4.8 BIOLOGICAL RESOURCES

This biological resources section of the Draft Environmental Impact Report ("Draft EIR"; "DEIR") addresses the biological resources present within the Planning Area. The section includes a discussion of the special-status species that may potentially occur within the General Plan Planning Area (Planning Area) as well as sensitive habitats in the Planning Area. This section also identifies potential plan-specific and cumulative impacts to these resources due to implementation of the proposed City of Ione General Plan update and its associated project components.

4.8.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

Geographically, Amador County (County) lies on the western edge of the Sierra Nevada foothills adjacent to the Central Valley. The City of Ione (City) is located in the western portion of the county near the junction of State Routes (SR) 104 and 124, which are 30 miles southeast of Sacramento and 30 miles northeast of Stockton. The Planning Area is within the Lower Foothills Metamorphic Belt (Miles and Goudey 1997). Characteristic natural communities within the region include forests and woodlands, shrublands, grasslands, and vernal pools. The predominant natural plant community is blue oak series; others such as needlegrass grasslands, chamise series on shallow and rocky soils, and valley oak series are also present in the region (Miles and Goudey 1997). This region exemplifies a hot, subhumid climate with hot, dry summers and mild, wet winters. The mean annual precipitation of this region is 20 to 40 inches with rainfall typically occurring between November and April (Miles and Goudey 1997). Under these conditions, the growing season extends from the beginning of March to the beginning of December. Snow is very infrequent during the winter months. The mean annual temperature ranges from 52 to 62 degrees Fahrenheit, with a typical annual freeze-free period that lasts for approximately 225 to 300 days (Miles and Goudey 1997).

The topography within the region contains moderately steep to steep mountains and hills at the western foot of the Sierra Nevada. The city's center is located at an elevation of approximately 298 feet above mean sea level (msl). The local terrain is distinguished by rolling hills that range in elevation from approximately 600 feet above msl in the northeastern portion of the Planning Area to approximately 258 feet above msl in the southwestern portion of the Planning Area.

LOCAL SETTING

The city encompasses approximately five square miles, which consists of residential, commercial, public, as well as developed and undeveloped industrial land uses. The local area is heavily mined for mineral resources. The city is located in the Sacramento-San Joaquin Drainage Basin, where stream courses typically run from the foothills to the southwest into the Central Valley. There are two main water features that flow intermittently through the Planning Area. Sutter Creek meanders through the center of town from east to west and Mule Creek flows north to south along the western boundary of the city. These two creeks converge into Dry Creek, located west of the city in the Ione Valley, which eventually drains into the Cosumnes River.

Plant Communities and Wildlife Habitats

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 vegetation types, which constitute categories of typical land cover or in some cases land use type. These vegetation types support specific wildlife habitats. Wildlife habitats provide cover, food, and water, which are necessary in order to support particular animal species or groups of species. Changes in these habitats, both

significant and minor, can impact a species' abundance, distribution, and diversity, including interactions between different species.

The Planning Area includes 13 dominant vegetation types, which are shown in **Figure 4.8-1**. Vegetation types within the Planning Area were defined based upon Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) data (USFS 2005) and analysis of aerial photography by a PMC biologist. The data from CALVEG did not cover the entire Planning Area. For areas where no data was available, a PMC biologist derived vegetation types through aerial photography interpretation and field notes. A reconnaissance-level field survey of the Planning Area was conducted by a PMC biologist on November 12, 2008, in order to analyze vegetation types and habitats within the Planning Area. Although extensive vegetation surveys were not completed for the entire Planning Area, the field survey helped to verify the vegetation types present and their locations within the Planning Area. **Table 4.8-1** includes a summary of the vegetation types and their acreages identified within the Planning Area.

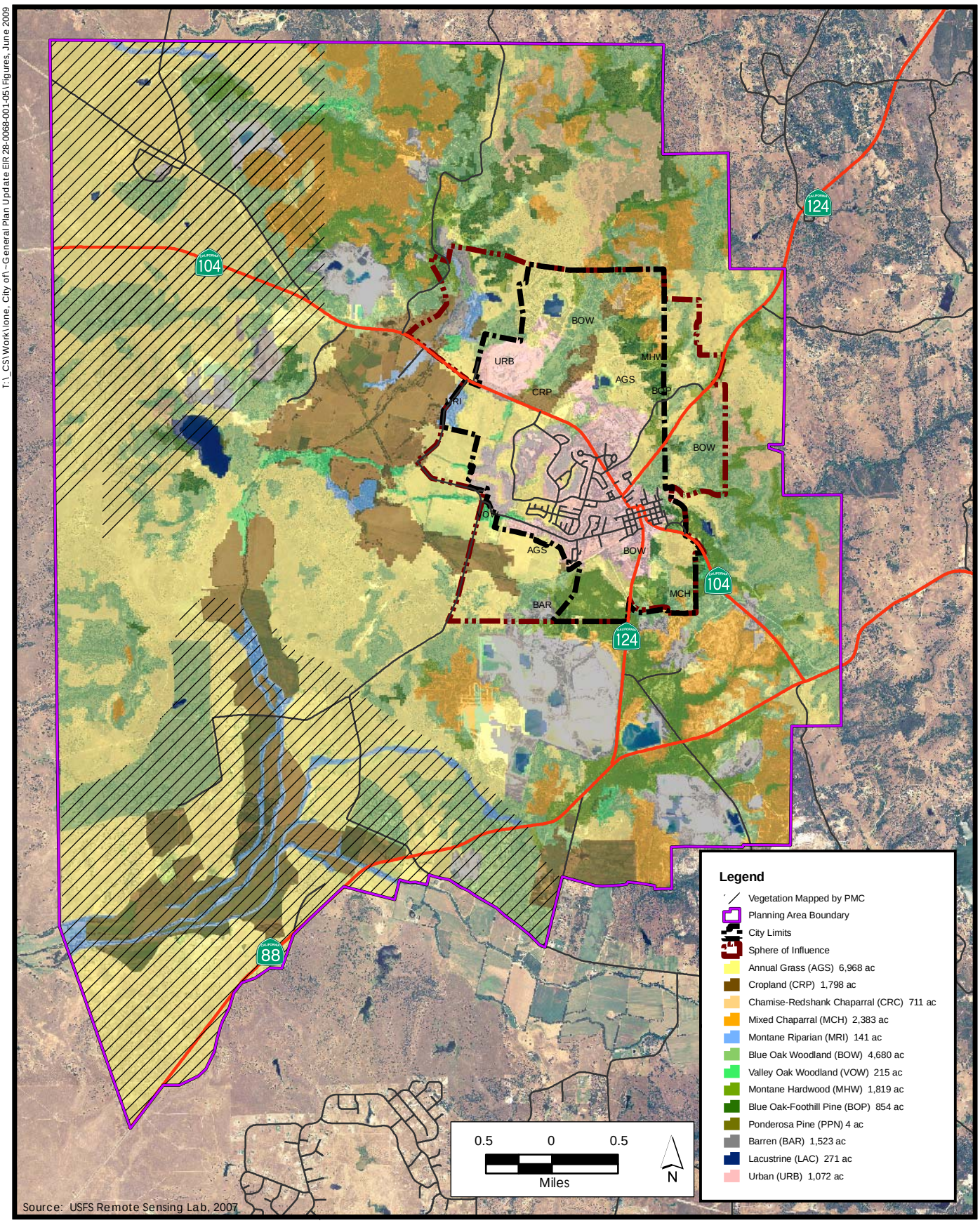
TABLE 4.8-1 – VEGETATION TYPES WITHIN THE PLANNING AREA

Vegetation Type	Acres Within the City Limits	Acres in SOI excluding City Limits [1]	Acres in Planning Area excluding SOI	Total Acres Within the Planning Area	Percentage of Planning Area
Annual Grassland	857.6	667.8	10,634.7	12,160.1	37.34%
Cropland (Agricultural Lands)	97.9	140.4	2,913.9	3,152.2	9.68%
Chamise-Red Shank Chaparral	10.9	14.3	685.8	711.0	2.18%
Mixed Chaparral	112.1	0.4	2,388.3	2,500.8	7.68%
Montane Riparian	25.1	35.9	496.0	557.2	1.71%
Blue Oak Woodland	341.9	363.6	5,958.9	6,664.3	20.46%
Valley Oak Woodland	17.6	27.4	170.3	215.2	0.66%
Montane Hardwood	233.8	107.9	1,520.4	1,862.0	5.72%
Blue-Oak Foothill Pine	122.3	66.0	665.9	854.1	2.62%
Ponderosa Pine	0.0	0.0	4.0	4.0	0.01%
Barren	7.1	96.0	1,551.7	1,654.9	5.08%
Lacustrine (lake)	22.9	4.5	256.0	283.3	0.87%
Urban	1,053.1	27.4	170.3	1,071.8	3.29%
Total	**2902.3**	**1,551.6**	**27,416**	**31,691***	**100%**

Source: USFS 2005.

Note: Total acreage of the Planning Area for the Vegetation Mapping (32,565 acres) differs from the total acreage of the Planning Area in Land Use section (31,770 acres). This is because the County Line identified in USFS data differs slightly from the County Line identified in preparation of the map used to calculate the Planning Area.

1. SOI = Sphere of Influence



City of Ione
Planning Department

Figure 4.8-1
Vegetation Map

The following discussion describes the vegetation types that exist within the Planning Area. These descriptions are based on the Mayer and Laudenslayer's classification of wildlife habitats in *A Guide to Wildlife Habitats of California* (1988). Included in the discussion of each vegetation type is a description of the community or habitat, any pertinent information on the wildlife species found, and information on plant species found within each vegetation type, where applicable.

Annual Grassland

Annual grassland generally occurs on flat plains to gently rolling foothills. This widespread vegetation type is found throughout the Planning Area. Within the Planning Area, this vegetation type is characterized by annual grasses and forbs, which are predominantly non-native species. Annual grassland within the Planning Area may include common species such as wild oat *(Avena fatua)*, slender oat *(A. barbata)*, soft brome *(Bromus hordeaceus*), wild onion (*Allium atrorubens* var. *cristatum*), foxtail fescue (*Vulpia myuros* var. *hirsuta*), broadleaf filaree (*Erodium botrys*), turkey mullein (*Eremocarpus setigerus*), perennial ryegrass *(Lolium perenne)*, wild mustard *(Brassica nigra)*, wild radish *(Raphanus sativus)*, prickly lettuce *(Lactuca serriola)*, and cocklebur *(Xanthium strumarium)* (Kie, 2005). The annual grassland within the Planning Area has the potential to contain vernal pools and other seasonal wetlands. Vernal pools support downingia (*Downingia* spp.), meadowfoam (*Limnanthes* spp.), and other plant species. Vernal pools are discussed in more detail below.

Many wildlife species use annual grasslands for foraging and/or breeding. Characteristic reptiles that breed in annual grasslands include the western fence lizard *(Sceloporus occidentalis)*, common garter snake *(Thamnophis sirtalis)* and western rattlesnake *(Crotalus viridis)*. Common bird species observed or expected to occur in this vegetation type include western scrub jay *(Aphelocoma californica),* northern mockingbird *(Mimus polyglottos)*, killdeer *(Charadrius vociferus)*, and mourning dove *(Zenaida macroura)*. This vegetation type also provides important foraging habitat for several raptor species such as white-tailed kite *(Elanus leucurus;* California fully protected species*)*, American kestrel *(Falco sparverius)*, Swainson's hawk *(Buteo swainsoni*; state-threatened), and prairie falcon *(Falco mexicanus)*. Mammals typically found in this vegetation type include the black-tailed jackrabbit *(Lepus californicus)*, desert cottontail (*Sylvilagus audubonii*), California ground squirrel *(Spermophilus beecheyi)*, Botta's pocket gopher *(Thomomys bottae)*, western harvest mouse *(Reithrodontomys megalotis*), California vole *(Microtus californicus)*, and coyote (*Canis latrans*) (Kie, 2005).

Vernal Pool

Vernal pools and other seasonal wetlands have the potential to occur in the annual grassland habitat within the Planning Area. 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. Vernal pools are seasonally flooded depressions found on ancient soils with an impermeable layer such as a hardpan, claypan, or volcanic basalt. The impermeable layer allows the pools to retain water over the winter much longer than the surrounding uplands. The higher and drier pools integrate closely with seasonal wetland and grassland cover types, while more stable, deeper vernal pools are often integrated with freshwater marsh cover types. Vernal pools are recognized as a sensitive community protected by the California Department of Fish and Game (CDFG).

Several federally and state-listed wildlife species only occur or breed within vernal pool habitats. Some species found in vernal pool and vernal pool grassland habitat types have adapted to specific conditions and are thus only found in those habitat types. Some of these species may

utilize the vernal pool and vernal pool grassland habitats only during specific stages of vernal pools, whereas others can be found year-round. For example, a group of aquatic crustaceans, known as branchiopods, have adapted to rely almost exclusively on the unique hydrology of vernal pools for their survival. Species of branchiopods that may be found within the Planning Area include California linderiella (*Linderiella occidentalis*), the federally listed conservancy fairy shrimp (*Branchinecta conservatio*), and the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*). Vernal pool branchiopod eggs can be consumed and passed undamaged through the digestive tract of foraging birds, which take flight to other aquatic environments where the eggs may be deposited; thereby inoculating new sites (Eriksen and Belk, 1999). In addition, eggs can be carried away in mud attached to the feathers or feet of birds and grazing animals, which offers the opportunity for long distance transport before the mud is washed off in another aquatic environment (Eriksen and Belk, 1999). The dispersal of seeds and eggs is key to maintaining genetic diversity within the vernal pools. The exact nature of the relationship between mammals and vernal pools has not been documented, but some evidence is available that shows that smaller species such as rabbits may spread seeds and eggs (Zedler and Black 1992); also, abandoned burrows dug by burrowing mammals provide shelter for some amphibians. In addition, vernal pools serve as breeding and rearing sites for amphibians due to the fact that they do not support predatory fish species, which feed on tadpoles and young amphibians. Amphibians, such as the federally threatened California tiger salamander (*Ambystoma californiense*), utilize vernal pools for breeding and for tadpole habitat during the wet periods.

Cropland (Agricultural Lands)

The area mapped as cropland within the Planning Area includes cropland, vineyard, and irrigated pasture. Although agricultural lands generally provide less suitable habitat for wildlife than do natural lands because of weed control, tilling, and pest control practices, they provide valuable open space for foraging and nesting. Agricultural lands generally occur in areas that once supported productive and diverse biological communities (Zeiner, 1988). The conversion of native vegetation to agricultural lands greatly reduces wildlife species diversity and habitat value. Common and agricultural "pest" species forage in these habitats and cultivated vegetation can provide benefits such as cover, shade, and moisture for these and other species during hot summer months.

Amphibians and reptiles may disperse across croplands on a seasonal basis. Common species such as western toad *(Bufo boreas)*, western fence lizard, and Pacific gopher snake *(Pituophis malanoleucus)* may occasionally forage within agricultural lands, particularly adjacent to grasslands. Typical bird species found in agricultural lands include red-tailed hawk (*Buteo jamaicensis*), barn owl (*Tyto alba*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Carpodacus mexicanus*). Croplands and pasture are particularly suitable habitat for the federally listed Swainson's hawk. Some birds, such as killdeer and western meadowlark *(Sturnella neglecta)*, will nest on agricultural lands when farming practices allow adequate cover. Migratory species that may forage in agricultural fields during their migrations through the region include American pipit *(Anthus rubescens*), Say's phoebe *(Sayornis saya*), and horned lark *(Eremophila alpestris)* in addition to various raptors, shorebirds, swallows, and sparrows. Many small herbivorous mammals, particularly rodents, are able to establish seasonal populations in croplands because food is abundant and cover provided by crops is adequate. Small herbivores expected to occur in croplands include black-tailed jackrabbit, Botta's pocket gopher, California ground squirrel, western harvest mouse, deer mouse *(Peromyscus maniculatus)*, California vole, Norway rat *(Rattus norvegicus*), and house mouse *(Mus musculus)*. Carnivores and omnivores expected to forage in croplands include broad-footed mole *(Scapanus latimanus),* coyote, raccoon *(Procyon lotor)*, long-tailed weasel (*Mustela frenata*), American badger *(Taxidea taxus;* California species of special concern), and striped skunk *(Mephitis mephitis*). Bats also utilize croplands for foraging during late spring, summer, and early fall.

Chamise-Redshank Chaparral

Mature stands of chamise-redshank chaparral are generally single-layered and lacking well-developed herbaceous ground cover and overstory trees. Shrub canopies frequently overlap, which produces a nearly impenetrable canopy of interwoven branches. Chamise *(Adenostoma* spp.*)* dominated stands average one to 2 meters in height, but can reach up to 3 meters. Total shrub cover frequently exceeds 80 percent (England, 1988a). Redshank (*Adenostoma sparsifolium*) stands are slightly taller, averaging 2 to 4 meters; occasionally reaching 6 meters (England, 1988a). Mature redshank stands are frequently more open than chamise and can have sparse herbaceous cover between shrubs. A stand of brush is classified as chamise-redshank chaparral, as opposed to mixed chaparral, if any of the following criteria are fulfilled: any stand with greater than 60 percent relative shrub cover by chamise and redshank; young stands recovering from fire with greater than 20 percent absolute shrub cover by chamise and redshank, and greater than 75 percent relative shrub cover by these species and relatively short-lived subshrubs; any stand with at least 50 percent relative shrub cover by chamise and redshank and greater than 75 percent relative shrub cover by these species and shrubs of intermediate life span such as ceanothus (*Ceanothus* spp.) (England, 1988a). Common plant species include scrub oak (*Quercus berberidifolia)*, chaparral oak *(Quercus durata)*, and several species of ceanothus and manzanita (*Arctostaphylos* spp.). Additional common shrubs and plants include chamise, birchleaf mountain mahogany *(Cercocarpus montanus* var*. glaber),* Fremont silk-tassel *(Garrya fremontii)*, toyon *(Heteromeles arbutifolia)*, yerba santa (*Eriodictyon californicum*), California buckeye *(Aesculus californica*), western poison-oak (*Toxicodendron diversilobum)*, California buckthorn *(Frangula californica* ssp. *californica),* and yarrow (*Achillea millefolium*) (England, 1988a).

Wildlife species found in this vegetation type are also found in mixed chaparral or sagebrush and in shrubs beneath several woodland and forest types. Chamise-redshank chaparral provides important cover, foraging, and breeding habitat for many wildlife species. Examples of wildlife species typically found in this community include spotted towhee (*Pipilo maculates*), California quail (*Callipepla californica*), western scrub jay, western fence lizard, and western rattlesnake (England, 1988a).

Mixed Chaparral

Mixed chaparral occurs on all aspects, but at lower elevations, it is generally found on north-facing slopes. This pattern is especially true in southern California. Generally, it occurs on steep slopes and ridges with relatively thin, well-drained soils (England, 1988b). Soils can be rocky, sandy, gravelly, or heavy. Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Generally, mature stands of mixed chaparral are dense and nearly impenetrable, comprised of a thicket with greater than 80 percent absolute shrub cover (England, 1988b). Considerable leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Canopy height ranges from 1 to 4 meters and may occasionally reach up to 6 meters (England, 1988b). Mixed chaparral is a floristically rich type that supports numerous species of woody plants. Dominant species in mixed chaparral include scrub oak, chaparral oak, and several species of ceanothus and manzanita. Individual sites may support pure stands of these shrubs or diverse mixtures of several species. Commonly associated shrubs include chamise, birchleaf mountain mahogany, Fremont silk-tassel, toyon, yerba santa, California buckeye, western poison-oak, California buckthorn, and hollyleaf cherry *(Prunus iliciflora*). Some of these species may be locally dominant (England, 1988b).

There are no wildlife species that are restricted to mixed chaparral. Most species are found in other shrub-dominated types, like chamise-redshank chaparral or the shrubs beneath several woodland and forest types. Common wildlife species include spotted towhee, California quail, western scrub jay, western fence lizard, and western rattlesnake.

Montane Riparian

The vegetation of montane riparian areas is quite variable and often structurally diverse. Generally, montane riparian occurs as a narrow, often dense grove of broad-leaved, winter deciduous trees up to 30 meters tall with a sparse understory (Grenfell, 1988b). Fremont cottonwood *(Populus fremontii),* Oregon ash (*Fraxinus latifolia*), willow *(Salix* spp.), dogwood *(Cornus* spp.*),* wild azalea *(Rhododendron canescens),* wild grape (*Vitis californica*), and common snowberry (*Symphoricarpos albus*)*,* and a high diversity of forbs are commonly found in montane riparian habitat (Grenfell, 1988b). Riparian areas are found associated with montane lakes, ponds, seeps, bogs, and meadows as well as rivers, streams, and springs. Water may be permanent or ephemeral. There are two identified creeks with riparian habitat within the Planning Area. Sutter Creek meanders through the center of town from east to west and Mule Creek flows north to south along the western boundary of the city. These two creeks converge into Dry Creek, located west of the city in the Ione Valley, which eventually drains into the Cosumnes River.

All riparian habitats have an exceptionally high value for many wildlife species by providing water, thermal cover, migration corridors, and diverse nesting and feeding opportunities. The shape of many riparian zones, particularly the linear nature of streams, maximizes the development of edge habitat, which is highly productive for wildlife. Common wildlife species include bank swallow (*Riparia riparia*), tree swallow (*Tachycineta bicolor*), Wilson's warbler (*Wilsonia pusilla*), Swainson's thrush (*Catharus ustulatus*), song sparrow (*Melospiza melodia*), and Swainson's hawk.

Blue Oak Woodland

Generally blue oak woodlands have an overstory composed of scattered trees, although the canopy can be nearly closed on better quality sites. The canopy is dominated by broad-leaved trees, which are 5 to 15 meters in height and commonly form open savanna-like stands on dry ridges and gentle slopes (Ritter, 1988a). Blue oaks *(Quercus douglasii)* may reach 25 meters in height. Within this habitat type, blue oaks are the dominant species, comprising 85 to 100 percent of the trees present, although interior live oak *(Quercus wislizenii)* may also be present (Ritter, 1988a). Shrubs are often present but rarely extensive, often occurring on rock outcrops. Associated shrub species include western poison-oak, California coffeeberry *(Rhamnus californica)*, sedgeleaf buckbrush *(Ceanothus cuneatus* var. *fascicularis)*, California buckeye, and manzanita species. Typical understory is composed of annual grassland vegetation. The groundcover is comprised mainly annuals such as brome grass *(Bromus* spp.*)*, wild oats, foxtail *(Alopecurus* spp.*)*, needlegrass *(Achnatherum* spp.*)*, filaree *(Erodium* spp.), and fiddleneck *(Amsinckia* spp.*),* among others.

Oak woodland vegetation provides many habitat functions including cover, vertical and horizontal structure, nesting sites for birds, and shelter for numerous mammals. Several species of amphibians and reptiles, birds, and mammals find mature stages of oak woodland suitable or optimum for breeding. The woodland also supports numerous insects and small mammals that are important food sources for other vertebrates in the area. Snags provide excellent roosts for raptors and provide nesting cavities for owls, American kestrel (*Falco sparverius*), woodpeckers, nutchatches (*Sitta* spp.), wrens, and chickadees (*Poecile* spp.). Fallen logs become homes for abundant invertebrates that are important food sources for numerous vertebrate species including mice, lizards, snakes, and birds. Blue oak acorns buried by western scrub jays, yellow-

billed magpies *(Pica nuttali)*, western gray squirrels *(Sciurus griseus)*, and California ground squirrels are more likely to germinate because the seeds root well and are less likely to be eaten. Many wildlife species benefit from the use of oaks and even enhance oak germination.

Valley Oak Woodland

Valley oak woodland varies from savanna-like to forest-like stands with partially closed canopies, comprised mostly of winter-deciduous, broad-leaved species (Ritter, 1988b). Denser stands typically grow in valley soils along natural drainages. The shrub layer is best developed along natural drainages, becoming insignificant in the uplands with more open stands of oaks. Valley oak stands with little or no grazing tend to develop a partial shrub layer of bird-disseminated species, such as western poison-oak, toyon, and coffeeberry (Ritter, 1988b). Ground cover consists of a well-developed carpet of annual grasses and forbs. Mature valley oaks with well-developed crowns range in height from 15 to 35 meters (Ritter, 1988b). Canopies of these woodlands are dominated almost exclusively by valley oaks (*Quercus lobata*). Tree associates include California sycamore *(Platanus racemosa)*, black walnut *(Juglans nigra),* interior live oak, box-elder *(Acer negundo)*, and blue oak. The shrub understory consists of blue elderberry *(Sambucus mexicana),* California wild grape *(Vitis californica),* California coffeeberry, California sagebrush (*Artemisia californica*), and California blackberry *(Rubus ursinus)*. Various sorts of grasses and forbs such as wild oats, bent grass (*Agrostis pallens*), wild onion, soft brome, barley *(Hordeum brachyantherum*), ryegrass, and needlegrass dominate the groundcover. Additional common plant species include tarragon (*Artemisia dracunculus*), miner's lettuce *(Montia perifoliata)*, fairwell-to-spring *(Clarkia unguiculata)*, coyote mint *(Monardella villosa)*, melic grass (*Melica imperfecta)*, and snakeroot *(Sanicula crassicaulis)*.

These woodlands provide food and cover for many species of wildlife. Oaks have long been considered important to some birds and mammals as a food source (Ritter, 1988b). Many birds use valley oak woodland habitat for breeding, including red-shouldered hawk *(Buteo lineatus)*, California quail, oak titmouse *(Baeolophus inornatus)*, western scrub jay, Bewick's wren *(Thryomanes bewickii)*, bushtit *(Psaltriparus minimus),* and acorn woodpecker *(Melanerpes formicivorus*). Mammals such as fox *(Vulpes* spp.*)*, western gray squirrel, and black-tailed deer *(Odocoileus hemionus*) regularly inhabit valley oak woodland.

Montane Hardwood

Montane hardwood is typically composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum, and a sparse herbaceous layer (McDonald, 1988). Tree heights tend to be uniform at most ages in mature stands where hardwoods occur, but subordinate to conifers. Mature oaks on better sites and in canyons range between 17 and 30 meters tall and up to 150 centimeters in diameter at breast height (dbh) (McDonald, 1988). Snags and downed woody material generally are sparse throughout the montane hardwood habitat. At higher elevations, canyon live oak *(Quercus chrysolepsis)* is scattered in the overstory among ponderosa pine *(Pinus ponderosa)*, Coulter pine *(Pinus coulteri)*, and white fir *(Abies concolor),* the latter on serpentine and peridotite outcrops. Knobcone pine *(Pinus attenuata)*, gray pine *(Pinus sabiniana)* and Oregon white oak *(Quercus garryana)* are abundant at lower elevations. Understory vegetation is mostly scattered woody shrubs (manzanita, birchleaf mountain mahogany*),* western poison-oak and a few forbs (McDonald, 1988).

Bird and animal species characteristic of the montane hardwood habitat include western scrub jay, Steller's jay (*Cyanocitta stelleri*), acorn woodpecker, western gray squirrel, wild turkey *(Meleagris gallopavo)*, band-tailed pigeon *(Patagioenas fasciata)*, California ground squirrel, dusky-footed woodrat *(Neotoma fuscipes),* black bear *(Ursus americanus)*, and black-tailed deer.

Deer also use the foliage of several hardwoods to a moderate extent. Many amphibians and reptiles are found on the forest floor in the montane hardwood habitat. Among them are Mount Lyell salamander *(Hydromantes platycephalus)*, relictual slender salamander *(Batrachoseps relictus*), western fence lizard, and sagebrush lizard (*Sceloporus graciosus graciosus)*. Snakes include rubber boa *(Charina bottae)*, western rattlesnake, California mountain kingsnake *(Lampropeltis zonata*), and sharp-tailed snake *(Contia tenuis)* (McDonald, 1988).

Blue Oak-Foothill Pine

Blue oak-foothill pine is typically diverse in structure both vertically and horizontally with a mix of hardwoods, conifers, and shrubs. The shrub component is typically composed of several species that tend to be clumped, with interspersed patches of annual grassland. Woodlands of this type generally have small accumulations of dead trees and relatively few snags, compared with other tree habitats in California. Most existing stands of this type are in mature stages with canopy cover ranging from 10 to 59 percent. Blue oak and gray (or foothill) pine typically comprise the overstory of this habitat, with blue oak usually most abundant. Stands dominated by gray pine tend to lose their blue oak, which is intolerant of shade (Verner, 1988). In the foothills of the Sierra Nevada, tree species typically associated with this vegetation type are interior live oak and California buckeye. At lower elevations where blue oaks make up most of the canopy, the understory tends to be primarily annual grasses and forbs. At higher elevations where gray pines and even interior live oaks sometimes comprise the canopy, the understory usually includes patches of shrubs in addition to the annual grasses and forbs. Shrub species include ceanothus, manzanita, California coffeeberry, western poison-oak, silvery lupine *(Lupinus argenteus)*, blue elderberry, yerba santa, rock gooseberry (*Ribes quercetorum*), and California redbud *(Cercis occidentalis*) (Verner, 1988).

Blue oak-foothill pine woodlands provide breeding habitat for a large variety of wildlife species, although there are no known species that are completely dependent on this vegetation type for breeding, feeding or cover. Most species of cavity-nesting birds use living oaks for nesting. The cavities are often in the form of scars where limbs have broken from the trunk or a main branch and have developed a level of decay that makes them more easily excavated by primary cavity nesters. Common wildlife species include Steller's jay, Anna's hummingbird (*Calypte anna*), acorn woodpecker, American robin (*Turdus migratorius*), dusky-footed woodrat, raccoon, and black-tailed deer (Verner, 1988).

Ponderosa Pine

The ponderosa pine vegetation type includes pure stands of ponderosa pine as well as stands of mixed species in which at least 50 percent of the canopy area is ponderosa pine (Fitzhugh, 1988). Most ponderosa pine stands that include other coniferous trees probably are maintained by periodic ground fires. In many of these stands, crown fires result in dense montane chaparral communities. Other conifers, when present, provide denser crowns than do the pine, thus creating habitat diversity. Grasses, shrubs, and deciduous trees may be present or absent depending on local environmental factors. Typical coverage of shrubs is 10 to 30 percent and of grasses and forbs is 5 to 10 percent (Fitzhugh, 1988). Associated species vary depending on location in the state and site conditions. Typical tree associates include white fir, incense-cedar *(Cryptomeria japonica),* Coulter pine, sugar pine *(Pinus lambertiana),* Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*), bigcone Douglas-fir *(Pseudotsuga macrocarpa)*, canyon live oak, California black oak (*Quercus kelloggii),* Oregon white oak, Pacific madrone *(Arbutus menziesii)* and tanoak *(Lithocarpus densiflorus* var. *densiflorus)*. Associated shrubs include manzanita, ceanothus, dogwood, yerba santa, California buckthorn, western poison-oak, and Sierra gooseberry *(Ribes roezlii)*. Associated grasses and forbs include orcutt brome *(Bromus orcuttianus)*, bluegrass *(Sisyrinchium* spp.*),* and bracken fern *(Pteridium aquilinum)* (Fitzhugh, 1988).

Ponderosa pine may serve as a transitional or migratory habitat for deer and can be extremely important to deer nutrition in migration holding areas (Fitzhugh, 1988). A mixture of early and late successional stages closely interspersed probably will provide good general wildlife. The seeds of ponderosa pine serve as a food source for red-winged blackbirds (*Agelaius phoeniceus*), spotted towhees (*Pipilo maculatus*), mourning doves (*Zenaida macroura*), finches (*Carpodacus* spp.), jays, and nuthatches (*Sitta* spp.). The seeds are choice feed for chipmunks (*Tamias* spp.) and ground squirrels. The trees provide cover, roosting, and nesting sites for many other bird species (Fitzhugh, 1988).

Barren

Barren habitat is defined by the absence of vegetation. Any habitat with less than 2 percent total vegetation cover by herbaceous, desert, or non-wildland species and less than 10 percent cover by tree or shrub species is defined as barren (Parisi, 1988). Sparsely vegetated substrate is usually assumed to be a component of the surrounding vegetation type, which generally tends to be annual grassland.

Plovers (*Charadrius* spp.), black-necked stilts (*Himantopus mexicanus*), American avocets (*Recurvirostra americana*), nighthawks (*Chordeiles* spp.), and common poorwills (*Phalaenoptilus nuttallii*) rely on open ground covered with sand or gravel for constructing small scrape nests (Parisi, 1988). The barren habitat within the Planning Area is suitable foraging habitat for many raptor species.

Lacustrine

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. Cattle stock ponds, mine-tailing ponds, wastewater treatment plant ponds, and golf course ponds are examples of lacustrine habitat within the Planning Area. These habitats may vary from small ponds less than one hectare to large areas covering several square kilometers. Depth can vary from a few centimeters to hundreds of meters (Grenfell, 1988a). Typical lacustrine habitats include permanently flooded lakes and reservoirs, intermittent lakes (e.g., playa lakes) and ponds (including vernal pools and seasonal wetlands) so shallow that rooted plants can grow over the bottom. Typical plant species associated with lacustrine habitat include cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), broad-leaf plantain (*Plantago major*), Fremont cottonwood, willow, crab grass (*Digitaria sanguinalis*), duckweed (*Lemna* spp.), water hyacinth (*Eichornia crassipes*) and waterweed (*Elodea canadensis*) (Grenfell, 1988a). Giant European reed (*Arundo donax*) is an invasive weed that may become established along waterways, within wetlands or surrounding lacustrine habitats. Most permanent lacustrine systems support fish; intermittent types usually do not. The relatively calm waters of lakes and ponds offer environmental conditions that contrast sharply with those of running water. Light penetration is dependent on turbidity. Temperatures vary seasonally and with depth. Because only a small proportion of the water is in direct contact with the air and because decomposition is taking place on the bottom, the oxygen content of lake water is relatively low compared to that of running water. In some lakes, oxygen may decrease with depth, but there are many exceptions. These gradations of oxygen, light and temperature along with the currents and seiches, profoundly influence the vertical distribution of lake organisms (Grenfell, 1988a).

Common fish species associated with lacustrine habitat include bluegill (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), and carp (*Cyprinus carpio*). It is unknown which fish species, if any, occur in the lacustrine habitat within the Planning Area. Common wildlife species include beaver (*Castor canadensis*), song sparrow (*Melospiza melodia*), belted kingfisher (*Ceryle alcyon*), northern harrier (*Circus cyaneus*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and green heron (*Butorides virescens*).

Urban/Ruderal

Urban habitat is characterized by the presence of ornamental and ruderal vegetation such as grass lawns, native and non-native trees and hedges, as well as commercial and industrial areas that lack vegetation (McBride and Reid, 1988). Urban habitat within the Planning Area includes high-density and low-density development, major roads, ruderal or disturbed habitat, and recreation/landscaped areas. Urban vegetation observed within the Planning Area was almost exclusively composed of ornamental trees, ornamental shrubs, and ornamental grasses. Ruderal (roadside) communities occur in areas of disturbances such as along roadsides, trails, parking lots, etc. These communities are subjected to ongoing or past disturbances (e.g., vehicle activities, mountain bikes, mowing). Ruderal habitat in these disturbed areas supports a diverse weedy flora. Vascular plant species associated with ruderal habitat typically include Johnson grass *(Sorghum halepense),* Canadian horseweed *(Conyza canadensis*), milk thistle *(Silybum marianum)*, and yellow star-thistle *(Centaurea solstitialis*). Fallow fields support field bindweed *(Convolvulus arvensis*), wild lettuce *(Lactuca serriola)*, prickly sow thistle *(Sonchus arvensis)*, and common mallow *(Malva neglecta*).

Native and introduced wildlife species that are tolerant of human activities often thrive in urban or ruderal habitats, such as house finch*,* American crow, rock pigeon *(Columba livia)*, European starling *(Sturnus vulgaris)*, Norway rat, and house mouse.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive Habitats

Sensitive habitats include areas of special concern to resource agencies, areas evaluated under the California Environmental Quality Act (CEQA), areas designated as sensitive natural communities by CDFG, areas outlined in Section 1600 of the California Fish and Game Code (FGC), areas regulated under Section 404 of the federal Clean Water Act (CWA), areas protected under Section 402 of the CWA, and areas protected under local regulations and policies. Some of the vegetation types found in the Planning Area are sensitive habitats protected by various agencies. These include vernal pools, other wetlands, riverine, and riparian habitats, as well as oak woodlands. Vernal pools (identified by the CDFG as Northern Hardpan Vernal Pool), which are considered by CDFG to be rare or uncommon but not imperiled (state rank 3.1 – very threatened, between 10,000 and 50,000 acres). Seasonal wetlands, including vernal pools, are potential habitat for listed vernal pool branchiopods (e.g., vernal pool fairy shrimp). Special-status species and their habitat are described in more detail under the heading **Special-status Species**.

Riparian Habitat

In addition, the montane riparian habitat within the Planning Area is a sensitive habitat under the jurisdiction of CDFG and the U.S. Army Corps of Engineers (USACE). Riparian habitat is considered to be a "sensitive" habitat by CDFG. The presence of bed-to-bank features may allow a drainage to be defined as waters of the U.S. under jurisdiction of USACE, waters of the State under jurisdiction of the State Water Resources Control Board (SWRCB), or a streambed under jurisdiction of CDFG. Sutter and Mule creeks are identified waters of the U.S. found within the Planning Area and are protected under Section 404 of the CWA. The riparian corridor that surrounds these creeks, although limited by the surrounding urban and agricultural environment, has significant canopy coverage. The riparian corridor is a sensitive habitat that supports numerous common plant and wildlife species and has the potential to support several special-status species. The riparian corridor is subject to the requirements under Section 1602 of the Fish and Game Code.

Other Wetlands or Waterways

Additional wetland features may be located within the Planning Area but were not identified. These may include, but are not limited to, seasonal wetlands, vernal pools, emergent wetlands, wetlands within the riparian corridor, and stock ponds. The lacustrine habitat identified from the CALVEG data (USFS 2005) may also be considered jurisdictional under USACE. Freshwater emergent wetland and other wetland areas that occur within the Planning Area are potentially protected under USACE and provide potential habitat for special-status species. The identified potential jurisdictional features within the Planning Area are represented on **Figure 4.8-2** as identified by CALVEG (USFS 2005), the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (USFWS 1985), and the U.S. Geologic Survey (USGS) National Hydrography Dataset (USGS 1997). **Table 4.8-2** shows the acreages of the wetlands within the Planning Area as mapped by USFWS. **Table 4.8-3** shows the linear feet of the USGS National Hydrography Dataset. Acreages for line features within these datasets were not calculated because the Geographic Information System (GIS) data layer used for the analysis did not provide acreage estimates. Potential jurisdictional features and their acreages will be determined on a project-by-project basis for future development projects permitted under the updated General Plan.

TABLE 4.8-2
NATIONAL WETLAND INVENTORY WETLANDS MAPPED WITHIN THE PLANNING AREA

Type	Acres Within the City Limits	Acres within the SOI excluding City Limits	Acres within the Planning Area excluding the SOI	Total Acres Within the Planning Area
Freshwater Emergent Wetland	20.4	10.9	245.6	276.9
Freshwater Forested/Shrub Wetland	7.6	15.9	28.0	51.5
Freshwater Pond	14.9	28.8	240.8	284.5
Lake	0	0	85.3	85.3
Other	0.11	0	148.9	149.01
Riverine	0	10.3	16.6	26.9
Total	43.0	65.8	765.2	874

***Source: USFS National Wetland Inventory (USFS 1985). Since this a different dataset than the CALVEG data, some of these wetlands may overlap ones that have been mapped by CALVEG.*

TABLE 4.8-3
NATIONAL HYDROGRAPHY DATABASE MAPPED WITHIN THE PLANNING AREA

Type	Linear Feet Within the City Limits	Linear Feet within the SOI excluding the City Limits	Linear Feet within the Planning Area excluding the SOI	Total Linear Feet within the Planning Area
Connector	0	0	3,843	3,843
Canal/Ditch	366	0	25,455	25,821
Pipeline	0	0	3,063	3,063
Stream/River	60,483	39,530	645,359	745,372
Artificial Path	778	1,448	32,499	34,725
Total	61,627	40,978	710,220	812,824

***Source: USGS National Hydrography Dataset (USGS 1997). Since this a different dataset than the CALVEG data, some of these wetlands may overlap ones that have been mapped by CALVEG.*

Oak Woodland

The term "oak woodland" refers to an oak stand with greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover (Oak Woodland Conservation Act, Fish and Game Code Section 1361). Four woodland types that were identified in the Planning Area would qualify as oak woodland; they include valley oak woodland (state rank 2.1 – very threatened, between 2,000 and 10,000 acres), blue oak woodland (state rank 3.2 – threatened, between 10,000 and 50,000 acres), blue-oak-foothill pine, and montane hardwood. All types have at least 10 percent canopy cover of oak trees. Montane riparian may also have a 10 percent canopy cover of valley oaks although this habitat is already considered a sensitive community by CDFG. Oak woodland is a CDFG-designated sensitive natural community that occurs within the Planning Area. Oak woodlands are rapidly disappearing in California and, as defined in CEQA, further elimination would result in significant adverse impacts.

Ione Soil Formation

The Ione soil formation (Eocene) is present within and around the Planning Area (**Figure 4.8-3**). The formation's soil is highly acidic and nutrient-poor, and contains high concentrations of soluble aluminum, which exhibits environmental conditions that are hostile to plant life. Several unique and rare plants evolved and adapted to these harsh conditions (Hartwell 2006).

USFWS Critical Habitat

USFWS defines critical habitat as a specific area that is essential for the conservation of a federally listed species and which may require special management considerations or protection. There are no areas designated as critical habitat by USFWS within the Planning Area, based on the critical habitat maps for federally listed species (USFWS 2008b). The closest area designated as critical habitat is approximately 4 miles northwest of the Planning Area. This area is designated as critical habitat for vernal pool tadpole shrimp, vernal pool fairy shrimp, and Sacramento Orcutt grass (*Orcuttia viscida*). The next closest site for designated critical habitat is an area that supports California tiger salamander, approximately 6 miles southwest of the Planning Area (USFWS 2008b).

Wildlife Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed land. Maintaining the continuity of established wildlife corridors is important to sustain species with specific foraging requirements, preserve a species' distribution potential, and retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource. Streams and creeks as well as other areas of open space may provide enough cover to function as a migratory corridor for some species. For example, riparian zones along Sutter Creek and Mule Creek, including other small drainage channels, serve as aquatic and terrestrial wildlife migration corridors for areas within and surrounding the Planning Area. In addition, irrigation channels, agricultural land, and other open space may provide enough cover to function as a migratory corridor for some species.

The Planning Area is located in the middle of the management unit for the Mother Lode deer herd. The Mother Lode deer herd unit is a collection of resident deer populations which have in common a similar habitat type and life history throughout the herd range (CDFG1983). The herd boundaries were selected based on common habitat features and similarities in life history of this group of west slope Sierra foothill resident deer (CDFG1983). The deer of the Mother Lode herd are resident Columbian black-tailed (*Odocoileus hemionus columbianus*) and California mule deer (*O. h. californicus*). They occupy the same home range year-round and do not make the long seasonal migrations typical of west slope Sierra migratory herds, although they may migrate locally to riparian areas for fawning.

SPECIAL-STATUS SPECIES

The CDFG's California Natural Diversity Database (CNDDB) (CDFG 2008), the California Native Plant Society (CNPS) online inventory (CNPS 2008) and the USFWS online species lists (USFWS 2008a) were queried for a list of special-status wildlife, botanical, and fisheries resources that have the potential to occur or are known to occur in the project limits and vicinity. Sub-Appendix 4.8A includes the results of the CNDDB, CNPS, and USFWS queries. Appendix 4.8B includes a consolidated list of special-status species from the database searches as well as a determination and rationale for including or excluding them in the impact analysis of this report. Special-status species were considered for this analysis based on habitat suitability within the Planning Area, previously recorded occurrences of these species, and professional expertise. Locations of previously recorded special-status species occurrences within a 1-mile radius of the Planning Area are shown on Figure 4.8-3. In addition to the above database searches, GIS technology was used to compile the CNDDB records of previously recorded occurrences of special-status species within a 5-mile radius of the Planning Area, which were also noted and are discussed in Appendix 4.8B.

The number and variety of special-status species found within the Planning Area is due to the variety and distribution of suitable wetland and upland habitat types that occur within the Planning Area. In some cases, the plants and wildlife are unique specifically to the Ione region and Sacramento-San Joaquin Drainage Basin. The following discussion describes the plant and wildlife species that have been afforded special recognition by federal, state, or local resource agencies or organizations. Listed and other special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as:

- Listed, proposed, or candidate for listing under the State or Federal Endangered Species Acts;
- Protected under other regulations (e.g., local policies, Migratory Bird Treaty Act);

- CDFG's Species of Special Concern and California Fully Protected Species;
- Listed as species of concern by CNPS; or
- Otherwise receive consideration during environmental review.

Special-status Plant Species

Provided below are species accounts for each of the special-status plant species that, according to results of database searches and known habitat types within the Planning Area, have the potential to occur within the Planning Area and therefore have been considered in the impact analysis. A full list of species from the results of the database queries are found in **Appendix 4.8B**. Range and habitat information for the special-status plant species below was obtained from the CNDDB Rarefind 3 computer program (CDFG 2008), CNPS Inventory of Rare and Endangered Plants (CNPS 2008), and NatureServe Explorer (online edition; NatureServe 2008). **Table 4.8-4** lists the special-status plant species that may occur within the Planning Area.

TABLE 4.8-4
SPECIAL-STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE PLANNING AREA

Scientific Name	Common Name	Status		
		Federal1	State2	CNPS3
Arctostaphylos myrtifolia	Ione manzanita	FT	~	1B
Calycadenia hooveri	Hoover's calycadenia	~	~	1B
Castilleja campestris ssp. *succulenta*	Succulent (=fleshy) owl's clover	FT	SE	1B
Downingia pusilla	Dwarf downingia	~	~	2
Eriogonum apricum var. *apricum*	Ione buckwheat	FE	SE	1B
Eriogonum apricum var. *prostratum*	Irish Hill buckwheat	FE	SE	1B
Eryngium pinnatisectum	Tuolumne button-celery	~	~	1B
Gratiola heterosepala	Bogg's Lake hedge-hyssop	~	SE	1B
Horkelia parryi	Parry's horkelia	~	~	1B
Legenere limosa	Legenere	~	~	1B
Navarretia myersii ssp. *myersii*	Pincushion navarretia	~	~	1B
Orcuttia viscida	Sacramento Orcutt grass	FE	SE	1B
Sagittaria sanfordii	Sanford's arrowhead	~	~	1B

STATUS CODES

1: Federal Status	2: State Status	3: CNPS
FE = Listed as endangered under the federal Endangered Species Act (FESA)	**SE** = Listed as endangered under the California Endangered Species Act (CESA)	**List 1B** = Plant species that are rare, threatened, or endangered in California and elsewhere. **List 2** = Plant species that are rare, threatened, or endangered in California, but are more common elsewhere **List 3** = Plant species that lack the necessary information to assign them to a listing status
FT = Listed as threatened under the FESA	**ST** = Listed as threatened under the CESA	

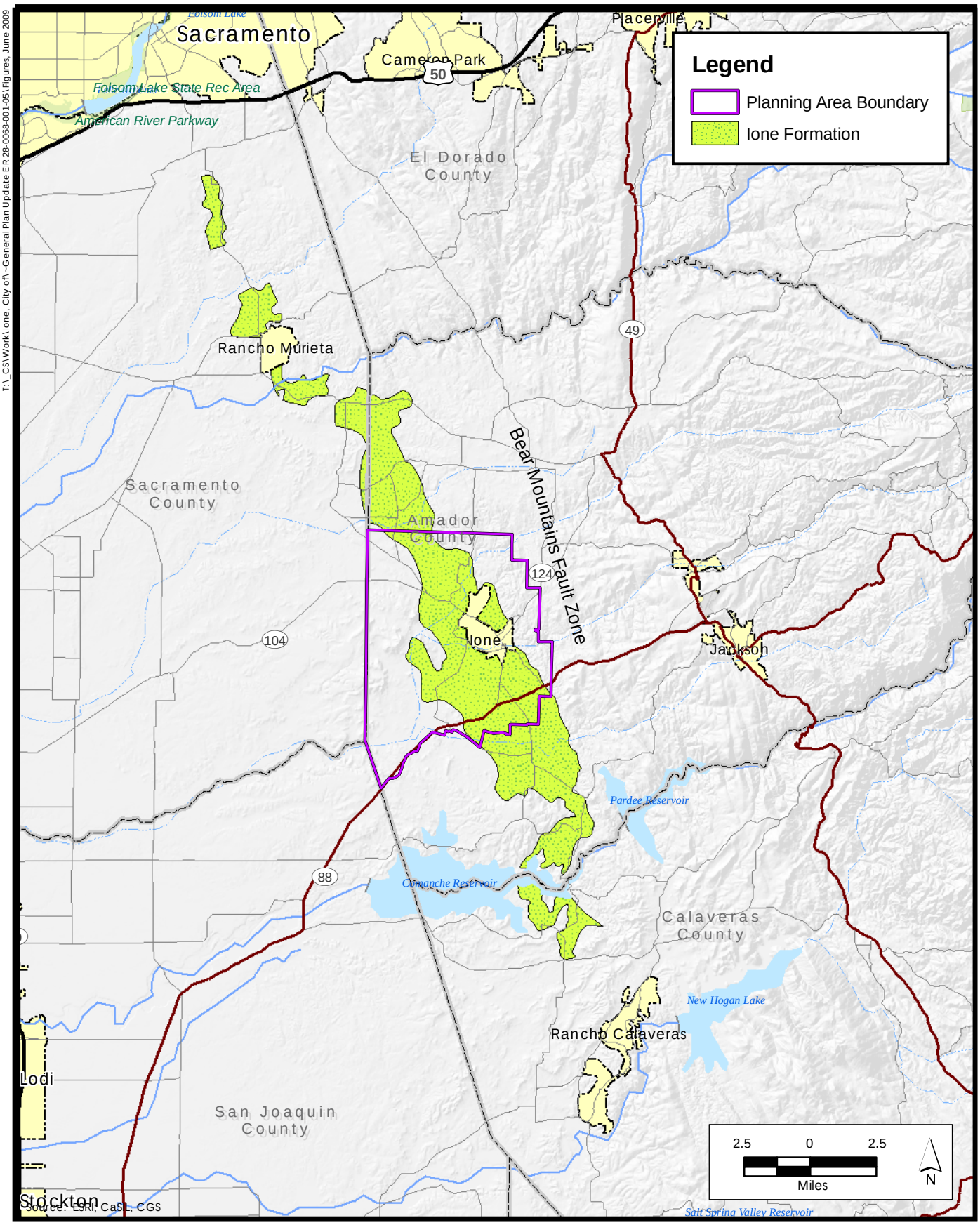


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Figure 4.8-2
Ione Formation

T:_CS\Work\Ione, City of\~General Plan Update EIR 28-0068-001-05\Figures, June 2009

Map	Common Name	Scientific Name	Federal Listing	State Listing	CNPS Listing
1	Bisbee Peak rush-rose	Helianthemum suffrutescens	None	None	3.2
2	California linderiella	Linderiella occidentalis	None	None	
3	California tiger salamander	Ambystoma californiense	Threatened	None	
4	Ione Chaparral	Ione Chaparral	None	None	
5	Ione buckwheat	Eriogonum apricum var. apricum	Endangered	Endangered	1B.1
6	Ione manzanita	Arctostaphylos myrtifolia	Threatened	None	1B.2
7	Irish Hill buckwheat	Eriogonum apricum var. prostratum	Endangered	Endangered	1B.1
8	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	None	None	
9	Parry's horkelia	Horkelia parryi	None	None	1B.2
10	Tuolumne button-celery	Eryngium pinnatisectum	None	None	1B.2
11	golden eagle	Aquila chrysaetos	None	None	
12	northwestern pond turtle	Actinemys marmorata marmorata	None	None	
13	pincushion navarretia	Navarretia myersii ssp. myersii	None	None	1B.1
14	valley elderberry longhorn beetle	Desmocerus californicus dimorphus	Threatened	None	
15	vernal pool fairy shrimp	Branchinecta lynchi	Threatened	None	
16	vernal pool tadpole shrimp	Lepidurus packardi	Endangered	None	

Legend

CNDDB Occurrences

- Amphibian
- Bird
- Reptile
- Invertebrate
- Plant
- Terrestrial Habitat
- 1-mile Buffer of Planning Area
- Planning Area Boundary
- City Limits
- Sphere of Influence

0.6 0 0.6

Miles

N

Source: USFS Remote Sensing Lab, 2007

City of Ione
Planning Department

Figure 4.8-3
Previously Recorded Occurrances of Special-status Species within a Radius of the Planning Area

Ione manzanita *(Arctostaphylos myrtifolia)* is federally listed as threatened and designated as a List 1B species by CNPS. This evergreen shrub of the heath family (Ericaceae) inhabits chaparral and cismontane woodland in acidic, Ione clay, or sandy soils. The blooming period for this species lasts from November through February. This species is generally found at an elevation of 60 to 580 meters (CNPS 2008). There are seven previously recorded occurrences of this species within a one-mile radius of the Planning Area and an additional four occurrences within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the chaparral and woodland areas within the Planning Area.

Hoover's calycadenia (*Calycadeni hooveri*) is designated as a CNPS List 1B species. This perennial herb of the grass family (Poaceae) inhabits cismontane woodland, valley and foothill grassland, among rocky soils. This species' blooming period lasts from July through September. This species is generally found at an elevation of 65 to 300 meters (CNPS 2008). Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable habitat is present within the annual grassland habitat in the Planning Area.

Dwarf downingia (*Downingia pusilla*) is designated as a List 2 species by CNPS, which includes plant species that are rare, threatened, or endangered in California but are more common elsewhere. This annual herb of the bellflower family (Campanulaceae) inhabits valley and foothill grassland (in mesic soils) and vernal pools. This species' blooming period lasts from March through May. This species is generally found at an elevation of 1 to 445 meters (CNPS 2008). Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable habitat is present within the annual grassland habitat in the Planning Area.

Ione buckwheat *(Eriogonum apricum* var. *apricum)* is federally and state-listed as endangered and designated as a List 1B species by CNPS. This perennial herb of the buckwheat family (Polygonaceae) inhabits chaparral in areas with ground openings and Ione soils. The blooming period for this species lasts from July to October. This species is commonly found at an elevation of 60 to 145 meters (CNPS 2008). There are nine previously recorded occurrences of this species within a 1-mile radius of the Planning Area and one additional occurrence within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the chaparral habitat in the Planning Area.

Irish Hill buckwheat *(Eriogonum apricum* var. *prostratum)* is federally and state-listed as endangered and designated as a List 1B species by CNPS. This perennial herb of the buckwheat family (Polygonaceae) inhabits chaparral within openings and in Ione soils. The blooming period for this species occurs from June to July. This species is generally found at an elevation of 90 to 120 meters (CNPS 2008). There is one previously recorded occurrence of this species within a 1-mile radius of the Planning Area and one additional occurrence within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the chaparral habitat in the Planning Area.

Tuolumne button-celery *(Eryngium pinnatisectum)* is designated as a List 1B species by CNPS. This perennial herb is a member of the carrot family (Apiaceae). This species inhabits cismontane woodland, lower montane coniferous forest and vernal pools in mesic soils. The blooming period for this species lasts from June to August. This species is generally found at an elevation of 70 to 915 meters (CNPS 2008). Suitable habitat for this species is present within the Planning Area. There is one previously recorded occurrence of this species within a 1-mile radius of the Planning Area and three additional occurrences within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the Planning Area.

Bogg's Lake hedge-hyssop *(Gratiola heterosepala*) is state-listed as endangered and designated as a List 1B species by CNPS. This annual herb is a member of the figwort family

(Scrophulariaceae). This species inhabits marshes, swamps, lake margins, and vernal pools in clay soils. The blooming period for this species lasts from April to June. This species is generally found at an elevation of 10 to 2,375 meters (CNPS 2008). There are four previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the Planning Area.

Parry's horkelia *(Horkelia parryi)* is designated as a List 1B species by CNPS. This perennial herb of the rose family (Rosaceae) commonly inhabits chaparral and cismontane woodland habitats especially in Ione soils. The blooming period for this species lasts from April to June. This species is generally found at an elevation of 80 to 1,035 meters (CNPS 2008). There are six previously recorded occurrences of this species within a 1-mile radius of the Planning Area and three previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the Planning Area.

Legenere (*Legenere limosa*) is designated as a List 1B species by CNPS. This annual herb of the bellflower family (Campanulaceae) inhabits vernal pools. This species' blooming period lasts from April to June. This species is generally found at an elevation of 1 to 880 meters (CNPS 2008). There are four previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present within the Planning Area.

Pincushion navarretia (*Navarretia myersii* ssp. *myersii*) is designated as a List 1B species by CNPS. This annual herb of the phlox family (Polemoniaceae) inhabits vernal pools. This species' blooming period occurs in May. This species is generally found at an elevation of 20 to 330 meters (CNPS 2008). There are three previously recorded occurrences of this species within a 1-mile radius of the Planning Area and four additional occurrences within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present within the Planning Area.

Sacramento Orcutt grass (*Orcuttia viscida*) is federally and state-listed as endangered and designated as a List 1B species by CNPS. This annual herb of the grass family (Poaceae) inhabits vernal pools. This species is known from approximately 10 occurrences (CNPS 2008). This species' blooming period lasts from April to July. This species is generally found at an elevation of 30 to 100 meters CNPS 2008). There is one previously recorded occurrence of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present within the Planning Area.

Sanford's arrowhead (*Sagittaria sanfordii*) is designated as a List 1B species by CNPS. This perennial herb of the water-plantain family (Alismataceae) inhabits marshes and swamps (assorted shallow freshwater areas). This species was extirpated from southern California and it is mostly extirpated from the Central Valley (CNPS 2008). This species' blooming period lasts from May to October. This species generally occurs at an elevation of 1 to 616 meters (CNPS 2008). Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable habitat is present within the Planning Area.

Succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) is federally listed as threatened and state-listed as endangered and it is designated as a List 1B species by CNPS. This hemi-parasitic annual herb of the figwort family (Scrophulariaceae) inhabits vernal pools in the southern portion of the Central Valley. This species' blooming period occurs in May. This species generally occurs at an elevation of 50 to 750 meters (CNPS 2008). Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable habitat is present within the Planning Area.

Special-status Wildlife Species

Table 4.8-5 lists the special-status wildlife species that may occur within the Planning Area. The following descriptions provide greater detail on the special-status wildlife species that have the potential to occur in the Planning Area.

TABLE 4.8-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE PLANNING AREA

Scientific Name	Common Name	Status	
		Federal[1]	State[2]
Invertebrates			
Branchinecta lynchi	Vernal pool fairy shrimp	FT	~
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT, FPD	~
Branchinecta conservatio	Conservancy fairy shrimp	FE	~
Lepidurus packardi	Vernal pool tadpole shrimp	FE	~
Fish			
Oncorhynchus mykiss	Central Valley (CV) steelhead	FT	~
Oncorhynchus tshawytscha	CV Chinook salmon, Spring-run ESU	FT	ST
Oncorhynchus tshawytscha	CV Chinook salmon, Winter-run ESU	FE	SE
Amphibians			
Ambystoma californiense	California tiger salamander	FT	CSC
Spea hammondii	Western spadefoot toad	~	CSC
Rana aurora draytonii	California red-legged frog	FT	CSC
Reptiles			
Actinemys marmorata marmorata	Northwestern pond turtle	~	CSC
Birds			
Buteo swainsoni	Swainson's hawk	~	ST
Pandion haliaetus	Osprey	~	CSC
Aquila chrysaetos	Golden eagle	~	CSC; CFP
Haliaeetus leucocephalus	Bald eagle	FPD	SE; CFP
Falco mexicanus	Prairie falcon	~	CSC
Ammodramus savannarum	Grasshopper sparrow	~	CSC
Icteria virens	Yellow-breasted chat	~	CSC
Agelaius tricolor	Tri-colored blackbird	~	CSC
Riparia riparia	Bank swallow	~	ST
Athene cunicularia	Burrowing owl	~	CSC
Mammals			
Antrozous pallidus	Pallid bat	~	CSC

CODE DESIGNATIONS

1: Federal status	2: State status
FE = Listed as endangered under the federal Endangered Species Act (FESA)	SE = Listed as endangered under the California Endangered Species Act (CESA)
FT = Listed as threatened under the FESA	ST = Listed as threatened under the CESA
FPD = Federally proposed for delisting, identified by USFWS	CSC = Species of Concern as identified by the CDFG
	CFP = Listed as fully protected under CDFG Code

INVERTEBRATES

Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*) is a federally threatened species that is currently proposed for delisting, as identified by USFWS. VELB occurs in the Central Valley of California only where its host plant, the elderberry (*Sambucus* spp.), is found. The exit holes made by the emerging adults are distinctive one-half to one centimeter round or oval openings. The entire life cycle of the VELB revolves around the elderberry. Adults eat the elderberry foliage until about June when they mate. The females lay eggs in crevices in the bark. Upon hatching the larvae then begin to tunnel into the tree, where they will spend one to two years eating the interior wood, which is their sole food source. Adult emergence is from late March through June at about the same time the elderberry produces flowers. The range of the VELB extends throughout California's Central Valley and associated foothills, from about the 3,000-foot-elevation contour on the east and the watershed of the Central Valley on the west (USFWS 1999). There is one previously recorded occurrence of this species within a 1-mile radius of the Planning Area (CDFG 2008). Several elderberry shrubs were observed within the Planning Area during a field survey performed by a PMC biologist on November 12, 2008.

Vernal Pool Crustaceans

Vernal pool crustaceans are found in ephemeral freshwater habitats, and their life cycles have adapted to the unique habitat conditions of vernal pools and other seasonal ponded areas. Following the winter rains, vernal pools become inundated, and in conjunction with the appropriate environmental cues (temperature, total dissolved solids, alkalinity, etc.), the hatching of vernal pool crustacean eggs is initiated. Vernal pool crustaceans then mature rapidly into adults. Vernal pool crustaceans are ecologically dependent on wetlands with seasonal fluctuations in water levels during specific times of the year with seasonal inundation and subsequent desiccation. A suitable aquatic environment is necessary for egg incubation and hatching, growth and maturation, reproduction, feeding, sheltering, and dispersal. Appropriate periods of desiccation are necessary for egg dormancy and to eliminate predators such as bullfrogs, fish, and other aquatic predators that depend on year-round inundation of wetland habitats to survive (USFWS 2003). Vernal pool crustaceans cannot persist in wetlands that are inundated for the majority of the year or in wetlands without periodic seasonal inundation, although they do occur in pools that do not inundate every year (USFWS 2003).

Vernal pool fairy shrimp (*Branchinecta lynchi*) is federally listed as threatened. This species inhabits ephemeral swales and vernal pools in grassland communities. Eggs hatch and shrimp become active when pools fill during the winter rainy season. There is one previously recorded occurrence of this species within a 1-mile radius of the Planning Area and 12 previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present within the Planning Area.

Vernal pool tadpole shrimp (*Lepidurus packardi*) is federally listed as endangered and it occurs in vernal pools, swales, and various other seasonally ponded habitats in the Sacramento Valley containing clear to highly turbid water. Breeding pools for this species are commonly found in grass-bottomed swales within unplowed grasslands; the pools may be mud-bottomed and highly turbid. There has been one previously recorded occurrence of this species within a 1-mile radius of the Planning Area and five additional occurrences within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present within the Planning Area.

Conservancy fairy shrimp (*Branchinecta conservatio*) is federally listed as endangered. This species inhabits rather large, cool-water vernal pools with moderately turbid water. They have been collected from early November to early April. Currently, the USFWS is aware of eight populations of Conservancy fairy shrimp, which include (from north to south): Vina Plains, Butte and Tehama counties; Sacramento National Wildlife Refuge, Glenn County; Yolo Bypass Wildlife Area, Yolo County; Jepson Prairie, Solano County; Mapes Ranch, Stanislaus County; University of California, Merced, Merced County; Grasslands Ecological Area, Merced County and Los Padres National Forest, Ventura County. Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable habitat is present within the Planning Area.

FISH

Central Valley steelhead – Evolutionary Significant Unit (ESU) (*Oncorhynchus mykiss*) is federally listed as threatened. This fish species is found within the Sacramento and San Joaquin rivers and their tributaries. Resident populations inhabit small headwater streams, large rivers, lakes, or reservoirs, often in cool clear lakes and cool swift streams with silt-free substrate. In streams, deep, low velocity pools are important wintering habitats. Sutter Creek and Mule Creek within the Planning Area eventually drain into the Cosumnes River, which has the potential to support this fish species. Impacts to the watershed within the Planning Area would contribute to downstream habitat conditions for this species; therefore this species will be discussed in the impact analysis.

Central Valley Chinook salmon spring-run ESU *(Oncorhynchus tshawytscha)* is federally and state-listed as threatened. Existing populations spawn in the Sacramento River and its tributaries in California. Historically, this ESU was the dominant run in the Sacramento and San Joaquin river basins, but native populations in the San Joaquin River apparently all have been extirpated. Sutter Creek and Mule Creek within the Planning Area eventually drain into the Cosumnes River, which has the potential to support this fish species. Impacts to the watershed within the Planning Area would contribute to downstream habitat conditions for this species; therefore this species will be discussed in the impact analysis.

Central Valley Chinook salmon winter-run ESU (*Oncorhynchus tshawytscha)* is federally and state-listed as endangered. This species spawns primarily in the mainstem of the Sacramento River immediately downstream of Keswick Dam and below the historic spawning grounds downstream from Shasta Reservoir; most suitable spawning areas are between the Red Bluff Diversion Dam and Keswick Dam. This species migrates through the Sacramento River, Delta, and San Pablo and San Francisco bays to nonbreeding habitat in the Pacific Ocean. Some juveniles rear non-natally for brief periods in lower reaches of tributaries. Sutter Creek and Mule Creek within the Planning Area eventually drain into the Cosumnes River, which has the potential to support this fish species. Impacts to the watershed within the Planning Area would contribute to downstream habitat conditions for this species; therefore this species will be discussed in the impact analysis.

AMPHIBIANS

California tiger salamander (*Ambystoma californiense*) is federally listed as threatened and a California species of special concern. This species is typically found in annual grasslands of lower hills and valleys. It breeds in temporary and permanent ponds and in streams, although it appears to be absent in waters containing predatory game fish. This species uses rodent burrows and other subterranean retreats in surrounding uplands for shelter. The California tiger salamander spends most of its lifecycle estivating underground adjacent to wetland habitats, primarily in abandoned rodent burrows. Research has shown that dispersing juveniles can roam up to 2 miles from their breeding ponds and that a minimum of several hundred acres of uplands habitat is needed surrounding a breeding pond in order for the species to survive over the long term. There are three previously recorded occurrences of this species within a 1-mile radius of the Planning Area and 20 additional occurrences within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present for this species within the Planning Area.

Western spadefoot (*Spea hammondii*) is a California species of special concern. Historically, the western spadefoot toad ranged from Redding to northwestern Baja California. In California, the species was found throughout the Central Valley and in the Coast Ranges and coastal lowlands from San Francisco Bay to Mexico; however, it has been extirpated from many locations within its historic range. Associated habitat for this species is divided between aquatic breeding ponds and upland, non-breeding habitat. During much of the year, this species is found in upland grassland, chaparral, and woodland communities. This species will travel long distances to ephemeral breeding pools. Breeding typically takes place from January through May. There are five previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the Planning Area.

California red-legged frog (*Rana aurora draytonii*) is federally listed as threatened and it is a California species of special concern. This species is found in humid forests, woodlands, grasslands, and streamsides with plant cover. This species is most commonly found in lowlands or foothills, frequently in woods adjacent to streams from sea level to 2,440 meters. Breeding habitat is in permanent or late season sources of deep water such as lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. This species breeds from late December to early April. Ranges along the coast from Mendocino County in northern California south to northern Baja California, and inland through the northern Sacramento Valley into the foothills of the Sierra Nevada mountains, south to Tulare county, and possibly Kern County. Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable habitat is present within the Planning Area. There is a previously recorded occurrence from 2003 approximately 11 miles to the south east of the Planning Area near Campo Seco along Youngs Creek (CDFG 2008a).

REPTILES

Northwestern pond turtle (*Actinemys marmorata marmorata*) is a California species of special concern. The northwestern pond turtle is a subspecies of the western pond turtle. Suitable habitat for pond turtles includes ponds or slowly moving bodies of water with aquatic vegetation, debris within the water or banks for basking, and invertebrate and vertebrate prey. This species is highly aquatic, but nests on land up to several hundred yards from water. There has been one previously recorded occurrence of this species within a 1-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present for this species within the Planning Area.

BIRDS

Swainson's hawk (*Buteo swainsoni*) is state-listed as threatened. The preferred breeding habitat of this raptor consists of large trees, which serve as nesting sites, proximate to extensive areas of grassland and/or open fields, which serve as foraging habitat. Swainson's hawks begin to arrive in the Central Valley from South America in March to breed and raise their young. They typically nest in large, mature trees such as eucalyptus (*Eucalyptus* spp.), valley oak, Fremont's cottonwood, willow, and native black walnut. Selected trees are typically located near suitable foraging habitat and often within riparian corridors. Swainson's hawks forage in open grasslands, agricultural fields, and pastures. Alfalfa, row crops, grain fields, and irrigated pastures are the Swainson's hawk's preferred foraging habitats, where they take advantage of the opportunities that harvesting and irrigating practices provide for the easy capture of small rodents. They do not forage in vineyards, orchards, or flooded rice fields. There is one previously recorded occurrence of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable nesting and foraging habitat is present for this species within the Planning Area.

Osprey (*Pandion haliaetus*) is a California species of special concern. This raptor inhabits areas primarily along rivers, lakes, reservoirs, and seacoasts. This species is often seen crossing land between bodies of water during its migration. This raptor nests in dead snags, living trees, cliffs, utility poles, wooden platforms on poles, channel buoys, chimneys, windmills, etc. (usually near or above water). This species nests are often used in successive years. Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable nesting and foraging habitat is present within the Planning Area.

Golden eagle (*Aquila chrysaetos*) is a California species of special concern, a California Fully Protected species (CFP) under the California Fish and Game Code (FGC), and federally listed under the Bald and Golden Eagle Protection Act. This species forages in grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys, whereas nest sites are located in niches in cliffs, escarpments, and bluffs, most often in rugged, mountainous country. This species' prey includes primarily small mammals. California ground squirrels and black-tailed jackrabbits are abundant throughout the grassland area and provide a prey base for this eagle. There is one previously recorded occurrence of this species within a 1-mile radius of the Planning Area (CDFG 2008). Suitable nesting and foraging habitat for this species is present within the Planning Area.

Bald eagle (*Haliaeetus leucocephalus*) is state-listed as endangered and federally listed as threatened, although it is proposed to be delisted from the federal list. The bald eagle is a California fully protected species. It is also protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. This species is a permanent resident (and uncommon winter migrant) of California. Currently, the species is restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties. This species inhabits ocean shore, lake margins, and rivers, both nesting and wintering. This species builds stick nests within large tall trees and typically within 1 mile of permanent water. Wintering populations have been previously recorded along major rivers and reservoirs in Yuba County. The breeding period for this species lasts from February to July. Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008), suitable habitat for this species is present within the Planning Area.

Prairie falcon (*Falco mexicanus*) is a California species of special concern. Prairie falcons inhabit hills, canyons, and mountains of arid grasslands and shrub-steppes of southwestern Canada, western United States, Baja California, and northern Mexico. They nest primarily on cliffs overlooking large open areas, using a ledge, cavity, crevice, or an abandoned nest of eagles,

hawks, or ravens. There has been one previously recorded occurrence of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable nesting and foraging habitat for this species is present within the Planning Area.

Grasshopper sparrow (*Ammodramus savannarum)* is a California species of special concern. This species inhabits grassland/herbaceous, old field, and savanna. This species prefers grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground for breeding habitat. Other habitat requirements for this species include moderately deep litter and sparse coverage of woody vegetation. There is one previously recorded occurrence of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the Planning Area.

Yellow-breasted chat *(Icteria virens)* is a California species of special concern. This migrant species nests in riparian habitats along rivers and streams up to 4,800 feet on the west side of the Sierra Nevada. This species breeding period lasts from May to July. There is one previously recorded occurrence of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the Planning Area.

Tri-colored blackbird *(Agelaius tricolor)* is a California species of special concern. This species breeds in freshwater wetlands among tall dense vegetation including tule (*Scirpus acutus* var. *acutus*), common cattail (*Typha latifolia*), and blackberry. This species forages in grasslands and croplands. They are a year-round resident. This species breeds from April to July. There are five previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat for this species is present within the Planning Area.

Bank swallow *(Riparia riparia)* is state-listed as threatened. This species inhabits primarily riparian and other lowland habitats in California. During the summer, this species is restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils for nesting holes. This species' breeding period lasts from early May through July. There are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Although the entire Planning Area was not surveyed, suitable habitat may be present along the riparian corridors; however, since the entire Planning Area was not surveyed, it is unknown whether these areas contain vertical cliffs suitable for nesting habitat.

Western burrowing owl (*Athene cunicularia hypugea*) is a California species of special concern. Burrowing owls are year-round residents in the open, dry grasslands of the Central Valley. During fall and winter, local residents may move from nesting areas, and migrants may move in. Burrowing owls nest and take shelter in burrows in the ground, typically burrows excavated by other species such as ground squirrels. They forage in grasslands and agricultural fields. There are two previously recorded occurrences of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable nesting and foraging habitat is present within the annual grassland habitat.

Raptors and Other Migratory Birds

Many bird species are migratory and fall under the jurisdiction of the Migratory Bird Treaty Act. Various migratory birds and raptor species, in addition to those described in detail above, have the potential to inhabit the project vicinity. Northern harriers (*Circus cyaneus*), great blue herons, and short-eared owls (*Asio flammeus*) may occur within the vicinity of the Planning Area. Some raptor species, such as red-tailed hawk and northern harrier, are not considered special-status species because they are not rare or protected under the federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA); however, the nests of all raptor species are protected under the MBTA and Section 3503.5 of the California FGC. Migratory birds forage and

nest in multiple habitats. The nests of all migratory birds are protected under the MBTA, which makes it illegal to destroy any active migratory bird nest. The habitat found within the vicinity of the Planning Area provides potential nesting habitat for raptors and migratory birds. Consequently, raptor and migratory bird species are likely to forage and nest in the Planning Area.

MAMMALS

Pallid bat *(Antrozous pallidus)* is a California species of special concern. Pallid bats roost in rock crevices, tree hollows, mines, caves, and a variety of anthropogenic structures, including vacant and occupied buildings and buildings, mines, and natural caves, are utilized as roosts. This species occurs primarily in arid habitats. Pallid bat colonies are usually small and may contain 12 to 100 bats. There is one previously recorded occurrence of this species within a 5-mile radius of the Planning Area (CDFG 2008). Suitable habitat is present throughout the Planning Area.

Other special-status bat species could inhabit the area within the vicinity of the Planning Area, including hoary bat (*Lasiurus cinereus*), yuma myotis (*Myotis yumanensis*), western red bat (*Lasiurus blossevillii*), and western mastiff bat (*Eumops perotis*). These species are widely distributed throughout California; however, many of these species are rare within these overall ranges. Habitat for bat species consists of foraging habitat, night roosting cover, day roosting sites, maternity roost sites, and winter hibernacula. These bat species may forage within a variety of habitats, including montane riparian scrub, montane meadow, mixed coniferous forest, and red fir forest. Suitable roosting sites within these habitats include caves, rock crevices, cliffs, buildings, tree bark, and snags. Some or all of these bat species are likely to forage in the project vicinity, but there is a low likelihood that maternity roosts or hibernacula are located in the Planning Area. Tree bark, snags, and human structures within the Planning Area could provide roosting habitat for special-status bat species.

4.8.2 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 [USC] Section 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 USC §1532, 50 Code of Federal Regulations [CFR] 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, USACE

must inquire of 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 USC Section 1536a.2, c.1). If they may be present, 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 USFWS or NMFS. In the context of the Planning Area, the FESA would be triggered if development resulted in the 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

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 CFR Section 328.2(f)]. In addition, Section 401 of the CWA (33 USC Section 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 United States

Waters of the U.S. that are subject to the jurisdiction of 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 CFR Section 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 CFR §328.4l(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 CFR §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 (SWANCC) 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 Section 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 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.

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 MBTA (42 USC 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."

Bald and Golden Eagle Protection Act

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

Executive Order 13112 – Invasive Species

Executive Order 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, USFWS and USACE would issue permits and therefore would be responsible for ensuring that the proposed action complies with Executive Order 13112 and does not contribute to the spread of invasive species.

STATE

California Endangered Species Act

Under CESA, CDFG has the responsibility for maintaining a list of endangered and threatened species (Fish and Game Code - FGC Section 2070). Sections 2050 through 2098 of the FGC outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the FGC prohibits the taking of plants and animals listed under the CESA. Section 2081 established an incidental take permit program for state-listed species. CDFG maintains a list of "candidate species" which are species that CDFG formally notices as being under review for addition to the list of endangered or threatened species.

Native Plant Protection Act of 1977

The Native Plant Protection Act of 1977 (FGC Section 1900 et seq.) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered (as defined by CDFG). An exception to this prohibition in the act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify CDFG and give that state agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed (FGC

Section 1913 exempts from "take" prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way"). Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

California Department of Fish and Game Species of Special Concern

CDFG also maintains lists of "Species of Special Concern" (CSC), which serve as species' "watch lists." Species with CSC status have limited distribution or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under CEQA and thereby warrant specific protection measures.

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society's Lists 1A, 1B, and 2 would typically be considered under CEQA.

FGC Section 3500 to 5500

Sections 3500 to 5500 of the FGC outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFG cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

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

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. Take of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from CDFG would be in the form of an Incidental Take Permit.

FGC Section 1602

State and local public agencies are subject to Section 1602 of the FGC, which governs construction activities that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFG. Under Section 1602, a discretionary Stream Alteration Agreement permit from CDFG (Region 2 for the proposed project) must be issued by CDFG to the project developer prior to the initiation of construction activities within lands under CDFG jurisdiction. As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

NON-GOVERNMENTAL AGENCY

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, have 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 definitions of the CNPS listings are provided below:

- List 1A: Plant species that are presumed extinct in California;
- List 1B: Plant species that are rare, threatened, or endangered in California and elsewhere;
- List 2: Plant species that are rare, threatened, or endangered in California, but are more numerous elsewhere;
- List 3: Plants species that lack the necessary information to assign them to a listing status - A Review List;
- List 4: Plant species that have a limited distribution or that are infrequent throughout a broader area in California - A Watch List.

Plant species designated as List 3 and 4 will not be discussed in this report since they are not considered special-status species.

LOCAL

City of Ione **Tree Ordinance** (Municipal Code Chapter 8.20)

The City of Ione Tree Ordinance (Municipal Code Chapter 8.20) states that any tree that falls in the existing or proposed right of way or easement shall be shown on the cross section when requested by the City Engineer. Permission to remove any tree (not required to be removed by construction) in the City rights of way or easements must be obtained from the City Manager prior to removal, as detailed in Chapter 8.20 of the City's Municipal Code. In addition, a Tree Removal Permit is required for the removal of any heritage tree. Chapter 8.20 of the Municipal Code defines a Heritage Tree as follows:

- Any tree which is 16 inches or more in diameter measured four feet six inches from the ground. The diameter is determined by dividing the circumference by 3.14, or
- Any tree which is of historical significance, specially designated by Planning Commission action, or has taken on an aura of historical appeal, and which is indigenous to this area or has adapted exceptionally well to area climatic conditions. A Tree Removal Permit is also required for removal of any trees having a minimum trunk diameter of six inches measured at 48 inches above the ground on any undeveloped parcels in anticipation of developing that parcel.

Other Local Laws or Ordinances

Currently the City of Ione does not have ordinances focused on protecting natural resources. There are no other laws or ordinances that are relevant to the proposed project.

4.8.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

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

1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations or by CDFG or USFWS.

2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFG or USFWS.

3) 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.

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

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

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

7) Although listed species are protected by specific federal and state statutes, the 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:

   - "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

   - "Rare" when either:

   - 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

   - 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.

METHODOLOGY

Habitat Assessment: Habitat types within the Planning Area were defined based upon Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) data (USFS 2005) and analysis of aerial photography by a PMC biologist in 2008. CALVEG data is primarily used for defining vegetation types for forestry, so some areas within the Central Valley are not surveyed. The data from CALVEG did not cover the entire Planning Area. For areas within the Planning Area that were not covered by CALVEG data, a habitat layer was created using ArcView based on aerial photograph interpretation and knowledge from reconnaissance-level surveys (**Figure 4.8-2**). The habitat data has not been verified with extensive field surveys for each parcel. Parcel-level site verification will need to be conducted under each future development proposal that would be allowed under the proposed project. A reconnaissance-level field survey of the Planning Area was conducted by a PMC biologist on November 12, 2008, in order to assess habitat types within the Planning Area. The entire Planning Area was not surveyed. The field survey helped to attest to the quality of habitat within the Planning Area.

Due to the methods in which the CALVEG data was obtained and the intended scale of how the data was meant to be used, this data may not reflect all the habitat types within the Planning Area to the level of detail that is expressed in **Figure 4.8-2**. This data is used to present an overall picture and an estimate of habitat types that occur within the Planning Area as this is the best data available at this time. CALVEG's minimum mapping unit is 2.5 acres for the area within the Planning Area (USFS 2005). CALVEG is a hierarchical classification system of actual vegetation designed to assess vegetation-related resources throughout California. The system was devised in the late 1970s by the Pacific Southwest Region of the U.S. Forest Service to describe and map natural vegetation in the state. CALVEG mapping was done between 1979 and 1981 by U.S. Forest Service personnel by photo-interpretation of 1:250,000 scale color infrared prints of Landsat Multispectral Scanner (MSS) imagery. CALVEG organizes all vegetation by "cover type," which can include shrubs, grass, water, etc. Using the CALVEG-CHWR crosswalk, the CALVEG classifications were then correlated with the applicable CWHR types as defined by Mayer and Laudenslayer (Mayer and Laudenslayer 1988). A habitat map was created using ArcView by layering the CALVEG and PMC-generated data on an aerial photograph (**Figure 4.8-2**). The habitat data therefore is not precise at a project-level analysis, although it is appropriate for this programmatic planning level analysis.

Special-status Species Assessment: The habitat mapping and field surveys were reviewed for potential habitat for the special-status species identified from the literature and database searches. A species was determined to have potential to occur in the Planning Area if its documented geographic range from the literature and database searches includes the vicinity of

the Planning Area and if suitable habitat for the species was identified within or near the Planning Area. CDFG's CNDDB was queried for a list of special-status wildlife, botanical, and fisheries resources with a potential to occur or known to occur within the Planning Area and within the vicinity of the Planning Area (CDFG 2008). The database search was performed for special-status species within the *Ione* and *Irish Hill, California* United States Geologic Survey (USGS) 7.5-minute quadrangles and the surrounding ten quadrangles (*Latrobe, Fiddletown, Carbondale, Goose Creek, Folsom SE, Amador City, Jackson, Valley Springs, Wallace, and Clements*). Locations of special-status species occurrences as recorded in CNDDB within a 1-mile radius of the Planning Area are shown in **Figure 4.8-3**. The CNPS inventory was also searched for the quadrangles listed above for rare or endangered plants that may occur within the Planning Area (CNPS 2008). This query was performed for CNPS List 1A, List 1B, and List 2 special-status plants occurring in the surrounding USGS 7.5-minute quadrangles listed above. In addition, the USFWS list for the USGS 7.5-minute quadrangles listed above was consulted for federally listed or candidate plant and animal species that could potentially be affected by the proposed action (USFWS 2008a/b).

When USFWS lists a species as threatened or endangered under FESA, areas of habitat considered essential to its conservation and survival may be designated as critical habitat. These areas may require special consideration and/or protection due to their ecological importance. In November 2008, potential critical habitat designations within the general vicinity of the Planning Area were checked using the USFWS Critical Habitat Portal (USFWS 2008b).

Impact Assessment: This impact assessment is based on the project description (**Section 3.0**), information described in the environmental setting, and the standards of significance described above. This impact assessment discusses impacts to the City from implementation of the proposed General Plan update and associated project components. Areas of potentially impacted habitat types from implementation of the proposed project were calculated using the proposed Land Use Map (**Figure 3.0-4** and habitat mapping efforts.

Assumptions

The exact detail of all development and associated impacts associated with the Land Use Map of the proposed General Plan is not known at this time. Although it is likely that some level of natural resources would be retained within future projects implemented under the proposed project, the location and extent of these resources cannot be determined. Therefore, the more conservative impact approach was taken to ensure that impacts are not underestimated. A basic assumption of this conservative approach is that all natural resources within each proposed project could be removed, or otherwise negatively modified by activities allowed under the General Plan, unless protections are explicitly stated in the General Plan. The analysis takes into account the density and type of land uses proposed, as well as proposed and anticipated development in the City of Ione, the Sphere of Influence (SOI), and the Planning Area. The reader is referred to **Table 4.0-1** and **Section 4.0**, **Introduction to the Analysis and Assumptions Used**, regarding assumed land uses and development conditions in this area.

Table 4.8-6 below provides the base land use assumptions that were utilized to assess potential impacts to biological resources. The impact assessment was produced by comparing the existing habitat types and the proposed land uses under the proposed project. Areas where proposed land uses may negatively affect habitats and other resources were analyzed using ArcGIS. When there was no change to land use (i.e., open space), the acreage was removed from the analysis. Urban habitat is not included in this analysis. **Table 4.8-7** and **Table 4.8-8** provide the same analysis for the wetlands identified by USFWS National Wetland Inventory (NWI) and National Hydrography Dataset (NHD) data.

TABLE 4.8-6
POTENTIALLY IMPACTED HABITATS FROM IMPLEMENTATION OF THE PROPOSED GENERAL PLAN DESIGNATIONS AND EXISTING LAND USES

Existing Land Use/Vegetation Types	Proposed Land Use	Acres within the Planning Area
Annual Grasslands (AGS)	General Agriculture*	3,430.7
	Other Urban Land Use*	796.3
	Parks and Recreation	70.9
	Rural Residential	174.1
	Surface Mining	2,809.1
	Special Planning Area	299.7
Total		*7,580.8*
Barren (BAR)	General Agriculture	13.4
	Other Urban Land Use*	37.9
	Rural Residential	0.4
	Surface Mining	1,392.5
	Special Planning Area	104.3
Total		*1,548.5*
Blue Oak – Foothill Pine (BOP)	General Agriculture	6.5
	Other Urban Land Use*	110.8
	Parks and Recreation	23.5
	Rural Residential	42.1
	Surface Mining	130.0
Total		*321.9*
Blue Oak Woodland (BOW)	General Agriculture	675.8
	Other Urban Land Use*	403.8
	Parks and Recreation	26.0
	Rural Residential	80.7
	Surface Mining	1,722.8
	Special Planning Area	126.9
Total		*3,036.0*
Chamise-Redshank Chaparral (CRC)	Other Urban Land Use*	10.9
	Surface Mining	16.8
Total		*27.7*
Cropland (CRP)	Other Urban Land Use*	97.4
	Rural Residential	10.9
	Surface Mining	90.5
	Special Planning Area	4.2
Total		*203.0*
Lacustrine (LAC)	General Agriculture	3.7
	Other Urban Land Use*	22.9
	Rural Residential	4.5

Existing Land Use/Vegetation Types	Proposed Land Use	Acres within the Planning Area
	Surface Mining	163.3
	Special Planning Area	42.2
Total		*236.6*
Mixed Chaparral (MCH)	General Agriculture	14.7
	Parks and Recreation	4.6
	Other Urban Land Use*	104.3
	Rural Residential	3.3
	Surface Mining	1,323.3
	Special Planning Area	367.4
Total		*1,817.6*
Montane Hardwood (MHW)	Other Urban Land Use*	204.1
	Parks and Recreation	27.8
	Rural Residential	29.1
	Surface Mining	22.6
	Special Planning Area	537.3
Total		*820.9*
Montane Riparian (MRI)	General Agriculture	411.7
	Rural Residential	3.4
	Surface Mining	61.8
	Special Planning Area	25.4
Total		*502.3*
Ponderosa Pine (PPN)	Surface Mining	2.4
Total		*2.4*
Valley Oak Woodland (VOW)	General Agriculture	83.2
	Parks and Recreation	4.6
	Other Urban Land Use*	16.9
	Surface Mining	30.1
	Special Planning Area	12.0
Total		*146.8*
Planning Area Total Impact Acreage		***16,235.5***

** Most of the annual grasslands within the Planning Area are already used as pasture. The "General Agriculture" designation may not impact this habitat type as there may not be a land use change.*

*** "Other Urban Land Use" includes high/medium/low density residential, commercial, industrial, downtown transition, and public service.*

TABLE 4.8-7
POTENTIALLY IMPACTED WETLANDS FROM IMPLEMENTATION OF THE PROPOSED GENERAL PLAN DESIGNATIONS AND EXISTING LAND USES

Existing Land Use/Vegetation Types	Proposed Land Use	Acres within the Planning Area
Freshwater Emergent Wetland	General Agriculture*	83.9
	Other Urban Land Use*	4.0
	Parks and Recreation	3.4
	Rural Residential	1.1
	Surface Mining	62.8
	Special Planning Area	14.5
Total		*169.7*
Freshwater Forested/ Shrub Wetland	General Agriculture	26.6
	Other Urban Land Use*	7.6
	Rural Residential	0.3
	Surface Mining	0.9
Total		*35.4*
Freshwater Pond	General Agriculture	33.2
	Other Urban Land Use*	30.7
	Rural Residential	10.0
	Surface Mining	145.0
	Special Planning Area	17.8
Total		*236.7*
Lake	Surface Mining	48.1
Total		*48.1*
Other	General Agriculture*	5.3
	Other Urban Land Use*	1.6
	Surface Mining	125.8
Total		*132.7*
Riverine	General Agriculture	11.1
Total		*11.1*
Planning Area Total Impact Acreage		***633.7***

** Most of the annual grasslands within the Planning Area is already used as pasture. The "General Agriculture" designation may not impact this habitat type as there may not be a land use change.*

*** "Other Urban Land Use" includes high/medium/low density residential, commercial, industrial, downtown transition, and public service.*

Source: National Wetland Inventory (USFWS 1985).

TABLE 4.8-8
POTENTIALLY IMPACTED WATERS FROM IMPLEMENTATION OF THE PROPOSED GENERAL PLAN DESIGNATIONS AND EXISTING LAND USES

Existing Land Use/Vegetation Types	Proposed Land Use	Linear Feet within the Planning Area
Connector	General Agriculture*	1,888
	Surface Mining	162
Total		*2,050*
Canal/Ditch	General Agriculture	6,891
	Other Urban Land Use*	366
	Special Planning Area	756
Total		*8,013*
Pipeline	General Agriculture	1,012
Total		*1,012*
Stream/River	General Agriculture	219,854
	Other Urban Land Use*	54,789
	Parks and Recreation	11,074
	Rural Residential	2,789
	Surface Mining	135,718
	Special Planning Area	24,085
Total		*448,309*
Artificial Path	General Agriculture	9,095
	Other Urban Land Use*	778
	Rural Residential	1,184
	Surface Mining	6,660
Total		*17,717*
Planning Area Total Linear Feet Impact		***477,101***

** Most of the annual grasslands within the Planning Area is already used as pasture. The "General Agriculture" designation may not impact this habitat type as there may not be a land use change.*

*** "Other Urban Land Use" includes high/medium/low density residential, commercial, industrial, downtown transition, and public service.*

Source: National Hydrography Dataset (USGS 1997).

The City of Ione General Plan is intended to be a "self-mitigating" document, in that the General Plan polices are designed to mitigate or avoid impacts on the environment resulting from implementation of the proposed project. To that end, the relevant GPU policies providing mitigation have been identified for each significant impact in this section. If the applicable General Plan polices were determined not to fully mitigate or avoid impacts, then additional mitigation measures have been provided. These additional mitigation measures have been written as policy statements that can be incorporated into the final General Plan. Each impact discussion includes a determination as to whether the impacts would be mitigated to a less than

significant level or would remain significant and unavoidable after implementation of the updated General Plan policies.

PROJECT IMPACTS AND MITIGATION MEASURES

Impacts to Endangered, Threatened, and Other Listed Species

Impact 4.8.1 Implementation of the proposed General Plan and associated project components 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 1A or 1B (i.e., rare, threatened, or endangered plants). This would be a **potentially significant** impact.

Direct Impacts of the Proposed Project

As discussed above, suitable habitat for plant and animal species listed as endangered, threatened, or List 1B (collectively referred to in this DEIR as "listed species") is found within the Planning Area. Development under the proposed project could directly impact such habitat and result in take of a listed species. Most direct impacts would occur from development of large areas of generally undeveloped land in the Planning Area. Additional impacts would occur from infill development and redevelopment in the city's center.

Development under the proposed General Plan and associated Land Use Map for the Planning Area could potentially cause direct impacts to approximately 16,235 acres of vegetation types that serve as occupied or potential habitat for listed species. See **Table 4.8-9** for a listing of each vegetation type in which listed plant and animal species have the potential to occur in the Planning Area as well as the acres of each vegetation type that exist within the Planning Area. This is a general list; some species have specific habitat requirements that may not occur in the Planning Area or may occur in multiple habitats found within the Planning Area (e.g., trees for nesting, burrows, elderberry shrubs, Ione soil formation, caves, or cliffs). The exact acreage of impacted wetlands and other waters of the U.S. is not known since that effort is beyond the scope of this programmatic EIR. An estimation of wetlands and other waterways from the NWI and NHD is included. As the final design of future development is not currently known, the acreages listed in **Table 4.8-9** represent the maximum area that could be directly affected. Actual direct impacts to these vegetation 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 DEIR is a programmatic analysis of the broad environmental effects of the overall proposed project. Goals, policies and implementation measures contained within the proposed project 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 4.8-9
VEGETATION TYPES CONTAINING HABITAT FOR LISTED SPECIES IN THE PLANNING AREA

Vegetation Type	Common Name	Status			Potentially Impacted Habitats in Planning Area (acres)
		Federal	State	CNPS	
Annual Grasslands[1]	Hoover's calycadenia	~	~	1B	7,581
	Tuolumne button-celery	~	~	1B	
	Bogg's Lake hedge-hyssop	~	SE	1B	
	Legenere	~	~	1B	
	Pincushion navarretia	~	~	1B	
	Sacramento Orcutt grass	FE	SE	1B	
	Tuolumne button-celery	~	~	1B	
	Succulent (fleshy) owl's clover	FT	SE	1B	
	Vernal pool fairy shrimp	FT	~	~	
	Conservancy fairy shrimp	FE	~	~	
	Vernal pool tadpole shrimp	FE	~	~	
	Valley elderberry longhorn beetle[2]	FT, FPD	~	~	
	California tiger salamander	FT	CSC	~	
	Swainson's hawk (foraging)	MNBMC	ST	~	
	Golden eagle (foraging)	MNBMC	CSC; CFP	~	
	Bald eagle (foraging)	FPD; MNBMC	SE; CFP	~	
Barren	Foraging Habitat for Raptor Species	MNBMC	~	~	1,548
Blue-Oak Foothill Pine	Parry's horkelia	~	~	1B	322
	Valley elderberry longhorn beetle[2]	FT, FPD	~	~	
	Swainson's hawk	MNBMC	ST	~	
	Golden eagle	MNBMC	CSC; CFP	~	
	Bald eagle	FPD; MNBMC	SE; CFP	~	
Blue Oak Woodland	Valley elderberry longhorn beetle[2]	FT, FPD	~	~	3,036
	Parry's horkelia	~	~	1B	
	Swainson's hawk	MNBMC	ST	~	
	Golden eagle	MNBMC	CSC; CFP	~	
	Bald eagle	FPD; MNBMC	SE; CFP	~	
Chamise-Redshank Chaparral	Irish Hill buckwheat	FE	SE	1B	28
	Ione buckwheat	FE	SE	1B	
	Ione manzanita	FT	~	1B	
Cropland	Foraging Habitat for Raptor Species	MNBMC	~	~	203
Lacustrine (lake)	Bank swallow	MNBMC	ST	~	237
	Golden eagle (foraging)	MNBMC	CSC; CFP	~	

Vegetation Type	Common Name	Status			Potentially Impacted Habitats in Planning Area (acres)
		Federal	State	CNPS	
	Bald eagle (foraging)	FPD; MNBMC	SE; CFP	~	
Mixed Chaparral	Irish Hill buckwheat	FE	SE	1B	1,818
	Ione buckwheat	FE	SE	1B	
	Ione manzanita	FT	~	1B	
Montane Hardwood	Parry's horkelia	~	~	1B	821
	Valley elderberry longhorn beetle[2]	FT, FPD	~	~	
	Swainson's hawk	MNBMC	ST	~	
	Golden eagle	MNBMC	CSC; CFP	~	
	Bald eagle	FPD; MNBMC	SE; CFP	~	
Montane Riparian	Valley elderberry longhorn beetle[2]	FT, FPD	~	~	502
	California red-legged frog	FT	CSC	~	
	Bank swallow	MNBMC	ST	~	
Ponderosa Pine	Golden eagle	MNBMC	CSC; CFP	~	2
	Bald eagle	FPD; MNBMC	SE; CFP	~	
Valley Oak Woodland	Parry's horkelia	~	~	1B	147
	Valley elderberry longhorn beetle[2]	FT, FPD	~	~	
	Swainson's hawk	MNBMC	ST	~	
	Golden eagle	MNBMC	CSC; CFP	~	
	Bald eagle	FPD; MNBMC	SE; CFP	~	
Other wetland habitat[3]	Sanford's arrowhead	~	~	1B	501.2
Total					**16,746**

1 Annual grassland habitat within the Planning Area has the potential to contain vernal pools and other seasonal wetlands.

2 The valley elderberry longhorn beetle only occurs where its host plant, the elderberry shrub, is found.

3 Since this a different dataset than the CALVEG data, some of these wetlands may overlap ones that have been mapped by CALVEG.

Source: USFWS 2008, CDFG 2008a/b, CNPS 2008, USFS 2005, and USFWS 1985.

Direct Impacts to Listed Plant Species

Listed plant species with the potential to occur in the Planning Area are listed in **Table 4.8-9**. Implementation of the General Plan and associated project components may directly impact these species by direct take during construction, destruction, or degradation of these species' habitat(s). The Ione soil formation found within and surrounding the Planning Area is habitat for several unique and rare plants (**Figure 4.8-3**). Direct removal or development over this soil type further limits the narrow habitat range for these unique plants. Direct and indirect impacts to remaining natural vegetation communities within the Planning Area would occur as a result of implementation of the proposed project. Subsequent development under the proposed project could result in direct take of these species or direct loss of habitat associated with these listed

plant species, since these habitat conditions do occur within the Planning Area. This would be considered to have **potentially significant** impacts.

Direct Impacts to Listed Vernal Pool Crustaceans

Vernal pool crustaceans are dependent upon seasonally ponded water like vernal pools and seasonal wetlands for their entire life cycle. The Land Use Plan proposes development to occur on approximately 7,581 acres of annual grassland habitat within the Planning Area where seasonally ponded water is likely to support these species. This acreage calculation may be overestimated since 3,431 acres of the annual grassland habitat is designated as General Agriculture and may be used as natural pasture (see **Table 4.8.6**); therefore there may be no land use change/conflict. Conversion of natural pastureland to irrigated pasture, cropland, or other agricultural uses may also have a detrimental effect to wetlands and special-status species and should be considered. Direct removal of vernal pools, a CDFG sensitive habitat and habitat for threatened, endangered, or sensitive species, or other seasonally ponded area that is likely to support these species would result in direct take of federally listed species. Development around these sensitive habitat areas would likely result in degradation of habitat and take of federally listed species. This would be considered to have **potentially significant** impacts.

Direct Impacts to Valley Elderberry Longhorn Beetle

Implementation of the proposed project may result in the disturbance and/or removal of elderberry shrubs, which are the host plant for the federally threatened VELB. The proposed General Plan Land Use Map identifies Public Service, General Agriculture, and Park and Recreation designations, among others, along the riparian corridor. These designations within the riparian corridor would degrade the habitat where this species is known to occur. There are previously recorded occurrences of the VELB within the riparian corridor adjacent to Sutter Creek within the Planning Area that date back to 1991 (CDFG 2008b). This species may occur wherever an elderberry shrub is present and therefore could occur throughout the Planning Area. Implementation of the proposed project could result in direct loss (or take) of a VELB through habitat (elderberry shrub) removal or direct take of an individual. This would be considered a **potentially significant** impact.

Direct Impacts to Special-status Fish Species such as Central Valley ESU Steelhead, Central Valley Spring-run ESU Chinook Salmon, and Central Valley Winter-run ESU Chinook Salmon

Many creeks and drainages flow through the Planning Area. While the proposed project requires setbacks from wetlands and waterways (Action CON-1.2.4), these setbacks are not defined and the General Plan Land Use Map identifies Public Service, General Agriculture and Low Density Residential designations, among other land uses, along the riparian corridors within the Planning Area. Adverse impacts to steelhead and salmon resources can arise from improperly designed bridge construction or stormwater projects (increase of sedimentation downstream, loss of existing spawning riffles, loss of rock/gravel recruitment for maintenance of spawning areas, etc.). In addition, recreational and residential developments that reduce riparian vegetation and/or increase urban runoff (fertilizers, pesticides, oils, etc.) into the creeks may also affect populations within the watershed (see Section 4.10, Hydrology and Water Quality). Other construction such as road and bridge construction may negatively impact special-status fish downstream. This would be considered a **potentially significant** impact.

Direct Impacts to California Tiger Salamander

Implementation of the proposed project would result in disturbance and degradation of aquatic breeding and associated upland habitat for California tiger salamander, a federally threatened species. Previously recorded occurrences of California tiger salamander are located approximately 2 miles west of the Planning Area, which date back to 2005 (CDFG 2008b). California tiger salamanders are dependent upon vernal pools, seasonal wetlands, and stock ponds as aquatic breeding habitat. The Land Use Plan designates land uses on 7,581 acres of annual grassland habitat within the Planning Area where seasonally ponded water is likely to support breeding habitat for these species. This acreage calculation may be overestimated since 3,431 acres of annual grassland habitat is designated as General Agriculture and may be used as natural pasture (see **Table 4.8.6**); therefore there may be no land use change/conflict. Conversion of natural (dry) pasture to irrigated pasture, cropland, or other agricultural uses may also have a detrimental effect to wetlands and special-status species and should be considered. Direct removal of vernal pools, a CDFG sensitive habitat, or other seasonally ponded area that is likely to support this species could potentially result in direct take of a federally listed species. Development around these sensitive habitat areas would likely result in degradation of habitat and take of a federally listed species. This would be considered a **potentially significant** impact.

Direct Impacts to California Red-legged Frog

California red-legged frog, a federally threatened species, has the potential to occur in riparian areas within the Planning Area. Although there are no previously recorded occurrences of this species within a 5-mile radius of the Planning Area, there is one previously recorded occurrence approximately 11 miles southeast of the Planning Area (CDFG 2008) and suitable habitat is present within the Planning Area. Many creeks that provide suitable habitat dissect the Planning Area. The proposed General Plan Land Use Map designates Public Service, General Agriculture and Low Density Residential, among other land uses, along the riparian corridors within the Planning Area. In addition, recreational and residential developments, which reduce riparian vegetation and/or increase urban runoff (fertilizers, pesticides, oils, etc.) into the creeks, may also affect local populations (see Section 4.10, Hydrology and Water Quality). This would be considered a **potentially significant** impact.

Direct Impacts to Bank Swallow

Bank swallows have the potential to occur in riparian and lacustrine areas within the Planning Area. This species makes nesting holes on vertical banks, bluffs, and cliffs with fine-textured or sandy soils. Since the entire Planning Area was not surveyed, it is unknown whether this type of habitat occurs within the Planning Area. Destruction or degradation of this habitat type could potentially result in direct take of a state-listed species. If construction of subsequent projects occurs during the nesting season, disturbance could result in direct take of the species (i.e., removal of an active nest), disturbance to nesting activities (e.g., noise, vibration, or activity near the nest), or degradation of foraging habitat causing nest failure. Degradation of riparian corridors would further reduce this species' nesting and foraging habitat. This would be considered a **potentially significant** impact.

Direct Impacts to Swainson's Hawk

Implementation of the proposed project would result in disturbance and degradation of foraging habitat for Swainson's hawk and removal of large trees for nesting. The state-listed Swainson's hawk prefers low-growing cropland such as alfalfa and fallow fields for foraging, but

will forage on most vacant lands. The croplands, barren, annual grasslands, or otherwise vacant lands with a suitable prey base within the Planning Area are suitable foraging habitat for this species. Conversion of farmland and open space into residential and commercial development would significantly reduce the foraging habitat for this special-status raptor species. The Swainson's hawk prefers large trees within riparian corridors but will nest in trees throughout the Planning Area. Removal of vegetation or other construction activities during the nesting season may cause direct impacts to nesting Swainson's hawk if the species is nesting within 250 feet of construction activities by direct take of the species (e.g., removal of tree with active nest), disturbance to nesting activities (e.g.,, noise, vibration, or activity near the nest), or degradation of foraging habitat causing nest failure. Degradation of riparian corridors and conversion of open space would further reduce this species' nesting and foraging habitat. This would be considered a **potentially significant** impact.

Direct Impacts to Bald Eagle and Golden Eagle

Bald and golden eagles have the potential to forage and nest within the Planning Area. A golden eagle nest was observed in 1992 less than 1 mile west of the Planning Area (CDFG 2008a/b). Bald and golden eagles nest and forage within the vicinity of the Planning Area. These species may be directly impacted if construction activities occur within 500 feet of an active nest. Direct impacts to these species would occur for the same reasons and in the same manner as direct impacts to Swainson's hawk as identified and discussed above. This would be considered a **potentially significant** impact.

Indirect Impacts of the Proposed Project

Suitable habitat for listed plant and animal species exists within the Planning Area and could be indirectly impacted by development under the proposed project and roadway or infrastructure improvement and construction. 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. Although these indirect impacts would contribute to the degradation of habitat which may be used by listed species, these impacts would be minimal and therefore are considered **less than significant**.

Increased Human/Wildlife Interactions

The major circulation features identified in the Circulation Element of the proposed project 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. The proposed project is predicting the population of Ione to more than double by the year 2030 (see **Section 4.3**, **Population and Housing**). The increase in human presence subsequently increases the change of negative human/wildlife interactions (e.g., incidental take, insecticides, trapping, and herbicides, vehicular strike). Additionally, the Circulation Element of the proposed General Plan 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. 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 project 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. Development of areas that contain listed species may separate a population from other populations or restrict the range for the population so that the population is no longer viable.

Encroachment by Exotic Weeds

With the conversion of farmland and open space into residential and commercial development, there is increased potential that construction and landscaping activities will introduce invasive exotic plant species to the area. 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. Construction activities and other human disturbances provide opportunities for invasive weeds (e.g., tree of heaven, giant European reed, and yellow star-thistle) to colonize an area. 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 vegetation 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. Indirect impacts to special-status species could occur with implementation of the proposed project which may include habitat degradation as a result of impacts to water quality (see Section 4.10, Hydrology and Water Quality, regarding water quality impacts).

Table 4.8-9 shows quantities of these habitats that may be directly or 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 4.8-9**, 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. 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 changes in the environment that have not already been adequately considered in this DEIR.

In addition to circulation improvements identified in the proposed General Plan and other project components, development provided under the proposed project 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 gas facilities). These associated supporting services and improvements could also contribute to impacts on listed plant and wildlife species.

Proposed General Plan Policies and Action Items that Provide Mitigation

The following proposed General Plan goals, policies, and action items address biological resources and would assist in reducing impacts to endangered, threatened, and other listed species.

Conservation and Open Space Element

Action CO-1.1.1: As appropriate to the characteristics of the proposed development, project location, and environmental conditions, incorporate significant habitat preserves and interconnected wildlife corridors in new development areas to provide ample space for animal movement.

Action CO-1.1.2: Review projects through the entitlement process and CEQA analysis to ensure that they comply with State and federal policy for biological resources.

Action CO-1.1.3: For areas planned to be preserved, the City shall require that preserved habitats have interconnections with other habitat areas, to the extent feasible, in order to maintain the viability of the preserved habitat to support the special-status species identified. The determination of the design and size of the "interconnections" shall be made by the City, as recommended by a qualified professional, and will include consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service.

Policy CO-2.1: Consult with relevant State and local agencies, property owners, and local interest groups to restore, enhance, and preserve creeks in and around the City of Ione. Public and private projects shall be required to avoid impacts to wetlands if feasible. If avoidance is not feasible, projects shall achieve no net loss of wetlands, consistent with State and federal regulations.

Action CO-2.1.1: Restrict or modify as part of the project approval and environmental review process proposed development in areas that contain wetlands, as defined by U.S. Army Corps of Engineers approved delineations as necessary to ensure the continued health and survival of special-status species and sensitive areas.

Action CO-2.1.2: Require setbacks and buffers for all development within areas containing wetlands or for development which will occur adjacent to wetlands or waterways.

Policy CO-2.2: The City shall require that drainage improvements discharging 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, flow velocity, and water quality.

Policy CO-2.4: Require the preservation of existing creek locations, topography, and meandering alignment.

Action CO-2.4.1: Encourage projects that contain creeks, or are located adjacent to creeks, to be designed for visibility and, as appropriate, access. Utilize low-impact trails, such as raised walkways, wherever access to wetlands, creeks and waterways is planned.

Action CO-2.4.2: Ensure that direct and indirect adverse impacts to wetland habitats are minimized by environmentally sensitive project siting and design.

Action CO-2.4.3: Establish standards for private projects allowing public access in the floodplain and buffers along creek corridors and preserves, where not precluded by habitat preservation requirements. Require open-view fencing for all residential development adjacent to creeks and wetlands.

Policy CO-3.1: Conserve existing native and non-invasive trees for their historic, economic, aesthetic, educational, and environmental value.

Policy CO-3.2: The City shall require preservation of all trees of 36" dbh or greater on development sites, unless health, safety, or access requirements do not allow for preservation of such trees. All development is required to fully mitigate the removal of any trees by replanting.

Policy CO-4.3: Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action CO-4.3.1: Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.

Action CO-4.3.2: Educate the community on laws governing the proper handling of hazardous materials, especially those laws that pertain to discharging materials into creeks.

Action CON-4.3.3: Install appropriate signage to deter the discharge of hazardous materials into storm drains.

Action CO-4.3.4: Future land uses anticipated to utilize hazardous materials or waste shall be required to provide adequate containment facilities to ensure that surface water and groundwater resources are protected from accidental releases.

Policy CO-4.4: Minimize erosion into stream channels resulting from new development in urban areas, consistent with State law.

Action CO-4.4.1: Require development projects to contain urban runoff control strategies and requirements that are consistent with Drainage Master Plans and the City's urban runoff management program.

Action CO-4.4.2: 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 City.

Action CO-4.4.3: Encourage new development to incorporate features such as grassy swales, multi-use retention or detention basins, and integrated drainage systems to enhance water quality.

Action CO-4.4.4: Require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff.

Policy CO-4.5: The City shall incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission.

Policy CO-4.6: The City shall continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.

Although application of policies and actions proposed in the Ione General Plan would reduce direct impacts to listed species, impacts to such species are expected to still be **potentially significant**. The proposed policies would not currently require project-by-project surveys to identify possible impacts to species beyond the CNDDB nor do they adequately protect existing areas of important habitat from development. Therefore, the following mitigation measures shall be incorporated into the General Plan in the Conservation and Open Space Element to lessen the impacts to threatened, endangered, and sensitive species and their habitat.

Mitigation Measures

MM 4.8.1a The following shall be added to the Conservation and Open Space Element as an action item:

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 4.8.1b The following shall be added to the Conservation and Open Space Element as an action item:

For proposed private and public projects in which special-status species are found, likely to occur, or where the presence of species can be reasonably inferred, the City shall require feasible mitigation of impacts to those species that ensure that the project does not contribute to the decline of the affected species such that their decline would impact the viability of the species. Such mitigation measures may include providing and permanently maintaining similar quality and quantity of replacement habitat, enhancing existing habitat areas, or paying fees towards to an approved habitat mitigation bank. Replacement habitat may occur either on-site or at approved off-site locations. Feasible mitigation shall be determined by the City after the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) are provided an opportunity to comment. Mitigation shall emphasize a multi-species approach to the maximum extent feasible. This may include development or participation in a habitat conservation plan.

MM 4.8.1c The following shall be added to the Conservation and Open Space Element as an action item:

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.

Implementation of the above General Plan goals, policies, action items, and mitigation measures would mitigate direct and indirect impacts to special-status listed species in the Planning Area. In conjunction with the goals, policies, and action items already identified by the City of Ione, these additional action items would require a biological resource assessment for subsequent projects that could affect sensitive resources, require mitigation for loss of vernal pool complexes, reduce the spread of noxious weeds, and minimize indirect impacts to special-status fish species. Therefore, implementation of the proposed project will result in **less than significant** impacts to listed species.

Impacts to Species of Concern, California Fully Protected, and Other Non-listed Special-Status Species

Impact 4.8.2 Implementation of the proposed General Plan and associated project components would result in direct and indirect loss of habitat and individuals of animal and plant species of concern, listed as "fully protected" in the Fish and Game Code of California (Sections 3511, 4700, 5050, and 5515), migratory birds protected under the Migratory Bird Treaty Act, and other non-listed special-status species including plant species identified by the California Native Plant Society with a rating of List 2. This would be a **potentially significant** impact.

Direct Impacts of the Proposed Project

Suitable habitat exists in the Planning Area for unlisted but nonetheless special-status species. These species are designated as a species of concern by USFWS or CDFG, or rated as List 2 by CNPS. It should be noted that for non-listed special-status species, protection only applies to individuals of the species and not to habitat loss. In addition to the 16,235.5 acres of habitat for listed species that may be directly impacted by development under the proposed General Plan Land Use Map (see Impact 4.8.1), an additional 1,071.8 acres of urban development could be potentially impacted that could affect special-status bat species or nesting migratory birds. Non-listed special-status species have potential to occur in these areas and could also be directly impacted. Direct impacts to non-listed special-status species would occur for the same reasons and in the same manner as direct impacts to listed species as identified and discussed in Impact 4.8.1 above. **Table 4.8-10** lists non-listed special-status species that have the potential to occur in the vegetation types within the Planning Area as well as acreages of conflicting land uses that would be affected by implementation of the proposed project.

TABLE 4.8-10
VEGETATION TYPES CONTAINING HABITAT FOR NON-LISTED SPECIES IN THE IONE GENERAL PLAN PLANNING AREA

Vegetation Type	Common Name	Status			Potentially Impacted Habitat in the Planning Area (acres)
		Federal	State	CNPS	
Annual Grassland[1]	Dwarf downingia	~	~	*2*	7,580.8
	Western spadefoot toad	~	CSC	~	
	Northwestern pond turtle	~	CSC	~	
	Grasshopper sparrow[2]	~	CSC	~	
	Burrowing owl	~	CSC	~	
Barren	Burrowing owl	~	CSC	~	1,548.5
Blue-Oak Foothill Pine	Pallid bat & other special-status bats	~	CSC	~	321.9
Blue Oak Woodland	Prairie falcon[2]	~	CSC	~	3,036.0

Vegetation Type	Common Name	Status			Potentially Impacted Habitat in the Planning Area (acres)
		Federal	State	CNPS	
	Grasshopper sparrow[2]	~	CSC	~	
	Pallid bat & other special-status bats	~	CSC	~	
Chamise-Redshank Chaparral	Grasshopper sparrow[2]	~	CSC	~	27.7
	Pallid bat & other special-status bats	~	CSC	~	
Cropland	Tri-colored blackbird[2]	~	CSC	~	203.0
Lacustrine (lake)	Northwestern pond turtle	~	CSC	~	236.6
	Osprey (foraging)	~	CSC	~	
Mixed Chaparral	Grasshopper sparrow[2]	~	CSC	~	1,817.6
	Pallid bat & other special-status bats	~	CSC	~	
Montane Hardwood	Prairie falcon	~	CSC	~	820.9
	Pallid bat & other special-status bats	~	CSC	~	
Montane Riparian	Northwestern pond turtle	~	CSC	~	502.3
	Osprey[2]	~	CSC	~	
	Prairie falcon[2]	~	CSC	~	
	Yellow-breasted chat[2]	~	CSC	~	
	Pallid bat & other special-status bats	~	CSC	~	
Ponderosa Pine	Pallid bat & other special-status bats	~	CSC	~	2.4
Urban	Pallid bat & other special-status bats	~	CSC	~	1,071.8
Valley Oak Woodland	Prairie falcon[2]	~	CSC	~	146.8
	Grasshopper sparrow[2]	~	CSC	~	
	Osprey[2]	~	CSC	~	
	Pallid bat & other special-status bats	~	CSC	~	
Other Wetlands[3]	Northwestern pond turtle	~	CSC	~	501.2
	Tri-colored blackbird[2]	~	CSC	~	
Total					***17,817.5***

1 Annual grassland habitat within the Planning Area has the potential to contain vernal pools and other seasonal wetlands.

2 These species may occur in multiple habitats throughout the Planning Area where suitable nesting habitat is present.

3 Since this a different dataset than the CALVEG data, some of these wetlands may overlap ones that have been mapped by CALVEG.

Source: USFWS 2008, CDFG 2008a/b, CNPS 2008, USFS 2005, and USFWS 1985.

Direct Impacts to Special-status Plant Species

Direct impacts to non-listed special-status plant species would occur for the same reasons and in the same manner as they would for listed special-status plant species. See Impact 4.8.1 for a discussion of impacts to special-status plant species. Dwarf downingia is rare in California, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time. It is

endangered in a portion of its range but is more or less widespread outside of California. Removal of dwarf downingia plants would be considered a **potentially significant** impact.

Direct Impacts to Western Spadefoot Toad

Western spadefoot toad, a California species of special concern, is found in seasonally ponded water and associated upland habitat. The direct removal or degradation of 7,580.8 acres of annual grassland habitat in the Planning Area that may contain seasonally ponded water may result in direct take of the species (see **Table 4.8-9**). This acreage calculation may be overestimated since 3,431 acres is designated as General Agriculture and may be used as natural pasture; therefore there may be no land use change/conflict. Conversion of natural pasture land to irrigated pasture, cropland, or other agricultural uses may also have a detrimental effect to wetlands and special-status species and should be considered. If this species is present during construction activities from subsequent projects under the proposed project, adverse effects from construction activities could result in the mortality or injury to western spadefoot toad, constituting a **potentially significant** impact.

Direct Impacts to Northwestern Pond Turtle

Suitable habitat for northwestern pond turtle, a California species of special concern, occurs in the Planning Area. It is the goal of CDFG to maintain viable populations of this species as declining population levels, limited ranges, and/or continuing threats have made them increasingly vulnerable to regional extirpation. The northwestern pond turtle requires the protection of suitable nesting sites and the reduction of mortality in the younger age groups to maintain viable populations. If construction activities from subsequent projects under the proposed General Plan and associated project components occur in aquatic habitat (i.e. wetland, riparian, pond, etc.) or upland habitat (i.e. surrounding annual grassland, chaparral, or woodlands), direct effects could occur if individual pond turtles were present. Adverse effects from construction activities could result in the mortality or injury to pond turtles and disturbance/destruction of habitat constituting a **potentially significant** impact.

Direct Impacts to Tri-colored Blackbird

Tri-colored blackbirds nest in dense vegetation, such as tules, cattails, or blackberries. Removal of vegetation during nesting activities could result in direct mortality of this species. In addition, noise, vibration, and other construction activities from subsequent projects under the proposed project could disrupt nesting and foraging activities, which may inadvertently cause nest failure. This impact would be considered **potentially significant**.

Direct Impacts to Burrowing Owl

During construction activities, subsequent projects under the proposed project have the potential to cause direct mortality or harm to burrowing owl (a California species of special concern), if this species is present during grading or earthmoving work from subsequent projects under the proposed project. Burrowing owl habitat is present within the barren land, annual grasslands, or otherwise vacant land within the Planning Area. Burrowing owls frequently occur in areas used by ground squirrels and will excavate old burrows to use as their own. Construction of subsequent projects under the proposed General Plan and associated project components may interfere with nesting activities, if nests are present within 150 meters (500 feet) of construction activities. There is potential that project construction could inadvertently compact occupied burrows. These actions could result in direct loss (or take) of a burrowing owl if construction activities disrupt the breeding of this special-status species or destroy a burrow that is actively being used by a burrowing owl. This impact would be considered **potentially significant**.

Direct Impacts to Migratory Birds and Raptors

Raptors in the orders Falconiformes (hawks, eagles, and falcons) and Strigiformes (owls) are protected in varying degrees under the California Fish and Game Code Section 3503.5, the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and CEQA. The Planning Area currently provides suitable nesting and foraging habitat for several raptor and migratory bird species. The subsequent projects under the proposed project have the potential to significantly impact nesting raptors and migratory birds. The average avian breeding window is from February 1 to August 31. This period may extend to September 15 if the area is still occupied or until the young have fledged or nesting had failed after June 15. Direct take of active nests, eggs, or birds is prohibited by CDFG and measures must be taken to minimize disturbance.

Implementation of the proposed project would result in disturbance, degradation, and removal of trees for nesting and foraging habitat. Trees and other vegetation provide nesting habitat for migratory birds and raptors including great egret, great blue heron, red-tailed hawk, red-shouldered hawk, and American kestrel, among others. In addition some bird species, such as killdeer, are ground nesters and may therefore be impacted by earthmoving activities. The proposed project would result in potential development of approximately 9,300 acres of open space suitable for nesting and foraging. Many raptors or birds of prey prefer low-growing cropland such as alfalfa fields and grassland for foraging. Increased conversion of farmland into residential, commercial, and industrial development would significantly reduce the foraging habitat for these raptor species. These actions could result in direct loss (or take) of protected migratory birds and raptors through direct removal of an active nest or construction activities during the nesting season. This impact would be considered **potentially significant**.

Direct Impacts to Special-status Bats

Bats such as the pallid bat, hoary bat, yuma myotis, western red bat, western mastiff bat, and other special-status bat species have the potential to occur within the Planning Area. Suitable roosting habitat for these species varies and includes snags, the loose bark of a tree, other vegetation, rock overhangs, manmade structures, caves, and culverts. Several bat species roost in abandoned buildings, rock crevices, under bark, hollow trees, or other dark crevices. Suitable roosting habitat for special-status bat species occurs within the Planning Area. Development under the proposed General Plan and associated project components may result in the removal of appropriate roosting habitat, which could result in direct mortality of individuals or the entire roosting colony. Disturbance of significant roost sites can result in a significant impact on regional populations. Disturbance may include removal of vegetation surrounding or immediately adjacent to a cave or tunnel entrance, changes to airflow within the cave, or alteration of water flows and ground hydrology in the surrounding area. Changes in their habitat, including an increase in noise and vibrations, can severely affect the survivorship of the young if construction occurs adjacent to maternity colonies during spring and summer breeding and the subsequent raising of young. This impact would be considered **potentially significant**.

Indirect Impacts of the Proposed General Plan

Suitable habitat exists within the Planning Area for non-listed, special-status species, identified in **Table 4.8-10** above. Indirect impacts to these species would occur for similar reasons as those identified in Impact 4.8.1.

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. The mitigating effect of many of the policies and action items in the proposed project, 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 project 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 DEIR. This environmental review and subsequent environmental reviews may further reduce the indirect impacts of the proposed project on non-listed special-status species. Therefore, indirect impacts associated with implementation of the proposed General Plan update and associated project components likely would be less. As the final design of development and roadways to be constructed under the proposed project cannot be known, the actual quantity of habitat impacted may vary greatly. Although indirect impacts would contribute to the degradation of habitat which may be used by non-listed special-status species, these impacts would be minimal and therefore are considered **less than significant**.

Discussion of Indirect Impacts to Special-status Plant Species

Indirect impacts to non-listed special-status plant species would occur for the same reasons and in the same manner as they would for listed special-status plant species. See Impact 4.8.1 for a discussion of indirect impacts to special-status plant species.

Discussion of Indirect Impacts to Special-status Wildlife Species

Indirect impacts to non-listed special-status wildlife species would occur for the same reasons and in the same manner as they would for listed special-status wildlife species (see Impact 4.8.1). In addition to the indirect impacts to special-status wildlife species discussed under Impact 4.8.1, additional indirect impacts may occur to northwestern pond turtle and special-status bat species with the implementation of the proposed project. Indirect effects to northwestern pond turtle habitat may occur downstream from subsequent projects under the proposed project, if water quality were degraded by sediment transported downstream. Sediment derived from construction activities or erosion could also eliminate food sources in the creek; however mitigation outlined in Section 4.10, Hydrology and Water Quality, will ensure that water quality will not be significantly degraded by subsequent projects under the proposed project.

For special-status bat species, construction activities near or adjacent to a roosting site may indirectly impact the species. Disturbance may include removal of vegetation surrounding or immediately adjacent to a cave or tunnel entrance, changes to airflow within the cave, or alteration of water flows and ground hydrology in the surrounding area. Changes in their habitat, including increase in noise and vibrations, can severely affect the survivorship of the young if construction occurs adjacent to maternity colonies during spring and summer breeding and the subsequent raising of young. Indirect impacts to special-status bat species may decrease the viability of local populations.

Proposed General Plan Policies and Action Items that Provide Mitigation

The following proposed General Plan goals, policies, and action items address biological resources and would assist in reducing impacts to species of concern and other non-listed special-status species.

Conservation and Open Space Element

Action CO-1.1.1: As appropriate to the characteristics of the proposed development, project location, and environmental conditions, incorporate significant habitat

preserves and interconnected wildlife corridors in new development areas to provide ample space for animal movement.

Action CO-1.1.2: Review projects through the entitlement process and CEQA analysis to ensure that they comply with State and federal policy for biological resources.

Action CO-1.1.3: For areas planned to be preserved, the City shall require that preserved habitats have interconnections with other habitat areas, to the extent feasible, in order to maintain the viability of the preserved habitat to support the special-status species identified. The determination of the design and size of the "interconnections" shall be made by the City, as recommended by a qualified professional, and will include consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service.

Policy CO-2.1: Consult with relevant State and local agencies, property owners, and local interest groups to restore, enhance, and preserve creeks in and around the City of Ione. Public and private projects shall be required to avoid impacts to wetlands if feasible. If avoidance is not feasible, projects shall achieve no net loss of wetlands, consistent with State and federal regulations.

Action CO-2.1.1: Restrict or modify as part of the project approval and environmental review process proposed development in areas that contain wetlands, as defined by U.S. Army Corps of Engineers approved delineations as necessary to ensure the continued health and survival of special-status species and sensitive areas.

Action CO-2.1.2: Require setbacks and buffers for all development within areas containing wetlands or for development which will occur adjacent to wetlands or waterways.

Policy CO-2.2: The City shall require that drainage improvements discharging 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, flow velocity, and water quality.

Policy CO-2.4: Require the preservation of existing creek locations, topography, and meandering alignment.

Action CO-2.4.1: Encourage projects that contain creeks, or are located adjacent to creeks, to be designed for visibility and, as appropriate, access. Utilize low-impact trails, such as raised walkways, wherever access to wetlands, creeks and waterways is planned.

Action CO-2.4.2: Ensure that direct and indirect adverse impacts to wetland habitats are minimized by environmentally sensitive project siting and design.

Action CO-2.4.3: Establish standards for private projects allowing public access in the floodplain and buffers along creek corridors and preserves, where not precluded by habitat preservation requirements. Require open-view fencing for all residential development adjacent to creeks and wetlands.

Policy CO-3.1: Conserve existing native and non-invasive trees for their historic, economic, aesthetic, educational, and environmental value.

Policy CO-3.2: The City shall require preservation of all trees of 36" dbh or greater on development sites, unless health, safety, or access requirements do not allow for preservation of such trees. All development is required to fully mitigate the removal of any trees by replanting.

Policy CO-4.3: Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action CO-4.3.1: Restrict hazardous materials storage in the 100-year floodplain to prevent surface water contamination.

Action CO-4.3.2: Educate the community on laws governing the proper handling of hazardous materials, especially those laws that pertain to discharging materials into creeks.

Action CON-4.3.3: Install appropriate signage to deter the discharge of hazardous materials into storm drains.

Action CO-4.3.4: Future land uses anticipated to utilize hazardous materials or waste shall be required to provide adequate containment facilities to ensure that surface water and groundwater resources are protected from accidental releases.

Policy CO-4.4: Minimize erosion into stream channels resulting from new development in urban areas, consistent with State law.

Action CO-4.4.1: Require development projects to contain urban runoff control strategies and requirements that are consistent with Drainage Master Plans and the City's urban runoff management program.

Action CO-4.4.2: 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 City.

Action CO-4.4.3: Encourage new development to incorporate features such as grassy swales, multi-use retention or detention basins, and integrated drainage systems to enhance water quality.

Action CO-4.4.4: Require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff.

Policy CO-4.5: The City shall incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission.

Policy CO-4.6: The City shall continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.

Mitigation Measures

Implementation of the General Plan policies and action items listed under Impact 4.8-1, in addition to mitigation measures **MM 4.8.1a** through **MM 4.8.1c** would mitigate any direct or indirect impacts to non-listed special-status species in the Planning Area by requiring surveys for special-status species and appropriate mitigation for impacts to special-status species. Therefore, implementation of the proposed project will result in **less than significant** impacts to non-listed special-status species.

Impacts to Sensitive Biological Communities, Including Oak Woodlands, Riparian Habitat, Vernal Pools, Wetlands, and Jurisdictional Features

Impact 4.8.3 Implementation of the proposed project would result in disturbance, degradation, and removal of sensitive biological communities. This would be a **potentially significant** impact.

Oak Woodlands

Oak woodland is a CDFG-designated sensitive natural community that occurs within the Planning Area. Oak woodlands are rapidly disappearing in California and further elimination due to future development areas would result in significant adverse impacts. Four woodland types that were identified in the Planning Area that would qualify as oak woodland: valley oak woodland, blue oak woodland, blue-oak-foothill pine, and montane hardwood. Implementation of the project would result in disturbance, degradation, and removal of approximately 147 acres of valley oak woodland, 3,036 acres of blue oak woodland, 322 acres of blue-oak foothill pine, and 821 acres of montane hardwood. Destruction and degradation of 4,326 acres of oak woodland habitat is **potentially significant**.

Ione Soil Formation

The Ione soil formation (Eocene) is present within and around the Planning Area. The formation's soil is highly acidic and nutrient-poor, and contains high concentrations of soluble aluminum, which exhibits environmental conditions that are hostile to plant life. Several unique and rare plants have evolved and adapted to these harsh conditions (Hartwell 2006). The destruction or degradation of the plant communities which inhabit this soil formation would result in a significant reduction in this unique habitat type and is a **potentially significant** impact.

Riparian Habitat

Implementation of the proposed project would result in disturbance, degradation, and removal of riparian habitat. Riparian habitat is under the jurisdiction of CDFG under Fish and Game Code Section 1602. CDFG regulates work that will substantially affect resources associated with rivers, creeks, streams, and lakes in California, pursuant to Fish and Game Code Sections 1600–1607. Any action from a project that substantially diverts or obstructs the natural flow or changes the bed, channel, or bank of any river or stream, or uses material from a streambed must be previously authorized by CDFG in a Streambed Alteration Agreement under Section 1602 of the Fish and Game Code. This requirement may, in some cases, apply to any work undertaken within the 100-year floodplain of a body of water or its tributaries, including intermittent streams. As a general rule, however, it applies to any work done within the ordinary high-water mark of a river or stream, that contains or once contained fish and wildlife or that supports or once supported riparian vegetation. Implementation of the General Plan update and associated project components would result in direct and indirect impacts to riparian conditions along the waterways within the Planning Area.

Riparian habitat supports a high diversity of wildlife species and provides shade for streams and wetlands, maintaining stream temperatures and reducing stream evaporation. Riparian obligates (those species dependent on riparian habitat) require a minimum of a 100-foot setback (Robins 2006; Ledwith 1996). Buffers are not only important to the species they support but they also can reduce sediment and nutrient inputs into streams. The length of buffers is also important for stream functions. The benefits of riparian corridor buffers increase if they are adjacent to larger tracts of conserved land.

Riparian habitat is considered to be a sensitive natural community under CEQA. The proposed project designates land within the riparian corridor as Public Service, Park and Recreation, and Low Density Residential, among others. In addition, the WIRIS bypass may cross several creeks. Proposed General Plan policies encourage the use of areas surrounding creek corridors and natural areas for use by the public and as educational outreach (Policy CO-1.2, Action CO-1.2.1., Action CO-1.2.2, and Action CO-2.1.3); however, these policies and action items may impact habitat values within sensitive natural areas if signage and public use interfere substantially with sensitive resource areas. Encroachment into the riparian corridor decreases its habitat value and function. Disturbance and loss of riparian habitat is considered a potentially significant impact. Since the exact nature and location of development is not known at this time, until subsequent project design plans are finalized the exact number of acreage lost cannot be verified. Destruction and degradation of riparian habitat without mitigation is **potentially significant**.

Vernal Pools and Wetlands

Implementation of the proposed project would result in disturbance, degradation, and removal of approximately 7,580.8 acres of annual grassland habitat within the Planning Area, which has a high potential to support vernal pools, a CDFG sensitive habitat, and other wetland types. This acreage calculation may be overestimated since 3,431 acres is designated as General Agriculture and may be used as natural pasture; therefore there may be no land use change/conflict. Conversion of natural pasture land to irrigated pasture, cropland, or other agricultural uses may also have a detrimental effect to wetlands and special-status species and should be considered. Implementation of the General Plan update and associated project components would result in direct and indirect impacts to annual grassland habitat within the Planning Area. Vernal pools are considered to be a sensitive natural community under CEQA. In addition, vernal pools and other wetland types are habitat for numerous listed and non-listed special-status species. Vernal pools require the surrounding upland habitat to maintain their habitat value and function. Disturbance and loss of vernal pool habitat as well as its associated upland habitat is considered a **potentially significant** impact. Additional discussion of this sensitive resource has previously appeared under **Impact 4.8.1.**

Jurisdictional Features

Implementation of the proposed project, specifically development identified in the General Plan Land Use Map, could result in temporary and permanent loss of jurisdictional waters, including wetlands, within the Planning Area. Jurisdictional waters of the U.S. may occur within any of the habitat types in the Planning Area. The NWI dataset (USFWS 1985) has identified 501.2 acres of wetlands that may be impacted by implementation of the proposed project (**Table 4.8-7**). In addition, the National Hydrography Dataset (USGS 1997) has identified 469,088 linear feet of potential waters of the U.S. that may be impacted by implementation of the proposed project (**Table 4.8-8**). Additional jurisdictional features that have not been mapped are present within the Planning Area. Jurisdictional features may be directly affected by being filled or partially filled by subsequent projects under the proposed General Plan. Impacts to jurisdictional features

would require a 404 permit from USACE and a 401 Water Quality certification from the Regional Water Quality Control Board. Potential trenching of waterways within the Planning Area will also require a Streambed Alteration Agreement (CDFG Code Section 1603). USACE and CDFG have a "no net loss" policy for jurisdictional features; therefore, this impact would be considered **potentially significant**.

Implementation of the proposed project may cause localized alterations of the hydrology (i.e., changes in water flow spatially as well as temporally) that may indirectly impact jurisdictional features. Water quality may also be adversely impacted. Runoff from increased impervious surfaces, such as roadways, contains pollutants (e.g., heavy metals, oil, or litter) that would be directly or indirectly discharged into jurisdictional features via sheet flow and storm drainages. Construction activities of subsequent projects under the proposed project could increase sediment and urban runoff into waterways that could result in significant adverse impacts to the aquatic environment.

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. Impacts to surface water flows are discussed further in Section 4.10, Hydrology and Water Quality.

Proposed General Plan Policies and Action Items that Provide Mitigation

The proposed General Plan includes the following policies and action items that provide some mitigation for this impact:

Conservation and Open Space Element

Action CO-1.1.1: As appropriate to the characteristics of the proposed development, project location, and environmental conditions, incorporate significant habitat preserves and interconnected wildlife corridors in new development areas to provide ample space for animal movement.

Action CO-1.1.2: Review projects through the entitlement process and CEQA analysis to ensure that they comply with State and federal policy for biological resources.

Action CO-1.1.3: For areas planned to be preserved, the City shall require that preserved habitats have interconnections with other habitat areas, to the extent feasible, in order to maintain the viability of the preserved habitat to support the special-status species identified. The determination of the design and size of the "interconnections" shall be made by the City, as recommended by a qualified professional, and will include consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service.

Policy CO-2.1: Consult with relevant State and local agencies, property owners, and local interest groups to restore, enhance, and preserve creeks in and around the City of Ione. Public and private projects shall be required to avoid impacts to

wetlands if feasible. If avoidance is not feasible, projects shall achieve no net loss of wetlands, consistent with State and federal regulations.

Action CO-2.1.1: Restrict or modify as part of the project approval and environmental review process proposed development in areas that contain wetlands, as defined by U.S. Army Corps of Engineers approved delineations as necessary to ensure the continued health and survival of special-status species and sensitive areas.

Action CO-2.1.2: Require setbacks and buffers for all development within areas containing wetlands or for development which will occur adjacent to wetlands or waterways.

Policy CO-2.2: The City shall require that drainage improvements discharging 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, flow velocity, and water quality.

Policy CO-2.4: Require the preservation of existing creek locations, topography, and meandering alignment.

Action CO-2.4.1: Encourage projects that contain creeks, or are located adjacent to creeks, to be designed for visibility and, as appropriate, access. Utilize low-impact trails, such as raised walkways, wherever access to wetlands, creeks and waterways is planned.

Action CO-2.4.2: Ensure that direct and indirect adverse impacts to wetland habitats are minimized by environmentally sensitive project siting and design.

Policy CO-4.3: Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Policy CO-4.4: Minimize erosion into stream channels resulting from new development in urban areas, consistent with State law.

Action CO-4.4.4: Require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff.

Policy CO-4.6: The City shall continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.

The updated General Plan incorporates the policies and action items under Goal CO-2 and CO-4 that provide mitigation for sensitive communities, including jurisdictional features; however any loss of these sensitive resources is considered a significant impact and additional mitigation measures are necessary. Action Items CO-1.1.1 and CO-1.1.3 encourage the incorporation of habitat preserves and connectivity; however they do not specify which types of habitat. The policies and action items under Goal CO-2 strive to preserve and maintain creek corridors and wetlands; however, impacts to these habitats may still occur. The General Plan also does not address impacts to oak woodlands or sensitive plant communities found within the Ione soil formation. Additional mitigation measures are necessary to address impacts to these sensitive resources.

Mitigation Measures

Adoption of the proposed General Plan goals CO-1, CO-2, CO-3, and CO-4 and associated policies and action items as well as implementation of the General Plan policies and action items listed under Impact 4.8-1, in addition to mitigation measures **MM 4.8.1a** through **MM 4.8.1c** would reduce potential impacts to a **less than significant** level. These mitigation measures would mitigate impacts to sensitive biological communities by requiring a biological resources evaluation, preserving vernal pool complexes, preserving riparian habitat, discouraging planting of and actively removing invasive species, mitigating and preserving wetland habitats, and buffering sensitive areas.

Impacts to the Movement of Native Resident or Migratory Fish or Wildlife Species or with Established Migratory Corridor

Impact 4.8.4 Implementation of the proposed project would interfere substantially with the movement of several special-status and common wildlife species. This would be a **potentially significant** impact.

Wildlife movement corridors are routes frequently utilized by wildlife that provide shelter and sufficient food supplies to support wildlife species during migration. Movement corridors generally consist of riparian, woodland, or forested habitats that span contiguous acres of undisturbed habitat. Wildlife movement corridors are an important element of resident species home ranges, including deer (such as the Mother Lode deer herd) and coyote. Drainages provide 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 Sutter, Mule, and Dry creeks. The major area with remaining natural lands within the city limits includes the riparian habitats which provide adequate cover and vegetation to be used as a migratory corridor for common and special-status wildlife species. Corridors provided by these streams and drainages provide important routes for species moving through the area as well as for local species that use these corridors to spread to new habitat, to mate, and to disperse genetic material.

Since the Mother Lode deer herd does not make long-distance migrations, the long-distance deer migration routes are not expected to be impacted with the implementation of the proposed project. Leaving patches of chaparral, protecting riparian areas, and retaining oak trees would supply resident deer with the habitat components they require (CDFG1983).

In addition to ephemeral drainages, streams, and rivers, large areas of undeveloped land provide habitat and cover for other species moving through the area and between habitats within the Planning Area. Implementation of the General Plan update and associated project components would result in disturbance, degradation, and removal of riparian habitat, important corridors for the movement of common and special-status species. In addition open space, including agricultural lands, chaparral, woodlands, and annual grasslands, provides an opportunity for dispersal and migration of wildlife species. Large-scale development of the Planning Area 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 or further sever connections between habitats and vegetation types in the Planning Area. Roadway improvement and construction also could negatively impact ephemeral drainages and jurisdictional waters of the U.S. Channelization of existing streams, culvert additions, and otherwise engineered or manipulated drainages have been shown to reduce opportunities for some species' movement. The proposed project could result in habitat degradation due to

additional traffic, increased human presence, and degradation of the water quality. This would be considered a **potentially significant** impact.

Proposed General Plan Policies and Action Items that Provide Mitigation

The proposed General Plan includes the following policies and action items that provide some mitigation for this impact:

Conservation and Open Space Element

Action CO-1.1.1: As appropriate to the characteristics of the proposed development, project location, and environmental conditions, incorporate significant habitat preserves and interconnected wildlife corridors in new development areas to provide ample space for animal movement.

Action CO-1.1.3: For areas planned to be preserved, the City shall require that preserved habitats have interconnections with other habitat areas, to the extent feasible, in order to maintain the viability of the preserved habitat to support the special-status species identified. The determination of the design and size of the "interconnections" shall be made by the City, as recommended by a qualified professional, and will include consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service.

Action CO-2.1.2: Require setbacks and buffers for all development within areas containing wetlands or for development which will occur adjacent to wetlands or waterways.

Policy CO-2.4: Require the preservation of existing creek locations, topography, and meandering alignment.

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 project. Therefore, the following mitigation measures shall be incorporated into the General Plan where indicated.

Mitigation Measures

MM 4.8.4a The following action item shall replace action item CO-1.1.1:

Continuous wildlife habitat, including corridors free of human disruption, shall be preserved and where feasible, created by interconnecting open spaces and wildlife habitat and corridors. The City shall consider loss of wildlife habitat and connectivity when evaluating new projects as feasible to the characteristics of the proposed development, project location, and environmental conditions, incorporate habitat preserves and interconnected wildlife corridors in new development areas. The City shall strive to retain and connect existing wildlife habitat within the city limits and areas of infill development through open spaces, trails, or other corridors.

MM 4.8.4b The following shall be added to the Conservation and Open Space Element as an action item::

Coordinate with Amador County and adjoining jurisdictions, as well as with federal and state agencies such as Caltrans, to assure regional connectivity of open space and wildlife corridors.

Implementation of mitigation measures **MM 4.8.1a** through **4.8.1c**, and **4.8.4a** and **4.8.4b** as well as the incorporation of General Plan action item CO-1.1.3, would reduce potential impacts to migratory/movement corridors to a **less than significant** level by requiring a biological resources evaluation, preserving riparian habitat, incorporating wildlife corridors into planning decisions and impact analyses, and buffering sensitive areas.

Conflict with Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Any Adopted Biological Resources Recovery or Conservation Plan of Any Federal, State, or Local Agency

Impact 4.8.5 Implementation of the proposed project 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. There would be **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. There are **no impacts**.

Mitigation Measures

None required.

4.8.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The land use policies in the proposed City of Ione General Plan update would provide direction for growth within the city limits, while the Amador County General Plan policies provides direction for growth outside the city limits, but within the Planning Area boundaries (until land areas are annexed into the City). Thus, the setting for this cumulative analysis includes existing, proposed, approved, and planned projects in the City of Ione General Plan Planning Area and surrounding portions of unincorporated Amador County as well as full buildout of the City of Ione General Plan Planning Area as proposed in the General Plan update (occurring after year 2030). Development in the region identified in Section 4.0 would change the intensity of land uses in the region. The cumulative setting for this section of the DEIR is broad 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 proposed project (e.g., vernal pools, biological resources associated in the Ione Formation) as well as biological resource impacts for the larger region (e.g., oak tree and wetlands loss). 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 the cities of Ione, Jackson, Sutter Creek, and Plymouth as well as unincorporated areas of Amador County. A list of regional projects in the Planning Area is located in **Table 4.0-1** in Section 4.0 of this Draft EIR.

Increased development and disturbance created by human activities under cumulative conditions will result in direct mortality, habitat loss, deterioration of habitat suitability, and avoidance of habitat. Habitats most likely to be affected are oak woodlands, riparian habitat, and wetlands. The wildlife species associated with each habitat will likely be affected as well.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Biological Resources

Impact 4.8.6 Implementation of the proposed General Plan and associated project components, 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 project's incremental contribution to this significant cumulative impact is **cumulatively considerable**.

As identified under **Impacts 4.8.1 through 4.8.5** above, development arising through implementation of the proposed project 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 under way in areas such as the cities of Jackson, Sutter Creek, and Plymouth as well as in unincorporated areas of Amador County would increase indirect impacts on the cumulative area.

The contribution to these impacts by development of the General Plan and associated project component would be cumulatively considerable as many special-status species rely on specific vegetative 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 other raptors that have been known to use the agricultural lands as foraging habitat and riparian and other natural habitat within the Planning Area as nesting and breeding habitat. In addition, species such as the western spadefoot toad and California tiger salamander may use seasonal wetlands for foraging and breeding and adjacent uplands for overwintering.

In addition to these direct impacts, the cumulative loss of habitat and associated wildlife could result in declines in special-status species and other regulated biological resources. In addition, the proposed project would contribute to an increased human presence, which would result in indirect impacts to biological resources (e.g., wildlife struck by vehicles, increased nighttime lighting). The proposed project and other projects in the region would result in adverse impacts on:

- Large trees and riparian habitat that provide important habitat for a wide variety and high diversity of wildlife;
- Special-status species and the habitat(s) they use;
- Habitat used by migratory birds and raptors; and
- Jurisdictional features (wetlands and waters of the U. S.).

A portion of the Planning Area is disturbed as a result of previous residential and commercial development activities and agricultural production. Even so, disturbed lands provide habitat for many common species and may provide habitat for several special-status species. Many of the species potentially occurring within the Planning Area are not only a concern in the city but also regionally throughout Amador County and California. The riparian corridors, agricultural lands, and

open space within the Planning Area provide habitat for numerous listed and non-listed special-status species. Further population declines for listed species may jeopardize species survival while non-listed species may become listed with further losses or degradation of suitable habitat. Implementation of the proposed project would contribute to the overall loss of open space.

Wetlands and riparian habitat provide invaluable services such as water purification through retention of nutrients, sediments, and pollutants, groundwater recharge (the movement of water from the wetland down into the underground aquifer), and stabilization of local climate conditions, particularly rainfall and temperature. The loss of wetlands and riparian forest along the waterways within the Planning Area would result in declines in water quality conditions. This potential reduction to water quality in the city's waterways could result in adverse effects to downstream aquatic resources and riparian habitat. Many streams and drainages found within the Planning Area feed larger watercourses to the west of the city and impacts to these features could impact other areas such as Sacramento County.

While additional impacts may result from the implementation of individual projects within the Planning Area and surrounding areas, mitigation would be required of any discretionary projects impacting natural resources. The establishment of mitigation requirements such as those recommended in this document would adequately address these impacts. The City of Ione General Plan policies for preservation of wildlife and their habitats would ensure that the cumulative impacts would be properly mitigated by preserving mitigation lands for wildlife and sensitive communities within Amador County.

Proposed General Plan Policies and Action Items that Provide Mitigation

The proposed General Plan update contains several goals, policies, and action items that would assist in reducing this potential impact to biological resources. The following list contains those policies and action items that contain specific, enforceable requirements and/or restrictions and corresponding performance standards that assist in reducing (though not eliminating) this impact. Since these policies and action items have been described in detail in prior impact discussions for this section, the following is limited to only listing the policy and action item numbers.

Conservation and Open Space Element

Action CO-1.1.1, Action CO-1.1.2, Action CO-1.1.3, Policy CO-2.1, Action CO-2.1.1, Action CO-2.1.2, Policy CO-2.2, Policy CO-2.4, Action CO-2.4.1, Action CO-2.4.2, Policy CO-3.1, Policy CO-3.2, Policy CO-4.3, Action CO-4.3.1, Action CO-4.3.2, Action CO-4.3.3, Action CO-4.3.4, Policy CO-4.4, Action CO-4.4.1, Action CO-4.4.2, Action CO-4.4.3, Action CO-4.4.4, Policy CO-4.6.

Mitigation Measures

Implementation of the above General Plan policies, associated action items, and mitigation measures **MM 4.8.1a** through **4.8.1c**, **MM 4.8.4a,** and **MM 4.8.4b** would reduce the proposed project's contribution to cumulative biological impacts in the region. However, the proposed project'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 under the General Plan and its associated project components– 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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