3.4 Biological Resources

San Luis Obispo County supports a wide range of important and sensitive species and habitat types. Renewable energy projects located in areas supporting sensitive biological resources could result in impacts to biological resources. This section outlines the existing biological resource setting in the county and related state and federal regulatory framework and evaluates the proposed Program for biological resource impacts.

3.4.1 PHYSICAL SETTING

The following discussion begins with a general county overview of the biological setting and then provides more specific information within each of the four planning areas considered under the Renewable Energy Streamlining Program (RESP or Program). Native vegetation, special-status species (including designated critical habitat), migration and wildlife movement, jurisdictional resources, and other biological considerations are described for each planning area. The Coastal Zone Planning Area is excluded from consideration in the Program and therefore is not described.

GIS datasets were used to develop the environmental setting for the Program and were obtained from various sources including the California Department of Fish and Wildlife (CDFW), County of San Luis Obispo, US Fish and Wildlife Service (USFWS), US Geological Survey (USGS), and others.

BIOLOGICAL RESOURCES IN SAN LUIS OBISPO COUNTY

The county is rich with native habitats, undeveloped open space, and rural areas that support diverse biological resources. The following paragraphs introduce the resources highlighted in this analysis.

Vegetation and Habitats

San Luis Obispo County supports a wide variety of vegetation and habitats, from desert scrub to coastal sage scrub; oak woodlands to redwood forests; agriculture, grasslands, and developed lands to riparian woodlands, marshes, lakes, and rivers. Vegetation data presented in this analysis are from the USGS GAP Land Cover Data Set, which incorporates the NatureServe Ecological System classification system to represent natural and semi-natural land cover (USGS 2011). **Figure 3.4-1** illustrates the distribution of vegetation and habitats in the county.

Special-Status Species and Critical Habitat

Over 50 species listed under the federal or California Endangered Species Acts (ESA or CESA, respectively) are recorded in or have the potential to occur in San Luis Obispo County. A few of the more recognized wildlife species include Morro shoulderband snail, vernal pool fairy shrimp, San Joaquin kit fox, Nelson's antelope squirrel, giant kangaroo rat, blunt-nosed leopard lizard, California tiger salamander, and California condor.. In addition to these listed species, many other plants and animals in the county are recognized by the CDFW or the USFWS as candidates for listing, species of special concern, or with other special-status conservation designations. As a general rule, conservation of listed threatened and endangered species takes highest priority and will conserve habitats and other resources for many lower-priority special-status species. Therefore, listed species and designated critical habitat are used in this analysis as a proxy for all special-status species.

Critical habitat is a federal designation to provide essential habitat for listed species. It comprises one or more areas essential for the conservation of a species listed as threatened or endangered

under the ESA. It often includes areas that are not occupied by the species for which it was designated, but that provide specific functions (e.g., biological connectivity, dispersal areas) necessary for the species' recovery. Critical habitat may be designated for a single species or a group of species. **Figure 3.4-2** identifies designated critical habitat in San Luis Obispo County.

Migration and Wildlife Movement

Migratory pathways are routes used by species during migration, particularly in the fall and spring. Bird and bat migratory pathways often span thousands of miles and follow specific topographic features such as canyons and mountain ranges. In topographically open areas, migratory pathways may be broad and less concentrated. Riparian and wetland areas, annual grasslands, and fallow agricultural fields are particularly important as foraging and stopover sites for migrating and wintering birds in San Luis Obispo County.

In addition to seasonal migration movement, wildlife populations must have access to suitable habitat areas throughout their ranges to make use of available resources and maintain self-sustaining population levels. Land use changes for urban and agricultural uses, and linear developments such as freeways, tend to partially isolate large habitat areas from one another. Wildlife corridors facilitate movement between habitat areas that would otherwise be isolated. These corridors include habitat linkages among natural areas, greenbelts, and refuge systems. They can divert wildlife across permanent physical barriers to aid dispersal (e.g., underpasses and ramps that help wildlife cross highways and dams). Several benefits of wildlife corridors, including the promotion of species richness and diversity, decreased probability of extinction, maintenance of genetic variation, increased mix of habitat and successional stages, and alternative refugia from large disturbances.

Figure 3.4-3 presents data identifying some important areas for migration and wildlife movement in the county. Suitable stopover habitat is critical for migrating birds to provide food, water, and refugia. Important Bird Areas are identified by Audubon California (2008) as critical terrestrial and inland water habitats for birds, particularly habitat that supports rare, threatened, or endangered birds or exceptionally large congregations of shorebirds or waterfowl; these areas are conservation priorities. A number of Important Bird Areas have been identified in the county and are shown on **Figure 3.4-3**.

The Missing Linkages collaboration process identified linkages that are important to maintain or reinstate habitat connectivity throughout California. Linkages in this dataset include large, regional connections between habitat blocks meant to facilitate animal movement and other essential functions; narrow, impacted, or otherwise tenuous linkages connecting two or more habitat blocks; and highly impacted linkages that currently provide little to no connectivity function (due to intervening development, roadways, etc.) but based on location are considered critical to restoring connectivity function.

Essential Habitat Connectivity Areas and Natural Landscape Blocks were identified in the *California Essential Habitat Connectivity Project* (Spencer et al. 2010). Natural Landscape Blocks are large, relatively natural habitat blocks that support native biodiversity; Essential Connectivity Areas are essential for ecological connectivity between them.

Both the Missing Linkages and the California Essential Habitat Connectivity projects were developed at coarse scale and are focused on ecological integrity. The areas identified are broad-scale regional connectivity areas, and site-specific land uses within these areas may or may not significantly interfere with habitat connectivity.

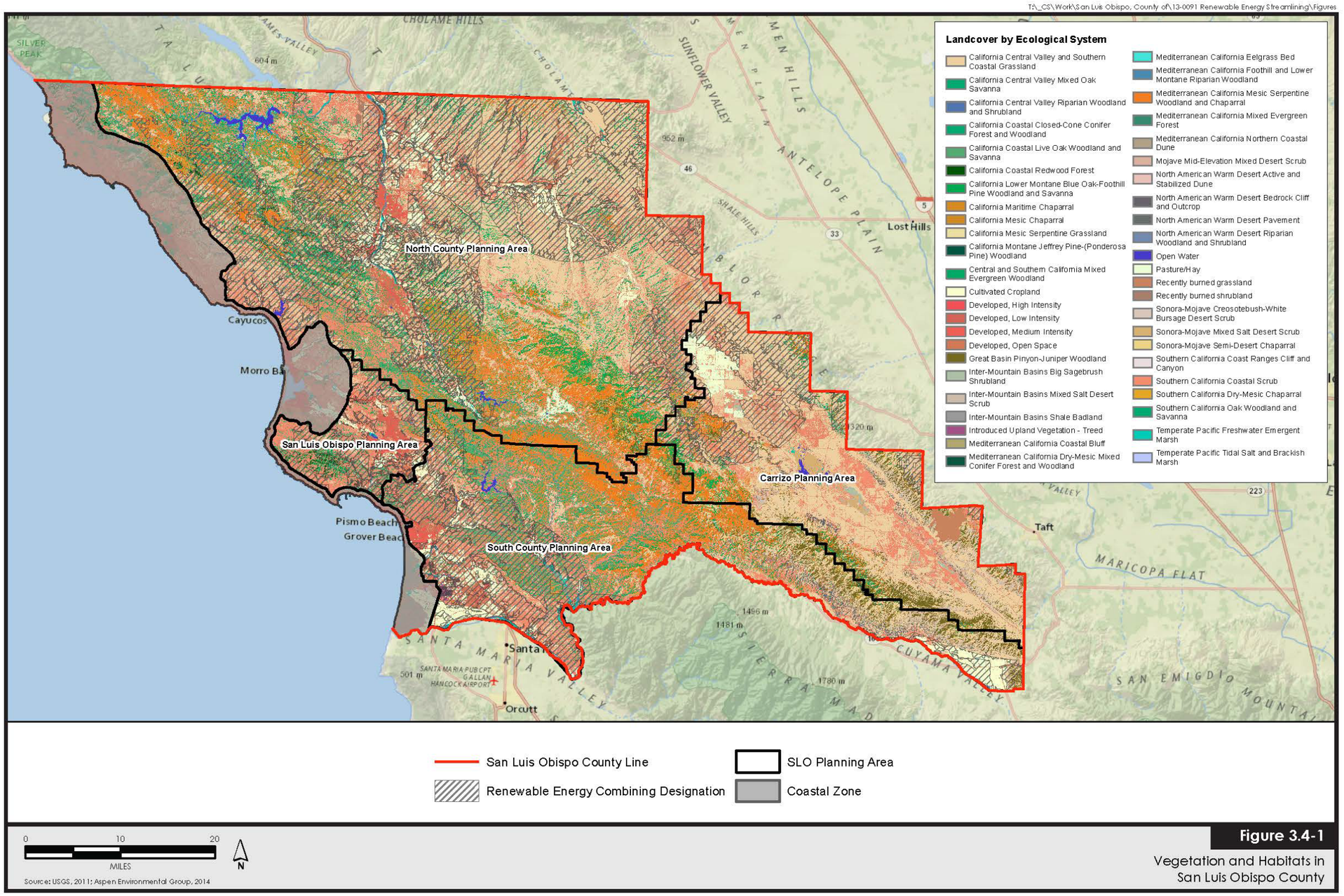

Figure 3.4-1
Vegetation and Habitats in San Luis Obispo County

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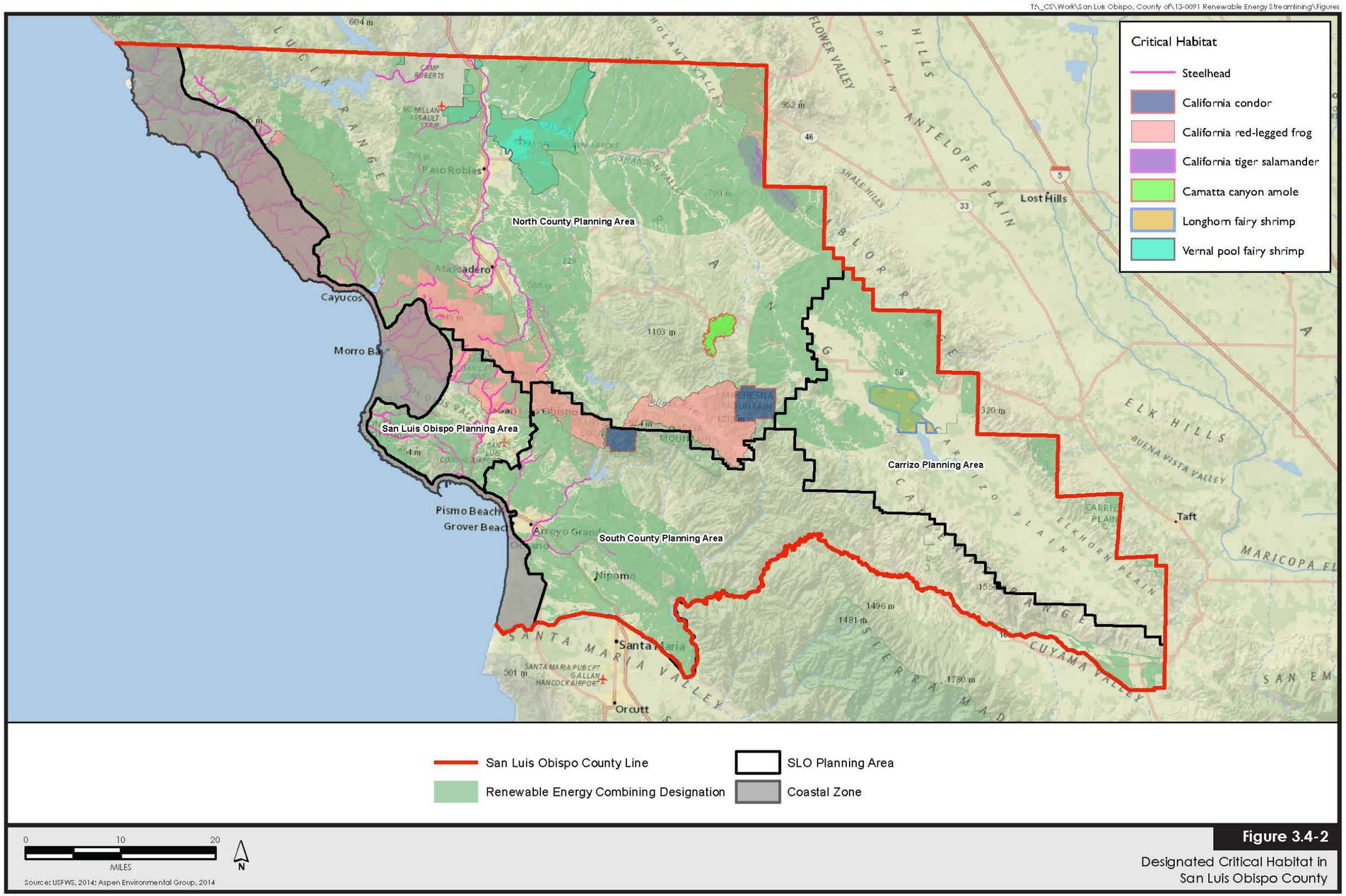

Figure 3.4-2
Designated Critical Habitat in San Luis Obispo County

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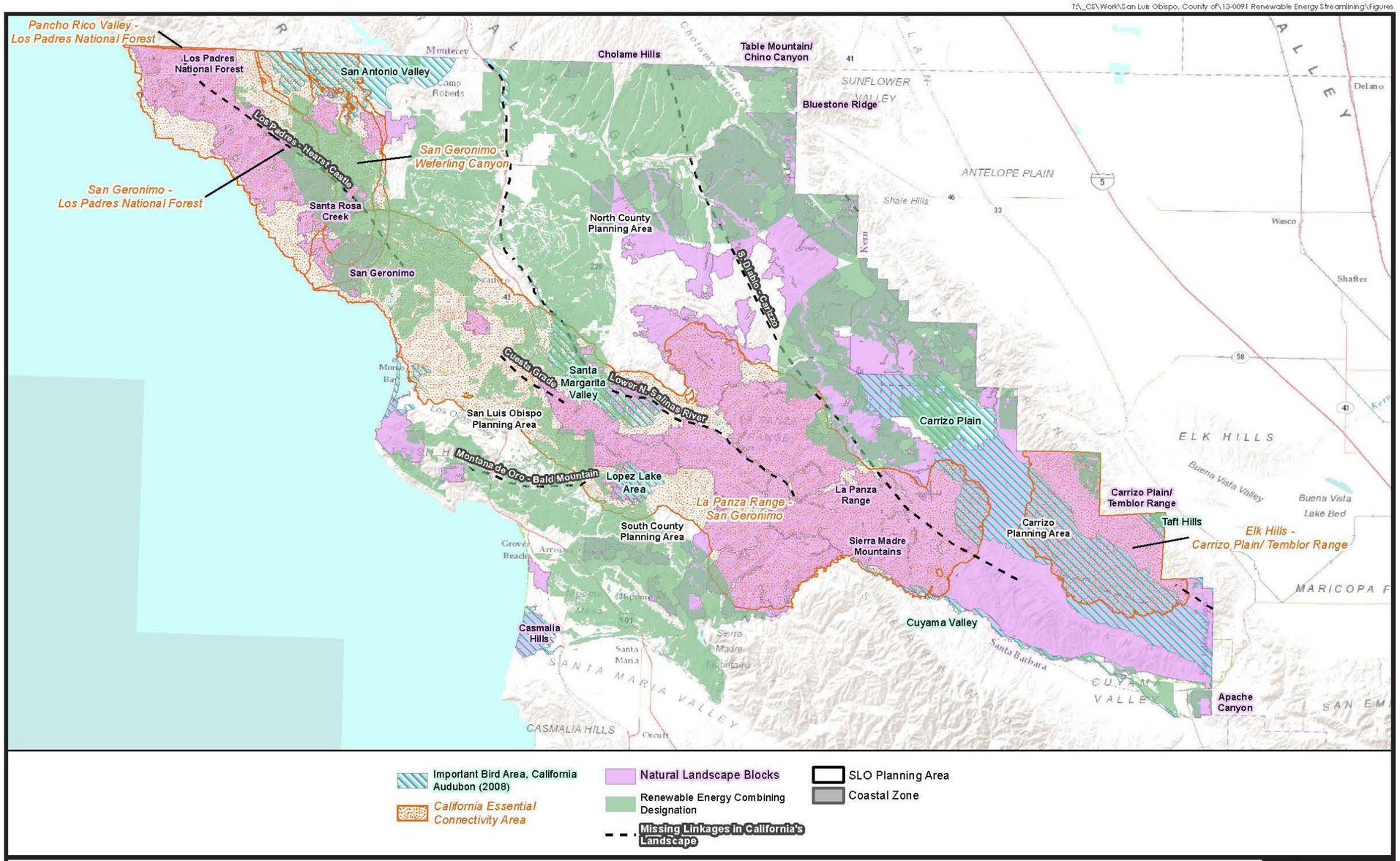

Figure 3.4-3

Migration and Wildlife Movement in San Luis Obispo County

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Jurisdictional Resources and Other Biological Considerations

Jurisdictional resources include wetlands, lakes, rivers, streams, and other waterways and drainage channels that convey water either seasonally or year-round, meeting the jurisdictional criteria as waters of the United States, waters of the State, or both. These resources are widespread throughout the county. Major resources include lakes and reservoirs, rivers, vernal pool complexes, and marshes. **Figure 3.4-4** identifies the locations of the following jurisdictional resources and other sensitive biological resources that are limited in distribution and support suites of rare and endemic species.

- Named streams, rivers, and water bodies (USGS National Hydrography Dataset) – Note that only named features are shown to identify the major jurisdictional resources, but potentially jurisdictional resources occur throughout the county and are too abundant to detail at this level of analysis. Individual project-level analysis would be conducted to identify jurisdictional resources on a particular site.
- Vernal pool habitats (CDFW data) – Vernal pools often, but not always, meet jurisdictional criteria as waters of the United States or waters of the State. Even where vernal pools are not jurisdictional, they often support rare or listed plants and invertebrates. Therefore, these habitats, regardless of jurisdictional status, are important biological resources.
- Serpentine soils (San Luis Obispo County data) – Serpentine soils are another important consideration for biological resources. These soils, developed from ultramafic bedrock material, are high in certain metals and present an unusual habitat for plants. A suite of rare plants in the county are found only on serpentine soils.

CARRIZO PLANNING AREA

The Carrizo Planning Area is in the southeastern portion of San Luis Obispo County. It is primarily agricultural, rural, and open space. The majority of the planning area is within the Carrizo Plain National Monument; there are additional lands outside of the monument that are under state and federal ownership. The portions under County jurisdiction are in the northern portion and some areas along the eastern county border. The following descriptions reflect conditions in the portions of the Carrizo Planning Area under County jurisdiction.

Vegetation and Habitats

The easternmost portions of the planning area are primarily coastal sage scrub and grasslands. The north-central portion of the planning area mainly consists of open grasslands and agricultural fields. Chaparral and oak-pine woodlands are prevalent in the western portion of the planning area.

Predominant vegetation and habitat types in the Carrizo Planning Area include the following (data and descriptions from USGS 2011):

- **Pasture/Hay.** Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay habitat accounts for greater than 20 percent of total land cover.
- **Cultivated Cropland.** Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total land cover. This class also includes all land being actively tilled.

- **California Central Valley and Southern Coastal Grassland.** This vegetation is found from 10 to 1,200 meters (30–3,600 feet) elevation; receiving on average 50 centimeters or approximately 20 inches of precipitation per year (range 25–100 cm, or approximately 10–39 inches), mainly as winter rain. It is found with fine-textured soils, moist or even waterlogged in winter, but very dry in summer. These grasslands are common among oak savanna and woodland and probably experience similar frequent fire regimes. Characteristic plant species include purple needlegrass, threeawn, boreal yarrow, blow-wives, annual goat-chicory, common golden star, prettyface, wavy leaf soap-plant, winecup fairy fan, tall mountain shooting star, blue wild rye, beardless lyme grass, California fescue, California melic grass, attenuate Indian-paintbrush, and curly bluegrass. Annual grasses and herbs such as wild oats, foxtail, brome grasses, wild mustards, and star thistles are common and often abundant throughout the grasslands.
- **Southern California Coastal Scrub.** This mixed coastal shrubland occurs from Central California south into Baja California Norte, Mexico. It is composed of drought-deciduous shrubs such as California sagebrush, black sage, white sage, purple sage, California brittlebush, and California wild buckwheat. Fire-tolerant evergreen shrubs, laurel sumac, lemonade sumac, and holly leaf buckthorn are also present. Recent increases in the number of fires have converted many of these shrublands to non-native annual grasslands. The abundance of fire-tolerant shrubs and coastal prickly-pear has increased in many areas.
- **Inter-Mountain Basins Big Sagebrush Shrubland.** Big sagebrush shrublands are one of the most widespread vegetation types in the western United States, found in broad basins between mountain ranges, on plains, and in foothills between 1,500 and 2,300 meters (between approximately 4,920 and 7,550 feet) elevation. The soils are deep, well-drained, and not salty. The most important sagebrush species is Wyoming or basin big sagebrush; other common shrubs include bitterbrush, rabbitbrush, and mountain snowberry. Shrubs dominate the vegetation, with grasses making up less than 25 percent of the cover. In recent years, this vegetation has been invaded by non-native annual grasses or weeds, in particular cheatgrass, which accelerates the frequency of fire, causing type-conversion to non-native annual grassland.
- **Sonora-Mojave Mixed Salt Desert Scrub.** This warm desert scrub forms extensive open-canopied shrublands in salty soil basins in the Mojave and Sonoran deserts, arid parts of the San Joaquin Valley, and the Carrizo Plain. It is often found around playas (dry lakes) that occasionally fill following rain. Soils are generally fine-textured clays and silts. Common shrubs are fourwing saltbush, cattle-spinach, or other saltbushes. Allenrolfea, pickleweed, seepweed, or other salt-loving plants are often present. The grasses alkali sacaton and saltgrass may be present at varying densities.

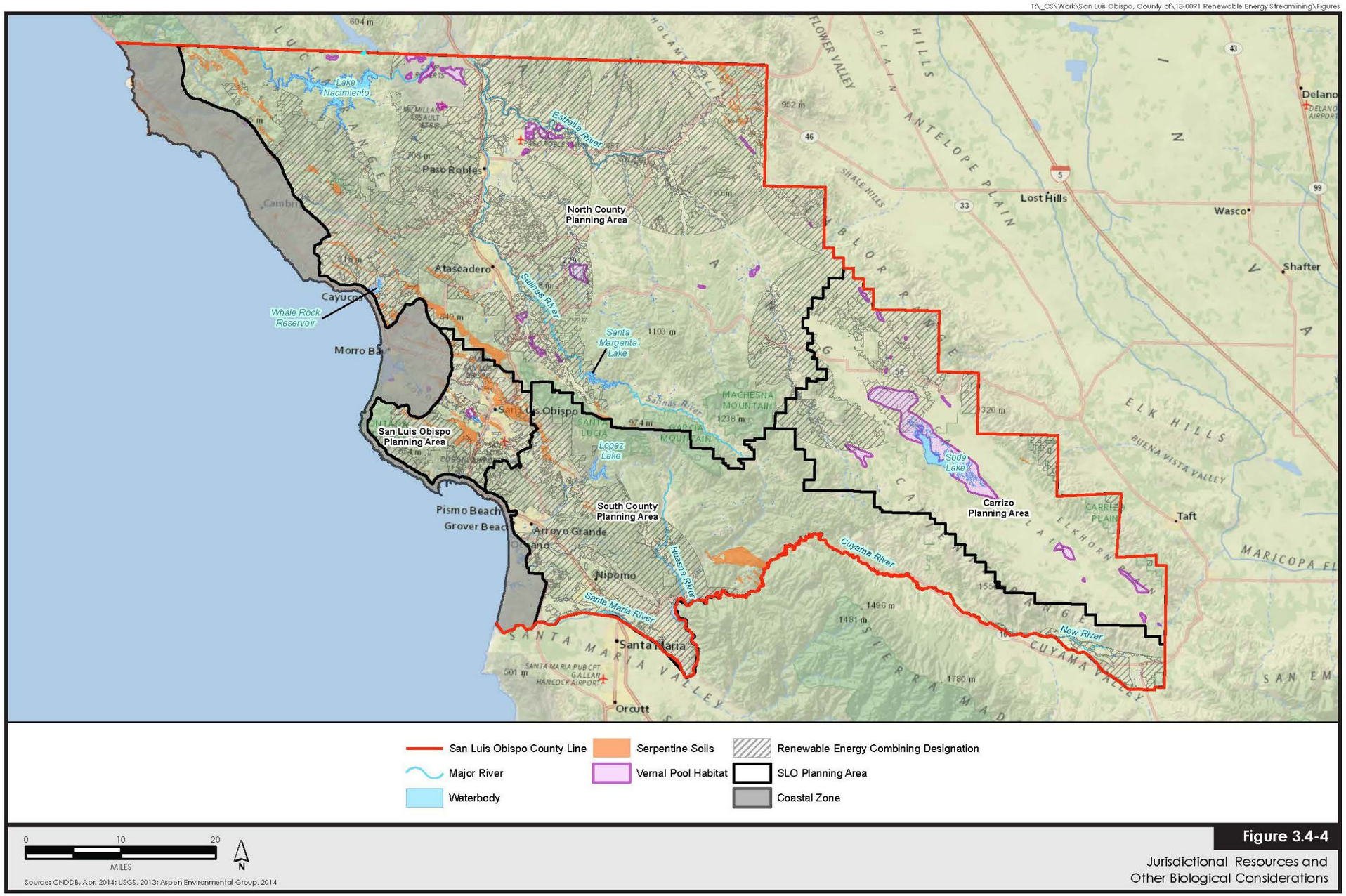

Figure 3.4-4

Jurisdictional Resources and Other Biological Considerations

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- **Mediterranean California Mesic Serpentine Woodland and Chaparral**. This vegetation occurs in the north and south Coast Ranges and the northern Sierra Nevada, on cool northerly and concave slopes and toeslopes with thin, rocky, ultramafic (gabbro, peridotite, serpentinite) soils. These shrublands and woodlands are highly variable and spotty in distribution, and the composition of individual stands can be very diverse, especially the shrubs (often individual species have low cover). Sargent cypress, gray pine, interior silk tassel, leather oak, California laurel, and hoary coffeeberry are characteristic. Common associates include toyon, chamise, and the California endemics sticky whiteleaf manzanita and Jepson ceanothus. In some settings, big berry manzanita, California snowdrop bush, or mountain mahogany can be common. Occasionally, Port Orford cedar may be present. Common grasses and forbs can include Torrey melic, blue fescue, iris, and locally endemic serpentine forbs (*Senecio* spp. and others). Structurally, this vegetation is sometimes woodland in character, but it can also be an arborescent chaparral, depending on fire history.

- **California Lower Montane Blue Oak-Foothill Pine Woodland and Savanna.** This is an open pine-oak woodland of the valley margins and foothills of the Sierra Nevada and Coast Ranges of California, ranging from approximately 120 to 1,200 meters (360–3,600 feet) elevation on rolling plains and dry slopes. High-quality stands are open and park-like foothill pine, typically including blue oak, interior live oak, coast live oak, valley oak, California buckeye, manzanita, redbud, buckbrush, California coffeeberry, oak woods gooseberry, California juniper, or Coulter pine. Foothill pine tends to drop out all together in the driest and more southerly sites, which are then dominated by blue oak. Foothill pine density varies based on intensity or frequency of fire, being less abundant in areas of higher intensity or frequency fires; hence, it is often more abundant on steep, rocky, or more mesic north-facing slope exposures.

- **Southern California Dry-Mesic Chaparral.** This vegetation includes chaparral from sea level up to 1,500 meters (4,920 feet) elevation throughout Central and Southern California and inland portions of Baja California Norte, Mexico. It is found in semi-moist to moist site conditions. Santa Ana winds drive late-summer, stand-replacing fires in these habitats. Characteristic species include bigpod ceanothus, hoaryleaf ceanothus, chaparral whitethorn, Mojave Desert whitethorn, common chamise, redshank, big berry manzanita, birchleaf mountain-mahogany, smooth mountain-mahogany, sugar bush, and mission manzanita.

- **Great Basin Pinyon-Juniper Woodland.** These woodlands occur on dry mountain ranges of the Great Basin region and eastern foothills of the Sierra Nevada and in scattered locations of western California, including the Carrizo Plain. They are found on warm, dry sites on mountain slopes, mesas, plateaus, and ridges, above the valleys where sagebrush is dominant. Severe weather during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to a relatively narrow altitudinal zone. Singleleaf pinyon and California juniper, alone or mixed together, are the main trees. Shrubs and grasses may be abundant to absent all together. Typical species include manzanita, sagebrush, blackbrush, turbinella live oak, needle-and-thread grass, Idaho fescue, blue bunch wheatgrass, great basin lyme grass, and mutton grass.

Special-Status Species and Critical Habitat

The variety of native habitats in the Carrizo Planning Area, including chaparral, oak woodlands, desert scrub, and grasslands, may support several special-status species including, but not limited to, the following (CDFW 2014a):

- Longhorn fairy shrimp (*Branchinecta longiantenna*)
- Vernal pool fairy shrimp (*B. lynchi*)
- Kern primrose sphinx moth (*Euproserpinus euterpe*)
- Blunt-nosed leopard lizard (*Gambelia sila*)
- California tiger salamander (*Ambystoma californiense*)
- California condor (*Gymnogyps californianus*)
- San Joaquin kit fox (*Vulpes macrotis mutica*)
- Giant kangaroo rat (*Dipodomys ingens*)
- Tipton kangaroo rat (*D. nitratoides nitratoides*)
- California jewelflower (*Caulanthus californicus*)
- Kern mallow (*Eremalche kernensis*)
- San Joaquin woollythreads (*Monolopia congdonii*)

The only designated critical habitat in the portion of the Carrizo Planning Area under County jurisdiction is for the longhorn fairy shrimp, which is found in vernal pools. One area is designated for this species in the north-central portion of the planning area.

Migration and Wildlife Movement

A portion of the South Diablo-Carrizo linkage traverses the western portion of the planning area under County jurisdiction. This linkage is described in more detail under the North County Planning Area. Most of the Carrizo Planning Area, including the lands under County jurisdiction, is mapped as Essential Habitat Connectivity Areas or Natural Landscape Blocks associated with the La Panza Range, the Carrizo Plain, and the Temblor Range.

The entire Carrizo Plain is an Important Bird Area, and the Taft Hills Important Bird Area straddles the border between San Luis Obispo County and Kern County to the east (Audubon California 2008).

Jurisdictional Resources and Other Biological Considerations

A large number of creeks and streams are mapped in the portion of the Carrizo Planning Area under County jurisdiction, in particular in the mountainous areas to the west. Jurisdictional areas would also include additional unmapped tributaries, including intermittent channels, which can only be identified through site-specific analysis. Serpentine soils are not mapped in the planning area, but vernal pool habitat is identified in a number of locations.

NORTH COUNTY PLANNING AREA

The North County Planning Area is the largest of the five planning areas, encompassing the northern half of the county (excluding the coastal zone). Most of this planning area is under County jurisdiction, with the south central portion (Los Padres National Forest) and northern portion (Camp Roberts) under federal ownership. Agriculture, open space, and rural lands are most abundant, with development concentrated primarily along the Highway 101 corridor. The following descriptions reflect conditions in the portions of the North County Planning Area under County jurisdiction.

Vegetation and Habitats

Agriculture, including vineyards, is common along Highway 101 and State Routes 46 and 41, as well as portions of the eastern part of the North County Planning Area. Grasslands, oak savanna, and coastal sage scrub dominate the majority of the eastern half of the planning area, while chaparral and woodlands are prevalent in the western and southern portions.

Predominant land cover and vegetation types in the North County Planning Area (excluding the Coastal Zone) include the following (data and descriptions from USGS 2011):

- **Developed, Open Space.** Includes areas with a mixture of structures and impervious surfaces, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.
- **Developed, Low Intensity.** Includes areas with a mixture of structures, impervious surfaces, and vegetation. Impervious surfaces account for 20–49 percent of total cover. These areas most commonly include single-family housing units.
- **Developed, Medium Intensity.** Includes areas with a mixture of structures, impervious surfaces, and vegetation. Impervious surfaces account for 50–79 percent of the total cover. These areas most commonly include single-family housing units.
- **California Coastal Live Oak Woodland and Savanna.** These coast live oak-dominated woodlands occur throughout the Pacific coastal areas from Sonoma County, California, south to Baja California. Cover varies from nearly interlocking canopies with lush understory shrubs such as California blackberry, creeping snowberry, toyon, and poison oak to more open conditions with long-lived grasses. Open stands typically occur on south-facing slopes. Denser stands are often in areas with more moisture, such as north-facing slopes or at the bottom of a slope. Past activities such as fire, fire suppression, livestock grazing, or herbivory by feral pigs or other wildlife can also affect stand structure.
- **California Central Valley Mixed Oak Savanna.** Historically, these savannas occurred on alluvial terraces and flat plains, often with deep, fertile soils, throughout California's Central Valley from Lake Shasta south to Los Angeles County. Valley oak is the characteristic oak of these savannas, though other types may be present including interior live oak, coast live oak, and blue oak. California buckeye, Texas redbud, California juniper, and purple needlegrass are common. Much of the undergrowth prior to the invasion by non-native annual herbs was likely composed of native annual wildflowers such as tarweed, buckwheat, clover, gilia, pincushion-plant, lupine, western rosinweed, vinegar-weed, trefoil, wild carrot, and tarbush. There is considerable seasonal and annual variation in cover of undergrowth species due to timing of flowering and seasonal variation in precipitation and temperature. Today much of this vegetation has been replaced by agriculture and housing developments.
- **California Mesic Chaparral.** This vegetation occurs on moist sites such as north-facing slopes, concavities, or the bottom of slopes throughout coastal California but inland from the coastal fog belt. It occurs mostly up to 1,500 meters (4,920 feet) in elevation; up to 1,830 meters (6,000 feet) in Southern California. It is dominated by a variety of mixed or single shrub species that are evergreen, thick-leaved, and drought resistant. Common species include scrub oak, scrub interior live oak, birchleaf mountain-mahogany, California ash, silktassel, toyon, honeysuckle, hollyleaf cherry, hollyleaf buckthorn, and hollyleaf redberry. Most chaparral species are fire-adapted, resprouting vigorously after

burning or producing fire-resistant seeds. However, this is not a habitat that requires frequent fire for perpetuation.

- **California Central Valley Riparian Woodland and Shrubland.** This vegetation occurs in the floodplains of small to mid-sized rivers of California's Central Valley. Alluvial soils and late winter/early spring flooding (usually every year) from snowmelt typify this habitat. Communities are predominantly floodplain woodlands but also include shrublands, wet meadows, and flats. Important trees and shrubs include Fremont cottonwood, California sycamore, valley oak, Goodding's black willow, boxelder, common buttonbush, and California wild grape. Eastern black walnut hybrids, tamarisk, and tree of heaven are problem invasive trees. Santa Barbara sedge, California mugwort, and various marsh species occur along riverbanks and backwaters. Giant reed is another common invasive and introduced forage species that often invades degraded areas within the floodplains. Periodic flooding and associated sediment scour are necessary to maintain growth and reproduction of vegetation. Flooding regimes have been significantly altered in all but a few tributaries that support this vegetation.
- **Temperate Pacific Freshwater Emergent Marsh.** These are freshwater marshes, mostly permanently flooded or semi-permanently flooded. They are dominated by emergent herbaceous species, usually sedges, rushes, bullrush, spikerush, or cattail. They are called emergent because the plants are rooted in the mud at the bottom of the lake or pond, and "emerge" through the water surface. Red-winged blackbirds can be abundant in the spring in these habitats.
- **Open Water (Fresh).** All areas of open water, generally less than 25 percent cover of vegetation or soil. Specifically, inland waters of streams, rivers, ponds, and lakes.
- **Sonora-Mojave Creosotebush-White Bursage Desert Scrub.** This widespread warm desert scrub occurs in broad valleys, lower bajadas, plains, and low hills in the Mojave and lower Sonoran deserts, arid parts of the San Joaquin Valley, and the Carrizo Plain. This sparse to moderately dense shrubland is composed of creosote bush and white burrobush, but many different shrubs, dwarf-shrubs, and cacti may be present. Other common plants include desert-holly, brittlebush, Nevada joint-fir, ocotillo, and beavertail cactus. Grass and herb cover is sparse, except during springs following above-average winter rains when ephemeral annual plants carpet the desert floor.
- **Cultivated Cropland.** Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total land cover. This class also includes all land being actively tilled.
- **Pasture/Hay.** Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay habitat accounts for greater than 20 percent of total land cover.
- **California Central Valley and Southern Coastal Grassland.** This vegetation is found from 10 to 1,200 meters (30–3,600 feet) elevation; receiving on average 50 centimeters or approximately 20 inches of precipitation per year (range 25–100 cm, or approximately 10–39 inches), mainly as winter rain. It is found with fine-textured soils, moist or even waterlogged in winter, but very dry in summer. These grasslands are common among oak savanna and woodland and probably experience similar frequent fire regimes. Characteristic plant species include purple needlegrass, threeawn, boreal yarrow, blow-wives, annual goat-chicory, common golden star, prettyface, wavy leaf soap-plant, winecup fairy fan, tall mountain shooting star, blue wild rye, beardless lyme grass, California fescue, California melic grass, attenuate Indian-paintbrush, and curly

bluegrass. Annual grasses and herbs such as wild oats, foxtail, brome grasses, wild mustards, and star thistles are common and often abundant throughout the grasslands.

- **Mediterranean California Mesic Serpentine Woodland and Chaparral.** This vegetation occurs in the north and south Coast Ranges and the northern Sierra Nevada, on cool northerly and concave slopes and toeslopes with thin, rocky, ultramafic (gabbro, peridotite, serpentinite) soils. These shrublands and woodlands are highly variable and spotty in distribution, and the composition of individual stands can be very diverse, especially the shrubs (often individual species have low cover). Sargent cypress, gray pine, interior silk tassel, leather oak, California laurel, and hoary coffeeberry are characteristic. Common associates include toyon, chamise, and the California endemics sticky whiteleaf manzanita and Jepson ceanothus. In some settings, big berry manzanita, California snowdrop bush, or mountain mahogany can be common. Occasionally, Port Orford cedar may be present. Common grasses and forbs can include Torrey melic, blue fescue, iris, and locally endemic serpentine forbs (*Senecio* spp. and others). Structurally, this vegetation is sometimes woodland in character, but it can also be an arborescent chaparral, depending on fire history.
- **California Lower Montane Blue Oak-Foothill Pine Woodland and Savanna.** This is an open pine-oak woodland of the valley margins and foothills of the Sierra Nevada and Coast Ranges of California, ranging from approximately 120 to 1,200 meters (360–3,600 feet) elevation on rolling plains and dry slopes. High-quality stands are open and park-like foothill pine, typically including blue oak, interior live oak, coast live oak, valley oak, California buckeye, manzanita, redbud, buckbrush, California coffeeberry, oak woods gooseberry, California juniper, or Coulter pine. Foothill pine tends to drop out all together in the driest and more southerly sites, which are then dominated by blue oak. Foothill pine density varies based on intensity or frequency of fire, being less abundant in areas of higher intensity or frequency fires; hence, it is often more abundant on steep, rocky, or more mesic north-facing slope exposures.
- **Southern California Coastal Scrub.** This mixed coastal shrubland occurs from Central California south into Baja California Norte, Mexico. It is composed of drought-deciduous shrubs such as California sagebrush, black sage, white sage, purple sage, California brittlebush, and California wild buckwheat. Fire-tolerant evergreen shrubs, laurel sumac, lemonade sumac, and holly leaf buckthorn are also present. Recent increases in the number of fires have converted many of these shrublands to non-native annual grasslands. The abundance of fire-tolerant shrubs and coastal prickly-pear has increased in many areas.

Special-Status Species and Critical Habitat

The following special-status species have been recorded in the North County Planning Area (CDFW 2014a):

- Vernal pool fairy shrimp
- Tidewater goby (*Eucyclogobius newberryi*)
- Southern steelhead (*Oncorhynchus mykiss irideus*)
- Blunt-nosed leopard lizard
- California red-legged frog (*Rana draytonii*)
- California tiger salamander
- California condor

- Bald eagle (Haliaeetus leucocephalus)
- Swainson's hawk (*Buteo swainsoni*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Bank swallow (*Riparia riparia*)
- San Joaquin kit fox
- Giant kangaroo rat
- California jewelflower
- Santa Lucia purple amole (*Chlorogalum purpureum* var. *purpureum*)
- Camatta Canyon amole (*C. p.* var. *reductum*)
- San Luis Obispo fountain thistle (*Cirsium fontinale* var. *obispoense*)
- Spreading navarretia (*Navarretia fossalis*)
- Kern mallow

There is designated critical habitat for several species in the North County Planning Area under County jurisdiction. California red-legged frog critical habitat extends along most of the western and southern portions of the planning area, as well as in the northeastern corner. Vernal pool fairy shrimp critical habitat is concentrated around the Paso Robles area. California tiger salamander critical habitat partially overlaps California red-legged frog critical habitat in the northeastern portion of the planning area, along the boundary with Kern County. There is one area of critical habitat for Camatta Canyon amole in the southern part of the planning area. A number of watercourses in the western and central portions of the planning area, including the Salinas River, are designated as critical habitat for southern steelhead.

Migration and Wildlife Movement

Missing Linkages and Essential Habitat Connectivity Areas identified in the North County Planning Area include the following:

- **Los Padres Connector-Hearst Castle**. Located in the northwestern portion of the planning area, this north–south landscape linkage follows the Santa Lucia Range and associated Essential Habitat Connectivity Areas. Key species include mountain lion, bear, spotted owl, and red-legged frog.
- **Lower North Salinas River**. This north–south landscape linkage spans the entire planning area along the central portion and connects the Santa Lucia and Diablo ranges via the Salinas River. Key species utilizing this linkage include neotropical migrant birds, steelhead, and large and small mammals.
- **South Diablo-Carrizo**. This linkage traverses the eastern portion of the planning area in a north–south direction. Key species include large mammals, mountain lion, and kit fox. This is a key area that links public lands.

Important Bird Areas in the North County Planning Area include the San Antonio Valley in the northern portion, the northern portion of the Salinas River in the county, and the Santa Margarita Valley (Audubon California 2008).

Jurisdictional Resources and Other Biological Considerations

Major water bodies in the North County Planning Area include Lake Nacimiento, Whale Rock Reservoir, Santa Margarita Lake, and the southern portion of San Antonio Lake. The Nacimiento, Salinas, and Estrella Rivers are major waterways. Jurisdictional areas would also include additional unmapped tributaries, including intermittent channels, which can only be identified through site-specific analysis. Serpentine soils are associated with mountains along the western and the eastern edges of the planning area, and vernal pool habitats occur in the central and eastern portions.

SAN LUIS OBISPO PLANNING AREA

The San Luis Obispo Planning Area is the smallest planning area and is located in the western area of the county concentrated around the city of San Luis Obispo and surrounding areas. Large portions of the western, central, and northern parts of the planning area are outside of County jurisdiction. Within County jurisdiction, primary land uses include agriculture, urban development, and rural lands. The Los Ranchos/Edna village is located on the Planning Area's southern edge. The following descriptions reflect conditions in the portions of the San Luis Obispo Planning Area under County jurisdiction.

Vegetation and Habitats

Coastal sage scrub is the most abundant vegetation in the portions of the San Luis Obispo Planning Area under County jurisdiction. Predominant land cover and vegetation types in the San Luis Obispo Planning Area include the following (data and descriptions from USGS 2011):

- **Mediterranean California Foothill and Lower Montane Riparian Woodland.** This vegetation is found throughout "Mediterranean California" (i.e., the majority of the state, with a characteristic Mediterranean climate pattern of dry summers and cool, wet winters) within a broad elevation range from near sea level up to 300 meters (1,000 feet) in the Coast Ranges and inland to 1,500 meters (4,545 feet). It often occurs as a mosaic of multiple communities that are dominated by trees with a diverse shrub component and open shrublands. It also includes open channels and bare alluvial bars. The variety of plant associations reflects elevation, stream gradient, floodplain width, and flooding events. Dominant trees may include white alder, boxelder, red alder (in Coast Ranges), Fremont cottonwood, red willow, Goodding's willow, Douglas fir, California sycamore, coast live oak, and big leaf maple (in central and south coast areas). Dominant shrubs include narrowleaf willow and arroyo willow. Exotic tree of heaven, eucalyptus, and giant reed occur. These are disturbance-driven habitats that require flooding, scour, and deposition for germination and maintenance.
- **Cultivated Cropland.** Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total land cover. This class also includes all land being actively tilled
- **Pasture/Hay.** Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay habitat accounts for greater than 20 percent of total land cover.
- **Developed, Open Space.** Includes areas with a mixture of structures and impervious surfaces, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot

single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.

- **Developed, Low Intensity.** Includes areas with a mixture of structures, impervious surfaces, and vegetation. Impervious surfaces account for 20–49 percent of total cover. These areas most commonly include single-family housing units.
- **Developed, Medium Intensity.** Includes areas with a mixture of structures, impervious surfaces, and vegetation. Impervious surfaces account for 50–79 percent of the total cover. These areas most commonly include single-family housing units.
- **Southern California Coastal Scrub.** This mixed coastal shrubland occurs from Central California south into Baja California Norte, Mexico. It is composed of drought-deciduous shrubs such as California sagebrush, black sage, white sage, purple sage, California brittlebush, and California wild buckwheat. Fire-tolerant evergreen shrubs, laurel sumac, lemonade sumac, and holly leaf buckthorn are also present. Recent increases in the number of fires have converted many of these shrublands to non-native annual grasslands. The abundance of fire-tolerant shrubs and coastal prickly-pear has increased in many areas.
- **California Coastal Live Oak Woodland and Savanna.** These coast live oak-dominated woodlands occur throughout the Pacific coastal areas from Sonoma County, California, south to Baja California. Cover varies from nearly interlocking canopies with lush understory shrubs such as California blackberry, creeping snowberry, toyon, and poison oak to more open conditions with long-lived grasses. Open stands typically occur on south-facing slopes. Denser stands are often in areas with more moisture, such as north-facing slopes or at the bottom of a slope. Past activities such as fire, fire suppression, livestock grazing, or herbivory by feral pigs or other wildlife can also affect stand structure.
- **California Lower Montane Blue Oak-Foothill Pine Woodland and Savanna.** This is an open pine-oak woodland of the valley margins and foothills of the Sierra Nevada and Coast Ranges of California, ranging from approximately 120 to 1,200 meters (360–3,600 feet) elevation on rolling plains and dry slopes. High-quality stands are open and park-like foothill pine, typically including blue oak, interior live oak, coast live oak, valley oak, California buckeye, manzanita, redbud, buckbrush, California coffeeberry, oak woods gooseberry, California juniper, or Coulter pine. Foothill pine tends to drop out all together in the driest and more southerly sites, which are then dominated by blue oak. Foothill pine density varies based on intensity or frequency of fire, being less abundant in areas of higher intensity or frequency fires; hence, it is often more abundant on steep, rocky, or more mesic north-facing slope exposures.
- **California Coastal Redwood Forest.** These are giant coniferous forests, found in the coastal fog belt. Among the tallest forests in the world, coast redwood, Port Orford cedar, Douglas fir, and western hemlock trees grow over 300 feet tall, sometimes with tanoak and laurel subcanopies over 100 feet tall. They occur on river terraces and coastal slopes. Understory plants are diverse and typical of coastal conifer forests, although usually are composed of evergreen shrubs or perennial wildflowers.
- **California Central Valley and Southern Coastal Grassland.** This vegetation is found from 10 to 1,200 meters (30–3,600 feet) elevation; receiving on average 50 centimeters or approximately 20 inches of precipitation per year (range 25–100 cm, or approximately 10–39 inches), mainly as winter rain. It is found with fine-textured soils, moist or even waterlogged in winter, but very dry in summer. These grasslands are common among oak savanna and woodland and probably experience similar frequent fire regimes. Characteristic plant species include purple needlegrass, threeawn, boreal yarrow, blow-wives, annual goat-chicory, common golden star, prettyface, wavy leaf soap-plant,

winecup fairy fan, tall mountain shooting star, blue wild rye, beardless lyme grass, California fescue, California melic grass, attenuate Indian-paintbrush, and curly bluegrass. Annual grasses and herbs such as wild oats, foxtail, brome grasses, wild mustards, and star thistles are common and often abundant throughout the grasslands.

- **Mediterranean California Mesic Serpentine Woodland and Chaparral.** This vegetation occurs in the north and south Coast Ranges and the northern Sierra Nevada, on cool northerly and concave slopes and toeslopes with thin, rocky, ultramafic (gabbro, peridotite, serpentinite) soils. These shrublands and woodlands are highly variable and spotty in distribution, and the composition of individual stands can be very diverse, especially the shrubs (often individual species have low cover). Sargent cypress, gray pine, interior silk tassel, leather oak, California laurel, and hoary coffeeberry are characteristic. Common associates include toyon, chamise, and the California endemics sticky whiteleaf manzanita and Jepson ceanothus. In some settings, big berry manzanita, California snowdrop bush, or mountain mahogany can be common. Occasionally, Port Orford cedar may be present. Common grasses and forbs can include Torrey melic, blue fescue, iris, and locally endemic serpentine forbs (*Senecio* spp. and others). Structurally, this vegetation is sometimes woodland in character, but it can also be an arborescent chaparral, depending on fire history.
- **Temperate Pacific Freshwater Emergent Marsh.** These are freshwater marshes, mostly permanently flooded or semi-permanently flooded. They are dominated by emergent herbaceous species, usually sedges, rushes, bullrush, spikerush, or cattail. They are called emergent because the plants are rooted in the mud at the bottom of the lake or pond, and "emerge" through the water surface. Red-winged blackbirds can be abundant in the spring in these habitats.

Special-Status Species and Critical Habitat

The following special-status species have been recorded in the San Luis Obispo Planning Area (CDFW 2014a):

- Vernal pool fairy shrimp
- Morro shoulderband snail (*Helminthoglypta walkeriana*)
- Southern steelhead
- California red-legged frog
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- Morro manzanita (*Arctostaphylos morroensis*)
- Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*)
- Indian Knob mountainbalm (*Eriodictyon altissimum*)
- San Luis Obispo fountain thistle

There is designated critical habitat for California red-legged frog and southern steelhead in the San Luis Obispo Planning Area under County jurisdiction. A large block of California red-legged frog critical habitat encompasses the northwest corner and the northeastern portion of the planning area. A number of watercourses in the western and central portions of the planning area are designated critical habitat for southern steelhead.

Migration and Wildlife Movement

Missing Linkages and Essential Habitat Connectivity Areas identified in the San Luis Obispo Planning Area include the Montana de Oro-Bald Mountain linkage, which runs east–west in the southern portion of the planning area. This linkage is identified as a choke-point for mountain lion movement. The Santa Lucia Range in the northeastern portion of the planning area is identified as an Essential Habitat Connectivity Area, and Natural Landscape Blocks are identified in the western portion.

Jurisdictional Resources and Other Biological Considerations

A number of creeks and streams are distributed throughout the portions of the planning area under County jurisdiction. Serpentine soils are abundant in the mountains and hills in the planning area, and vernal pool complexes have been mapped in the central portion of the area west of San Luis Obispo and along Los Osos Valley Road at the boundary of the planning area.

SOUTH COUNTY PLANNING AREA

The South County Planning Area encompasses the southernmost inland portion of the county. The eastern half of this planning area is mostly outside of County jurisdiction (under state or federal ownership; Los Padres Forest); County jurisdiction is primarily over the western half and the extreme southeastern portion of the planning area. Land uses include agriculture, urban development, and rural lands. The following descriptions reflect conditions in the portions of the South County Planning Area under County jurisdiction.

Vegetation and Habitats

Coastal scrub, agriculture, and oak woodlands are abundant in the western half of the planning area. The southeastern area under County jurisdiction is primarily agriculture.

Predominant land cover and vegetation types in the South County Planning Area include the following (data and descriptions from USGS 2011):

- **Mediterranean California Northern Coastal Dune.** These are open coastal dune habitats, ranging from small sandy areas near beaches to more extensive dunes near larger rivers and bays. They include open sand dunes, stabilized dunes with native grasses, forbs and shrubs, and rarely forests. This coastal vegetation occurs in scattered locations on the coast from Point Conception, California, north to Coos Bay, Oregon. Coastal dunes include beaches, foredunes, sand spits, and active or stable dunes made of quartz or gypsum sands. They may also occur as extensive dune fields dominating large coastal bays. Dune vegetation typically includes herbaceous, succulent, and low-shrub species with varying degrees of tolerance for salt spray, wind and sand abrasion, and substrate stability. Coyote brush, silver burr ragweed, buckwheat, and native dune grasses and forbs are most important. Introduced European beachgrass and yellow bush lupine in the north invade and change these habitats.
- **Introduced Upland Vegetation-Treed.** Vegetation dominated (typically greater than 60 percent canopy cover) by introduced species. These are spontaneous and self-perpetuating and not the direct result of planting, cultivation, or human maintenance. Land occupied by introduced vegetation is generally permanently altered (converted) unless restoration efforts are undertaken. Eucalyptus are the most abundant and

characteristic introduced trees, but some other escaped ornamentals may also be present.

- **Cultivated Cropland.** Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total land cover. This class also includes all land being actively tilled.
- **Pasture/Hay.** Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay habitat accounts for greater than 20 percent of total land cover.
- **Developed, Open Space.** Includes areas with a mixture of structures and impervious surfaces, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.
- **Developed, Low Intensity.** Includes areas with a mixture of structures, impervious surfaces, and vegetation. Impervious surfaces account for 20–49 percent of total cover. These areas most commonly include single-family housing units.
- **Developed, Medium Intensity.** Includes areas with a mixture of structures, impervious surfaces, and vegetation. Impervious surfaces account for 50–79 percent of the total cover. These areas most commonly include single-family housing units.
- **California Central Valley and Southern Coastal Grassland.** This vegetation is found from 10 to 1,200 meters (30–3,600 feet) elevation; receiving on average 50 centimeters or approximately 20 inches of precipitation per year (range 25–100 cm, or approximately 10–39 inches), mainly as winter rain. It is found with fine-textured soils, moist or even waterlogged in winter, but very dry in summer. These grasslands are common among oak savanna and woodland and probably experience similar frequent fire regimes. Characteristic plant species include purple needlegrass, threeawn, boreal yarrow, blow-wives, annual goat-chicory, common golden star, prettyface, wavy leaf soap-plant, winecup fairy fan, tall mountain shooting star, blue wild rye, beardless lyme grass, California fescue, California melic grass, attenuate Indian-paintbrush, and curly bluegrass. Annual grasses and herbs such as wild oats, foxtail, brome grasses, wild mustards, and star thistles are common and often abundant throughout the grasslands.
- **Great Basin Pinyon-Juniper Woodland.** These woodlands occur on dry mountain ranges of the Great Basin region and eastern foothills of the Sierra Nevada and in scattered locations of western California, including the Carrizo Plain. They are found on warm, dry sites on mountain slopes, mesas, plateaus, and ridges, above the valleys where sagebrush is dominant. Severe weather during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to a relatively narrow altitudinal zone. Singleleaf pinyon and California juniper, alone or mixed together, are the main trees. Shrubs and grasses may be abundant to absent all together. Typical species include manzanita, sagebrush, blackbrush, turbinella live oak, needle-and-thread grass, Idaho fescue, blue bunch wheatgrass, great basin lyme grass, and mutton grass.
- **Southern California Coastal Scrub.** This mixed coastal shrubland occurs from Central California south into Baja California Norte, Mexico. It is composed of drought-deciduous shrubs such as California sagebrush, black sage, white sage, purple sage, California brittlebush, and California wild buckwheat. Fire-tolerant evergreen shrubs, laurel sumac, lemonade sumac, and holly leaf buckthorn are also present. Recent increases in the number of fires have converted many of these shrublands to non-native annual

grasslands. The abundance of fire-tolerant shrubs and coastal prickly-pear has increased in many areas.

- **Southern California Dry-Mesic Chaparral.** This vegetation includes chaparral from sea level up to 1,500 meters (4,920 feet) elevation throughout Central and Southern California and inland portions of Baja California Norte, Mexico. It is found in semi-moist to moist site conditions. Santa Ana winds drive late-summer, stand-replacing fires in these habitats. Characteristic species include bigpod ceanothus, hoaryleaf ceanothus, chaparral whitethorn, Mojave Desert whitethorn, common chamise, redshank, big berry manzanita, birchleaf mountain-mahogany, smooth mountain-mahogany, sugar bush, and mission manzanita.
- **California Coastal Redwood Forest.** These are giant coniferous forests, found in the coastal fog belt. Among the tallest forests in the world, coast redwood, Port Orford cedar, Douglas fir, and western hemlock trees grow over 300 feet tall, sometimes with tanoak and laurel subcanopies over 100 feet tall. They occur on river terraces and coastal slopes. Understory plants are diverse and typical of coastal conifer forests, although usually are composed of evergreen shrubs or perennial wildflowers.
- **Mediterranean California Mesic Serpentine Woodland and Chaparral.** (This vegetation occurs in the north and south Coast Ranges and the northern Sierra Nevada, on cool northerly and concave slopes and toeslopes with thin, rocky, ultramafic (gabbro, peridotite, serpentinite) soils. These shrublands and woodlands are highly variable and spotty in distribution, and the composition of individual stands can be very diverse, especially the shrubs (often individual species have low cover). Sargent cypress, gray pine, interior silk tassel, leather oak, California laurel, and hoary coffeeberry are characteristic. Common associates include toyon, chamise, and the California endemics sticky whiteleaf manzanita and Jepson ceanothus. In some settings, big berry manzanita, California snowdrop bush, or mountain mahogany can be common. Occasionally, Port Orford cedar may be present. Common grasses and forbs can include Torrey melic, blue fescue, iris, and locally endemic serpentine forbs (*Senecio* spp. and others). Structurally, this vegetation is sometimes woodland in character, but it can also be an arborescent chaparral, depending on fire history.
- **California Coastal Live Oak Woodland and Savanna.** These coast live oak-dominated woodlands occur throughout the Pacific coastal areas from Sonoma County, California, south to Baja California. Cover varies from nearly interlocking canopies with lush understory shrubs such as California blackberry, creeping snowberry, toyon, and poison oak to more open conditions with long-lived grasses. Open stands typically occur on south-facing slopes. Denser stands are often in areas with more moisture, such as north-facing slopes or at the bottom of a slope. Past activities such as fire, fire suppression, livestock grazing, or herbivory by feral pigs or other wildlife can also affect stand structure.
- **Mediterranean California Foothill and Lower Montane Riparian Woodland.** This vegetation is found throughout "Mediterranean California" (i.e., the majority of the state, with a characteristic Mediterranean climate pattern of dry summers and cool, wet winters) within a broad elevation range from near sea level up to 300 meters (1,000 feet) in the Coast Ranges and inland to 1,500 meters (4,545 feet). It often occurs as a mosaic of multiple communities that are dominated by trees with a diverse shrub component and open shrublands. It also includes open channels and bare alluvial bars. The variety of plant associations reflects elevation, stream gradient, floodplain width, and flooding events. Dominant trees may include white alder, boxelder, red alder (in Coast Ranges), Fremont cottonwood, red willow, Goodding's willow, Douglas fir, California sycamore, coast live oak, and big leaf maple (in central and south coast areas). Dominant shrubs

include narrowleaf willow and arroyo willow. Exotic tree of heaven, eucalyptus, and giant reed occur. These are disturbance-driven habitats that require flooding, scour, and deposition for germination and maintenance.

- **California Lower Montane Blue Oak-Foothill Pine Woodland and Savanna.** This is an open pine-oak woodland of the valley margins and foothills of the Sierra Nevada and Coast Ranges of California, ranging from approximately 120 to 1,200 meters (360–3,600 feet) elevation on rolling plains and dry slopes. High-quality stands are open and park-like foothill pine, typically including blue oak, interior live oak, coast live oak, valley oak, California buckeye, manzanita, redbud, buckbrush, California coffeeberry, oak woods gooseberry, California juniper, or Coulter pine. Foothill pine tends to drop out all together in the driest and more southerly sites, which are then dominated by blue oak. Foothill pine density varies based on intensity or frequency of fire, being less abundant in areas of higher intensity or frequency fires; hence, it is often more abundant on steep, rocky, or more mesic north-facing slope exposures.
- **Temperate Pacific Freshwater Emergent Marsh.** These are freshwater marshes, mostly permanently flooded or semi-permanently flooded. They are dominated by emergent herbaceous species, usually sedges, rushes, bullrush, spikerush, or cattail. They are called emergent because the plants are rooted in the mud at the bottom of the lake or pond, and "emerge" through the water surface. Red-winged blackbirds can be abundant in the spring in these habitats.
- **Open Water (Fresh).** All areas of open water, generally less than 25 percent cover of vegetation or soil. Specifically, inland waters of streams, rivers, ponds, and lakes.

Special-Status Species and Critical Habitat

The following special-status species have been recorded in the South County Planning Area (CDFW 2014a):

- Longhorn fairy shrimp
- Vernal pool fairy shrimp
- Tidewater goby
- Southern steelhead
- Kern primrose sphinx moth
- Blunt-nosed leopard lizard
- California tiger salamander
- California red-legged frog
- California condor
- Swainson's hawk
- San Joaquin kit fox
- Giant kangaroo rat
- Nelson's antelope squirrel (*Ammospermophilus nelsoni)*
- Marsh sandwort (*Arenaria paludicola*)
- Pismo clarkia
- Indian Knob mountainbalm

- California jewelflower
- San Luis Obispo fountain thistle
- Surf thistle (*Cirsium rhothophilum*)
- La Graciosa thistle(*Cirsium scariosum* var. *loncholepis*)
- Beach spectaclepod (*Dithyrea maritima*)
- Nipomo Mesa lupine (*Lupinus nipomensis*)
- Kern mallow
- San Joaquin woollythreads (*Monolopia congdonii*)
- Gambel's watercress (*Nasturtium gambelii*)

Designated critical habitat in the South County Planning Area under County jurisdiction is limited to southern steelhead critical habitat along four watercourses and tributaries in the western end and a small portion of California red-legged frog critical habitat in the northwestern corner.

Migration and Wildlife Movement

The Montana de Oro-Bald Mountain linkage described under the San Luis Obispo Planning Area extends into the extreme northwestern portion of the South County Planning Area, as does the Essential Habitat Connectivity Area associated with the Santa Lucia Range. Natural Landscape Blocks are identified in the western and southern portions of the planning area under County jurisdiction.

Important Bird Areas in the South County Planning Area include the Lopez Lake Area in the northwestern portion and the Cuyama Valley along the southern border of the county (Audubon California 2008).

Jurisdictional Resources and Other Biological Considerations

Lopez Lake, Lopez Reservoir, and Twitchell Reservoir are major water bodies in the South County Planning Area. Jurisdictional areas would also include additional unmapped tributaries, including intermittent channels, which can only be identified through site-specific analysis. A limited amount of serpentine soils are mapped along the mountainous areas in the western portion of the planning area. No vernal pool complexes are mapped in this planning area.

3.4.2 REGULATORY SETTING

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFW has the responsibility for maintaining a list of native endangered and threatened species (California Fish and Game Code Section 2070). The CESA protects all native species including fishes, amphibians, reptiles, birds, mammals, invertebrates, plants, and their habitats that are threatened with extinction or experiencing a significant decline that would lead a threatened or endangered designation if not addressed. The CDFW maintains a list of "candidate species," which are species that the CDFW formally notices as being under review for addition to the list of endangered or

threatened species. The CDFW also maintains lists of "species of special concern," which serve as species "watch lists."

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present on the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW 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 California Fish and Game Code Section 206.591. Authorization from the CDFW would be in the form of an Incidental Take Permit.

California Fish and Game Code

The California Fish and Game Commission protects wildlife and plants listed as endangered or threatened under the California Endangered Species Act. The CESA prohibits all persons from taking species that are state listed as endangered or threatened except under certain circumstances. The CDFW also has jurisdictional authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Section 1600 et seq.

Fully Protected Species

Certain species are considered fully protected, meaning that the Fish and Game Code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals.

It is possible for a species to be protected under the California Fish and Game Code, but not fully protected. For instance, mountain lion (*Puma concolor*) is protected under Section 4800 et seq., but is not a fully protected species.

Protection of Birds and Nests

Eggs and nests of all birds are protected under Fish and Game Code Section 3503, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, and birds of prey under Section 3503.5. Migratory non-game birds are protected under Section 3800 and other specified birds under Section 3505.

Stream and Lake Protection

The CDFW has jurisdictional authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Section 1600 et seq. through administration of lake or streambed alteration agreements. Such agreements are not a permit, but rather a mutual accord between the CDFW and the project proponent. The CDFW has the authority to regulate work that will "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river lake or stream."

The CDFW enters into a streambed alteration agreement with the project proponent and can impose conditions in the agreement to minimize and mitigate impacts to fish and wildlife resources. Because the CDFW includes under its jurisdiction streamside habitats that may not qualify as wetlands under the federal Clean Water Act definition, CDFW jurisdiction may be broader than US Army Corps of Engineers (USACE) jurisdiction.

A project proponent must submit a notification of streambed alteration to the CDFW before construction. The notification requires an application fee for streambed alteration agreements, with a specific fee schedule to be determined by the CDFW. The CDFW can enter into programmatic agreements that cover recurring operation and maintenance activities and regional plans. These agreements are sometimes referred to as Master Streambed Alteration Agreements.

Oak Woodlands Conservation Act

The Oak Woodlands Conservation Act of 2001 recognizes the importance of California's oak woodlands and the critical role private landowners have in the conservation of oaks. The act identifies the Wildlife Conservation Board (WCB) as the responsible entity to implement the Oak Woodlands Conservation Program. The act created the Oak Woodlands Program with the expressed intent to accomplish the following:

- Support and encourage voluntary, long-term private stewardship and conservation of California oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands.
- Provide incentives to protect and encourage farming and ranching operations that are operated in a manner that protect and encourage farming and ranching operation that are operated in a manner that protect and promote healthy oak woodlands.
- Provide incentives for the protection of oak trees providing superior wildlife values on private land.
- Encourage planning that is consistent with oak woodlands preservation.

Counties must require feasible and proportional habitat mitigation for impacts on oak woodlands as part of the California Environmental Quality Act (CEQA) process. Under Public Resources Code Section 21083.4, a county is required to determine whether projects "may result in a conversion of oak woodlands that will have a significant effect on the environment." The law applies to all oak woodlands except those dominated by black oak. When it is determined that a project may have a significant effect on oak woodlands, mitigation is required.

LOCAL

San Luis Obispo County General Plan – Conservation and Open Space Element

The Conservation and Open Space Element (COSE) provides policies for the protection of biological resources throughout the county. Many policies incorporate state and federal approaches to protect sensitive biological resources. For instance, policies require environmental review addressing any special-status species on a proposed project site. Policies recommend methods for the preservation, replacement, and enhancement of habitats and special-status species. Also, policies recommend that additional standards be developed or considered in the presence of certain conditions, such as setbacks from specified species or wildlife corridors when present on a proposed project site.

San Luis Obispo County Land Use Ordinance – Title 22 of the County Code

The Land Use Ordinance (LUO) provides numerous standards for project design and siting to identify and reduce impacts to biological resources, as discussed below.

LUO – Sensitive Resource Areas (SRA) Combining Designation

The County's Land Use Ordinance applies the Sensitive Resource Area (SRA) Combining Designation to areas of the county with special environmental qualities or to areas containing unique or endangered vegetation or habitat resources. The purpose of these combining designation standards is to require that proposed uses be designed with consideration of the identified sensitive resources and the need for their protection. Development is permitted in SRAs provided that it is found not to create significant adverse effects on the natural features of the site or vicinity that were the basis for the SRA designation, and if they will preserve and protect such features through site design. Where SRAs are applied because of biological species, those species are not to be disturbed by construction or operation unless authorized by a conditional use permit.

LUO – Planning and Permit Procedures

Section 22.60.040 of the LUO identifies minimum application requirements for land use applications pursuant to Title 22. All land use permits except for zoning clearance require submission of a botanical report, biological report, and tree inventory plan. The Planning Director may waive these requirements based on specific site conditions or if the applicant is completing an environmental impact report pursuant to the requirements of CEQA.

LUO – Tree Preservation

Chapter 22.56 establishes the County's tree preservation requirements for trees located within urban or village reserve lines, or in areas designated by Article 9. Tree removal generally is prohibited unless approved through the land use permit process. Tree removal is allowed for trees meeting certain criteria, such as trees causing danger or conflicting with existing or utilities or improvements. Exemptions are provided for trees on residential uses, management for agricultural practices, or trunks measuring less than 8 inches in diameter at 4 feet above grade.

LUO – Development Standards for Electricity Generating Facilities

The special use standards for electricity-generating facilities provide protection for vegetation. Section 22.32 requires electricity-generating facilities to minimize soil disturbance and vegetation removal. Standards also require replanting of all disturbed areas once the disturbed areas are no longer required. Currently, all plans must submit an Environmental Quality Assurance Program addressing construction and operation with applications for conditional use permits. The contents of this plan are determined during the environmental review process.

San Luis Obispo County Voluntary Oak Woodland Management Plan

The Voluntary Oak Woodland Management Plan encourages the long-term conservation of oak woodlands using methods that are compatible with appropriate farming, ranching, and grazing operations. The plan was prepared by the Native Tree Committee of San Luis Obispo County to meet the requirements for participating in the Wildlife Conservation Board's Oak Woodlands Conservation Program. The plan suggests management techniques that private residents and

landowners can implement to conserve oak woodlands, encouraging clustered development and designing around existing trees.

Summary

Table 3.4-1 summarizes regulations and policies from the documents described above relevant to biological issues, including General Plan elements and the Land Use ordinance. Information is organized by planning area. The table also identifies where policies or standards only apply to subareas or land use designations.

TABLE 3.4-1
LOCAL POLICIES AND REGULATIONS FOR BIOLOGICAL ISSUES

Applicable Code Section	Summary
Countywide	
Agriculture Element, Policy AGP25	Applies to Agriculture land use designation or used for production agriculture and zoned other than Agriculture, for projects requiring discretionary permit: recommends protection of unique or sensitive habitat affected by the proposal through project siting to avoid significant impacts on the habitat or avoid significant impacts on the agricultural operations, design adjustments, or, when significant impacts are identified, the landowner shall implement County-approved mitigation measures consistent with the existing requirements of CEQA.
Agriculture Element, Policy AGP29.c	Applies to Agriculture land use designation or used for production agriculture and zoned other than Agriculture: When evaluating development proposals with discretionary permits, identify and protect on-site wildlife corridors as part of the CEQA process.
Conservation and Open Space Element, Policy BR 2.6	Recommends that potential adverse impacts to threatened, rare, and endangered species from development are avoided or minimized through project siting and design. • Discretionary projects to provide a biological resource survey when needed to address special-status animal and plant species and their associated habitats (Implementation Strategy BR 2.6.1) (see LUO 22.56). • Where avoidance, restoration, or replacement of habitat of special-status species is not feasible, recommends preservation and/or enhancement of similar habitat at a minimum 2:1 ratio (Implementation Strategy BR 2.6.2). • Obtain easements to protect habitat where connected to other large areas of unique or sensitive habitat. Natural open space areas in development projects should be contiguous to natural areas adjacent to sites wherever possible (Implementation Strategy BR 2.6.3).
Conservation and Open Space Element, Policy BR 1.12	Recommends that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits. Provide linkages and corridors as needed to connect sensitive habitat areas such as woodlands, forests, and wetlands. • Recommends all discretionary development applications in rural areas, including land divisions, to identify and protect wildlife corridors, and avoid disturbance of identified key wildlife corridors as the primary method of protection (Implementation Strategy BR 1.12.1). • Mitigate impacts to wildlife corridors. • If avoidance is not feasible, re-establish and/or restore important wildlife corridors that may have been damaged or disrupted (Implementation Strategy BR 1.12.2).

Applicable Code Section	Summary
Conservation and Open Space Element, Implementing Strategy SL 1.2.1	Recommends retention of natural vegetation and topography to the maximum extent feasible for all discretionary projects adjacent to blueline streams or in areas designated with at least moderate erosion potential.
Conservation and Open Space Element, Policy BR 1.1	Recommends protecting sensitive biological resources such as wetlands, migratory species of the Pacific Flyway, and wildlife movement corridors through: (1) environmental review of proposed development applications, including consideration of cumulative impacts, (2) participation in comprehensive habitat management programs with other local and resource agencies, and (3) acquisition and management of open space lands that provide for permanent protection of important natural habitats.
Conservation and Open Space Element, Policy BR 1.11	Recommends identification, protection, and enabling the management of connected habitat areas for wildlife movement. Features of particular importance to wildlife for movement may include, but are not limited to, riparian corridors, shorelines of the coast and bay, and ridgelines. Identification and designation of wildlife corridors will not interfere with agricultural uses on private lands.
Conservation and Open Space Element, Policy BR 1.12	Recommends that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits. Provide linkages and corridors as needed to connect sensitive habitat areas such as woodlands, forests, and wetlands.
Conservation and Open Space Element, Policy BR 1.13	Recommends maintenance and enhancement of existing stream channels and riparian corridors to provide for wildlife movement at roadway crossings.
Conservation and Open Space Element, Policy BR 1.15	Recommends avoiding impacts to sensitive riparian corridors, wetlands, and coastal areas to protect bird-nesting activities. • Design land divisions and development with adequate setbacks from sensitive habitat areas that are occupied during the nesting season to protect bird nesting, rearing, and fledging activities (Implementation Strategy BR 1.15.1). • Require preconstruction surveys where development is proposed in sensitive habitat areas during the nesting season in order to protect nests in active use (Implementation Strategy BR 1.15.2).
Conservation and Open Space Element, Policy BR 1.2	Recommends regulating and minimizing proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, coastal and riparian habitats, and wildlife habitat and movement corridors as necessary to ensure the continued health and survival of these species and protection of sensitive areas.
Conservation and Open Space Element, Policy BR 1.3	Recommends environmental review of development applications pursuant to CEQA and County procedures to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors.
Conservation and Open Space Element, Policy BR 1.4	Recommends that development projects are approved with conditions and mitigation measures to ensure the protection of sensitive resources and to achieve “no net loss” of sensitive habitat acreage, values, and function. Give highest priority to avoidance of sensitive habitat. When avoidance is not feasible, require provision of replacement habitat onsite through restoration and/or habitat creation. When on-site mitigation is not feasible, provide for off-site mitigation that reflects no net loss.
Conservation and Open Space Element, Policy BR 1.9	Recommends that proposed discretionary development protects and enhances ecotones or natural transitions between habitat types because of their importance to vegetation and wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.

Applicable Code Section	Summary
Conservation and Open Space Element, Policy BR 2.4	Recommends support of recovery programs for endangered and threatened species. • Recommends that applications for discretionary land use projects and land divisions located in the habitat for endangered or threatened species be consistent with applicable recovery plans (Implementing Strategy BR 2.4.1).
Conservation and Open Space Element, Policy BR 2.5	Recommends the County should coordinate with the US Fish and Wildlife Service to ensure that General Plan amendments do not conflict with the final recovery plans for federally listed species.
Conservation and Open Space Element, Policy BR 2.8	Recommends promoting and supporting efforts to reduce the effects of noxious weeds on natural habitats. • Encourage scientific study, monitoring, and active management where biotic communities and habitats of limited distribution or sensitive natural plant communities are threatened by the spread of invasive non-native species (Implementation Strategy BR 2.8.1). • Prohibit use of invasive plant species in landscaping of proposed development (Implementing Strategy BR 2.8.2). • Recommends the removal of invasive exotic plant species, to the extent feasible, when reviewing discretionary development projects, and include monitoring to prevent re-establishment in managed areas (Implementing Strategy BR 2.8.3).
Conservation and Open Space Element, Policy BR 2.9	Recommends landscaping for proposed development that will use a variety of native or compatible non-native, non-invasive plant species as part of project landscaping to improve wildlife habitat values.
Conservation and Open Space Element, Policy BR 3.1	Recommends protection of native and biologically valuable trees, oak woodlands, trees with historical significance, and forest habitats to the maximum extent feasible.
Conservation and Open Space Element, Policy B 3.2	Recommends proposed discretionary development and land divisions to avoid damage to native trees (e.g., Monterey Pines, oaks) through setbacks, clustering, or other appropriate measures. When avoidance is not feasible, require mitigation measures. • If avoidance is not feasible, require mitigation measures such as tree replacement (Implementation Strategy BR 3.2.1).
Conservation and Open Space Element, Policy BR 3.3	Recommends maintenance and improvement to oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat. • Comply with the Oak Woodlands Preservation Act (Public Resources Code Section 21083.4) through the review of proposed discretionary development by maintaining the integrity and diversity of oak woodlands, chaparral communities, and other significant vegetation (Implementation Strategy BR 3.3.1).
Conservation and Open Space Element, Policy BR 3.5	Recommends protection of healthy and non-hazardous, non-native trees (e.g., eucalyptus groves) and forests that provide raptor nesting or roosting sites or support colonies of monarch butterflies.
Conservation and Open Space Element, Policy VR 4.2	Recommends within suggested scenic corridors in the COSE: Balance the protection of scenic resources with the protection of biological and agricultural resources that may co-exist within the scenic corridor.
Conservation and Open Space Element, Implementing Strategy BR 1.15.2	Recommends preconstruction surveys, using established protocols, where development is proposed in sensitive habitat areas during the nesting season in order to protect nests in active use.
Title 22, Article 8, Section 22.32.030.B	Electric-generating plants will submit an Environmental Quality Assurance Program addressing construction and operation of the facility, with contents to be confirmed during the environmental review process.

Applicable Code Section	Summary
Title 22, Article 8, Section 22.32.030.C	Electric-generating plants will limit the land area exposed and vegetation removed to the minimum necessary to install and operate the facility. Disturbed areas no longer required for operation will be regraded, covered, and replanted.
Title 22, Chapter 22.56.020	Tree removal permits are required with zoning clearance review for tree removal in urban or village reserve lines or areas designated by Article 9. Exempt if trees meet criteria including location within residential land use designations on sites developed with residential units, and trees with trunks less than 8 inches in diameter.
Title 22, Chapter 22.56.030	Tree removal is prohibited unless dead, diseased, hazardous, interfering with existing utilities or structures, obstructing existing or proposed improvements that cannot be reasonably designed to avoid need for tree removal, or meeting other limited criteria.
Title 22, Section 22.60.040	All land use permits except for Zoning Clearance require submission of a botanical report, biological report, and tree inventory plan unless addressed through CEQA or otherwise waived by the Planning Director
Carrizo Planning Area	
No additional policies or code specific to the Carrizo Planning Area.	
North County Planning Area	
Shandon Community Plan, Shandon Community Plan, 4.6, CRP-2	Protect and preserve significant landscape features including native trees, riparian vegetation, and trees with significant aesthetic or historic significance, cultural heritage.
Title 22, Article 9, Section 22.94.040.B	North County, El Pomar Estrella subarea, AG land use designation: Any new development subject to discretionary review shall be set back a minimum of 50 feet from the top of the bank of any watercourse, or outside the dripline of riparian vegetation
Land Use Ordinance, Section III, Shandon Community Plan (4.6, CRP-2)	Protect and preserve significant landscape features including native trees, riparian vegetation, and trees with significant aesthetic or historic significance, cultural heritage.
Shandon Community Plan, Appendix D EIR Mitigation Measures, BIO-1(b)	Requires setbacks, buffers and avoidance for wetland habitats, or mitigations if impacts cannot be avoided. Designated infill parcels are exempt.
Title 22, Article 10, Section 22.104.030.A	Heritage Ranch Village: Additional standards apply, including street dedication, setbacks, vegetation protection, and botanical or biological report
Title 22, Section 22.94.020.D.3	Within the Nacimiento subarea, projects requiring Conditional Use Permit approval within the SRA combining designation: Concentrate proposed uses in the least sensitive portions of properties. Native vegetation shall be retained as much as possible.
San Luis Obispo Planning Area	
Title 22, Article 9, Section 22.98.020.E.6	San Luis Bay (south) subarea, projects requiring Conditional Use Permit approval: Concentrate proposed uses in the least sensitive portions of properties. Native vegetation shall be retained as much as possible.
South County Planning Area	
Title 22, Article 9, Section 22.108.040.A.4-5	Nipomo Community, Nipomo lowlands and Nipomo Creek: Additional drainage and creek protection measures for new development.
Title 22, Article 9, Section 22.96.020.C.1	Indian Knob Sensitive Resources Area: A site survey shall be conducted to locate any *Eriodictyon altissimum* (Indian Knob mountainbalm) prior to the approval of any land use permit, and new development shall preserve the plant.

Applicable Code Section	Summary
Title 22, Article 9, Section 22.98.072.D.3	South County subarea, North of Santa Maria River area, Industrial land use designation: Projects must protect biological resources within 150 feet of Nipomo Creek and the Santa Maria River.
Title 22, Article 9, Section 22.98.072.H.3	South County, Residential Rural land use designation in specified areas: A grading permit is required for site disturbances below the rim of Black Lake Canyon outside of the Sensitive Resource Area. Additional standards apply for wildlife corridors of native vegetation and areas containing wetlands
Title 22, Article 9, Section 22.98.072.H.9	South County subarea, specified areas: Construction and land use applications require the preparation of a biological and botanical report

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

A biological resource impact is considered significant if implementation of the RESP would result in any of the following:

1) Result in a loss of unique or special-status species or their habitats.[1]

2) Reduce the extent, diversity, or quality of native or other important vegetation.

3) Impact wetland or riparian habitat.

4) Interfere with the movement of resident or migratory fish or wildlife species, or factors which could hinder the normal activities of wildlife.

5) Conflict with any regional plans or policies to protect sensitive species, or with regulations of the California Department of Fish and Wildlife or US Fish and Wildlife Service.

PROJECT IMPACTS AND MITIGATION MEASURES

The provisions of the proposed RESP were specifically intended to reduce or eliminate the potential for significant impacts to biological resources. Parcels intended for inclusion in the combining designation were screened to ensure there were no conservation easements or existing or intended biological conservation areas. Because each project circumstance is unique, it was considered too speculative to allow streamlining of state and federal environmental permits. Therefore, the proposed LUO specifically precludes any project that requires a wetland fill, streambed alteration, or similar environmental permit from the streamlining program.

Tier 1 projects are anticipated to be small and located either or rooftops or on areas that have little to no existing biological resources. These projects can be approved through simple ministerial review and adherence to the provisions of the LUO. Tier 2 and above projects have additional performance standards designed to reduce potential impacts.

[1] Special-status species as defined in Section 15380 of the CEQA Guidelines, which includes all plant and wildlife species that fall under the category of rare, threatened, or endangered, as described in this section.

Every ground-mounted installation is likely to have some impact to biological resources. The expectation of the RESP is that adherence to the proposed performance standards in the LUO will ensure the impacts to biological resources will be less than significant. Those projects that could have significant impact to biological resources are required to obtain approval through the Minor or Conditional Use Permit process. The use permit process requires site-specific biological reports that may result in mitigation measures specific to the project.

Result in a Loss of Unique or Special-Status Species or Their Habitats (Threshold 1)

Construction and operation of solar energy projects could result in the loss of unique or special-status species or their habitats. Direct impacts to sensitive biological resources may include mortality to plants and wildlife, disruption of breeding, and loss of important habitat. Indirect effects may occur from exposure to fugitive dust, construction noise and vibration, erosion, or the introduction or spread of nonnative plants or wildlife. Direct effects could have long-term consequences on the viability of regional populations of special-status species. Indirect effects would primarily be temporary; however, the spread of weeds can result in habitat degradation with long-term effects that extend well beyond a project site. Impacts to species listed under the federal or California Endangered Species Acts would also require incidental take authorization from the USFWS or the CDFW, respectively.

Proposed performance standard 22.14.100.C requires an application and other information prepared as specified in existing Sections 22.60.040.B, 22.60.040.D, and 22.62.040 for Site Plan Review, including a biological resources report. As described in Section 22.14.100.F.2, a project will not be eligible for streamlining under the RESP if it has the potential to result in direct or indirect impacts to any special-status species, sensitive native vegetation, or jurisdictional wetlands or waters, or to disrupt wildlife movement and migration corridors. If a project is located in the San Joaquin Kit Fox Habitat Area, complies with the standard mitigation ratio and all kit fox conditions, and the biological resources report does not indicate the presence of any additional state or federally-listed wildlife or plant species or designated critical habitat, it would also qualify for streamlining. Projects that may result in these types of impacts would require project-level CEQA review outside the scope of the RESP. The following describes only the impacts of projects eligible for streamlining under the RESP.

Impact 3-4-1 – Solar Implementation of the proposed Program could result in a loss of habitat for unique or special-status species. This impact is considered **less than significant (Class III)**.

Proposed LUO Section 22.32.050.A.3.a specifies that Tier 1 solar projects are only allowed on the roof of a conforming use or on land that was previously developed for industrial or commercial purposes and degraded or contaminated and then abandoned or underused.

Nearly all studies of avian mortality are associated with large-scale solar projects. A search of the available literature did not find a study related to avian mortality associated with roof- mounted solar panels. A January 2014 study concluded that avian mortality associated with buildings is due to reflective windows (Loss et al. 2014).

Proposed performance standard LUO 22.32.050.D.1 requires that solar panels have nonreflective surfaces to minimize glare. The nonreflective surface and the angle normally associated with the roof will avoid the solar panels being mistaken for windows as might occur with a vertical installation. Building windows are a known source of avian mortality, as the birds mistake the reflection for an “opening” in the building through which they can fly. While a horizontal (flat) installation might be mistaken for a water body, the Tier 1 roof-mounted SEF installation is too

small and surrounded by building and therefore unlikely to attract large numbers of birds and or to cause mortality for birds that land.

Proposed LUO Section 22.32.050.A.3.b requires that Tier 1 ground-mounted facilities undergo site plan review that requires preparation of both a botanical and biological report (existing LUO 22.60.040.D.3 and .4). The required reports will determine the project-specific design that would address potential bird strikes. This can include specific materials or even plantings between components designed to break up the visual appearance of the panels. If the proposed project report cannot demonstrate that impacts will be less than significant, then a discretionary Minor or Conditional Use Permit will be required. A Minor or Conditional Use Permit will require a site-specific environmental analysis. As proposed, implementation of roof-mounted Tier 1 SEF solar projects under the RESP would result in impacts that are **less than significant (Class III)**.

Tier 2 and Tier 3 solar electric facility (SEF) projects are limited to a maximum of 40 acres and 160 acres, respectively. Tier 2 and Tier 3 SEFs could include extensive grading to prepare areas for the installation of solar collectors. Tier 2 and Tier 3 SEFs could be streamlined with implementation of proposed performance standard 22.14.100.F.2, which requires the preparation of a botanical and biological report demonstrating that the project site does not contain sensitive biological resources that would be impacted by the project. For each project, the proponent would submit a biological resources report prepared by a qualified biologist, which would require a habitat assessment for special-status species.

Whenever there is ground disturbance there is the potential to impact a biological resources. The RESP, and existing county regulations, require that a biological analysis be prepared for these types of projects. It is likely that the report will result in some impact that will be addressed through project modification. These might include trimming of a tree to allow equipment to pass, covering of the soil, trenching and grubbing. These are normal construction activities and would not require special permitting. If a project cannot demonstrate avoidance of occupied habitat or habitat that could support special-status species, project-level analysis under CEQA would be required and the project would not be eligible for streamlining under the RESP.

Direct and indirect impacts to sensitive biological resources in adjacent areas would be avoided through the implementation of proposed development standards. These include setbacks (i.e., buffers) around projects (Development Standard 22.14.100.F.4- 6), a weed management plan to minimize the potential for introduction and spread of invasive weeds (Development Standard 22.32.040.C.4), and only non-invasive species allowed in landscaping. Dust control and the implementation of other best management practices are required by existing LUO Chapter 22.52. Implementation of these development standards would ensure that the RESP would result in **less than significant (Class III)** impacts to special-status species or other sensitive biological resources.

Impact 3-4-1 – Wind Implementation of the proposed Program could result in a loss of habitat for unique or special-status species. This impact is considered **less than significant (Class III)**.

Streamlining of wind projects under the RESP would be limited to Tier 1 wind energy conversion systems (WECS), which are installations mounted on a roof of a structure or conforming use (refer to **Table 2.0-1** in Section 2.0, Project Description).

During operation, birds and bats, including special-status species, can be killed or injured by turbines. However, Tier 1 WECS are limited to a height of 10 feet above the building for agricultural, rural, and public facilities for a maximum height of 45 feet, and no more than 5 feet

above the building for a maximum height of 40 feet for residential and commercial land uses (proposed County Code Section 22.32.060.C). Although special-status species could collide with these facilities, as with SEF projects, the magnitude of these effects is expected to be extremely low (Anderson). With implementation of proposed development standards, impacts from the construction and operation of Tier 1 WECS would be **less than significant (Class III).**

Tier 2 and above ground-mounted WECS projects could result in avian mortality due to the size and number of turbines in a close pattern. The siting of WECS projects of this scale requires careful study of bird migration patterns, understanding of local habitat and foraging areas, and identification of the types of bird species likely to frequent the project site. Because this information is site-specific, the RESP program requires a site-specific biological report for Tier 2 WECS projects in the combining designation and either a Minor or Conditional Use Permit and accompanying CEQA analysis for projects outside of the combining designation.

If Tier 2 WECS projects within the combining district cannot be designed to result in a less than significant impact (Class III), the project is not eligible for the streamlining program and must proceed under the traditional approval process. This process would require independent environmental analysis under CEQA as well as approval of either a Minor or Conditional Use Permit. As designed, this impact is considered **less than significant (Class III).**

Impact 3-4-1 – Policy Changes Implementation of the proposed Program could result in changes to countywide policies that could indirectly result in a loss of habitat for unique or special-status species. This impact is considered **less than significant (Class III)**.

The streamlining provisions of the proposed project only apply to projects that cannot by design have an impact to biological resources (e.g., mounted on existing buildings) or can demonstrate that there is no biological impact through a professionally prepared biological study. Nearly every project can have some biological impact; however, in most cases the project will simply be designed to avoid or eliminate the potential impact. This is done frequently with projects where driveways, grading, construction and operational characteristics can all be intentionally designed to avoid impacting resources. As these changes are both site- and project-specific, there is no way to determine the extent of change (mitigation) in this EIR. The proposed program anticipates some of the typical project mitigation and includes performance standards that address some potential impacts (e.g., LUO 22.14.100.F) and further restrict project locations near wetlands and sensitive habitat by establishing minimum setbacks. Adherence to policy changes proposed under the RESP would ensure projects would minimize impacts to special-status species and habitat. This impact would be **less than significant (Class III)**.

Reduce the Extent, Diversity, or Quality of Native or Other Important Vegetation (Threshold 2)

As described under Threshold 1, construction and operation of solar energy projects could result in loss or degradation of important vegetation. Ground disturbance, fugitive dust, and spread of non-native and invasive weeds could reduce the extent, diversity, or quality of native or other important vegetation such as annual grasslands.

Impact 3-4-2 – Solar Implementation of the proposed Program could reduce the extent, diversity, or quality of native or other important vegetation. This impact is considered **less than significant (Class III)**.

Tier 1 SEF would be located on buildings or on land that was previously disturbed, altered, or abandoned from a previous industrial or commercial use (proposed LUO 22.32.050.A.3). Because Tier 1 solar installations would be located on top of existing structures or within developed areas that do not support sensitive biological resources, implementation of Tier 1 solar projects under the RESP would not result in significant impacts to native or other important vegetation. Ground-mounted Tier 1 SEF projects must obtain site plan approval that that requires preparation of both botanical and biological reports to ensure that the site does not include sensitive species (LUO 22.60.040).

Tier 2 SEF projects within the combining designation could result in projects up to 40 acres in size. The proposed LUO requires that these sites be located in urban areas or in rural areas on sites designated as Commercial Service (CS) or Industrial (IND)(proposed LUO 22.32.050.A).

Construction and operation of ground-mounted SEF facilities could result in impacts to vegetation both on-site and on adjacent sites through introduction of invasive weeds, overspray of herbicides, and dust covering vegetation. Provisions of the proposed LUO reduce the impact of SEF projects on adjacent vegetation by requiring project setbacks (proposed LUO 22.32.050.B), a weed management plan to minimize the potential for introduction and spread of invasive weeds (proposed LUO 22.32.040.C.4), and mandating that only non-invasive species be allowed in landscaping. Dust associated with the construction and operation of ground-mounted SEFs is addressed through implementation of best management practices required by existing LUO Chapter 22.52.

Tier 2 and Tier 3 SEF projects outside of the combining designation are subject to proposed performance standards that require preparation of a biological report demonstrating that the project will not significantly impact any sensitive biological resources. If a project cannot demonstrate a less than significant impact (Class III) on native or other important vegetation, project-level analysis under CEQA would be required and the project would not be eligible for streamlining under the RESP.

Program requirements ensure SEF projects would either demonstrate that impacts to sensitive biological resources would be less than significant (Class III) or that the resources have been avoided entirely through the implementation of proposed development standards. As designed, the proposed project reduces impacts to native vegetation to a **less than significant (Class III)** level.

Impact 3-4-2 – Wind

Implementation of the proposed Program could reduce the extent, diversity, or quality of native or other important vegetation. This would be a **less than significant (Class III)** impact.

Rooftop construction of Tier 1 WECS equipment may impact nearby grasslands or vegetation, as equipment may be necessary to hoist equipment to the roof of the building and gain access to the site. Most buildings in rural environments are required to have a clear area for fire protection, and it is anticipated that the fire break setback around the structure would be used for the staging and construction of roof-mounted WECS equipment. It is possible that some tree limbs or vegetation may need to be trimmed to allow passage of larger vehicles; however as the Tier 1 projects are to be located on existing buildings, the assumption is that there is adequate existing access. There may be a temporary impact associated with driving on grassland or vegetation; however, the area is expected to recover as the interaction will likely be less than two weeks and no follow-up construction would be necessary. Other than vehicle and pedestrian movement, no ground disturbance would be associated with building-mounted equipment.

Ground-mounted WECS projects are required to provide a biological report that will include measures designed to reduce impacts to less than significant. If the project modifications cannot reduce impacts to Class III, then the project will not qualify for streamlining and must obtain either a Minor or Conditional Use Permit, which will require independent project-specific CEQA analysis and mitigation. Impacts to native vegetation from the construction and operation of WECS projects are considered **less than significant (Class III).**

Impact 3-4-2 – Policy Changes Implementation of the proposed Program could reduce the extent, diversity, or quality of native or other important vegetation. This impact is considered **less than significant (Class III)**.

The proposed project was designed to either avoid sensitive areas or require that applicants demonstrate how projects will address impacts to native vegetation. Larger Tier 2 and above projects will require either a Minor or Conditional Use Permit. These discretionary permits would also be accompanied by additional project-specific environmental analysis. Projects that cannot demonstrate that impacts to vegetation are less than significant are not eligible for the proposed RESP. Therefore, the policy changes proposed with the RESP are considered **less than significant (Class III).**

Impact Wetland or Riparian Habitat (Threshold 3)

As described under Threshold 1, construction and operation of solar energy projects could potentially result in direct loss of wetland or riparian habitat and indirect impacts from fugitive dust and spread of nonnative and invasive weeds. However, renewable energy projects have significant siting constraints under the proposed RESP because they must avoid significant impacts to sensitive biological resources, including wetland and riparian habitat. New development policy 22.14.100.C requires project proponents to submit information prepared as specified in Sections 22.60.040.B, 22.60.040.D, and 22.62.040 for Site Plan Review, including a biological resources report, which includes vegetation mapping and identification of all wetlands, streams, ponds, lakes, and other potentially jurisdictional waters at the project site. A project would not be eligible for streamlining under the RESP if it had the potential to result in direct or indirect impacts to any jurisdictional area including wetland or riparian habitat. Projects that may result in impacts would require project-level CEQA review outside the scope of the RESP and could also require permits from the CDFW, the Regional Water Quality Control Board, or the USACE, as applicable. The following describes only the impacts of projects eligible for streamlining under the RESP.

Impact 3-4-3 – Solar Implementation of the proposed Program could impact wetland or riparian habitat. This impact is considered **less than significant (Class III)**.

Streamlined Tier 1 SEF projects would only be located on land that is disturbed, altered, or abandoned from a previous industrial or commercial use. Because Tier 1 SEFs would be located on top of existing structures or within developed areas that do not support sensitive biological resources, implementation of Tier 1 solar projects under the RESP would not result in impacts to wetland or riparian habitat.

As described above, direct impacts to wetland and riparian habitat from Tier 2 and Tier 3 solar projects that would require state or federal permitting, and projects that may impact these features are not eligible for streamlining under the RESP. Impacts to sensitive biological resources in adjacent areas would be avoided through the implementation of proposed development

standards. These include setbacks (i.e., buffers) around projects, a weed management plan to minimize the potential for introduction and spread of invasive weeds, and only non-invasive species allowed in landscaping. Dust control and the implementation of other best management practices are required by existing LUO Chapter 22.52. Implementation of these development standards would minimize or avoid impacts to wetland and riparian habitats to a **less than significant (Class III)** level.

Impact 3-4-3 – Wind Implementation of the proposed Program could impact wetland or riparian habitat. This impact is considered **less than significant (Class III)**.

Tier 1 wind turbines are mounted on a roof or structure of a conforming use, with no associated ground disturbance. Therefore, construction and operation would not result in direct or indirect impacts to wetland or riparian habitat.

Impact 3-4-3 – Policy Changes Implementation of the proposed Program could impact wetland or riparian habitat. This impact is considered **less than significant (Class III)**.

As described under Threshold 1, adherence to policy changes proposed under the RESP would ensure projects would minimize impacts to wetland and riparian habitat. Impacts would be **less than significant (Class III).**

Interfere with the Movement of Resident or Migratory Fish or Wildlife Species, or Factors Which Could Hinder the Normal Activities of Wildlife (Threshold 4)

As described under Threshold 1, construction and operation of solar energy projects could result in impacts to wildlife, including habitat loss and general disturbance that could interfere with migration, movement, and normal activities. Proposed standard 22.14.100.C requires project proponents to submit information prepared as specified in Sections 22.60.040.B, 22.60.040.D, and 22.62.040 for Site Plan Review, including a biological resources report, as a component of the application. The report must include identification of wildlife movement and migration corridors in the potential project vicinity and how the project will avoid or ensure that there are no significant impacts.

A project is only allowed to continue under the RESP if it can demonstrate that impacts are reduced to less than significant with mitigation incorporated (Class II) or result in a less than significant impact (Class III). A project is not eligible for streamlining under the RESP if it will result in significant and unavoidable impacts to wildlife movement or migration (Class I). Projects that may result in significant impacts will require conventional project-level CEQA review and approval of either a Minor or Conditional Use Permit before proceeding. These discretionary permits will require additional CEQA analysis to allow for site-specific mitigation. The following describes only the impacts of projects eligible for streamlining under the RESP.

Impact 3-4-4 – Solar Implementation of the proposed Program could interfere with the movement of resident or migratory fish or wildlife species, or factors which could hinder normal activities of wildlife. This impact is considered **less than significant (Class III)**.

Tier 1 SEF projects would be located on roofs or other structures or on heavily disturbed sites with no biological resources. Proposed performance standard LUO 22.32.050.D.1 states that solar panels must have nonreflective surfaces to minimize glare. The nonreflective surface and the

angle associated with the roof will avoid the solar panels being mistaken for windows as might occur with a vertical installation. Building windows are a known source of avian mortality. While a flat installation (e.g., flat roof) might be mistaken for a water body, the Tier 1 rooftop installation is likely to be too small to attract large numbers of birds and unlikely to cause mortality for those birds that land. The anticipated angle of installation on a normal sloping roof will avoid the appearance of a window and reduce or eliminate the potential to disrupt bird migration. Tier 1 SEF ground-mounted facilities are required to obtain site plan approval that involves preparation of botanical and biological reports. These reports will determine whether the proposal is eligible for processing as a Tier 1, or because of potential impacts to wildlife movement, must be processed with additional CEQA analysis and a Minor or Conditional Use Permit. Implementation of Tier 1 solar projects under the RESP would result in a **less than significant impact (Class III)** to wildlife movement or migration.

Tier 2 SEF ground-mounted projects within the combining designation can be up to 40 acres in size but can only be located on land that is graded, disturbed, or altered, located on Brownfield land that was previously developed for industrial or commercial purposes, and degraded or contaminated and then abandoned or underused (proposed LUO 22.32.050.A.3). Parcels eligible for inclusion in the combining designation were also screened to reduce the potential to affect known sensitive habitats or wildlife corridors. Tier 2 SEF and above projects outside of the combining designation could be between 40 acres and 160 acres in size. Projects of this size can impede wildlife seasonal migration or daily movement if constructed within a movement corridor. However, these projects are required by performance standard LUO 22.14.100.C to prepare a biological resources report as part of the application, which is specific to the project and design. The report will determine whether the project can avoid any identified migration corridor or whether additional analysis is necessary. Further, projects of this size outside of the combining designation must obtain a Minor or Conditional Use Permit which is discretionary and requires independent project-specific environmental analysis.

During construction, ground disturbance, noise and vibration, and general disturbance from human activity can discourage wildlife use or result in hazards to wildlife attempting to move through the area; however, these effects would be minimized through implementation of development standards requiring setbacks from areas that could be used by wildlife. During operation, fences or operations and maintenance activities can exclude wildlife. Development standards requiring setbacks and wildlife-friendly fencing would reduce impacts to a **less than significant (Class III)** level. No interference with fish migration or movement would occur, as eligible projects would not impact wetlands or waters.

Impact 3-4-4 – Wind

Implementation of the proposed Program could interfere with the movement of resident or migratory fish or wildlife species, or factors which could hinder normal activities of wildlife. This impact is considered **less than significant (Class III)**.

Streamlining of wind projects under the RESP is limited to Tier 1 WECS, which are installations mounted on a roof of a structure or conforming use (refer to **Table 2.0-1**). As discussed in Impact 3-4-1 above, roof-mounted WECs equipment is not likely to result impacts to birds. Roof-mounted facilities will be on buildings that are well separated, allowing movement all around them and resulting in no impact to bird migratory patterns or movement.

Although migratory and resident species could collide with these facilities, the magnitude of these effects is expected to be low (Anderson). With implementation of proposed development standards, impacts to wildlife movement and migration from Tier 1 WECS would be **less than significant (Class III).**

Tier 2 and above WECS projects could result in avian mortality due to the size and number of turbines in a close pattern. The siting of WECS projects of this scale requires careful study of bird migration patterns, understanding of local habitat and foraging areas, and identification of the types of bird species likely to frequent the project site. Because this information is site-specific, the RESP program requires a site-specific biological report for Tier 2 WECS projects in the combining designation and either a Minor or Conditional Use Permit and accompanying CEQA analysis for projects outside of the combining designation. If Tier 2 WECS projects within the combining district cannot be designed to result in a less than significant impact (Class III), the project is not eligible for the streamlining program and must proceed under the traditional zoning approval process. As designed, this impact is considered **less than significant (Class III).**

Impact 3-4-4 – Policy Changes Implementation of the proposed Program could interfere with the movement of resident or migratory fish or wildlife species, or factors which could hinder normal activities of wildlife. This impact is considered **less than significant (Class III)**.

The proposed project is specifically designed to guide renewable energy projects to areas with minimal biological impact. Tier 1 SEF and WECS projects are to be mounted on buildings or on previously disturbed soils. Tier 1 SEF ground-mounted installations must also obtain site plan approval that requires preparation of a botanical and biological report. (LUO 22.60.040) These reports will be used to ensure that a project does not have a significant impact on wildlife movement. Tier 2 projects inside the combining designation must maintain a setback from sensitive bird nesting habitat, wetlands, drainages, and vernal pools. Tier 2 and above SEF and WECS projects outside of the combining designation must obtain either a Minor or Conditional Use Permit. These discretionary permits require site-specific environmental analysis. Through a combination of proposed LUO performance standards and prohibition, the proposed project will have a **less than significant (Class III)** impact on wildlife activities**.**

Conflict with Any Regional Plans or Policies to Protect Sensitive Species, or with Regulations of the California Department of Fish and Wildlife or US Fish and Wildlife Service (Threshold 5)

Proposed SEF or WECS projects that require a state or federal permit to address impacts to biological resources are not eligible for streamlining and the RESP does not apply. As described in Section 2.0, Project Description, parcels included in the combining designation were screened to avoid conservation easements, Open Space land use categories, and areas that are or are intended for preservation for unique biological values.

Impact 3-4-5 – Solar Implementation of the proposed Program could conflict with regional plans or policies to protect sensitive species or with state or federal regulations. This impact is considered **less than significant (Class III)**.

Streamlined Tier 1 solar projects would be located on roofs or other structures, or on disturbed sites with no biological resources. Because Tier 1 solar installations would be located on top of existing structures or within developed areas that do not support sensitive biological resources, implementation of Tier 1 solar projects under the RESP would not result in significant impacts to sensitive biological resources protected by local, regional, state, or federal plans, policies, or regulations.

Any project with impacts to species regulated by the CDFW or the USFWS that would require state or federal permitting is not eligible for streamlining under the RESP. Impacts to sensitive species covered under regional plans or policies from Tier 2 and Tier 3 SEFs would be as

described under Threshold 1. Birds and bats could potentially collide with Tier 2 and Tier 3 solar projects. Although species protected by local, regional, state, or federal plans, policies, or regulations could collide with these facilities, the magnitude of these effects is expected to be low (Anderson). As proposed, the RESP was specifically designed to avoid conflicting with regional plans or policies or with federal or state regulations. Therefore, this impact is considered **less than significant (Class III).**

Direct and indirect impacts to sensitive biological resources in adjacent areas would be avoided through the implementation of proposed development standards. These include setbacks around projects, a weed management plan to minimize the potential for introduction and spread of invasive weeds. Dust control and the implementation of these development standards would ensure that the RESP would not result in significant impacts to sensitive biological resources protected by local, regional, state, or federal plans, policies, or regulations. In addition, Development Standard 22.14.100.F.1-2 would require compliance with applicable standards from regional plans or policies, including compliance with the conservation easement requirements of the County's San Joaquin Kit Fox Program. With implementation of development standards, impacts would be **less than significant (Class III)**.

Impact 3-4-5 – Wind Implementation of the proposed Program could conflict with regional plans or policies to protect sensitive species or with state or federal regulations. This impact is considered **less than significant (Class III)**.

Tier 1 wind turbines are mounted on a roof or structure of a conforming use and would not impact most sensitive species. As described under Threshold 1, birds and bats could potentially collide with Tier 1 WECS. Although species protected by local, regional, state, or federal plans, policies, or regulations could collide with these facilities, the magnitude of these effects is expected to be low (Anderson). Therefore, conflicts with regional plans or policies, or federal or state regulations would be **less than significant (Class III).**

Impact 3-4-5 – Policy Changes Implementation of the proposed Program could conflict with regional plans or policies to protect sensitive species or with state or federal regulations. This impact would be **less than significant (Class III)**.

As noted in this section, the proposed project was specifically designed to direct SEF and WECS projects to areas with minimal biological value. Tier 1 projects are encouraged to be roof-mounted, thereby using an existing building footprint instead of disturbing new ground. Ground-mounted Tier 1 projects must obtain a site plan approval that requires preparation of biological and botanical reports to ensure that sensitive species are not impacted. Tier 1 and 2 projects within the combining designation are also expected to be located on previously disturbed soils and commercial or industrial property.

For Tier 2 and above projects, a biological report must be prepared to demonstrate that the proposed project would result in minimal impacts to sensitive species and habitat. The RESP specifically precludes any project from the program if it needs a state or federal permit for approval. This would preclude streambed alteration permits and wetland fill permits. The streamlining policies proposed with the RESP are not intended to apply to all projects. The RESP acknowledges that projects that do not qualify for streamlining are able to follow the traditional method of project consideration (e.g., Minor or Conditional Use Permit). These methods allow consideration of site-specific project features as well as project-specific mitigation measures. Policy changes proposed under the RESP would not conflict with existing applicable regional

plans or policies and would not conflict with state or federal regulations protecting biological resources. Impacts would be **less than significant (Class III).**

CUMULATIVE IMPACTS

The geographic scope for cumulative analysis for biological resources encompasses the entire county, as even localized impacts to biological resources are important at a regional scale. As described above, renewable energy projects streamlined under the RESP would have negligible impacts to sensitive biological resources because demonstrating avoidance of significant impacts to biological resources is a requirement for eligibility under the RESP.

Countywide conditions and programs include standards to minimize impacts to biological resources, such as setbacks, restoration, and compensatory mitigation; these would apply to all development projects regulated by the County. Similarly, compliance with proposed development standards described above under Thresholds 1 through 5 would ensure that renewable energy projects streamlined under the RESP avoid or minimize impacts to biological resources. Therefore, countywide conditions, programs, and projections, in combination with the proposed RESP, would not result in a significant cumulative impact to biological resources and the RESP's contribution would not be cumulatively considerable.

REFERENCES

Anderson, Kenneth A. 2008. *A Study of the Potential Effects of a Small Wind Turbine on Bird and Bat Mortality at Tom Ridge Environmental Center, Erie, Pennsylvania*.

Audubon California. 2008. *Mapping California's Important Birds.* http://ca.audubon.org/california-important-bird-areas-gis-data-and-methods.

CDFG (California Department of Fish and Game.) 2008. *California Aquatic Invasive Species Management Plan*. Sacramento: CDFG.

CDFW (California Department of Fish and Wildlife). 2014a. California Natural Diversity Database, Special Animals. Sacramento: CDFW Biogeographic Data Branch. http://www.CDFW.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf.

———. 2014b. Special Vascular Plants, Bryophytes, and Lichens List. http://www.CDFW.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf.

Loss, Scott R., Tom Will, Sara S. Loss, and Peter P. Marra. 2014. "Bird–building collisions in the United States: Estimates of annual mortality and species vulnerability." *The Condor* 116 (1), 8–23.

SLO County (County of San Luis Obispo). 2003. *Voluntary Oak Woodland Management Plan.*

———. 2010a. *County of San Luis Obispo General Plan, Agriculture Element.*

———. 2010b. *County of San Luis Obispo General Plan, Conservation and Open Space Element.*

———. 2013. Notice of Preparation of an Integrated Draft Environmental Impact Report and National Environmental Policy Act Documentation for the Los Osos Community-Wide Habitat Conservation Plan and Implementing Agreement (the proposed project) and Notice of Scoping Meeting ED13-061.

———. 2014. Title 22 Land Use Ordinance.

Spencer, W. D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California*. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highway Administration.

USGS (US Geological Survey). 2011. *GAP Land Cover Data Set*. http://gapanalysis.usgs.gov/gaplandcover/data/