species. Policy NR-1-6 would introduce the consideration of a habitat conservation plan, which would serve to protect special-status species.

Conclusion

Future buildout, particularly in the Study Areas where there are large, contiguous areas for special-status species habitat, could result in disturbance and/or habitat loss. Though application of regulations and proposed Project policies and standards would reduce impacts to non-listed special-status species, individual species populations would experience habitat losses where creation and enhancement of habitat is not feasible. Therefore, impacts to these species would be **potentially significant**.

Mitigation Measures

No additional feasible mitigation available beyond compliance with existing regulations and proposed General Plan policies and standards.

Implementation of the above policies and standards would reduce direct and indirect impacts to non-listed species in the Planning Area. Nonetheless, an overall loss of species and their habitats would still occur with development in the Planning Area. Therefore, implementation of the proposed Project would result in a **significant and unavoidable** impact to special-status species.

Impacts to Riparian Habitat, Sensitive Natural Communities, or Protected Wetlands (Standards of Significance 2 and 3)

Impact 5.4.3 Implementation of the proposed Project could result in the loss of riparian vegetation, sensitive natural communities, and/or state or federally protected wetlands. This impact would be **less than significant**.

Sensitive habitats include those that are of special concern to resource agencies and those that are protected under CEQA, Section 1600 of the FGC, and Section 404 of the CWA. **Table 5.4-1** provides an estimate of aquatic and riparian land cover types in Planning Area. Aquatic land cover types may be linear, as in stream and creek corridors, or appear as inclusions on a larger

land cover type. Based upon aquatic land cover type configuration in the landscape, many of these features can be avoided during project development and design.

Vernal pools, wetlands, other WoUS, waters of the State, riparian communities, oak woodland, and Swainson's hawk foraging habitat provide suitable habitat for listed species in the Planning Area. They also provide suitable habitat for non-listed special-status and common species, including a variety of waterfowl and migratory passerines.

Existing Laws, Regulations, and Proposed General Plan Policies That Provide Mitigation

The RWQCB requires that a project proponent obtain a CWA Section 401 water quality certification for CWA Section 404 permits issued by the USACE. Under FGC Section 1602, a discretionary Streambed Alteration Agreement must be issued by the CDFW prior to the initiation of construction on lands with resources under CDFW jurisdiction.

The proposed Project includes policies that would minimize impacts on riparian habitat, sensitive natural communities, and protected wetlands. **Policy NR-1-3** would preserve and enhance some of these communities. **Policy NR-1-4** would ensure no net loss of wetland areas and avoid impacts to wetlands, vernal pools, marshlands, and riparian areas. **Policy NR-1-8** encourages development design to protect sensitive natural communities.

Conclusion

Future construction under the proposed Project could have the potential to substantially adversely affect riparian habitat, state or federally protected wetlands, and/or other sensitive natural communities identified in local or regional plans, policies, or regulations, by the CDFW or by the USFWS. However, compliance with existing regulations and application of the proposed Project policies, including those that require preservation and enhancement of some of these communities, ensuring no net loss of wetland areas and avoiding impacts to wetlands, vernal pools, marshlands, and riparian areas, would reduce impacts to riparian habitat, sensitive natural communities, and protected wetlands. This impact would be **less than significant**.

Mitigation Measures

None required beyond compliance with existing regulations and proposed General Plan policies.

Impacts to Wildlife Movement (Standard of Significance 4)

Impact 5.4.4 Implementation of the proposed Project could interfere with wildlife movement. This impact would be **less than significant**.

Wildlife corridors provide connectivity between open space areas, are present in a variety of habitats, and link areas of suitable wildlife habitat that are otherwise separated by human disturbance. Wildlife movement likely encompasses agricultural and rural areas, and adjacent open spaces. In addition, drainages and associated riparian corridors throughout the Planning Area likely facilitate wildlife movement. The edges of the Planning Area and adjacent open spaces facilitate local and regional movement. Future development that converts open space or encroaches on open space could result in alteration or loss of movement corridors.

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Proposed General Plan Policies and Standards That Provide Mitigation

The proposed Project includes policies and standards to help reduce impacts to wildlife movement and corridors. Standard NR-1-2a would require a biological resources evaluation for private and public development projects, which would help determine if wildlife corridors could be affected. Standard NR-1-2b requires development projects to retain movement corridors to allow for continued wildlife use by those species anticipated in the corridor. Policy PT-2-6 would help maintain wildlife movement corridors by restricting travel to nonmotorized traffic. Policy NR-2-4 would help maintain and enhance urban forests, which provide cover for wildlife movement. Policy LU-3-9 directs that Public, Open Space, and Conservation land uses in Open Space/Conservation Districts should address connectivity for both humans and animal life by connecting to an integrated network of passive and active open space corridors and uses.

Conclusion

Implementation of the proposed Project could interfere with wildlife movement, particularly in the Study Areas which are characterized by large, contiguous areas of open space. However, application of the proposed Project's policies and standards, such as Policy LU-3-9 that promotes buffers between residential, commercial, and industrial uses and maximization of connectivity for animal life with passive and active open space corridors, would reduce impacts to wildlife movement and corridors. This impact would be **less than significant**.

Mitigation Measures

No additional mitigation required beyond compliance with existing regulations and proposed General Plan policies and standards.

Conflict with Local Policies and Ordinances (Standard of Significance 5)

Impact 5.4.5 Implementation of the proposed Project would not conflict with any local policies or ordinances protecting biological resources. This is considered to have **no impact**.

The proposed Project would result in future land development activities that could require tree removal or pruning or could affect Swainson's hawk habitat. The City has adopted regulations that provide mitigation for potential impacts to these resources. The City's Municipal Code includes Chapter 19.12, Tree Preservation and Protection, and Chapter 16.130, Swainson's Hawk Impact Mitigation Fee. Chapter 19.12 requires mitigation for impacts to trees of local importance. Trees of local importance include coast live oak, valley oak, blue oak, interior live oak, oracle oak, California sycamore, and California black walnut with a single trunk 6 inches dbh or greater or multiple trunks with a combined dbh of 6 inches or greater. Chapter 16.130 requires mitigation for the loss of Swainson's hawk habitat at a 1:1 ratio. Development of the proposed Project would be required to be consistent with all local policies and codes protecting biological resources. Therefore, **no impact** would occur with regard to consistency with local ordinances or policies protecting biological resources.

Mitigation Measures

None required.

Conflict with Conservation Plans (Standard of Significance 6)

Impact 5.4.6 Implementation of the proposed Project would not conflict with the provisions of an adopted habitat conservation plan by allowing development of land planned for preservation as part of the proposed South Sacramento Habitat Conservation Plan. There would be **no impact**.

There is a conservation plan in process that includes the Planning Area: the SSHCP. A public review draft of the SSHCP and Implementing Agreement, as well as the associated joint draft Environmental Impact Statement/EIR, and draft Aquatic Resources Program, were released for agency and public review on June 2, 2017. However, the SSHCP has not yet been adopted.

The Planning Area is partially within the proposed SSHCP area; however, the City is not a participant in the SSHCP. As described previously, the purpose of the SSHCP is to provide a streamlined process for incidental take authorization and conserve habitat for special-status plant and wildlife species to address the biological impacts of future urban development. The SSHCP is expected to be adopted sometime in 2018, potentially before adoption of the proposed Project.

Because the SSHCP has not been adopted or implemented at this time, there would be **no impact** related to potential conflicts with an adopted habitat conservation plan under existing conditions.

The SSHCP assumes development in an Urban Development Area (UDA), which is generally contiguous with the County's Urban Services Boundary (USB). Outside the UDA, the SSHCP identifies Planned Preserve Units (PPUs), which contain areas of suitable habitat that are planned for use as mitigation land to offset development within the UDA. The draft SSHCP identifies a 9,750-acre conservation target in the 67,120-acre PPU. The North and East Study Areas are located within the UDA; thus, their development was accounted for in the SSHCP and would not conflict with the SSHCP's implementation.

The proposed West and South Study Areas, which total approximately 5,200 acres, are located outside the UDA and within PPU 6. Though future development in the West and South Study Areas would preclude the use of this area as mitigation lands in PPU 6, the mitigation for the loss of Swainson's hawk foraging habitat, which would be required of all development projects in these areas, as well as mitigation for impacts for other biological resources, would contribute to the SSHCP's overall conservation goals. Thus, development allowed under the General Plan would not be inconsistent with the provisions of the SSHCP, if it is adopted.

Mitigation Measures

None required.

5.4.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The habitat within the region is highly developed with large areas of natural or agricultural lands. Developed areas have encroached into some natural habitat, particularly annual grasslands, and aquatic features. The natural communities and some agricultural communities provide suitable habitat for special-status species, including Sanford's arrowhead, valley elderberry

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longhorn beetle, vernal pool branchiopod, giant garter snake, western pond turtle, Swainson's hawk, burrowing owl, and tricolored blackbird.

There is a higher level of protection for special-status species due to urban encroachment and development significantly impacting the species and their habitat. Because there has already been a large decline in available habitat for special-status species, there has been a significant cumulative impact on biological resources and the habitat that at present is particularly important.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Impacts to Biological Resources

Impact 5.4.7 Future development in the Planning Area, when considered together with other past, existing, and planned future projects, could result in a significant cumulative impact on biological resources in the region. The proposed Project's contribution to this impact would be **cumulatively considerable**.

As development occurs in the Planning Area and vicinity, habitat for biological resources will continue to be converted to urban development. More mobile species may survive this development by moving to other areas, but less mobile species would not. Natural habitat conversion will reduce the availability of habitat for special-status species. The natural areas remaining will likely be isolated and not support biological resources beyond their current carrying capacity.

The proposed Project will result in the increase of urban buildout and contribute to the loss of habitat for special-status species, as well as common species. Therefore, the Project's contribution to the cumulative loss of habitat would be **cumulatively considerable**.

Mitigation Measures

No additional feasible mitigation available beyond compliance with existing regulations and proposed General Plan policies and standards.

Implementation of existing regulations and proposed Project policies and standards would reduce the direct Project-specific impacts on special-status plants and wildlife, native trees, and jurisdictional wetlands and/or waters to a less than significant level. However, impacts to listed species would remain significant and unavoidable. On a cumulative level, the Project's contribution to direct and indirect impacts would remain **cumulatively considerable** and would be considered **significant and unavoidable**.

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