This biological resources section addresses the biological resources present within the City of Rancho Cordova and the City of Rancho Cordova General Plan Planning Area and includes a discussion of the special-status species that potentially occur within the General Plan Planning Area as well as sensitive habitats in the General Plan Planning Area. This section also identifies potential plan-specific and cumulative impacts to these resources due to implementation of the proposed City of Rancho Cordova General Plan. All discussion of biological resources in this section is divided into cover types, rather than separate planning areas as identified in the General Plan.

4.10.1 EXISTING SETTING

The following information is based largely on the Biological Resources Report (2005), prepared by Ecosystem Sciences expressly for the City of Rancho Cordova General Plan. This report relied on literature review and database searches of both the California Natural Diversity Database (CNDDB) and information from the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California as well as information drawn from the draft South Sacramento Habitat Conservation Plan (SSHCP). Site visits were conducted by Ecosystem Sciences as well as consultation with responsible agencies. Additional information for this section was provided by a habitat assessment performed for the proposed Rio Del Oro Specific Plan project (EDAW 2005) a Wetland Delineation for the Rio Del Oro Specific Plan project (Ecorp Consulting, Inc. 2005), the Preserve at Sunridge Draft EIR (2005), Sunrise Douglas Community Plan EIR (2001), and various draft documents generated for the SSHCP.

REGIONAL SETTING

Sacramento County lies in the middle of the Central Valley and is bordered by Contra Costa County and San Joaquin Counties on the south, Amador County and El Dorado County on the east, Placer County and Sutter County on the north, and Yolo County and Solano County on the west. Sacramento County extends from the low delta between the Sacramento and San Joaquin rivers northward to the foothills of the Sierra Nevada Mountains with plant communities ranging from cropland and grassland to woodlands and savanna (Ecosystem Sciences, 2005).

LOCAL SETTING

The topography within the Planning Area includes gently rolling terrain, such as that found in the eastern Great Central Valley interrupted by numerous seasonal creeks and streams. These creeks and streams are largely ephemeral and intermittent, which is typical of areas that experience extremely dry summers and cool, wet winters, as in this part of the Central Valley. The most notable creeks in the Planning Area are Morrison Creek, Laguna Creek, Deer Creek, Buffalo Creek, and Carson Creek. The location of these creeks is shown in Section 4.9, Hydrology and Water Quality. Other waterways of note are the American River in the north of the Planning Area, the Cosumnes River south of the Planning Area and Mather Lake located in the center of the Planning Area, Blodgett Reservoir located in the southeast, and the Folsom South Canal that bisects the Planning Area from north to south. (Ecosystem Sciences, 2005)

One primary biological concern within the Planning Area is vernal pools. Vernal pools are seasonal pools that exhibit a four-stage life cycle providing critical habitat to several species of plants and animals, including some species of concern. Preliminary mapping conducted in preparation of the Draft South Sacramento County Habitat Conservation Plan (SSHCP) identified 625 acres of vernal pools and 212 acres of fresh water marshes within the Planning Area. Additionally, 20,728 acres of Vernal Pool Grassland exist within the Planning Area. This grassland

is directly related to the vernal pools and also provides habitat for various species of concern. (Ecosystem Sciences, 2005)

Some portions of the General Plan Planning Area have been set aside for wetland preservation and wetland mitigation/creation. These areas are located generally south of SR-16 in the extreme southern portion of the Planning Area. One exception is the Anatolia Preserve, located within the Sunrise Douglas Community Plan/Sunridge Specific Plan area generally bounded by Sunrise Boulevard, Keifer Boulevard, and Jaeger Road between the Anatolia II and III subdivisions. A mitigation site is also located north of SR-16 immediately southwest of Mather Airport. All known mitigation/preserve sites are listed, along with their approximate acreages, in **Table 4.10-1**. Information on the size and location of these preserves was provided by the Sacramento County Department of Planning and Community Development and was accurate as of September 26, 2005.

TABLE 4.10-1
WETLAND PRESERVES AND MITIGATION SITES WITHIN THE GENERAL PLAN PLANNING AREA – 2005

Name or Affiliated Company	General Location	Approximate Acreage
Sunrise Douglas Mitigation Bank	Between Sunrise Boulevard and Jaeger Road north of Kiefer Boulevard	400
Teichert Mitigation Site 1	Immediately southwest of Mather Airport	100
Mather Regional Park	Immediately southeast of Mather Airport	1,145
Teichert Mitigation Site 2	South of SR-16, approximately 0.9 miles east of Bradshaw Road	80
SVC Preserve 1	South of SR-16, immediately east of Excelsior Road	278
ATK Mitigation Site	South of SR-16, immediately west of Eagles Nest Road	187
Arroyo Seco Mitigation Bank	South of SR-16, immediately east of Excelsior Road, and immediately south of the SVC Preserve	162
SVC Preserve 2	South of SR-16, immediately west of Eagles Nest Road, and immediately south of the ATK Mitigation Site	245
Triangle Rock Mitigation Site	South of SR-16, between Eagles Nest Road and Sunrise Boulevard	164

Source: County of Sacramento Department of Planning and Community Development, 2005

Several plant communities and habitat types occur within the Planning Area. In addition to Vernal Pool and Vernal Pool Grassland, the Planning Area includes cropland, woodlands of various types, pastures and grasslands, mixed riparian scrub, blue oak savannah, open water, fresh water marsh, and streams. Other land uses and cover types found in the Planning Area include High Density Development, Low Density Development, roads, mine tailings, recreation facilities, and an aqueduct (Ecosystem Sciences, 2005). The southern portions of the Planning Area include some undeveloped open space, most of which is or was used for grazing.

PLANT COMMUNITIES AND WILDLIFE HABITATS

The following information is taken directly from the Biological Resources Report prepared for the City of Rancho Cordova by Ecosystem Sciences in March 2005. The Biological Resources Report utilized data from both the Draft South Sacramento Habitat Conservation Plan and the California Wildlife Relationships System. Where information was obtained from sources other than the Biological Resources Report, a citation is included.

Several plant communities and wildlife habitats are found within the Planning Area. Plant communities are found where groups of plant species occur together in the same geographic area. These plant communities are organized into cover types that constitute categories of typical land covers and in some cases the uses of those areas such as aqueducts and roads. Specific wildlife habitats are created by these cover types. Wildlife habitats provide cover, food, and water, which is necessary in order to support a particular animal species or groups of species. Changes in these habitats, both significant and minor, can impact a species' abundance, distribution, and diversity as well as interactions between different species. See **Table 4.10-2** for a listing of the plant communities and wildlife habitats found in the Planning Area as well as their respective areas and the percentage of the Planning Area in which they are found. The location of the cover types shown in **Table 4.10-2** is depicted on **Figure 4.10-1**.

TABLE 4.10-2
COVER TYPES IN THE CITY OF RANCHO CORDOVA PLANNING AREA BY TOTAL ACRES

Cover Type	Acres Within City Boundary	Acres Outside City Boundary and Inside Planning Area	Total Acres	Percent of Total
Vernal Pool Grassland	6,540.5	14,187.2	20,727.8	33.77%
High Density Development	4,180.0	7,089.5	11,269.6	18.36%
Mine Tailings	4,548.7	5,726.3	10,275.0	16.74%
Roads	2,986.9	5,298.3	8,285.2	13.50%
Cropland	298.6	3,109.1	3,407.7	5.55%
Streams	507.7	1,478.4	1,986.0	3.24%
Pasture Grassland	1,088.1	270.8	1,359.0	2.21%
Grassland	230.4	407.2	637.5	1.04%
Vernal Pool	271.0	359.3	630.3	1.03%
Mixed Riparian Woodland	106.6	508.7	615.3	1.00%
Open Water	191.8	269.1	460.9	0.75%
Low Density Development	0.0	435.7	435.7	0.71%
Recreation	0.0	341.7	341.7	0.56%
Blue Oak Woodland	246.6	1.2	247.7	0.40%
Fresh Water Marsh	41.4	170.2	211.5	0.34%
Aqueduct	72.0	134.9	206.9	0.34%
Cottonwood Woodland	0.0	131.6	131.6	0.21%

Cover Type	Acres Within City Boundary	Acres Outside City Boundary and Inside Planning Area	Total Acres	Percent of Total
Blue Oak Savannah	75.6	5.0	80.5	0.13%
Valley Oak Riparian Woodland	0.0	50.2	50.2	0.08%
Mixed Riparian Scrub	0.0	21.0	21.0	0.03%
Upland	0.0	1.8	1.8	0.00%
Total	**21,385.8**	**39,997.2**	**61,383**	**100.0%**

Source: Rancho Cordova Biological Resources Report – Generated from GIS Land Cover Data from the Draft Sacramento County South Sacramento Habitat Conservation Plan.

Note: [1]These two cover types are only found in combination with each other and are therefore discussed together below.

[2]These two cover types are very similar from a biological standpoint and are therefore discussed together below.

[3]These two cover types are located immediately adjacent to each other and are very similar from a biological standpoint; therefore, they are discussed together below.

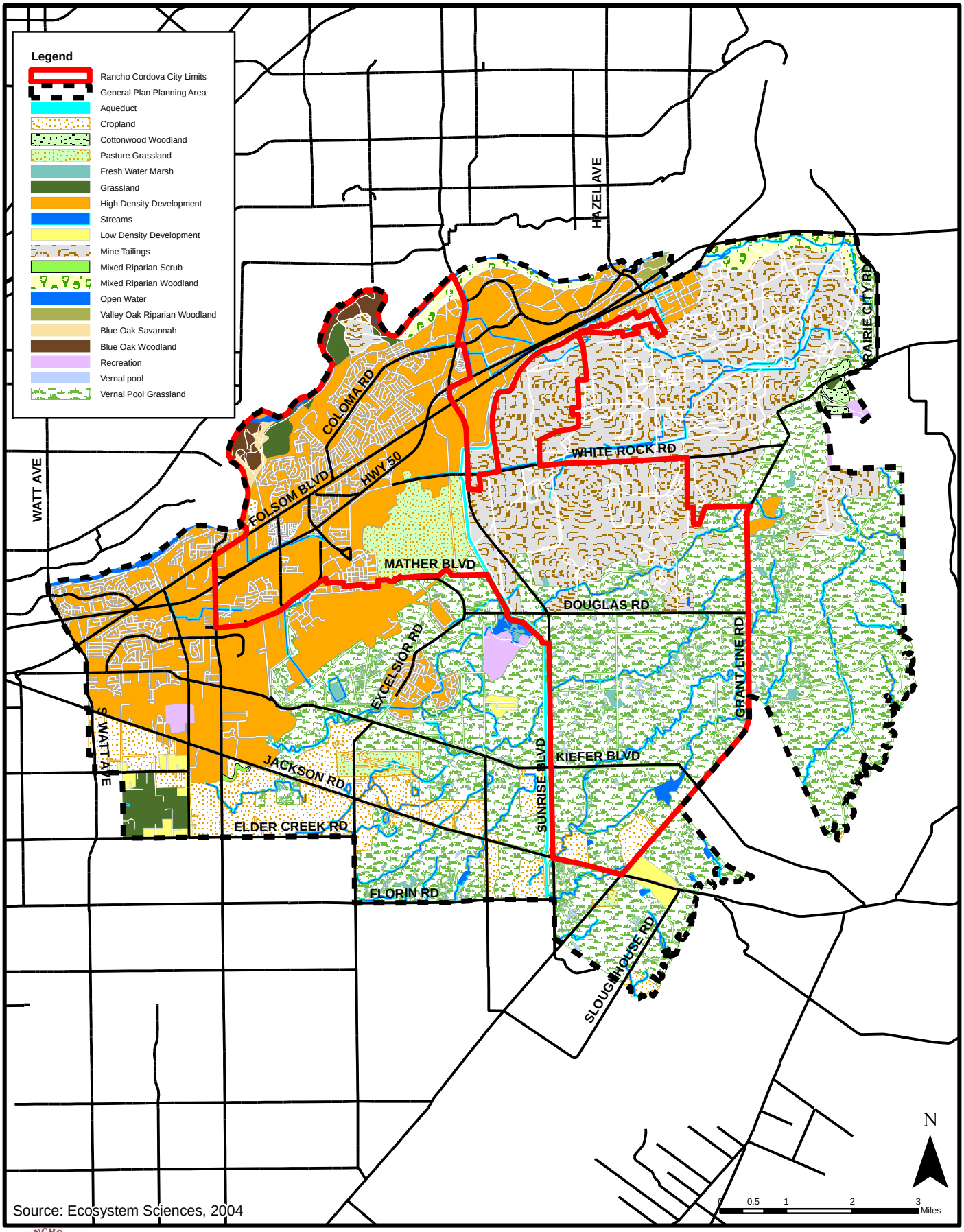
[4] Classifications for Streams and Roads above are slightly exaggerated, resulting in a larger overall area for those classifications (Ecosystem Sciences 2005).

Some of the above cover types found in the Planning Area are described as sensitive by the California Department of Fish and Game (CDFG). These include vernal pool (identified by the CDFG as "Northern Hardpan Vernal Pool"), which are considered by the CDFG to be "rare or uncommon but not imperiled", and the valley oak riparian woodland (identified by the CDFG as "Great Valley Oak Riparian Forest"), which is considered by the CDFG to be "critically imperiled because of extreme rarity or because some factor of its biology makes it especially vulnerable to extinction." In addition to sensitive cover types within the Planning Area, several special status animal species occur within these cover types and are found within the Planning Area. **Table 4.10-3**, provided in the Regulatory Framework section below, lists these special status species and identifies which cover types they are associated with.

The following discussion describes the biological communities and habitats (cover types) that exist within the General Plan Planning Area. Included in the discussion of each cover type is a description of the community or habitat, any pertinent information on the animal species found within the cover type, and information on plant species found within each cover type, where applicable.

Vernal Pool and Vernal Pool Grassland

As vernal pools within the Rancho Cordova Planning Area are located entirely within vernal pool grassland, both cover types are discussed together. A vernal pool is a type of seasonal wetland habitat that exhibits a four-stage hydrologic cycle and develops as a result of complex interactions between climate, geology, soils, the hydrologic cycle of the area, and chemical and evolutionary processes. The four hydrologic stages include a wetting phase, an aquatic or inundation phase, a water logged terrestrial phase, and a dry or drought phase. Specifically, vernal pools found in the Planning Area are of the Northern Hardpan Vernal Pool classification and vary in size and soil depth. Higher and drier pools integrate closely with wetland and grassland cover types, while more stable, deeper vernal pools are often integrated with freshwater marsh cover types. Both the grassland cover type and fresh water marsh cover type are found within the Planning Area.



City of Rancho Cordova
Planning Department

Figure 4.10-1
Cover Types
in the General Plan Planning Area

Many animal species found in the grassland cover type are also found in the vernal pool grassland cover type. Some species found in vernal pool and vernal pool grassland cover types have adapted to specific conditions and are, thus, only found in those cover types. Of those types, some of these species may utilize the vernal pool and vernal pool grassland habitats only during specific stages of vernal pools, and others can be found year-round.

A group of aquatic crustaceans, known as branchiopods, has adapted to rely almost exclusively on the unique hydrology of vernal pools for their survival. Four species of branchiopods are found within the Planning Area: California linderiella, mid-valley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. These particular species are found in vernal pools year-round, surviving the drought period buried in the mud in cyst form. Two species of snail are also found in vernal pools and survive the dry period in a similar manner.

Several species of amphibians and birds are found within the vernal pool and vernal pool grassland cover types. Amphibians utilize vernal pools for breeding and for tadpole habitat during the wet periods, as vernal pools are more viable breeding and rearing sites due to the fact that they do not support predatory fish species, which feed on tadpoles and young amphibians. Birds and vernal pools rely on each other as the pools provide nesting as well as high-protein food sources (especially important for migrating species such as Canada Geese), while birds spread plant seeds as well as invertebrate eggs and cysts from pool to pool as they feed. The dispersal of seeds, eggs, and cysts is key to maintaining ecological diversity and integrity within the vernal pools. The exact nature of the relationship between mammals and vernal pools is not documented, but some evidence is available that shows that smaller species such as rabbits may spread seeds and cysts and abandoned burrows dug by burrowing mammals may provide shelter for some amphibians.

High and Low Density Development

Both high and low density development cover types consist of previously developed land that is "highly constructed, intensely managed, and comprised of mainly ornamental exotic plants" (Ecosystem Sciences, 2005, p. 30). Exotic ornamental plants can be a concern as they may spread from managed, landscaped areas into adjacent wildlands.

Some special status species are found in these cover types in the Planning Area, specifically Sanford's Arrowhead and Cooper's hawk. Other species consist primarily of birds such as the rock pigeon, house sparrow, and starling. Low-density development supports scrub jay, mockingbird, and house finch as well. Some small mammals can be found in these cover types, including raccoon, opossum, and striped skunk – though these are primarily found in less dense urban portions of the Planning Area.

Mine Tailings

Large areas within the Planning Area were subjected to dredge gold mining in the late 1800's and again in the 1950's. The result of this mining is the mine tailings cover type that is characterized by long, linear rows of cobble piles with low-lying areas in between. The piles themselves consist primarily of large cobbles, with some sparse soils and non-native plants such as yellow star-thistle and ripgut brome. Low-lying areas between the piles provide habitat for small vegetative inclusions that support a dominance of riparian associated plant life. These low lying areas have accumulated finer solids resulting from the water used to dredge the tailings, as well as accumulated water from runoff from the piles on either side. Plants in these wetter low-lying areas include wetland shrub and tree species such as willow and Fremont cottonwood. These areas also support valley elderberry shrubs and valley elderberry longhorn beetle.

Lowering of the existing water table and removal of artificial water source from mine activities appears to be causing decline in the health of vegetation with these inclusions.

Though the cobble potions of the mine tailing have limited functions for wildlife, it is expected that raptors and migratory songbirds such as red-winged blackbirds benefit from the trees found in the low-lying areas. While no specific information is available that shows that tricolored blackbirds utilize this cover type, specific inclusion of vegetation found in the mine tailings cover type provides habitat for that species.

Cropland

The cropland cover type consists of land used for production of both vegetable crops, such as broccoli, carrots, celery, cucumbers, and melons, and grain and seed crops such as corn, dry beans, barley, alfalfa, and wheat. Within the City and Planning Area, cropland occur as small family farms consisting of trucks crops such as strawberries. The specific type of crop found on any area of cropland cover type determines the species that may utilize the cover type for food or shelter. For example, cropland located immediately adjacent to cottonwood woodland would likely exhibit use by species specific to the cottonwood woodland cover type. Irrigated cropland has similar biological characteristics as pasture grassland (discussed below). The method of farming can have an impact on species utilization. For example, if waste grain is left in the fields after harvest, that area attracts more waterfowl species than an area where the waste grain was brought in at the end of the season.

Streams

The streams cover type is found throughout the Planning Area and holds a vital role in ecosystem function within that area. Streams found in the Planning Area include ephemeral, intermittent, and perennial streams. While most streams are intermittent, some, such as Alder Creek, contain water year-round. See section 4.9, Hydrology and Water Quality for a depiction of the streams and creeks found in the Planning Area. Streams are interspersed with other cover types. For example, Alder Creek is interspersed with the mixed riparian forest cover type and Laguna Creek is interspersed with the vernal pool grassland cover type found in the Planning Area.

Streams are important to biological resources in the Planning Area as they convey water to habitats and cover types, attenuate storm flows through the action of vegetation found in the streams, provide habitat for nesting, mating, and migrating birds, and provide migration routes for animals between cover types. As the majority of streams found within the Planning Area are intermittent and have at least one dry period in which no water is located in the channel, fish species are not commonly found in this cover type within the Planning Area. Additionally, many streams in the area vary in their ecological integrity and condition due to being heavily altered and impacted in the past, prior to current regulations by state and federal agencies. Special status species found in the streams cover type include northwestern pond turtle and the giant garter snake.

Pasture Grassland

This cover type is characterized by generally flat to rolling terrain and consists of land currently or previously used to graze livestock. The plant species and animal species found on this cover type are largely determined by the adjacent cover types as well as the management practices of the land (i.e. irrigation practices, type of livestock pastured, fertilization, etc.). Animal species found in this cover type include ground-nesting birds such as waterfowl, pheasant, and crane. If

pastures are flood-irrigated then many wetland-associated bird species may utilize the pasture for feeding and roosting. Deer have also been observed in the pasture grassland cover type.

Grassland

The grassland cover type is similar to the vernal pool grassland cover type, though it differs significantly in hydrological characteristics and lacks the hardpan soil layer that allows for the formation of vernal pools. Plant species found in the grassland cover type were once native grasses, but introduced annual grasses have replaced the native species. The non-native annuals that now dominate this cover type are considered naturalized and thus prevent native perennials from re-establishing themselves in the area.

The grassland cover type supports several animal species by providing food plants and to some extent breeding, resting, and cover – though generally only in grassland that includes features such as cliffs, ponds, woody plants, or streams. Animal species found in the grassland cover type within the Planning Area include coyote, badger, Swainson's hawk, and smaller mammals such as mice and voles.

Mixed Riparian Woodland

The mixed riparian woodland cover type is found mainly adjacent to year-round waterways such as the American River and Alder Creek. Mixed riparian woodland is characterized by tall, dense, winter-deciduous, mixed broadleaf trees such as Fremont cottonwood and California sycamore, shade tolerant shrubs such as wild grape, and blue elderberry, as well as grasses and sedges. As mixed riparian woodland is found along year-round waterways, this cover type provides important linkages between the aquatic environment and terrestrial habitats. Mixed riparian woodland also provides food, water, and movement corridors for dispersal and migration, as well as nesting and cover sites for several species of amphibians, birds, and mammals.

Special status species found in the mixed riparian woodland cover type within the Planning Area include Cooper's hawk, great egret, great blue heron, Swainson's hawk, and yellow-breasted chat.

Open Water

The open water cover type is characterized by large areas of permanently flooded land including rivers and lakes. In addition to the American River in the northern portion of the Planning Area, both Mather Lake and Blodgett Reservoir are considered open water. Open water supports aquatic plants both on the surface of the water and along the edges of water bodies and, in turn, provides food for insects and wildlife. Algae and plankton populations are also supported by open water, therefore providing food for fish and invertebrates. Over 100 species of birds and 13 mammal species are known to utilize this cover type within the Planning Area, including bank swallow and north-western pond turtle. See **Table 4.10-3** for a complete listing of special status species found in this cover type.

Recreation

The recreation cover type is found within the Planning Area in areas immediately adjacent to low-density and high-density development cover types and is therefore very similar in ecological characteristics. Recreation areas are generally characterized by non-native plant species that are chemically and physically managed. However, native species are also found in the

recreation cover type. Within the Planning Area, some special status plant species such as Sanford's arrowhead are found within recreation areas.

Blue Oak Woodland and Blue Oak Savannah

As the blue oak woodland and blue oak savannah occur adjacent to each other and exhibit similar characteristics, they are discussed together. These cover types are found in areas with drier, rocky, and generally infertile, well-drained soils. They are characterized by a canopy dominated by blue oak, and include other oaks such as the valley oak. Blue oak woodland includes an understory of shrubs such as gooseberry and California lilac. The blue oak savannah cover type does not exhibit such shrubs and instead supports grasses and forbs. While conclusive data is not available on direct relationships between oaks and wildlife, small mammals such as squirrels are known to bury acorns and thus improve the chances of germination and survival of new oaks.

The blue oak woodland and blue oak savannah cover types provide food and breeding habitat for 29 species of amphibians and reptiles, 57 species of birds, and 10 mammal species. Oak trees generally provide leaves, twigs, bark, and sap as food sources and nesting materials, as well as shelter and perches for bird species. Mammals found within these cover type include deer, band-tailed pigeons, jays, and woodrats. Both Cooper's hawk and Swainson's hawk were found in these cover types within the Planning Area.

Fresh Water Marsh

Two types of fresh water marsh are found within the Planning Area. These two types are delineated by surrounding cover types and the associated plant species found in them. Fresh water marsh areas found within or adjacent to vernal pool grassland exhibit many of the characteristics of vernal pools and can support plant species such as sedges, umbrella sedges, dock, and rushes, as well as animal species similar to those found in vernal pools. Fresh water marsh areas that are inundated year round exhibit tall reeds, bulrushes, and cattails in addition to the animal species found in vernal pools.

This cover type provides very productive habitat for wildlife, especially for the 160 plus species of birds that utilize this cover type. A number of mammal, amphibian, and reptile species utilize the fresh water marsh cover type as well. The fresh water marsh cover type provides abundant food for animal species, as well as nesting, resting, and breeding sites. Several special status bird species are found within this cover type in the Planning Area, including tricolored blackbird, great egret, and great blue heron. Fresh water marsh also provides habitat for the north-western pond turtle, which is a special status species as well.

Aqueduct

The Folsom South Canal is the only portion of the Planning Area designated as the aqueduct cover type. The canal itself is man-made and consists of concrete sides and bottom, therefore it does not provide quality habitat for either plant or animal species. However, some hydrophytic vegetation is found along or near the canal, and includes rushes, cattail, sedges, and other wetland and riparian species similar to those found in the fresh water marsh and streams cover types. Some black flies and mayflies may use the aquatic environment of the canal as habitat, and thus insectivorous birds such as swallows, swifts, and flycatchers utilize these flies as a source of food and may, therefore, be found in this cover type. According to the November 2005 California Natural Diversity Database (CNDDB) data, no occurrences of any special status species have been found in the aqueduct cover type within the Planning Area.

Cottonwood Woodland

The cottonwood woodland cover type is characterized by Fremont cottonwoods mixed with other winter-deciduous, broadleaved trees such as black willow, narrow-leaf willow, box elder, and California sycamore. Non-native grasses such as those found in the grassland and vernal pool grassland cover types dominate the ground cover, interspersed with California wild grape. The cottonwood woodland cover type requires periodic flooding and the support of some type of subsurface irrigation to support the plant species found in it. The mapped cottonwood woodlands in the Planning Area occur in the north east corner of the Planning Area (Figure 4.10-1). Cottonwood patches also occur within mine tailings. Please see Mine Tailings for a more detailed discussion of the resource in this landscape setting. The cottonwood woodland cover type provides escape and movement corridors as well as nesting and cover sites for raptors, migratory songbirds, and other species found in adjacent habitats. Special status species found within this cover type in the Planning Area include the western spadefoot toad, Swainson's hawk, white tailed kite, and the American badger.

Valley Oak Riparian Woodland

The valley oak riparian woodland cover type is similar to mixed riparian woodland cover type but is instead dominated by valley oak and includes other tree species such as blue oak, black oak, and California sycamore. The groundcover is generally made up of grasses; therefore, the edges of this cover type can be similar to the grassland cover type. The valley oak riparian woodland cover type is found adjacent to the American River in the Planning Area, on higher floodplain surfaces and maintains a connection to the □iverine water table.

The valley oak riparian woodland cover type provides both forage and cover for many species of birds and mammals including red-shouldered hawk, western grey squirrels, and special status species such as great egret, great blue heron, and Swainson's hawk, among others.

Mixed Riparian Scrub

The mixed riparian scrub cover type is characterized by mixed species of winter-deciduous shrubs, small trees, and herbaceous cover found along streams within the Planning Area. Shrubs found in this cover type include willows, oaks, coyote brush, and poison oak. California wild grape is also found in this cover type. This vegetation community also occurs as inclusions in mine tailings. Please see Mine Tailing or more discussion.

Mixed riparian scrub provides migration corridors, water, and forage opportunities for several species of birds, mammals, invertebrates, and reptiles. As the streams that this cover type surrounds are wet for a large percentage of the year, aquatic habitat suitable for amphibians and reptiles is found within this cover type as well. Special status species known to utilize this cover type in the Planning Area include great egret, great blue heron, northern harrier, and loggerhead shrike. Riparian communities can provide important movement corridors for biota as they generally occur in long linear continuous and discontinuous segments along with waterways and traverse a variety of habitat types. Within the Planning Area, riparian communities associated with the American River Parkway and smaller streams and creeks with inclusions of riparian habitat act as movement corridors.

4.10.2 REGULATORY FRAMEWORK

The following section describes the federal, State, and local environmental laws, policies, plans, and agencies that are relevant to the proposed General Plan and the Planning Area.

FEDERAL

Federal Endangered Species Act

The United States Congress passed the federal Endangered Species Act (FESA) (16 United States Code Sections 460 et seq.) in 1973 to protect those species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

The FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 U.S.C. Section 1532, 50 Code Fed. Regs. Section 17.3). Actions that result in a "take" can result in civil or criminal penalties.

Under the FESA, federal agencies must ensure that the actions they fund, authorize, or carry out are not likely to jeopardize protected species. For example, the FESA and Section 404 of the federal Clean Water Act (CWA) prohibit the issuance of wetland permits for projects that would result in the take of a threatened or endangered wildlife or plant species. Under FESA, the U.S Army Corps of Engineers (USACE) must inquire of the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) whether any protected species or their critical habitat may be present in the area of the proposed federal action. 16 U.S.C. §§ 1536(a)(2), (c)(1). If they may be present, the USACE must prepare a "biological assessment" analyzing whether the action is likely to affect such species. If the assessment concludes that a protected species or a critical habitat is likely to be affected, the agency must formally consult with the USFWS or NMFS. In the context of the General Plan Planning Area, the federal ESA would be triggered if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in the take of a threatened or endangered species.

Clean Water Act

The USACE regulates discharge of dredged or fill material into "waters of the United States" under Section 404 of the CWA. "Discharges of fill material" are defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. Section 328.2(f)]. In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain certification that the intended dredge or fill activity will comply with the state's effluent limitations and water quality standards.

Jurisdictional Waters of the U.S.

Waters of the U.S. that are subject to the jurisdiction of the USACE include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Presently, to be considered a wetland, a site must exhibit three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site. Furthermore, jurisdictional waters of the U.S. can be defined by exhibiting a defined bed and bank and ordinary high water mark.

> *The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4I(1)]. The OHWM is defined by the Corps as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].*

Isolated wetlands are not subject to USACE jurisdiction under Section 404 of the CWA, pursuant to the "SWANCC" decision. *Solid Waste Agency of Northern Cook County vs. United States Army Corps of Engineers (2001) 531 U.S. 159*. According to the SWANCC decision, wetlands that are non navigable, isolated, and intrastate may not be subject to USACE jurisdiction. Although isolated wetlands are not subject to USACE jurisdiction under Section 404 of the CWA, they are considered "waters of the State" under California's Porter Cologne Act (Cal. Water Code §§ 13020, et seq.) and, as such, are subject to regulation by the Central Valley Regional Water Quality Control Board (RWQCB). The RWQCB generally takes jurisdiction over "waters of the State" that are not subject to USACE jurisdiction under the federal CWA in cases where the USACE has determined that certain features do not fall under its jurisdiction. Mitigation requiring a no-net-loss of wetlands functions and values of waters of the state is typically required.

Potential jurisdictional waters of the U.S. in Genera Plan Planning Area include lakes and ponds, intermittent and perennial creeks, irrigation ditches, perennial and seasonal marsh, river, seasonal wetland, and vernal pools. The most prevalent forms of jurisdictional waters of the U.S. in the Planning Area include vernal pools, depressional seasonal wetland□iverineine seasonal wetlands (seasonal swales), and ephemeral drainages.

Vernal Pools

The term vernal pool has been used to describe a variety of features. For the purposes of this document, the term vernal pool refers to seasonally inundated shallow depressions underlain by an impermeable layer of soil, generally hardpan or bedrock, which provides a specialized habitat for plant species adapted to this environment. Native annual herbs and grasses are the dominant species in vernal pool communities. The pools are inundated with water for various periods of times depending on the depression depth, extent and duration of rainfall, and ambient temperatures. Surface flow from the surrounding upland habitat (annual grassland) provides a primary source of hydrology of these systems.

Depressional Seasonal Wetlands

Depressional seasonal wetlands are seasonal wetlands where saturation rather than inundation is the dominant hydrologic regime. These wetlands support vegetation that is adapted to long-term saturation rather than inundation (non vernal pool vegetation). Annual grasses and herbs dominate the seasonal wetland communities. These wetlands, though not supporting a dominance of vernal pool associated plants, are habitat for federally listed vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad. Depressional seasonal wetlands may also support common wildlife species similar to those that inhabit vernal pools.

Riverine Seasonal Wetlands (Seasonal Swales)

Riverine seasonal wetlands are represented in the Planning Area as seasonal swales. These linear features collect and carry seasonal surface flow to receiving aquatic water bodies. The flows in these features do not achieve the energy necessary to create a defined bed and ordinary high water mark and therefore are not considered drainages. These features remain saturated or inundated for prolonged periods of time sufficient to support wetland vegetation.

Ephemeral Drainages

The Planning Area contains some complexes of unnamed ephemeral drainages. This drainage typically functions for the collection and transport of stormwater, conveying flows during and immediately after storm events to other water bodies such as Morrison Creek and Laguna Creek (see section 4.9, Hydrology and Water Quality for the location of these creeks). Wetland vegetation occurs intermittently in this drainage where slower flows and seasonal water availability is present. Depressional areas occur within the reach of the drainage where water pools and remains after the primary channel is dried. According to wetland delineations performed by Foothill and Associates in 2004 in connection with a development project within the City, these depressional areas can support vernal pool and seasonal wetland vegetation in the spring (Foothill and Associates, 2004).

U.S Fish and Wildlife Service Draft Vernal Pool Recovery Plan

The U.S. Fish and Wildlife Service (USFWS) designated critical habitat for certain vernal pool crustaceans and plants in 34 counties in California, including Sacramento County, and identified such habitat in its final rule of the vernal pool recovery plan on February 10, 2006, entitled, "Endangered and Threatened Wildlife and Plants; *Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation of Economic Exclusions From August 2003 Final Designation.*" 71 Fed. Reg. 28 (2006) (to be codified at 50 CFR Part 17). The Recovery Plan identifies a five-part strategy to ameliorate or eliminate threats to affected species and to preserve intact vernal pools. The five key elements of the Recovery Plan are: habitat protection; adaptive habitat management, restoration, and monitoring; status surveys; research; and participation and outreach. The Recovery Plan identifies habitat loss, fragmentation, and isolation of functional vernal pool ecosystems as the greatest threat to the survival and recovery of listed species and species of concern that are found in vernal pools. According to the Recovery Plan, habitat loss is generally the result of urbanization, agricultural conversion, and mining. Habitat loss may also occur from habitat alteration and degradation as a result of changes to natural hydrology; invasive species; incompatible grazing regimes, including insufficient grazing for prolonged periods; and infrastructure projects such as roads, water storage and conveyance, and utilities. In addition, recreational activities such as off-highway vehicles and hiking, erosion, contamination, and inadequate management and monitoring may result in habitat loss. Habitat fragmentation is

generally the result of activities associated with habitat loss due to road and other infrastructure projects that contribute to the isolation and fragmentation of vernal pool habitats.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) (42 U.S.C. Sections 703-712) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes 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."

STATE

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984 (Cal. Fish & Game Code Sections 2050, at seq.). The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. It requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. It directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species.

The state ESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFG may authorize a taking through an incidental take permit, if the impacts of the take are minimized and fully mitigated. Mitigation often takes the form of an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy. CDFG requires preparation of mitigation plans in accordance with published guidelines.

California Department of Fish and Game Species of Special Concern

In addition to formal listing under FESA and CESA, plant and wildlife species receive additional consideration during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFG. It tracks species in California whose numbers, reproductive success, or habitat may be threatened. See the subsection titled Federal and State – Special Status Species, below, for more information on CDFG Species of Special Concern.

California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California that are found in low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- List 1A: Plants Believed Extinct.
- List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.
- List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.
- List 3: Plants about Which We Need More Informati–n - A Review List.
- List 4: Plants of Limited Distribution - A Watch List.

FEDERAL AND STATE - SPECIAL STATUS SPECIES

The USFWS and the CDFG maintain a list of species that warrant special attention due to their respective rarity as well as the condition and availability of habitat suitable for those species. Also of concern are species limited to small areas of limited or unique distribution. Both agencies have regulatory authority over these public resources and maintain lists that group species in one of five categories:

- Species of Concern (USFWS) or Species of Special Concern (CDFG): This is an informal category that describes species for which information is available that the species may be in need of conservation actions to prevent decline, and species that are being considered as a candidate for listing as endangered or threatened. Species of Concern, however, are not legally protected under the Endangered Species Act and may not require listing.
- Candidate: Sufficient information indicates that the poor quantity or condition of the species or habitat utilized by the species qualifies them for listing with the USFWS and the CDFG, but they are not officially assigned a category and listed.
- Proposed: This category describes candidate species for which the formal process has been initiated by the USFWS or CDFG in order to add them to the list, but formal listing has not yet occurred.
- Threatened: This is a formal listing category used by both the USFWS and the CDFG to identify species that are likely to become endangered within the foreseeable future.
- Endangered: This is the formal listing category given to species for which information indicates they could potentially become extinct within the foreseeable future. This is the highest level of listing and denotes the highest level of protection under the law.
- Other special status species include species that are not included on USFWS and CDFG lists, but information is available that the species are rare, threatened, or endangered in the Sacramento County area.

For the purposes of this document, the term "special status species" refers to species that are:

- Legally protected or proposed for protection under the California Endangered Species Act or the Federal Endangered Species Act (any species in the above categories);

- Defined as endangered or rare under the California Environmental Quality Act (CEQA) (CEQA Guidelines Section 15380);
- Designated as a species of concern by the USFWS or the CDFG;
- Animal species listed as "fully protected" in the Fish and Game Code of California (Sections 3511, 4700, 5050, 5515); and/or,
- Plant species listed in the California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (2001).
- Plant or animal species that have been designated locally (by a city of county) as important through an ordinance (e.g., tree protection ordinance) or policy.

Several special status species are found within and around the Rancho Cordova Planning Area. **Table 4.10-3**, below, identifies each of those species, as well as their ranking in the CNDDB database, classification by other species lists, their State and Federal listing status (if any), and the cover types that these species are commonly associated with.

TABLE 4.10-3
SPECIAL STATUS SPECIES OCCURRING WITHIN THE RANCHO CORDOVA PLANNING AREA

Scientific name	Common Name	CNDDB Ranks	Other Protections or Rankings	State Listing Status	Federal Listing Status	Associated Cover-types
Plant Species						
Downingia pusilla	Dwarf downingia	G3, S3.1	CNPS: 2 R-E-D: 1-2-1	None	None	Vernal Pool, Vernal Pool Grassland.
Gratiola heterosepala	Boggs Lake hedge-hyssop	G3, S3.1	CNPS: 1B R-E-D: 1-2-2 USFWS: SC	Endangered	None	Fresh Water Marsh, Vernal Pool.
Juncus leiospermus	Ah'rt's dwarf rush	G2T1, S1.2	CNPS: 1B R-E-D: 3-2-3 USFWS : SC	None	None	Grassland, Vernal Pool Grassland, Vernal Pool.
Legenere limosa	Legenere	G2, S2.2	CNPS: 1B R-E-D: 2-3-3 USFWS : SC	None	None	Vernal Pool.
Narvarretia myersii ssp. myersi	Pincushion navarretia	G1T1, S1.1	CNPS: 1B R-E-D: 3-3-3] USFWS : SC	None	None	Vernal Pool.
Orcuttia tenuis	Slender orcutt grass	G3, S3.1	CNPS: 1B R-E-D: 2-3-3	Endangered	Threatened	Vernal Pool.
Orcuttia viscida	Sacramento orcutt grass	G1, S1.1	CNPS: 1B R-E-D: 3-3-3	Endangered	Endangered	Vernal Pool.
Sagittaria sanfordii	Sanf'rd's arrowhead	G3, S3.2	CNPS: 1B R-E-D: 2-2-3 USFWS : SC	None	None	Fresh Water Marsh, Vernal Pool.

Scientific name	Common Name	CNDDB Ranks	Other Protections or Rankings	State Listing Status	Federal Listing Status	Associated Cover-types
Amphibian Species						
Spea (Scaphiopus) hammondii	Western spadefoot	G3, S3	CDFG: CSC USFWS: SC	None	None	Vernal Pool and Vernal Pool Grassland, Grassland, Cottonwood Woodland, Upland
Bird Species						
Accipiter cooperii	Coo'er's hawk	G5, S3	CDFG: CSC	None	None	Blue oak savanna, Grassland, Blue Oak Woodland, High Density Development, Mixed Riparian Woodland, Mine Tailings.
Agelaius tricolor	Tricolored blackbird	G2G3, S2	CDFG: CSC USFWS : SC	None	None	Grassland, Vernal Pool Grassland, Fresh Water Marsh.
Ardea alba	Great egret	G5, S4		None	None	Fresh Water Marsh, Cropland, Pasture Grassland, Mixed Riparian Scrub, Mixed Riparian Woodland, Valley Oak Riparian Woodland
Ardea herodias	Great blue heron	G5, S4		None	None	Fresh Water Marsh, Cropland, Vernal Pool Grassland, Pasture Grassland, Mixed riparian scrub, Mixed Riparian Woodland, Valley Oak Riparian Woodland
Asio flammeus (nesting)	Short-eared Owl	G5, S3	CDFG: CSC	None	None	Grassland, Vernal Pool Grassland, Cropland, Fresh Water Marsh
Athene cunicularia (burrow sites)	Burrowing owl	G4, S2	CDFG: CSC USFWS: SC	None	None	Grassland, Vernal Pool Grassland, Pasture Grassland

Scientific name	Common Name	CNDDB Ranks	Other Protections or Rankings	State Listing Status	Federal Listing Status	Associated Cover-types
Buteo swainsoni	Swainson's hawk	G5, S2		Threatened	None	Blue Oak Woodland and savanna, Mixed Riparian Woodland, Valley Oak Riparian Woodland, Cottonwood Woodland, Vernal Pool Grassland, Grassland, Pasture Grassland, Cropland
Circus cyaneus (nesting)	Northern harrier	G5, S3	CDFG: CSC	None	None	Fresh Water Marsh, Grassland, Vernal Pool Grassland Mixed Riparian Shrub, Pasture Grassland, Cropland
Elanus leucurus	White-tailed kite	G5, S3	CDFG: Fully Protected	None	None	Fresh Water Marsh, Cottonwood Woodland, Grassland, Vernal Pool Grassland, Pasture Grassland, Cropland
Eremophila alpestris actia	California horned lark	G5T3, S3	CDFG: CSC	None	None	Grassland, Vernal Pool Grassland, Pasture Grassland
Icteria virens (nesting)	Yellow-breasted chat	G5S3	CDFG: CSC	None	None	Mixed riparian scrub, Mixed Riparian Woodland, Valley Oak Riparian Woodland
Lanius ludovicianus (nesting)	Loggerhead shrike	G4, S4	CDFG: CSC USFWS: SC	None	None	Grassland, Vernal Pool Grassland, Mixed Riparian Shrub, Valley Oak Riparian Woodland, Cottonwood Woodland, Cropland, Pasture Grassland
Plegadis chihi (rookery site)	White-faced ibis	G5, S1	CDFG: CSC USFWS: SC	None	None	Fresh Water Marsh, Vernal Pool Grassland, Pasture Grassland, Cropland

Scientific name	Common Name	CNDDB Ranks	Other Protections or Rankings	State Listing Status	Federal Listing Status	Associated Cover-types
Riparia riparia	Bank swallow	G5, S2S3		Threatened	None	Mixed Riparian Shrub, Mixed Riparian Woodland, Valley Oak Riparian Woodland, Open water
Invertebrate Species						
Branchinecta lynchi	Vernal pool fairy shrimp	G3, S2S3		None	Threatened	Vernal Pool
Branchinecta mesovallensis	Midvalley fairy shrimp	G2, S2	USFWS: SC	None	None	Vernal Pool
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	G3T2, S2		None	Threatened	Grassland, Vernal Pool Grassland, Blue Oak Woodland Savanna, Mixed Riparian Shrub
Lepidurus packardi	Vernal pool tadpole shrimp	G3, S2S3		None	Endangered	Vernal Pool
Linderiella occidentalis	California linderiella (fairy shrimp)	G3, S2S3	USFWS: SC	None	Endangered	Vernal Pool
Mammal Species						
Antrozous pallidus	Pallid bat	G5, S3	CDFG: CSC	None	None	Grassland, Vernal Pool Grassland, Pasture Grassland
Bassariscus astutus	Ringtail	G5	CDFG: CFP	None	None	Mine Tailings, Valley Oak Riparian Woodland, Mixed Riparian Shrub & woodland
Myotis ciliolabrum	Western small-footed myotis	G5	USFWS: SC	None	None	Cottonwood Woodland, Mine Tailings, Mixed Riparian Shrub & woodland, Blue Oak Woodland & savanna

Scientific name	Common Name	CNDDB Ranks	Other Protections or Rankings	State Listing Status	Federal Listing Status	Associated Cover-types
Myotis evotis	Long-eared myotis	G5, S4	USFWS: SC	None	None	Cottonwood Woodland, Mixed Riparian Shrub & woodland, Blue Oak Woodland & savanna, Grassland, Vernal Pool Grassland
Myotis thysanodes	Fringed myotis	G4T3T4, S2S3	USFWS: SC	None	None	Grassland, Vernal Pool Grassland, Valley Oak Riparian Woodland, Mixed Riparian Shrub, Cottonwood Woodland, Mine Tailings
Myotis volans	Long-legged myotis	G5	USFWS: SC	None	None	Cottonwood Woodland, Mine Tailings, Mixed Riparian Woodland, Valley Oak Riparian Woodland, Grassland, Vernal Pool Grassland
Myotis yumaensis	Yuma myotis	G5, S4	USFWS: SC	None	None	Cottonwood Woodland, Mine Tailings, Mixed Riparian Woodland, Valley Oak Riparian Woodland
Taxidea taxus	American badger	G5, S4	CDFG: CSC	None	None	Pasture Grassland, Grassland, Vernal Pool Grassland, Cottonwood Woodland, Blue Oak Woodland & savanna
Reptile Species						
Emys (=Clemmys) marmorata marmorata	North-western pond turtle	G3G4T3, S3	CDFG: CSC USFWS: SC	None	None	Fresh Water Marsh, Streams, Open water

Key to Ranks and Lists	
CDFG: CSC	California Species of Special Concern
CDFG: CFP	California Fully Protected
USFWS: SC	USFWS Species of Concern
CNDDB Ranks:	
G	Global rank indicator; denotes rank based on rangewide status.
T	Trinomial rank indicator; denotes global status of infraspecific taxa.
S	State rank indicator; denotes rank based on status.
1	Critically imperiled because of extreme rarity or because some factor of its biology makes it especially vulnerable to extinction (typically 5 or fewer occurrences).
2	Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (typically 6 to 20 occurrences).
3	Rare or uncommon but not imperiled (typically 21 to 100 occurrences).
4	Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences).
5	Demonstrably widespread, abundant, and secure.
U	Unrankable.
H	Historical occurrence (formerly part of the native biota; implied expectation that it might be rediscovered or possibly extinct).
X	Presumed extinct or extirpated.
Q	Indicates uncertainty about taxonomic status.
?	Uncertainty exists about the stated rank.
NR	Not ranked.
NA	Conservation status rank is not applicable.
CNPS Lists:	
List 1A:	Plants Presumed Extinct in California
List 1B:	Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2:	Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3:	Plants About Which We Need More Information - A Review List
List 4:	Plants of Limited Distribution - A Watch List
CNPS R-E-D Codes:	
R	Rarity
1	Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
E	Endangerment
1	Not endangered
2	Endangered in a portion of its range
3	Endangered throughout its range
D	Distribution
1	More or less widespread outside California
2	Rare outside California
3	Endemic to California

Source: Ecosystem Sciences, March 2005 and California Department of Fish and Game (CDFG). 2006. California Natural Diversity Database. Wildlife & Habitat Data Analysis Branch, Department of Fish and Game (Version: 09 December 2005)

Distribution and Life History of Federal and State Listed Species

Suitable habitat for plant and animal species listed as endangered, threatened, proposed, candidate, or List 1B is found within the Planning Area. This section, based on the Biological Resources Report prepared by Ecosystem Sciences in March 2005, provides general information

on the distribution and life history of these species. For more information on these species including their CNDDB ranking and the cover types they are associated with, see **Table 4.10-3** above. The location of special status animal species found within the General Plan Planning Area is shown on **Figure 4.10-2**. The location of special status plant species found within the General Plan Planning Area is shown on **Figure 4.10-3**.

Federal and State Listed Plant Species

Bogg's Lake Hedge-Hyssop (Gratia heterosepala)

The Bogg's lake hedge-hyssop is a small, semi-aquatic, herbaceous annual that grows to approximately 4 inches tall and produces flowers that bloom from April to June. The Bogg's lake hedge-hyssop is listed as endangered by the CDFG and is found in 10 locations within the vernal pool and fresh water marsh cover types in the Planning Area.

Slender Orcutt Grass (Orcuttia tenuis)

Slender orcutt grass is a grass that exhibits a particular pattern of flowering for Orcuttieae, thus differentiating it from other orcutt grasses. This plant flowers between June and July primarily, though flowering may continue into August and September in wetter years. Slender orcutt grass is listed as threatened by the USFWS and as Endangered by the CDFG. It is found in two locations within the vernal pool cover type in the Planning Area.

Sacramento Orcutt Grass (Orcuttia viscida)

The life history and habitat for Sacramento orcutt grass is very similar to the slender orcutt grass. Eight of the nine documented occurrences of Sacramento orcutt grass occur within the Planning Area inside the vernal pool cover type. Both the USFWS and the CDFG list Sacramento orcutt grass as endangered.

Federal and State Listed Bird Species

Swainson's Hawk (Buteo swainsoni)

Swainson's hawk nest in large, native trees such as oaks and willows and in nonnative trees as well, primarily in riparian and other wet cover types. Swainson's hawks utilize several cover types found within the Planning Area, both for shelter and nesting sights as well as foraging. Swainson's hawk is listed as threatened by the CDFG and is found in 29 locations within many different cover types in the Planning Area.

Bank Swallow (Riparia riparia)

Bank swallows use cliffs and banks as nesting sites, digging into the cliff side where soft soils are found. They eat primarily insects in flight and are therefore found in a wide range of habitats. The Bank swallow is listed as threatened by the CDFG and is found in five locations within several cover types in the Planning Area.

Federal and State Listed Invertebrate Species

Vernal Pool Fairy Shrimp (Branchinecta lynchi)

Vernal pool fairy shrimp inhabit primarily vernal pools but are also found in ephemeral drainages, rock outcrop pools, ditches, and other seasonal wetlands. Vernal pool fairy shrimp live out their entire life cycle within those pools, surviving the dry phase of vernal pools in cysts within the mud and sediment found at the bottom of such ephemeral wetlands. Endemic to California, this species is listed as threatened by the USFWS and is located in the vernal pool cover type in the Planning Area in 30 locations.

Valley Elderberry Longhorn Beetle (Desmocerus californicus ssp. Dimorphus)

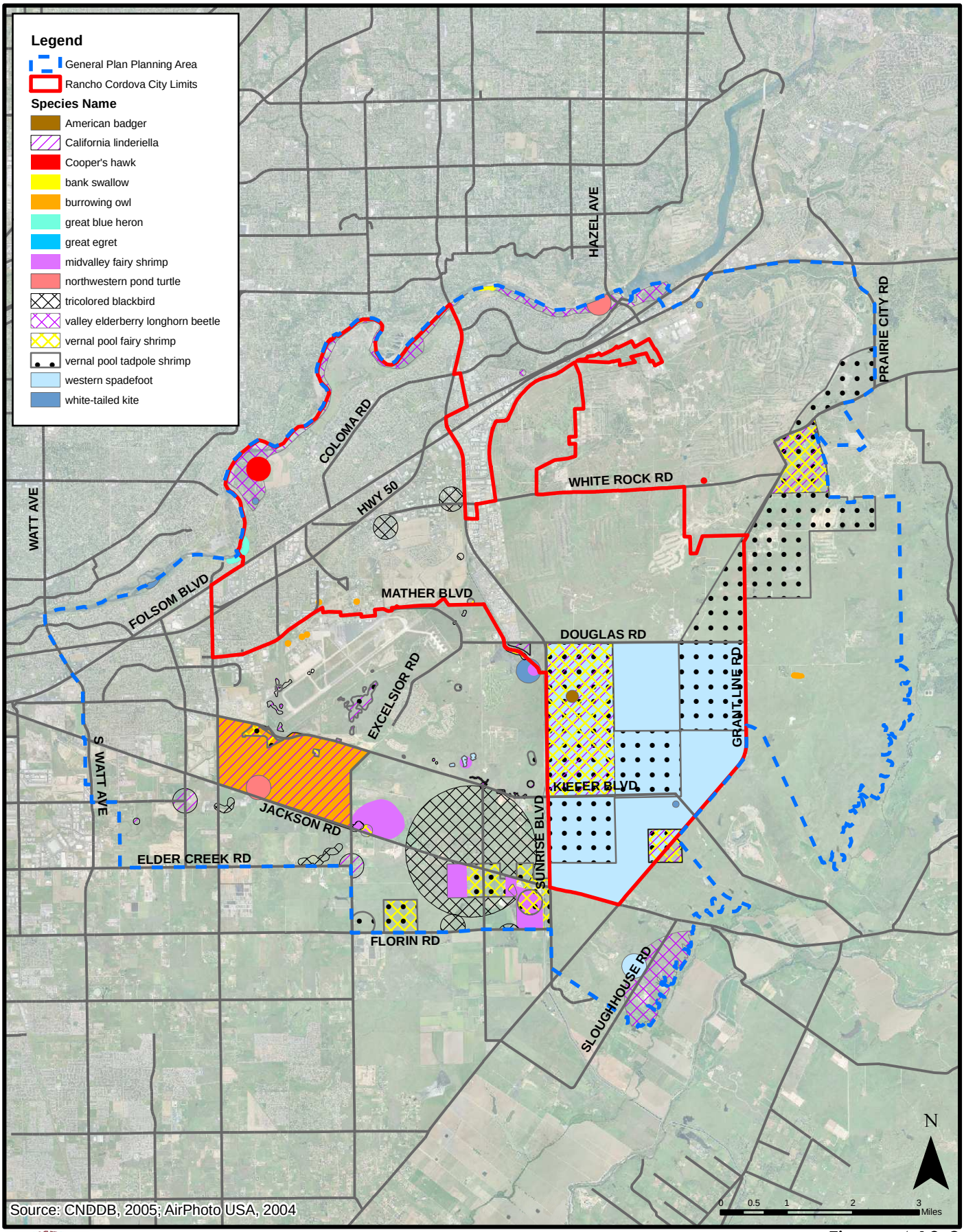
Valley elderberry longhorn beetle utilize elderberry plants for food, shelter for eggs, and cover. This species is listed as threatened by the USFWS and is found in 17 locations within several cover types in the Planning Area.

Vernal Pool Tadpole Shrimp (Lepidurus packardi)

Vernal pool tadpole shrimp are similar in life history to vernal pool fairy shrimp but differ by morphology and physical characteristics as well as dispersion and numbers within their associated cover types. Vernal pool tadpole shrimp are found in vernal pools as well as ephemeral drainages, seasonal wetlands, clay flats, stock ponds, and ditches. Also endemic to California, vernal pool tadpole shrimp were recorded in 22 locations within the vernal pool cover type in the Planning Area. Vernal pool tadpole shrimp are listed as endangered by the USFWS.

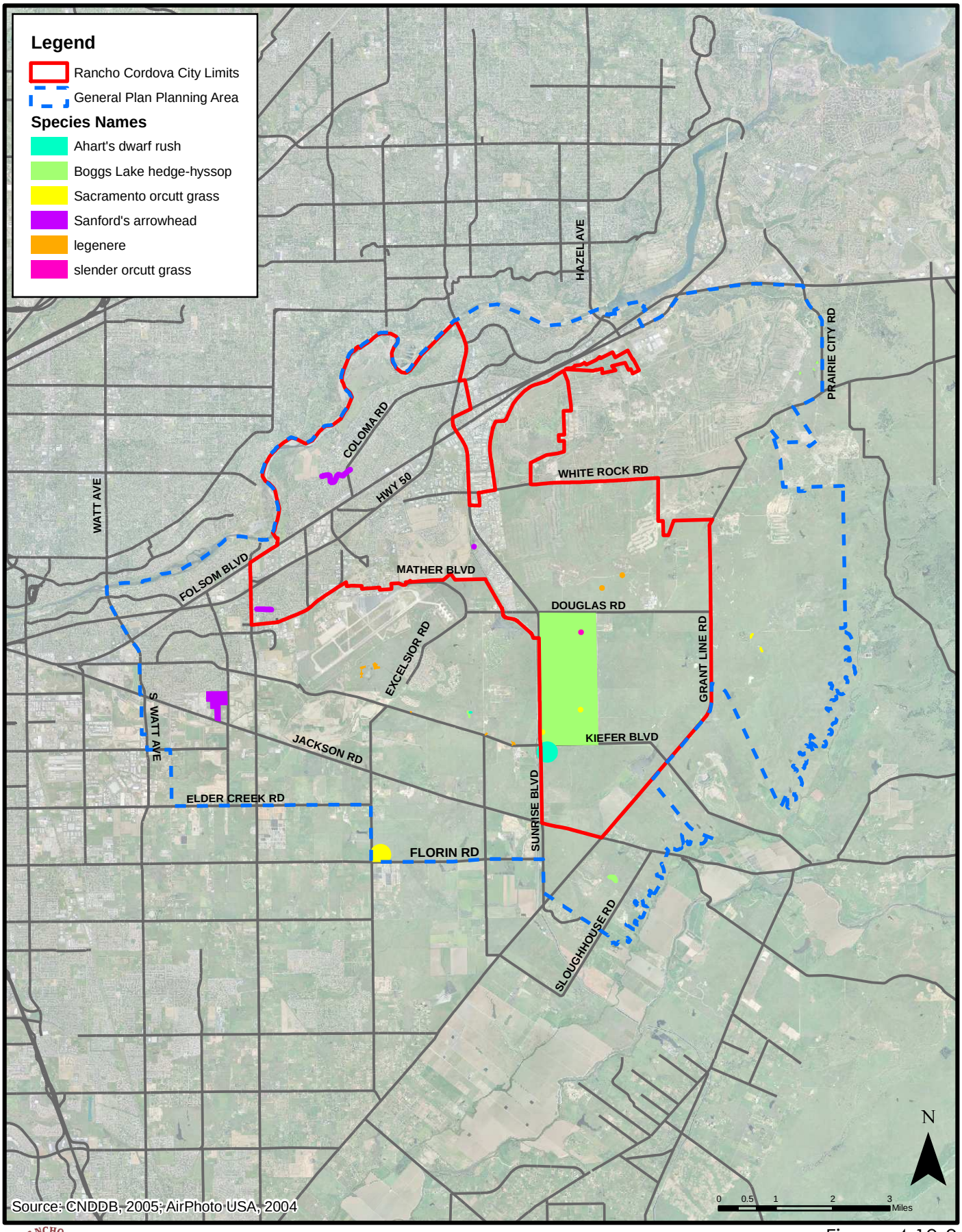
California Linderiella (Linderiella occidentalis)

California linderiella are also similar to the other species of vernal pool shrimp discussed above. A type of fairy shrimp, California linderiella inhabit similar habitats, though they show some tolerance for higher temperatures and inhabit clear water pools more readily than the vernal pool fairy shrimp (who are often found in more tea-colored pools). Also endemic to California,



City of Rancho Cordova
Planning Department

Figure 4.10-2
Recorded Occurrences
of Special-Status Animal Species (CNDDB)
Within the General Plan Planning Area



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City of Rancho Cordova
Planning Department

Figure 4.10-3
Recorded Occurrences
of Special-Status Plant Species (CNDDB)
Within the General Plan Planning Area

California linderiella are listed as endangered by the USFWS. While the CNDDB does not identify any occurrences of this species in the Planning Area, a Habitat Assessment performed by EDAW for the Rio Del Oro Specific Plan found several occurrences of this species in vernal pools throughout the central and eastern portions of the General Planning Area (EDAW, 2005). Sufficient habitat for this species exists in the Planning Area; therefore, it is discussed in this document.

LOCAL

Sacramento County General Plan and Land Use Map

The Sacramento County General Plan is used as the "blueprint" to guide future development in unincorporated portions of the County; it will continue to be the blueprint for those sections of the Planning Area that are outside the current city limits, unless and until such areas are annexed into the City, sometime during the planning horizon of the proposed General Plan. The Sacramento County General Plan Land Use Map was created to form an efficient community, focusing on the elimination of low density, auto-dependent land use patterns. The map's intention was to concentrate growth in specific areas to preserve open space, and to reduce air pollutant emissions, commute times, and vehicle miles traveled.

Sacramento County is required to maintain a supply of land within the Urban Policy Area (UPA) to accommodate urban activity and growth for the unincorporated areas, which includes the portion of the Planning Area located outside the existing city limits. The UPA is sub-area of the ultimate growth area - the Urban Services Boundary (USB) where the majority of growth is anticipated to occur and is designated for urbanized uses. The UPA encompasses those areas in the County, which are most likely to be developed during the current planning horizon of the County's existing General Plan (2010). The intent of the UPA is to provide a 20-year supply of developable land sufficient to accommodate projected growth.

The Conservation Element of the County's General Plan provides specific policies to protect natural resources within the County. Specific applicable policies that relate to the portion of the Planning Area located outside existing city limits provide for the conservation of stream corridors; wildlife, plant and fishery resources; native and landmark trees; and vernal pool, marsh and riparian wetland habitats.

Sacramento County is currently in the process of updating its General Plan. This will be the first update since it was last adopted in 1993. According to Sacramento County's website, "the General Plan update is necessary to plan for growth in the next planning cycle (2005-2030) as well as to address new emerging planning issues." The County General Plan Update will focus on an Open Space Vision Map to protect important open space that can serve multiple uses including habitat protection, and policies that will support the implementation of an adopted Habitat Conservation Plan including policies regarding preserving of resources and annexations.

Cordova Community Plan

Prior to the incorporation of the City of Rancho Cordova, Sacramento County completed a lengthy process preparing the Cordova Community Plan (CCP). The boundaries for the CCP are described as the area bordered by the American River and the City of Folsom on the north; Prairie City Road, Grant Line Road, and White Rock Road on the east; Douglas Road, Kiefer Boulevard, and Jackson Road (Highway 16) on the south; and the City of Sacramento and Watt Avenue on the west. The CCP area covered approximately 37,650 acres, and included a portion of the current City of Rancho Cordova as well as portions outside the current city limits

but within the General Plan Planning Area boundaries. The CCP is a policy document, which implemented the County's General Plan at a more detailed and specific level. The CCP did not address the entire Rancho Cordova General Plan Planning Area and in particular did not cover the area south of Douglas Road (the Sunrise Douglas Community Plan Area) where much of the future development in the City will occur. The Sacramento County Board of Supervisors adopted the Cordova Community Plan in 2003.

The following statements were identified as guiding visions for the CCP:

- Overcoming obstacles created by physical, neighborhood, and jurisdictional boundaries
- Redesigning Folsom Boulevard to be more pedestrian friendly
- Creating a better balance of housing and jobs
- Revitalizing the community's older neighborhoods; and
- Creating more diversity in the community's housing stock, in particular, through the development of more "move-up" housing choices.

South Sacramento Habitat Conservation Plan

The draft South Sacramento County Habitat Conservation Plan (SSHCP), which is managed by the Sacramento County Planning and Community Development Department, is a long-term conservation plan that seeks strategies that allow commercial, residential, and other development, while balancing the needs of sensitive plant and animal species and the preservation of agricultural operations. The SSHCP is currently being developed by several public agencies and other interested stakeholders. The City of Rancho Cordova is a participating agency in the SSHCP, and may ultimately become a permittee under the SSHCP. Currently, the SSHCP is a draft; however, it is considered at length in this EIR in part because there are no adopted habitat conservation plans applicable to the Planning Area. The geographic scope of the SSHCP includes approximately 340,000 acres in the unincorporated County area bounded by US-50 to the north, the County line to the east and south; excluding the Delta, and Interstate 5 to the west. The SSHCP covers land within the cities of Rancho Cordova, Elk Grove and Galt. Approximately 76.5% of the area within the City Limits and 86.6% of the area within the Planning Area is encompasses by the SSHCP Plan Area.

The SSHCP is intended to consolidate environmental efforts to protect and enhance wetlands (primarily vernal pools) and upland habitats to provide ecologically viable conservation areas. The SSHCP will also minimize regulatory hurdles and streamline the development permit process for projects that are consistent with the HCP. The SSHCP will be an agreement between state/federal wildlife and wetland regulators (e.g., USFWS and the USACE) and the plan participants to allow land owners to engage in "incidental take" of listed species (i.e., destruction or degradation of habitat in connection with economic based activities) in return for conservation commitments of the plan participants. Funding for the SSHCP is expected to come from a per-acre fee levied on new developments to mitigate associated habitat impacts.

The critical future steps to be taken in completion of the SSHCP include the: finalization of species and habitat account; development of conservation strategies, and completion of draft chapters of the SSHCP (land use, physical resources, biological resources, and cultural resources). The County is making progress towards the goal of acquiring a Clean Water Act Section 404 permit. The County will collaborate with five other counties in the region to lobby Congress for appropriations for fiscal year 2006.

Sacramento County Swainson's Hawk Ordinance

The Sacramento County Swainson's Hawk Ordinance, Chapter 16.130 of Title 16 of the County Code, establishes certain requirements and guidelines for the mitigation of Swainson's hawk foraging habitat that may be impacted due to a project. The Ordinance applies only to projects of 5 acres or greater within the unincorporated area of the County that are not within an approved Habitat Conservation Plan area and have been determined through the CEQA process to result in a significant impact or significant cumulative impact to Swainson's hawk foraging habitat. The Ordinance establishes an in-lieu fee option for mitigation of projects that are 40 acres or less, but disallows use of the fee as mitigation for projects that are greater than 40 acres. The Ordinance specifies that the fee will be used for the specific acquisition of lands in the unincorporated area of the County outside the Urban Services Boundary, to be preserved in perpetuity as Swainson's hawk foraging habitat, and states that fees shall be established and periodically updated by resolution. The current fee amount for the County was broken down as follows: $16000 per acre for land purchase, $2375 per acre for operations and maintenance, and $500 per project for administrative processing. The alternative mitigation option established by the ordinance, which can be used by projects of any size, is the direct purchase (through fee title or easement) of land by the project applicant. Use of this option requires approval of the land acquisition by the County and payment of an operations and maintenance fee to the County. As stated in the Ordinance, the establishment of mitigation measures by the Ordinance does not preclude the approval of other measures that are determined to mitigate impacts to Swainson's hawk foraging habitat, nor does it expressly allow all projects to utilize mitigation options established within. The City of Rancho Cordova is currently developing a Swainson's Hawk Ordinance that will embody many of the elements of the County Ordinance.

Sacramento Country and City of Rancho Cordova Tree Ordinance and Tree Preservation Ordinance

The Sacramento County Tree Ordinance, Chapter 19.04 of Title 19 of the County Code, establishes requirements for the planting and removal of public trees, and protection of public trees, as well as heritage and landmark trees. This Ordinance defines a heritage tree as: "a California oak tree growing on any land in Sacramento County, including privately owned land, with a trunk sixty inches or greater in girth measured four and one-half feet above the ground", and defines a landmark tree as "an especially prominent or stately tree on any land in Sacramento County, including privately owned land". This Ordinance calls for the Public Works Director to develop a Master Tree (planting) Plan for the County, and for project applicants to convey planting easements on private projects to the County. The manipulation of any public tree without a permit is prohibited, and special protection of landmark and heritage trees, specifically in relation to variance applications and road projects is required by this Ordinance.

The Sacramento County Tree Preservation Ordinance, Chapter 19.12 of Title 19, establishes requirements for the protection and removal of oak trees that do not fall within the scope of a discretionary project as well as guidelines for the protection and mitigation of trees that do fall within the scope of a discretionary project. This Ordinance requires protection of all native oak trees having a single trunk of 6" diameter at breast height (dbh, measured 4.5 feet above ground level) or greater, or with multiple trunks having an aggregate diameter of 10" dbh or greater. Removal of these trees must be authorized by an approving body as designated by the Ordinance, through a tree removal permitting process. Penalties, including stop work orders, monetary fines, and jail time are specified for violations of the Ordinance. In addition, this Ordinance allows the collection of a security deposit for projects that may impact oak trees and may, therefore, require mitigation. This Ordinance also requires limitation of grading beneath oak trees and establishes mitigation for damage to oak trees during construction.

The City of Rancho Cordova adopted both County ordinances upon incorporation in 2003.

4.10.3 PROJECT IMPACTS AND MITIGATION MEASURES

METHODOLOGY

Preliminary Investigation/Document Review

Preliminary investigation into biological resources in the Planning Area was conducted via literature review and document gathering. The purpose of such review was to identify the extent of resources to be analyzed in this document as well as to prepare for field investigations and to identify any data gaps that may exist in the records. A complete list of technical documents and records used is available in the Biological Resources Report prepared by Ecosystem Sciences, included in **Appendix 4.10** of this document. The assembled documents, including any digital data and aerial photos, were studied and interpreted in order to infer site conditions prior to field investigations. Additional information for this section was provided by a habitat assessment performed for the proposed Rio Del Oro Specific Plan project (EDAW 2005) a Wetland Delineation for the Rio Del Oro Specific Plan project (Ecorp Consulting, Inc. 2005), the Preserve at Sunridge Draft EIR (2005), Sunrise Douglas Community Plan EIR (2001), and various draft documents generated for the SSHCP. Additionally, the following agencies, firms, and individuals were consulted:

- Sacramento County, HCP Steering Committee
- U.S. Army Corps of Engineers, Sacramento District
- ECORP Consulting
- EDAW
- California Native Plant Society
- Dawn Lawson, Local Resident
- Judy and George Waegell, Local Resident

The cover types described and used for this document were based on classifications in the Draft South Sacramento Habitat Conservation Plan in consultation with the Sacramento County HCP Steering Committee.

Field Studies

A variety of field studies in the Planning Area were conducted by Sacramento County in support of the SSHCP effort. Vegetation mapping (land cover) was initially through aerial photography interpretation. Field studies provide the ground truthing exercise that increased the accuracy of the mapping effort. The City further refined the mapping through reconnaissance–level surveys conducted in 2004. Surveys were conducted by staff of Ecosystem Sciences and were performed in order to characterize existing conditions in the Planning Area and to determine the presence of special status species (plants and wildlife) and/or the presence of suitable habitat for such species. In order to identify potential species, the California Natural Diversity Database as well as the CNPS's Inventory of Rare and Endangered Vascular Plants of California were utilized. Consultations with the above agencies, firms, and individuals were used for this purpose as well. Database searches were conducted for both the Carmichael and Buffalo Creek minute quadrangles in which the Planning Area is located as well as Rio Linda, Citrus Heights, Folsom, Clarksville, Sacramento East, Folsom SE, Florin, Elk Grove, Sloughhouse, and Carbondale quadrangles.

STANDARDS OF SIGNIFICANCE

Section 15064.7 of the State CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. For purposes of CEQA a biological resource impact is considered significant if implementation of the project would result in any of the following:

- 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 CDFG or USFWS.

- 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 CDFG or USFWS.

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

- 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.

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

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

- Although listed species are protected by specific federal and state statutes, the California Environmental Quality Act (CEQA) Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet the criteria specified in Section 15380(b) as follows:

    - (1) "Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or

    - (2) "Rare" when either:

    - (A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or

    - (B) The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

Additionally, according to the Mandatory Findings of Significance [State CEQA Guidelines Section 15065(a)], an impact is considered significant if implementation of the project would:

- Substantially degrade the quality of the environment, substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife species to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important, but not significant for purposes of CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

PROJECT IMPACTS AND MITIGATION MEASURES

Impacts to Endangered, Threatened, and Other Listed Species

Impact 4.10.1 Implementation of the proposed General Plan would result in direct and indirect loss of habitat and individuals of endangered, threatened, rare, proposed, and candidate status as well as plant species identified by the California Native Plant Society with a rating of List 1B (i.e. rare, threatened or endangered plants). This would be a **significant** impact.

Direct Impacts of the Proposed General Plan

As discussed above, suitable habitat for plant and animal species listed as endangered, threatened, rare, proposed, candidate, or List 1B (collectively referred to in this EIR as "listed species" is found within the Planning Area. Development under the proposed General Plan could directly impact such habitat. Most direct impacts would occur from development of large areas of generally undeveloped land in the southern half of the Planning Area. However, additional impacts would occur from infill development and redevelopment in the City's center and northern portions. See **Figure 4.10-2** and **Figure 4.10-3** as well as **Table 4.10-3** for those listed species known to exist in the Planning Area.

Development under the proposed General Plan Land Use Map and associated land use maps for the Planning Areas could potentially cause direct impacts to approximately 28,543.5 acres of cover types that serve as occupied or potential habitat for listed species. See **Table 4.10-4** for a listing of each cover type in which listed plant and animal species have been found in the Planning Area as well as the acres of each cover type that exist within the Planning Area. In addition to these cover types, mining tailings cover types are known to support valley elderberry shrubs (a host plant for valley elderberry longhorn beetle). As the final design of future development is not currently known, the acreages listed in **Table 4.10-4**, below, represent the maximum area that could be directly affected. Actual direct impacts to these cover types may be less, depending on the ultimate design of individual developments as determined through application of proposed General Plan policies on a project specific basis and project specific compliance with state and federal agency requirements. As discussed in further detail in Section 1.0, this EIR is a programmatic analysis of the broad environmental effects of the overall proposed General Plan. Goals, polices and action items contained within the proposed

General Plan would apply to all future improvement plans within the Planning Area. Future proposed projects that have the potential to cause a direct or reasonably foreseeable indirect physical change in the environment will undergo additional, project-specific CEQA-review, as required by statute. Those future projects will also be subject to the FESA and CESA, as appropriate.

TABLE 4.10-4
COVER TYPES CONTAINING HABITAT FOR LISTED SPECIES IN THE RANCHO CORDOVA GENERAL PLAN PLANNING AREA

Cover Type	Listed Species (Common Name)	Acres Within City Boundary	Acres Outside City Boundary and Inside Planning Area	Total Acres
Vernal Pool Grassland	Ahart's dwarf rush Swainson's hawk Valley elderberry longhorn beetle	6,540.6	14,187.2	20,727.8
Cropland	Swainson's hawk	298.6	3,109.1	3,407.7
Pasture Grassland	Swainson's hawk	1,088.1	270.8	1,359.0
Grassland	Ahart's dwarf rush Swainson's hawk Valley elderberry longhorn beetle	230.4	407.2	637.5
Vernal Pool	Boggs lake hedge-hyssop Ahart's dwarf rush Legenere Pincushion navarretia Slender orcutt grass Sacramento orcutt grass Sanford's arrowhead Swainson's hawk Vernal pool fairy shrimp Vernal pool tadpole shrimp California linderiella	271.0	359.9	630.3
Mixed Riparian Woodland	Swainson's hawk Bank swallow	106.6	508.7	615.3
Open Water	Bank swallow	191.8	269.1	460.9
Blue Oak Woodland	Swainson's hawk Valley elderberry longhorn beetle	246.6	1.2	247.7
Fresh Water Marsh	Boggs lake hedge-hyssop Sanford's arrowhead	41.4	170.2	211.5
Cottonwood Woodland	Swainson's hawk	0.0	131.6	131.6
Blue Oak Savannah	Swainson's hawk Valley elderberry longhorn beetle	75.6	5.0	80.5
Valley Oak Riparian Woodland	Swainson's hawk Bank swallow	0	50.2	50.2
Mixed Riparian Scrub	Bank swallow Valley elderberry longhorn beetle	0	21.0	21.0
Total Acres		**9,090.7**	**19,491.2**	**28,581.0**

Source: Ecosystem Sciences, March 2005

In addition to direct impacts to listed species due to development within the Planning Area, further direct impacts to listed species could occur with implementation of the Rancho Cordova Circulation Plan, specifically: construction, expansion and improvement of City roadways as identified in the General Plan Roadway System Sizing Map (see **Figure 3.0-19**). **Table 4.10-5** lists the approximate direct impacts to habitats within the Planning Area by implementation of the General Plan Roadway Sizing Map. These impacts are approximate, and conservative for CEQA purposes, however, as they assume that no allowances in the final alignment or design of these roadways were given in order to minimize such impacts. Additionally, impacts due to the construction of conceptual roadways included in the General Plan Roadway System Sizing Map are approximated since the ultimate alignment of these roadways is not known and cannot be accurately determined at this time. The reader is referred to Section 4.5 (Transportation and Circulation) regarding further discussion of proposed General Plan roadway improvement impacts.

TABLE 4.10-5
DIRECT IMPACTS TO COVER TYPES CONTAINING HABITAT FOR LISTED SPECIES BY ROADWAY IMPROVEMENT AND CONSTRUCTION IN THE RANCHO CORDOVA PLANNING AREA

Cover Type	Acres Within City Boundary	Acres Outside City Boundary and Inside Planning Area	Total Acres
Vernal Pool Grassland	250.0	405.5	655.4
Cropland	5.5	125.8	131.3
Pasture Grassland	87.2	8.5	95.6
Grassland	0.0	2.7	2.7
Vernal Pool	6.2	14.3	20.6
Mixed Riparian Woodland	0.6	8.8	9.4
Open Water	1.3	0.3	1.5
Fresh Water Marsh	2.1	2.4	4.5
Cottonwood Woodland	0.0	1.5	1.5
Blue Oak Savannah	0.0	0.3	0.3
Mixed Riparian Scrub	0.0	0.2	0.2
Total	**352.8**	**570.3**	**923.0**

Source: City of Rancho Cordova Planning Department and South Sacramento Habitat Conservation Plan Dataset
Notes: Impacts identified in this table are compiled from SSHCP data and estimated roadway widths and alignments. Actual impacts may vary as roadways are redesigned and realigned. All impacts listed are direct impacts and do not take into account indirect impacts to adjacent habitat.

Indirect Impacts of the Proposed General Plan

Suitable habitat for listed plant and animal species exists within the Planning Area and could be indirectly impacted by both development under the proposed General Plan (as identified in the Land Use Element of the Rancho Cordova General Plan), and roadway improvement and construction (as identified in the Circulation Plan and the Circulation Element of the General Plan). Listed species include those species listed by the USFWS or the CDFG as endangered, threatened, rare, proposed, or candidate. Additionally, plant species identified by the CNPS as List 1B are considered in this document to be listed species. Information regarding these species, including their location, is included in **Figure 4.10-3**, **Figure 4.10-4**, and **Table 4.10-3**.

Just as direct impacts would occur to habitat in which listed species are found, indirect impacts would occur as well. Indirect impacts occur for a number of reasons, though primarily through increased human/wildlife interactions, habitat fragmentation, encroachment by exotic weeds, and area-wide changes in surface water flows due to development of previously undeveloped areas.

Increased Human/Wildlife Interactions

The major circulation features identified in the Circulation Element of the General Plan would be heavily traveled with vehicular traffic and pedestrians, increasing the amount and severity of indirect impacts to wildlife and habitat in the Planning Area. Additionally, the Circulation Plan for the City proposes a network of bicycle and pedestrian trails throughout the City, further exposing habitat and species to possible indirect impacts associated with pedestrian and bicycle use of areas that are currently inaccessible. Additionally, development of previously undeveloped land for residential uses can expose species to impacts from feral and unconfined pets.

Habitat Fragmentation

Much of the habitat within the Planning Area used by listed species is currently interconnected with large areas of open space and sparse development that has a minor impact on plant and animal species in the Planning Area. However, wide-scale development of the Planning Area consistent with the proposed General Plan could result in small pockets of conserved habitat that are no longer connected by streams and open space, resulting in indirect impacts to species diversity and movement within the Planning Area.

Encroachment by Exotic Weeds

Generally, landscaping installed as part of development in the region has relied heavily on exotic, non-native plant species for decoration. However, some of these species can spread to natural areas, causing native plant life to be replaced by exotic species. As native plants are replaced by exotic species, indirect impacts to the habitat of listed species would occur such as modification or degradation of habitat.

Changes in Surface Water Flows

As development occurs, surface water flows normally increase due to an increase in impermeable surfaces through, for example, the placement of building materials and paving over permeable surfaces. In addition, surface water flows are modified due to changes in surface flow by point source stormwater infrastructure installed in order to handle greater flows from the increasing impermeable surfaces as well as from the introduction of drainage flows during seasons when waterways and wetland features are typically dry (commonly referred to as "summer nuisance flows"). Some cover types that contain habitat for listed species can be indirectly impacted by such changes. For example, vernal pool communities survive along a rigid set of soil, water, and climatic conditions. Alteration of current inundation and desiccation regimes due to altered hydrology could substantially alter the characteristics of vernal pool habitat, resulting in loss or degradation of vernal pool habitat in developed and undeveloped areas of the Planning Area.

Table 4.10-4 shows quantities of these habitats that may be indirectly impacted by development of the proposed General Plan Land Use Map as well as which listed species would be impacted. The actual acreage ultimately indirectly impacted may be less than the estimates shown in **Table 4.10-4**, because future development design proposals will be subject to the application of

General Plan policies that address protection of biological resources, as well as possible further review on a project-by-project basis. These policies and possible further review are expected to reduce the indirect impacts estimated in **Table 4.10-4**, which ensure that the worst case indirect impacts are considered in this EIR. As discussed previously, further environmental review may be necessary, depending on whether the potential environmental impacts of future proposed projects within the Planning Area have the potential to cause one or more direct or reasonably foreseeable indirect physical change in the environment that has not already been adequately considered in this EIR.

General Plan Circulation Improvements and Other Supporting Infrastructure Improvements

Table 4.10-6, below, lists the estimated indirect impacts from implementation of the Circulation Element of the General Plan and the General Plan Roadway System Map (see **Figure 3.0-19**). These acreages and occurrences do not include direct impacts such as those identified in **Table 4.10-5** above. The data shown in **Table 4.10-6** was established by using the approximate widths and alignments of all major roads identified in the General Plan Roadway System Map and used for **Table 4.10-5**, however the following table lists impacts to cover types from the outer limit of the roadway outward for 250 feet. The distance and intensity of indirect effects on adjacent habitats will vary based upon project activities and the resources affected. For the purposes of providing a relative context of these potential impacts, this analysis assumes a distance of 250 feet as a distance at which indirect impacts to habitat and species could occur. In those cases where roadways currently exist, roadways that would be widened by the General Plan Roadway System Sizing Map, for example, may include impacts that are greater than the indirect effects within 250 feet of the original roadway that have already occurred.

TABLE 4.10-6
INDIRECT IMPACTS TO COVER TYPES CONTAINING HABITAT FOR LISTED SPECIES BY ROADWAY IMPROVEMENT AND CONSTRUCTION IN THE RANCHO CORDOVA PLANNING AREA

Cover Type	Acres Within City Boundary	Acres Outside City Boundary and Inside Planning Area	Total Acres
Vernal Pool Grassland	1,157.0	1,735.7	2,892.6
Cropland	40.3	458.8	499.1
Pasture Grassland	264.4	38.1	302.5
Grassland	0.0	30.6	30.6
Vernal Pool	43.6	56.4	99.9
Mixed Riparian Woodland	7.9	34.7	42.7
Open Water	6.0	3.9	9.9
Fresh Water Marsh	13.8	9.2	23.0
Cottonwood Woodland	0.0	13.6	13.6
Blue Oak Savannah	0.0	0.9	0.9
Valley Oak Riparian Woodland	0.0	0.6	0.6
Mixed Riparian Scrub	0.0	3.5	3.5
Total	**1,532.9**	**2,386.1**	**3,919.0**

Source: City of Rancho Cordova and South Sacramento Habitat Conservation Plan Dataset
Notes: Impacts identified in this table are compiled from SSHCP data and estimated roadway widths and alignments. Actual impacts may vary as roadways are redesigned and realigned. All impacts listed are indirect impacts and do not include direct impacts to habitat and species within the boundary of the roadway. All impacts occur between the outer boundary of the

In addition to circulation improvements identified in the General Plan, development provided under the General Plan would also require the expansion of existing public service and infrastructure improvements (e.g., construction of new public schools, fire stations and other community facilities, water and wastewater facilities, electrical and natural facilities). These associated supporting services and improvement could also contribute to impacts on plant and wildlife species.

Proposed General Plan Policies and Action Items That Provide Mitigation

The following General Plan policies and action items address biological resource impacts:

Policy NR.1. Incorporate large and interconnected wildlife corridors in new development areas to provide ample space for animal movement.

Action NR.1.1.1 Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks and/or wooded corridors.

Policy NR.1.2 Conserve Swainson's hawk habitat.

Action NR.1.2.1 Establish a Swainson's Hawk Ordinance in coordination with the California Department of Fish and Game to help guide the process of mitigating for the loss of Swainson's hawk foraging habitat.

Policy NR.1.3 Promote educational programs that inform the public about natural resources.

Action NR.1.3.1 Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.

Policy NR.1.4 Discourage the planting of invasive species.

Action NR.1.4.1 Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.

Policy NR.1.5 Ensure the protection of wildlife through the establishment of programs to control feral pet populations.

Policy NR.2.1 Require mitigation that provides for "no net loss" of wetlands.

Policy NR.2.2 Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Action NR.2.2.1 During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.

Policy NR.2.3 Works with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government

agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR.2.4 *Educate the public on the importance and benefit of wetlands areas.*

Action NR.2.4.1 *Develop trails and associated educational facilities (e.g., information kiosks, signage) around wetland and vernal pool preserves, where possible while maintaining the integrity of sensitive natural resources.*

Action NR.2.4.2 *Consider constructing elevated board walkways and other low impact trails interior to preserves, in coordination with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.*

Policy NR.3.1 *Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.*

Policy NR.3.2 *Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and discourage the placement of concrete within creeks and channels.*

Action NR.3.2.1 *Develop guidelines for channel creation or modification that will ensure channel meander, naturalized side slope, and varied channel bottom elevation are considered in design.*

Policy NR.3.3 *Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.*

Action NR 3.3.1 *Work with affected local, state and federal agencies to determine if natural creek corridors can and should accommodate storm flows or if separate storm water conveyance structures are necessary.*

Policy NR.3.4 *Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.*

Action NR.3.4.1 *Establish performance standards for natural resource preserves that accomplish the following:*

Provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses, and access for channel maintenance and flood control.

Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridor for wildlife habitat linkage, protection from runoff, and other impacts of urban uses adjacent to the corridor.

Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts.

Prohibit the placement of water quality treatment structures designed to meet pollutant discharge requirements within mitigation preserves.

Action NR.3.4.2 *Establish standards that allow public access in the floodplain and buffers along creek corridors and preserves. Mitigation measures shall be incorporated into environmental documents and conditions of approval that require open-view fencing adjacent to preserves.*

Action NR.3.4.3 *Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.*

Policy NR.4.1 *Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.*

Action NR.4.1.1 *Adopt a Tree Preservation Ordinance to establish minimum requirements for preserving native trees and landmark trees in the City, including a definition of the size, species, and age requirements of landmark, oak, and other trees to be protected and/or replaced.*

Action NR.4.1.3 *Establish development guidelines that require all oak habitat to be avoided to the maximum extent feasible. When avoidance is not possible, require mitigation efforts that result in preservation of in-kind habitat in the Planning Area.*

Policy NR.5.3 *Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.*

Action NR.5.3.1 *Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.*

Action NR.5.3.2 *Educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks.*

Action NR.5.3.3 *Install appropriate signage to deter the discharge of hazardous materials into storm drains.*

Policy NR.5.4 *Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.*

Action NR.5.4.1 *Provide information on pollution prevention, disposal of hazardous waste and chemicals, liability and clean-up on the City's website and in educational materials and brochures.*

Action NR.5.4.2 *Require clean-up of contaminated ground and surface water by current and/or past owners or polluters.*

Action NR.5.4.3 Encourage pollutant cleansing companies to use the latest technologies available in order to expedite the cleansing process and do the least harm to the environment.

Policy NR.5.5 Minimize erosion to stream channels resulting from new development in urban areas.

Action NR.5.5.1 Require community and specific plans to contain urban runoff control strategies and requirements that are consistent with Master Drainage Plans and the City's urban runoff management program.

Action NR.5.5.2 Require development within newly urbanizing areas to incorporate runoff control measures into their site design or to participate in an area-wide runoff control management effort consistent with standards developed by the Public Works Department.

Action NR.5.5.3 Encourage new development to incorporate features such as grassy swales, multi-use retention or detention basins, and integrated drainage systems to enhance water quality. Work with the Cordova Recreation and Park District to establish standards for integrating retention/detention basins into park sites and create examples of desirable and innovative natural drainage features.

Action NR.5.5.4 Establish and require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff.

Policy NR.6.1 Ensure that the environmental effects of mining and reclamation on aquifers, streams, scenic views, and surrounding residential uses are prevented or minimized.

Although application of policies and actions proposed in the Rancho Cordova General Plan would reduce direct impacts to listed species, impacts to such species are expected to still be significant. The proposed policies would not currently require project-by-project surveys to identify possible impacts to species beyond the CNDDB and SSHCP data, nor do they adequately protect existing areas of important habitat from development. Therefore, the following mitigation measures shall be incorporated into the General Plan where identified in the Natural Resources Element.

Mitigation Measures

MM 4.10.1a The following shall be incorporated into the Natural Resources Element as a policy under Goal NR.1:

The City shall require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based upon the City's biological resource mapping provided in the General Plan EIR or other technical materials. This evaluation shall be conducted prior to the authorization of any ground disturbance.

MM 4.10.1b The following measure shall be incorporated as an action item immediately under the above policy (MM 4.10.1a):

For those areas in which special status species are found or likely to occur or where the presence of species can be reasonably inferred, the City shall require mitigation of impacts to those species. Mitigation shall be designed by the City in coordination with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), and shall emphasize a multi-species approach to the maximum extent feasible. This may include development or participation in a habitat conservation plan.

MM 4.10.1c The following measure shall be incorporated into the Natural Resources Element as a policy under Goal NR.1:

The City shall encourage creation of habitat preserves that are immediately adjacent to each other in order to provide interconnected open space areas for animal movement.

MM 4.10.1d The following measure shall be incorporated into the Natural Resources Element as an action item under Policy NR.1.4:

The City shall adopt and maintain a Noxious Weed Ordinance. The Noxious Weed Ordinance shall include regulatory standards for construction activities that occur adjacent to natural areas to inhibit the establishment of noxious weeds through accidental seed import.

MM 4.10.1e The following measure shall be incorporated into the Natural Resources Element as a policy under Goal NR.2:

The City shall require that drainage improvements that discharge into areas of wetlands to be preserved are, to the maximum extent feasible, designed to mimic the undeveloped surface water flow conditions of the area in terms of seasonality, volume and flow velocity.

Implementation of the above General Plan goals, policies action items and mitigation measures would partially mitigate direct and indirect impacts to special-status listed species in the General Plan Planning Area. However, despite these goals, policies, action items, and mitigation measures there still will be an overall loss of listed species and their habitats in the Planning Area given the extent of change to habitat conditions from implementation of the proposed General Plan Land Use Map. Therefore, implementation of the General Plan will result in **significant and unavoidable** impacts to listed species.

Impacts to Species of Concern and Other Non-Listed Special Status Species

Impact 4.10.2 Implementation of the proposed General Plan would result in direct and indirect loss of habitat and individuals of animal and plant species of concern and other non-listed special status species. This would be a **significant** impact.

Direct Impacts of the Proposed General Plan

Suitable habitat exists in the Planning Area for unlisted but, nonetheless special status species. These species are designated as a species of concern by the USFWS or the CDFG, listed as "fully protected" in the Fish and Game Code of California (Section 3511, 4700, 5050, 5515, and/or listed in the CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (2001) as List

2. For a listing of special status, unlisted species within the Planning Area, see **Table 4.10-3**. For the location of known occurrences of these species, see **Figure 4.10-2** and **Figure 4.10-3**.

In addition to the 28,581.0 acres of habitat for listed species that may be directly impacted by development under the proposed General Plan Land Use Map (see impact 4.10.1, above), an additional 11,269.6 acres of high density development cover type, 435.7 acres of low density development type and 10,275.0 acres of the mine tailings cover type could be potentially impacted. Non-listed special status species have been found in both of these cover types and could also be directly impacted.

In addition to the 923.0 acres of habitat for listed species that may be directly impacted by roadway construction and improvement in the Planning Area, an additional 559.2 acres of mine tailings, 400.7 acres of high density development, 18.1 acres of low density development, and 11.0 acres of recreation could be directly impacted. Non-listed special status species have been found in all of these areas.

Direct impacts to these species would occur for the same reasons and in the same manner as direct impacts to listed species as identified and discussed in Impact 4.10.1 above. See Impact 4.10.1, as well as **Table 4.10-3** and **Table 4.10-4** above for information on the acreages of suitable habitat that would be affected by implementation of the proposed General Plan.

Indirect Impacts of the General Plan

Suitable habitat exists within the Planning Area for unlisted, special status species, identified (along with other listed special status species) in **Table 4.10-3** above. The location of these species is shown in **Figure 4.10-2** and **Figure 4.10-3**. Indirect impacts to these species would occur for similar reasons as those identified in Impact 4.10.1. In addition to the potential indirect impacts to listed species, an additional 11,269.6 acres of the high density development cover type, 435.7 acres of low density development cover type, and 10,275.0 acres of the mine tailings cover type, in which non-listed special status species have been found, could be potentially impacted by implementation of development envisioned under the proposed General Plan.

According to GIS information from the City of Rancho Cordova Planning Department, 2,080.1 acres of high density development, 1,869.4 acres of mine tailings, 160.75 acres of low density development, and 42.60 acres of recreation in addition to the 5,194.08 acres identified in Impact 4.10.2 could be indirectly impacted by roadway construction and improvements in the Planning Area.

Indirect impacts to habitat for non-listed, special status species would most likely be less than the total impact identified above, for a few reasons. First, cover types indirectly impacted by the proposed General Plan Roadway System Map may overlap those indirectly impacted by the proposed General Plan Land Use Plan. Second, the mitigating effect of many of the policies and action items in the proposed General Plan, addressing protection of biological resources, would ultimately reduce actual impacts. In estimating the amount of acreage potentially impacted, this discussion considers the worst-case outcome of implementation of the proposed General Plan to ensure that potential environmental impacts are fully considered. In addition, some future development design proposals will be subject to additional environmental review, depending on whether all of the impacts of such proposals have been adequately considered in this EIR. This environmental review may further reduce the indirect impacts of the proposed General Plan on non-listed special status species. Therefore, the total acres of indirect impacts likely would be less. As the final design of development and roadways to be constructed under the General Plan cannot be known, the actual quantity of habitat impacted may vary greatly.

Proposed General Plan Policies and Action Items That Provide Mitigation

The following proposed General Plan policies and action items address biological resources:

Policy NR.1.1 *Incorporate large and interconnected wildlife corridors in new development areas to provide ample space for animal movement.*

Action NR.1.1.1 *Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks and/or wooded corridors.*

Policy NR.1.2 *Conserve Swainson's hawk habitat.*

Action NR.1.2.1 *Establish a Swainson's Hawk Ordinance in coordination with the California Department of Fish and Game to help guide the process of mitigating for the loss of Swainson's hawk foraging habitat.*

Policy NR.1.3 *Promote educational programs that inform the public about natural resources.*

Action NR.1.3.1 *Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.*

Policy NR.1.4 *Discourage the planting of invasive species.*

Action NR.1.4.1 *Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.*

Policy NR.1.5 *Ensure the protection of wildlife through the establishment of programs to control feral pet populations.*

Policy NR.2.1 *Require mitigation that provides for "no net loss" of wetlands.*

Policy NR.2.2 *Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.*

Action NR.2.2.1 *During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.*

Policy NR.2.3 *Works with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.*

Policy NR.2.4 *Educate the public on the importance and benefit of wetlands areas.*

Action NR.2.4.1 Develop trails and associated educational facilities (e.g., information kiosks, signage) around wetland and vernal pool preserves, where possible while maintaining the integrity of sensitive natural resources.

Action NR.2.4.2 Consider constructing elevated board walkways and other low impact trails interior to preserves, in coordination with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.

Policy NR.3.1 Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2 Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and discourage the placement of concrete within creeks and channels.

Action NR.3.2.1 Develop guidelines for channel creation or modification that will ensure channel meander, naturalized side slope, and varied channel bottom elevation are considered in design.

Policy NR.3.3 Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Action NR 3.3.1 Work with affected local, state and federal agencies to determine if natural creek corridors can and should accommodate storm flows or if separate storm water conveyance structures are necessary.

Policy NR.3.4 Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.

Action NR.3.4.1 Establish performance standards for natural resource preserves that accomplish the following:

Provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses, and access for channel maintenance and flood control.

Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridor for wildlife habitat linkage, protection from runoff, and other impacts of urban uses adjacent to the corridor.

Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts.

Prohibit the placement of water quality treatment structures designed to meet pollutant discharge requirements within mitigation preserves.

Action NR.3.4.2 Establish standards that allow public access in the floodplain and buffers along creek corridors and preserves. Mitigation measures shall be

incorporated into environmental documents and conditions of approval that require open-view fencing adjacent to preserves.

Action NR.3.4.3 Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.

Policy NR.4.1 Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.

Action NR.4.1.1 Adopt a Tree Preservation Ordinance to establish minimum requirements for preserving native trees and landmark trees in the City, including a definition of the size, species, and age requirements of landmark, oak, and other trees to be protected and/or replaced.

Action NR.4.1.3 Establish development guidelines that require all oak habitat to be avoided to the maximum extent feasible. When avoidance is not possible, require mitigation efforts that result in preservation of in-kind habitat in the Planning Area.

Policy NR.5.1 Promote water conservation within existing and future urban uses.

Policy NR.5.3 Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action NR.5.3.1 Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.

Action NR.5.3.2 Educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks.

Action NR.5.3.3 Install appropriate signage to deter the discharge of hazardous materials into storm drains.

Policy NR.5.4 Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Action NR.5.4.1 Provide information on pollution prevention, disposal of hazardous waste and chemicals, liability and clean-up on the City's website and in educational materials and brochures.

Action NR.5.4.2 Require clean-up of contaminated ground and surface water by current and/or past owners or polluters.

Action NR.5.4.3 Encourage pollutant cleansing companies to use the latest technologies available in order to expedite the cleansing process and do the least harm to the environment.

Policy NR.5.5 Minimize erosion to stream channels resulting from new development in urban areas.

Action NR.5.5.1 Require community and specific plans to contain urban runoff control strategies and requirements that are consistent with Master Drainage Plans and the City's urban runoff management program.

Action NR.5.5.2 Require development within newly urbanizing areas to incorporate runoff control measures into their site design or to participate in an area-wide runoff control management effort consistent with standards developed by the Public Works Department.

Action NR.5.5.3 Encourage new development to incorporate features such as grassy swales, multi-use retention or detention basins, and integrated drainage systems to enhance water quality. Work with the Cordova Recreation and Park District to establish standards for integrating retention/detention basins into park sites and create examples of desirable and innovative natural drainage features.

Action NR.5.5.4 Establish and require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff.

Policy NR.6.1 Ensure that the environmental effects of mining and reclamation on aquifers, streams, scenic views, and surrounding residential uses are prevented or minimized.

Mitigation Measures

Implementation of the above General Plan policies, action items and mitigation measures MM 4.10.1a through e would partially mitigate any direct or indirect impacts to non-listed special-status species in the General Plan Planning Area though there will an overall loss of non-listed special-status and their habitat in the Planning Area. Therefore, implementation of the General Plan will result in **significant and unavoidable** impacts to listed species.

Loss of Habitat

Impact 4.10.3 Implementation of the proposed General Plan would result in the loss of foraging habitat for raptors, migratory birds, and other wildlife. This would be a **significant** impact.

Wetlands, riparian corridors, as well as large areas of open grassland and other suitable foraging habitat for special-status bird species found within the Planning Area, also provide important habitat for non-listed special status species, as well common wildlife including variety of shore birds, waterfowl, and migratory passerines Additionally, some mammal species such as coyote and black-tailed hare utilize these cover types as forage and denning habitat. Implementation of the General Plan, specifically development in line with the proposed General Plan Land Use Map as well as construction and improvement of roadways identified in the proposed Circulation Element could result in the loss of this habitat, causing a significant impact to occur.

Proposed General Plan Policies and Action Items That Provide Mitigation

The following proposed General Plan policies and action items address biological resources:

Policy NR.1.1 Incorporate large and interconnected wildlife corridors in new development areas to provide ample space for animal movement

Action NR.1.1.1 Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks and/or wooded corridors.

Policy NR.1.2 Conserve Swainson's hawk habitat.

Action NR.1.2.1 Establish a Swainson's Hawk Ordinance in coordination with the California Department of Fish and Game to help guide the process of mitigating for the loss of Swainson's hawk foraging habitat.

Policy NR.1.3 Promote educational programs that inform the public about natural resources.

Action NR.1.3.1 Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.

Policy NR.1.4 Discourage the planting of invasive species.

Action NR.1.4.1 Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.

Policy NR.1.5 Ensure the protection of wildlife through the establishment of programs to control feral pet populations.

Policy NR.2.1 Require mitigation that provides for "no net loss" of wetlands.

Policy NR.2.2 Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Action NR.2.2.1 During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.

Policy NR.2.3 Works with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR.2.4 Educate the public on the importance and benefit of wetlands areas.

Action NR.2.4.1 Develop trails and associated educational facilities (e.g., information kiosks, signage) around wetland and vernal pool preserves, where possible while maintaining the integrity of sensitive natural resources.

Action NR.2.4.2 Consider constructing elevated board walkways and other low impact trails interior to preserves, in coordination with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.

Policy NR.3.1 Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2 Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and discourage the placement of concrete within creeks and channels.

Action NR.3.2.1 Develop guidelines for channel creation or modification that will ensure channel meander, naturalized side slope, and varied channel bottom elevation are considered in design.

Action NR.3.2.2 Adopt and implement improvement standards for soft bottom channels.

Policy NR.3.3 Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Action NR 3.3.1 Work with affected local, state and federal agencies to determine if natural creek corridors can and should accommodate storm flows or if separate storm water conveyance structures are necessary.

Policy NR.3.4 Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.

Action NR.3.4.1 Establish performance standards for natural resource preserves that accomplish the following:

Provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses, and access for channel maintenance and flood control.

Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridor for wildlife habitat linkage, protection from runoff, and other impacts of urban uses adjacent to the corridor.

Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts.

Prohibit the placement of water quality treatment structures designed to meet pollutant discharge requirements within mitigation preserves.

Action NR.3.4.2 Establish standards that allow public access in the floodplain and buffers along creek corridors and preserves. Mitigation measures shall be incorporated into environmental documents and conditions of approval that require open-view fencing adjacent to preserves.

Action NR.3.4.3 Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.

Policy NR.4.1 Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.

Action NR.4.1.1 Adopt a Tree Preservation Ordinance to establish minimum requirements for preserving native trees and landmark trees in the City, including a definition of the size, species, and age requirements of landmark, oak, and other trees to be protected and/or replaced.

Action NR.4.1.2 Where feasible, require underground utility lines that are in close proximity to oaks and other landmark trees to be designed and installed to minimize impacts to trees. Work with the utility provider(s) to coordinate transmission line location and other potential impacts associated with the undergrounding of the utilities.

Action NR.4.1.3 Establish development guidelines that require all oak habitat to be avoided to the maximum extent feasible. When avoidance is not possible, require mitigation efforts that result in preservation of in-kind habitat in the Planning Area.

Policy NR.4.2 Improve overall landscaping quality and sustainability in all areas visible to the public.

Action NR.4.2.2 Create development guidelines that address landscaping standards and that require appropriate tree species and densities in buffer areas. The guidelines should also ensure that medians will include native plantings and trees, and will be wide enough to support the long-term viability of the plantings.

Action NR.4.2.3 Provide leaflets and planting guides that promote the use of drought-tolerant native vegetation in home landscaping.

Action NR.4.3.1 Achieve "Tree City USA" status. This will require the City to adopt a tree ordinance, appoint a board, department or commission to advise the city on tree issues, spend two dollars per capita on community forestry activities, and hold an Arbor Day celebration.

Action NR.4.3.2 Designate local funds to educate the public on tree planting and preservation.

Action NR.4.3.3 Offer programs or other resources to provide property owners with information on proper tree selection, planting, and maintenance.

Action NR.4.3.4 Actively participate in the Sacramento County Greenprint Program.

Policy NR.5.3 Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action NR.5.3.1 Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.

Action NR.5.3.2 Educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks.

Mitigation Measures

MM 4.10.3 The following measure shall be incorporated into the Natural Resources Element as a policy under Goal NR.1:

The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss may be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.

While the incorporation of the above policies and action items in the City of Rancho Cordova General Plan (as well as implementation of Mitigation Measure MM 4.10.3) would mitigate impacts to habitat, large open areas of habitat used by these species would be lost and/or degraded directly and indirectly through development under the General Plan. Given the extent of urban development for the Planning Area set forth in the General Plan, this impact is considered **significant and unavoidable**.

Direct and Indirect Impacts to Jurisdictional Waters

Impact 4.10.4 Implementation of the proposed General Plan would result in substantial adverse impacts to and the potential loss of jurisdictional waters of the U.S. This would be a **significant** impact.

Jurisdictional waters of the U.S. provide for a variety of functions for plants and wildlife within the Planning Area. Jurisdictional waters provide habitat, foraging, cover, migration and movement corridors, and water sources for both special-status and other species found in the Planning Area. In addition to habitat functions, jurisdictional waters provide physical conveyance of surface water flows as well as channels for the handling of large stormwater events. Large storms can produce extreme flows that cause bank cutting and sedimentation of ephemeral drainage and water bodies such as open water and streams in the Planning Area. Jurisdictional waters found within the Planning Area can slow these flows and lessen the effects of these large storm events, protecting habitat and other resources.

Implementation of the General Plan, specifically development identified in the General Plan Land Use Map and roadway construction and improvement identified in the Circulation Element could result in direct and indirect impacts to jurisdictional waters within the Planning Area. Improvements identified in the General Plan Roadway System Map could impact as much as 120.5 acres of vernal pools, 27.50 acres of fresh water marsh, 11.4 acres of open water, 478.90 acres of streams, and 60.70 acres of aqueduct. Jurisdictional waters of the U.S. occur within the vernal pool grassland, vernal pool, streams, mixed riparian woodland, open water, fresh water marsh, aqueduct, valley oak riparian woodland, and mixed riparian scrub cover types. Impacts 4.10.1, 4.10.2 and 4.10.3 above contain more information regarding acreages of these cover types and possible direct and indirect impacts to these cover types due to implementation of the proposed General Plan.

Proposed General Plan Policies and Action Items That Provide Mitigation

The following proposed General Plan policies and action items address biological resources:

Policy NR.1.1 Incorporate large and interconnected wildlife corridors in new development areas to provide ample space for animal movement.

Action NR.1.1.1 Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks and/or wooded corridors.

Policy NR.1.3 Promote educational programs that inform the public about natural resources.

Action NR.1.3.1 Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.

Policy NR.1.4 Discourage the planting of invasive species.

Action NR.1.4.1 Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.

Policy NR.1.5 Ensure the protection of wildlife through the establishment of programs to control feral pet populations.

Policy NR.2.1 Require mitigation that provides for "no net loss" of wetlands.

Policy NR.2.2 Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Action NR.2.2.1 During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.

Policy NR.2.3 Works with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR.2.4 - Educate the public on the importance and benefit of wetlands areas.

Action NR.2.4.1 Develop trails and associated educational facilities (e.g., information kiosks, signage) around wetland and vernal pool preserves, where possible while maintaining the integrity of sensitive natural resources.

Action NR.2.4.2 Consider constructing elevated board walkways and other low impact trails interior to preserves, in coordination with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.

Policy NR.3.1 *Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.*

Policy NR.3.2 *Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and discourage the placement of concrete within creeks and channels.*

Action NR.3.2.1 *Develop guidelines for channel creation or modification that will ensure channel meander, naturalized side slope, and varied channel bottom elevation are considered in design.*

Policy NR.3.3 *Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.*

Action NR 3.3.1 *Work with affected local, state and federal agencies to determine if natural creek corridors can and should accommodate storm flows or if separate storm water conveyance structures are necessary.*

Policy NR.3.4 *Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.*

Action NR.3.4.1 *Establish performance standards for natural resource preserves that accomplish the following:*

Provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses, and access for channel maintenance and flood control.

Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridor for wildlife habitat linkage, protection from runoff, and other impacts of urban uses adjacent to the corridor.

Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts.

Prohibit the placement of water quality treatment structures designed to meet pollutant discharge requirements within mitigation preserves.

Action NR.3.4.2 *Establish standards that allow public access in the floodplain and buffers along creek corridors and preserves. Mitigation measures shall be incorporated into environmental documents and conditions of approval that require open-view fencing adjacent to preserves.*

Action NR.3.4.3 *Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.*

Policy NR.5.1 *Promote water conservation within existing and future urban uses.*

Policy NR.5.3 *Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.*

Action NR.5.3. *Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.*

Action NR.5.3.2 *Educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks.*

Action NR.5.3.3 *Install appropriate signage to deter the discharge of hazardous materials into storm drains.*

Policy NR.5.4 *Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.*

Action NR.5.4.1 *Provide information on pollution prevention, disposal of hazardous waste and chemicals, liability and clean-up on the City's website and in educational materials and brochures.*

Action NR.5.4.2 *Require clean-up of contaminated ground and surface water by current and/or past owners or polluters.*

Action NR.5.4.3 *Encourage pollutant cleansing companies to use the latest technologies available in order to expedite the cleansing process and do the least harm to the environment.*

Policy NR.5.5 *Minimize erosion to stream channels resulting from new development in urban areas.*

Action NR.5.5.1 *Require community and specific plans to contain urban runoff control strategies and requirements that are consistent with Master Drainage Plans and the City's urban runoff management program.*

Action NR.5.5.2 *Require development within newly urbanizing areas to incorporate runoff control measures into their site design or to participate in an area-wide runoff control management effort consistent with standards developed by the Public Works Department.*

Action NR.5.5.3 *Encourage new development to incorporate features such as grassy swales, multi-use retention or detention basins, and integrated drainage systems to enhance water quality. Work with the Cordova Recreation and Park District to establish standards for integrating retention/detention basins into park sites and create examples of desirable and innovative natural drainage features.*

Action NR.5.5.4 *Establish and require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff.*

Mitigation Measures

Incorporation of the above General Plan action items and policies, most importantly Policy NR.2.1, which requires that the City ensure a "no net loss of wetlands" (including vernal pools and other wetland habitats) in a regional context, though there will an overall loss of wetland resources in the Planning Area as well as a reduction in the habitat value. Therefore, implementation of the General Plan will result in **significant and unavoidable** impacts to jurisdictional waters of the U.S. within the Planning Area.

Effects on Wildlife Movement Corridors

Impact 4.10.5 Implementation of the proposed General Plan would interfere substantially with the movement of several special status and common wildlife species. This would be a **significant** impact.

Large complexes of ephemeral drainage, such as those that feed Morrison Creek and Laguna Creek, exist within the Planning Area. Ephemeral Drainage provides key movement corridors for both migratory and local species of wildlife. Streams themselves also provide major movement corridors for species in the Planning Area. Major streams found in the Planning Area include the Alder, Buffalo, Morrison, Laguna, Frye and Elder Creeks. Corridors provided by these streams and drainages provide important routes for species moving through the area as well as local species that use these corridors to spread to new habitat, to mate, and to disperse genetic material. Large riparian areas such as the American River Parkway and the Consumnes River provide movement corridors as well. In addition to ephemeral drainages, streams, and rivers, large areas of undeveloped land such as those found in the southern half of the Planning Area provide habitat and cover for other species moving through the area and between habitats within the Planning Area.

Large-scale development of the Planning Area identified in the General Plan could isolate these areas from one another and adversely impact these areas and movement corridors. Additionally, construction of roadways and improvement of existing roadways as identified in the proposed Circulation Element could sever and/or further sever connections between habitats and cover types in the Planning Area. Roadway improvement and construction also could negatively impact ephemeral drainages and jurisdictional waters of the U.S. Engineered drainages, such as those that would result from proposed roadway improvement and construction, have been shown to reduce opportunities for some species' movement. For example, movement of vernal pool tadpole shrimp does not occur within artificial channels such as those constructed under roadways (Preserve at Sunridge DEIR, 2005).

Proposed General Plan Policies and Action Items That Provide Mitigation

The following proposed General Plan policies and action items address biological resources:

Policy NR.1.1 *Incorporate large and interconnected wildlife corridors in new development areas to provide ample space for animal movement.*

Action NR.1.1.1 *Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks and/or wooded corridors.*

Policy NR.1.2 *Conserve Swainson's hawk habitat.*

Action NR.1.2.1 Establish a Swainson's Hawk Ordinance in coordination with the California Department of Fish and Game to help guide the process of mitigating for the loss of Swainson's hawk foraging habitat.

Policy NR.1.3 Promote educational programs that inform the public about natural resources.

Action NR.1.3.1 Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.

Policy NR.1.4 Discourage the planting of invasive species.

Action NR.1.4.1 Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.

Policy NR.1.5 Ensure the protection of wildlife through the establishment of programs to control feral pet populations.

Policy NR.2.1 Require mitigation that provides for "no net loss" of wetlands.

Policy NR.2.2 Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Action NR.2.2.1 During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.

Policy NR.2.3 Works with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR.2.4 Educate the public on the importance and benefit of wetlands areas.

Action NR.2.4.1 Develop trails and associated educational facilities (e.g., information kiosks, signage) around wetland and vernal pool preserves, where possible while maintaining the integrity of sensitive natural resources.

Action NR.2.4.2 Consider constructing elevated board walkways and other low impact trails interior to preserves, in coordination with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.

Policy NR.3.1 Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2 Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the

modification of existing channels, and discourage the placement of concrete within creeks and channels.

Action NR.3.2.1 Develop guidelines for channel creation or modification that will ensure channel meander, naturalized side slope, and varied channel bottom elevation are considered in design.

Policy NR.3.3 Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Action NR 3.3.1 Work with affected local, state and federal agencies to determine if natural creek corridors can and should accommodate storm flows or if separate storm water conveyance structures are necessary.

Policy NR.3.4 Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.

Action NR.3.4.1 Establish performance standards for natural resource preserves that accomplish the following:

Provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses, and access for channel maintenance and flood control.

Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridor for wildlife habitat linkage, protection from runoff, and other impacts of urban uses adjacent to the corridor.

Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts.

Prohibit the placement of water quality treatment structures designed to meet pollutant discharge requirements within mitigation preserves.

Action NR.3.4.2 Establish standards that allow public access in the floodplain and buffers along creek corridors and preserves. Mitigation measures shall be incorporated into environmental documents and conditions of approval that require open-view fencing adjacent to preserves.

Action NR.3.4.3 Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.

Policy NR.4.1 Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.

Action NR.4.1.1 Adopt a Tree Preservation Ordinance to establish minimum requirements for preserving native trees and landmark trees in the City, including a definition of

the size, species, and age requirements of landmark, oak, and other trees to be protected and/or replaced.

Action NR.4.1.3 Establish development guidelines that require all oak habitat to be avoided to the maximum extent feasible. When avoidance is not possible, require mitigation efforts that result in preservation of in-kind habitat in the Planning Area.

Policy NR.5.1 Promote water conservation within existing and future urban uses.

Policy NR.5.3 Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action NR.5.3.1 Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.

Action NR.5.3.2 Educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks.

Action NR.5.3.3 Install appropriate signage to deter the discharge of hazardous materials into storm drains.

Policy NR.5.4 Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Action NR.5.4.1 Provide information on pollution prevention, disposal of hazardous waste and chemicals, liability and clean-up on the City's website and in educational materials and brochures.

Action NR.5.4.2 Require clean-up of contaminated ground and surface water by current and/or past owners or polluters.

Action NR.5.4.3 Encourage pollutant cleansing companies to use the latest technologies available in order to expedite the cleansing process and do the least harm to the environment.

Policy NR.5.5 Minimize erosion to stream channels resulting from new development in urban areas.

Action NR.5.5.1 Require community and specific plans to contain urban runoff control strategies and requirements that are consistent with Master Drainage Plans and the City's urban runoff management program.

Action NR.5.5.2 Require development within newly urbanizing areas to incorporate runoff control measures into their site design or to participate in an area-wide runoff control management effort consistent with standards developed by the Public Works Department.

Action NR.5.5.3 Encourage new development to incorporate features such as grassy swales, multi-use retention or detention basins, and integrated drainage systems to enhance water quality. Work with the Cordova Recreation and Park District

to establish standards for integrating retention/detention basins into park sites and create examples of desirable and innovative natural drainage features.

Action NR.5.5.4 *Establish and require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff.*

Policy NR.6.1 *Ensure that the environmental effects of mining and reclamation on aquifers, streams, scenic views, and surrounding residential uses are prevented or minimized.*

Mitigation Measures

Implementation of the above proposed General Plan policies and action items would not provide all feasible mitigation to impacts on movement corridors due to implementation of the proposed General Plan Land Use Map and the Roadway System Map. Therefore, the following mitigation measures shall be incorporated into the City of Rancho Cordova General Plan where indicated.

The following measure identifies changes to policy NR.3.2. Deletions are shown as a ~~strikethrough~~ and new text is underlined.

MM 4.10.5a Modify Policy NR.3.2 to read:

Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and ~~discourage~~ prohibit the placement of concrete within creeks and channels.

The following mitigation measures shall be incorporated into the City of Rancho Cordova General Plan as new policies under Goal NR.1.

MM 4.10.5b The following mitigation measures shall be incorporated into the City of Rancho Cordova General Plan as a new policy under Goal NR.1:

The City shall avoid the placement of new roadways within habitat preserves to the maximum extent feasible.

MM 4.10.5c The following mitigation measures shall be incorporated into the City of Rancho Cordova General Plan as a new policy under Goal NR.1:

In such cases where habitat preserves are crossed by a roadway, or where two adjacent preserves are separated by a roadway, the roadway shall be designed or updated with wildlife passable fencing separating the roadway from the preserve and/or shall incorporate design features that allow for the movement of wildlife across or beneath the road without causing a hazard for vehicles and pedestrians on the roadway.

While the proposed General Plan policies, associated action items and mitigation measures MM 4.10.5a through c would assist in minimizing adverse impacts to wildlife movement in Planning Area corridors, whether wooded or another type, they would not fully protect existing corridors formed by grassland and other non-riparian, non-wooded undeveloped land in the City.

Development of currently undeveloped areas containing grassland and similar cover types would still occur and movement corridors would be restricted or impeded by such development. Further mitigation is not feasible without prohibiting development of the majority of undeveloped land in the City as set forth in the proposed General Plan; therefore, overall impacts to movement corridors not associated with wooded areas or wetlands would remain **significant and unavoidable**.

Loss of Trees

Impact 4.10.6 Implementation of the proposed General Plan would result in the loss of native and landmark trees. This would be a **significant** impact.

While large portions of the Planning Area, including those undeveloped areas in the southern half of the City, do not contain large numbers of trees, many other areas of the Planning Area do include many trees that are not special-status species but still provide many benefits to species in the area. Urban trees are a major source of nesting habitat for local bird species. In addition to providing forage, shelter, cover, and other habitat for many bird and mammal species, trees have other benefits for the City including aesthetic impacts due to the removal of large stands of trees. Trees also provide shade and stabilize the soil.

Additionally, many native trees such as blue oak and California sycamore are found in stands of and would be adversely impacted by the removal of surrounding trees. There are currently an estimated 246 acres of blue oak woodland, 76 acres of blue oak savannah, 132 acres of cottonwood woodland, and 50 acres of valley oak riparian woodland in the Planning Area.

Proposed General Plan Policies and Action Items That Provide Mitigation

The following proposed General Plan policies and action items address biological resources:

Policy NR.1.1 *Incorporate large and interconnected wildlife corridors in new development areas to provide ample space for animal movement.*

Action NR.1.1.1 *Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks and/or wooded corridors.*

Policy NR.1.3 *Promote educational programs that inform the public about natural resources.*

Action NR.1.3.1 *Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.*

Policy NR.1.4 *Discourage the planting of invasive species.*

Action NR.1.4.1 *Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.*

Policy NR.2.2 *Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.*

Action NR.2.2.1 *During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.*

Policy NR.3.1 *Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.*

Policy NR.3.2 *Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and discourage the placement of concrete within creeks and channels.*

Policy NR.3.4 *Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.*

Action NR.3.4.3 *Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.*

Policy NR.4.1 *Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.*

Action NR.4.1.1 *Adopt a Tree Preservation Ordinance to establish minimum requirements for preserving native trees and landmark trees in the City, including a definition of the size, species, and age requirements of landmark, oak, and other trees to be protected and/or replaced.*

Action NR.4.1.3 *Establish development guidelines that require all oak habitat to be avoided to the maximum extent feasible. When avoidance is not possible, require mitigation efforts that result in preservation of in-kind habitat in the Planning Area.*

Mitigation Measures

Implementation of the proposed General Plan policies and action items above would protect landmark and oak trees in the City as well as large wooded areas and urban trees. Therefore, no further mitigation is necessary and impacts to non-native trees from the General Plan would be **less than significant** though losses of native trees including oaks would be **significant and unavoidable.** There are no feasible mitigation measures to fully off-set the loss of native trees.

Conflict with Adopted Federal and State Conservation and Recovery Plans

Impact 4.10.7 Implementation of the proposed General Plan would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any adopted biological resources recovery or conservation plan of any Federal or State agency. This would result in **no impact**.

Currently there is no adopted Habitat Conservation Plan, Natural Community Conservation Plan, nor any other conservation or recovery plan in effect for the Planning Area, in whole or in part. However, Sacramento County is currently preparing the South Sacramento Habitat Conservation Plan (SSHCP) that will include the Planning Area in its scope. The City of Rancho Cordova is participating in development of this plan.

Additionally, the USFWS is currently finalizing a Vernal Pool Recovery Plan that includes a portion of the Planning Area in its scope. The Draft Recovery Plan concerns 33 plant and animal species that occur exclusively or primarily within the California and southern Oregon vernal pool ecosystem. Species identified in the Plan for the "Southeastern Sacramento Valley Vernal Pool Region", which includes the Planning Area, are slender orcutt grass (*Orcuttia tenuis*),vernal pool fairy shrimp, vernal pool tadpole shrimp, Boggs lake hedge hyssop, Ahart's dwarf rush, legenere, midvalley fairy shrimp (*Branchinecta mesovallensis*), California linderiella, and western spadefoot toad. The draft plan proposes to protect and enhance these species and their associated habitat through habitat protection; adaptive habitat management, restoration, and monitoring; status surveys; research; and participation and outreach. No specific requirements for action by municipalities, either local or State, are stated in the draft plan. The Plan does state that only federal agencies will be required to follow the plan. Therefore, while the City may choose to comply with this plan, it is not required to do so.

Proposed General Plan Policies and Action Items That Provide Mitigation

There are proposed General Plan policies or action items that address the SSHCP.

Mitigation Measures

While efforts are ongoing by some municipalities and federal agencies to form and adopt such plans, no Habitat Conservation Plans, Natural Community Conservation Plans, or Habitat Recovery Plans have been adopted as of this date. Therefore the General Plan cannot have an impact on such plans. Therefore, no mitigation is required and the General Plan would have **no impact**.

4.10.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting for this section of the EIR is extensive due to the fact that biological resources that are within the Planning Area also occur in areas adjacent to the Planning Area and exist in a broader regional context. The viability of species populations as well as quality and functions of habitat are dependent on the conditions of these resources in a regional and often statewide context. Thus, the cumulative setting takes into account impacts that are locally related to the General Plan (e.g., vernal pool and associated biological resources in the Laguna Geologic Formation) as well as biological resource impacts for the larger region (e.g., oak tree loss and Swainson's hawk impacts). The reader is referred to Section 4.0 regarding the extent of the cumulative setting and for information on cumulative analyses. For the purposes of this analysis, the cumulative setting is City of Elk Grove, Galt and Folsom as well as unincorporated areas of Sacramento, El Dorado, Sutter and Placer counties

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Biological Resources

Impact 4.10.8 Implementation of the proposed General Plan, together with past, present, and probable future projects in the Planning Area and larger regional context would result in a cumulatively significant loss of biological resources in the region. The General Plan's incremental contribution to this significant cumulative impact is **cumulatively considerable**.

As identified under Impacts 4.10.1 through 4.10.7 above, development of the General Plan would result in direct and indirect impacts to listed and non-listed special status species as well as impacts to jurisdictional waters of the U.S. and non-special status species, trees, habitat, and movement corridors. Further development underway in areas such as the City of Elk Grove, Galt and Folsom as well as unincorporated areas of Sacramento, El Dorado, Sutter and Placer counties would increase indirect impacts on the cumulative area. Additional indirect impacts to the Consumnes River basin to the south of the Planning Area could occur.

The contribution to these impacts by development of the General Plan would be cumulatively considerable as many special status species rely on specific cover types found in the Planning Area for movement and forage, while not necessarily using cover types in the Planning Area on a permanent basis. Migrating birds fall within this category, as well as Swainson's hawk and other raptors that have been known to use the southern portions of the Planning Area as foraging habitat while nesting and breeding in areas south of the Planning Area such as within the City of Elk Grove and along the Consumnes River.

Additionally, a large percentage of the local vernal pools and vernal pool grassland found in the Sacramento County portion of the cumulative setting exists within the Planning Area. Development of the City of Rancho Cordova, as well as development of the incorporated portions of Sacramento County to the south, would impact these cover types, potentially reducing the overall quantity and quality of vernal pools. Many streams and drainages found within the Planning Area feed larger watercourses to the southwest of the City and impacts to these features could impact other areas such as Elk Grove. Both Laguna Creek and Morrison Creek flow to the southwest and ephemeral drainages located within the Planning Area are tributaries to these systems. Development planned upstream of the Planning Area, such as that in the southern portion of the City of Folsom could also impact streams in the cumulative area.

Proposed General Plan Policies and Action Items That Provide Mitigation

The following proposed General Plan policies and action items address biological resources:

Policy NR.1.1 *Incorporate large and interconnected wildlife corridors in new development areas to provide ample space for animal movement*

Action NR.1.1.1 *Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks and/or wooded corridors.*

Policy NR.1.2 *Conserve Swainson's hawk habitat.*

Action NR.1.2.1 Establish a Swainson's Hawk Ordinance in coordination with the California Department of Fish and Game to help guide the process of mitigating for the loss of Swainson's hawk foraging habitat.

Policy NR.1.3 Promote educational programs that inform the public about natural resources.

Action NR.1.3.1 Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.

Policy NR.1.4 Discourage the planting of invasive species.

Action NR.1.4.1 Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.

Policy NR.1.5 Ensure the protection of wildlife through the establishment of programs to control feral pet populations.

Policy NR.2.1 Require mitigation that provides for "no net loss" of wetlands.

Policy NR.2.2 Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Action NR.2.2.1 During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.

Policy NR.2.3 Works with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR.2.4 Educate the public on the importance and benefit of wetlands areas.

Action NR.2.4.1 Develop trails and associated educational facilities (e.g., information kiosks, signage) around wetland and vernal pool preserves, where possible while maintaining the integrity of sensitive natural resources.

Action NR.2.4.2 Consider constructing elevated board walkways and other low impact trails interior to preserves, in coordination with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.

Policy NR.3.1 Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2 Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the

modification of existing channels, and discourage the placement of concrete within creeks and channels.

Action NR.3.2.1 *Develop guidelines for channel creation or modification that will ensure channel meander, naturalized side slope, and varied channel bottom elevation are considered in design.*

Action NR.3.2.2 *Adopt and implement improvement standards for soft bottom channels.*

Policy NR.3.3 *Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.*

Action NR 3.3.1 *Work with affected local, state and federal agencies to determine if natural creek corridors can and should accommodate storm flows or if separate storm water conveyance structures are necessary.*

Policy NR.3.4 *Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.*

Action NR.3.4.1 *Establish performance standards for natural resource preserves that accomplish the following:*

Provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses, and access for channel maintenance and flood control.

Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridor for wildlife habitat linkage, protection from runoff, and other impacts of urban uses adjacent to the corridor.

Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts.

Prohibit the placement of water quality treatment structures designed to meet pollutant discharge requirements within mitigation preserves.

Action NR.3.4.2 *Establish standards that allow public access in the floodplain and buffers along creek corridors and preserves. Mitigation measures shall be incorporated into environmental documents and conditions of approval that require open-view fencing adjacent to preserves.*

Action NR.3.4.3 *Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.*

Policy NR.4.1 *Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.*

Action NR.4.1.1 Adopt a Tree Preservation Ordinance to establish minimum requirements for preserving native trees and landmark trees in the City, including a definition of the size, species, and age requirements of landmark, oak, and other trees to be protected and/or replaced.

Action NR.4.1.2 - Where feasible, require underground utility lines that are in close proximity to oaks and other landmark trees to be designed and installed to minimize impacts to trees. Work with the utility provider(s) to coordinate transmission line location and other potential impacts associated with the undergrounding of the utilities.

Action NR.4.1.3 Establish development guidelines that require all oak habitat to be avoided to the maximum extent feasible. When avoidance is not possible, require mitigation efforts that result in preservation of in-kind habitat in the Planning Area.

Policy NR.4.2 Improve overall landscaping quality and sustainability in all areas visible to the public.

Action NR.4.2.2 Create development guidelines that address landscaping standards and that require appropriate tree species and densities in buffer areas. The guidelines should also ensure that medians will include native plantings and trees, and will be wide enough to support the long-term viability of the plantings.

Action NR.4.2.3 Provide leaflets and planting guides that promote the use of drought-tolerant native vegetation in home landscaping.

Action NR.4.3.1 Achieve "Tree City USA" status. This will require the City to adopt a tree ordinance, appoint a board, department or commission to advise the city on tree issues, spend two dollars per capita on community forestry activities, and hold an Arbor Day celebration.

Action NR.4.3.2 Designate local funds to educate the public on tree planting and preservation.

Action NR.4.3.3 Offer programs or other resources to provide property owners with information on proper tree selection, planting, and maintenance.

Action NR.4.3.4 Actively participate in the Sacramento County Greenprint Program.

Policy NR.5.3 Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action NR.5.3.1 Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.

Action NR.5.3.2 Educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks.

Mitigation Measures

Implementation of the above General Plan policies, associated action items and mitigation measures MM 4.10.1a through e, MM 4.10.3, and MM 4.10.5a through c would reduce the General Plan's contribution to cumulative biological impacts in the region. However, the General Plan's contribution to cumulative and significant biological resource impacts for the region would still be **cumulative considerable** and is considered a **significant and unavoidable** impact. The only mitigation for such impacts – restricting the majority of development proposed in the General Plan– is not considered feasible, given that it would fundamentally conflict with the objectives of the General Plan identified in Section 3.0 of this document.

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