

3.5 Biological Resources—Terrestrial

3.5.1 Introduction

This section describes terrestrial biological resources in the study area and evaluates the potential impacts of the types of restoration projects that would be permitted under the Order. This section analyzes all special-status species found in California except for fishes, which are discussed in Section 3.6, *Biological Resources—Aquatic*. This section also considers all sensitive natural communities, including but not limited to, riparian forests and wetlands. Finally, this section considers all local policies, ordinances, and conservation planning efforts as they pertain to the protection of any biological resources.

The environmental setting and impact evaluation for terrestrial resources is based on a review of existing published documents; information regarding example projects similar to those that could be permitted under the Order; and other information sources listed in Chapter 8, *References*.

The following comments addressing biological resources were received in response to the notice of preparation (NOP):

- ◆ The EIR should assess the impact of restoration projects on existing tidal marshes, tidal flats, subtidal areas, salt ponds, and managed wetlands.
- ◆ Establishing wetlands in subtidal or some tidal areas could result in habitat type conversion that could inadvertently eliminate or reduce the numbers of certain populations of fish and wildlife.
- ◆ The analysis of cumulative impacts should specifically consider how multiple projects in the same area could affect the distribution of invasive species.
- ◆ The EIR should analyze how large-scale earthmoving operations—particularly those within the floodplain—would affect groundwater, and should consider how changes in groundwater patterns could affect mortality of riparian trees.

See Appendix B for the NOP comment letters.

3.5.2 Environmental Setting

This section describes the terrestrial biological resources that have the potential to be affected by the types of restoration projects that would be permitted under the Order. The study area covers the entire geographic extent of California and includes numerous habitats, sensitive plant communities, and special-status plant and wildlife species.

To organize the environmental setting description for terrestrial biological resources for the proposed statewide Order, this analysis is organized in the context of “ecoregions.” These ecoregions encompass geographic areas that have similar patterns of physical and biological characteristics: geology, soils, geomorphology, hydrology, climate, vegetation types, wildlife species presence, biodiversity, and land use.

Ecoregion classifications organize the primary environmental variables of ecosystems into an orderly, related set of spatial scales. A numerical hierarchical framework is used to distinguish between different levels of ecological regions designated by USGS. Level I ecoregions divide geographic areas at the coarsest level, while level IV ecoregions have the finest spatial scale (Griffith et al. 2016). While there are only 15 level I ecoregions in North America, there are 13 level III ecoregions in California and 177 level IV ecoregions in California (Griffith et al. 2016). Given the programmatic level of analysis contained in this section, it was determined based on best professional judgment that analysis of the environmental setting at the level III ecoregion level was the most appropriate. Processes and patterns at one level or scale influence or constrain those at lower levels. At broad scales, descriptions and mapping of ecosystems are coarse, typically based on regional factors such as climate, latitude, and major landform patterns. By contrast, descriptions and mapping of the same classification systems at finer scales are more directly correlated with local factors, such as soils, precipitation, vegetation, and land use. Although organizing the terrestrial biological resources section by ecoregions allows for a program-level analysis, it does not preclude or replace the need for project-level environmental analysis (see process description in Chapter 1 and flow charts Figures 1-1 and 1-2). Additional project-level biological resources analyses may include field surveys, aerial imagery, and protocol-level or preconstruction surveys for special-status species.

The environmental setting for terrestrial biological resources was developed to focus on the dominant common and sensitive resources that occur throughout the state. The program-level environmental setting discussion broadly assumes that the common and sensitive biological resources in an ecoregion could be present in the project area or adjacent to restoration projects permitted under the Order that would be implemented in that given ecoregion.

Each ecoregion description summarizes the ecoregion's primary or characteristic common and sensitive biological resources. Because of the program level and statewide scope of this analysis, the environmental setting and ecoregion descriptions in this section are not intended to provide a full inventory of all sensitive biological resources that are known or could occur in a particular ecoregion.

Appendix G presents tables of sensitive biological resources that have been documented to occur in each of the state's ecoregions, based on results from the California Natural Diversity Database (CNDDB). These tables do not provide a comprehensive list of sensitive biological resources present in a given ecoregion; species or natural communities could be present in a given location and not cataloged in the CNDDB system.

A combination of data sources and survey efforts would be used during project-level planning and evaluations to determine the specific biological resources known or with potential to occur in the project area.

Special-Status Species

Special-status species are species that are legally protected or otherwise considered sensitive by federal or state resource agencies (federal Endangered Species Act [FESA], California Endangered Species Act [CESA], or Species of Special Concern) or

by local resource agencies. These species, subspecies, distinct population segments, or varieties fall into one or more of the following categories, regardless of their legal or protection status:

- ◆ Species officially listed by the State of California as threatened, endangered, or rare (plants only)¹
- ◆ Species officially listed by the federal government as threatened or endangered¹
- ◆ Candidates for state listing as threatened or endangered, and species that are formally proposed for federal listing or are candidates for listing as threatened or endangered¹
- ◆ Species that meet the definitions of rare, threatened, or endangered under State CEQA Guidelines Section 15380¹
- ◆ Species identified by the California Department of Fish and Wildlife (CDFW) as species of special concern and/or included on CDFW's Special Animals List (CNDDDB 2019a), and species legally designated as fully protected species (e.g., California Fish and Game Code Section 3511 [birds], Section 4700 [mammals], and Sections 5050 [reptiles and amphibians] and 5515 [fish])
- ◆ Species afforded protection or special consideration by local planning documents
- ◆ Species, subspecies, and varieties of plants considered by CDFW and the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California." The CNPS Inventory of Rare and Endangered Plants of California assigns the following California Rare Plant Rank (CRPR) categories for plant species of concern:²
 - CRPR 1A—Plants presumed to be extinct in California.
 - CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere.
 - CRPR 2—Plants that are rare, threatened, or endangered in California but more common elsewhere.
 - CRPR 3—Plants about which more information is needed (a review list).

¹ A species of animal or plant is:

- (1) "Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or
- (2) "Rare" when either:
 - (A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or
 - (B) The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

A species of animal or plant shall be presumed to be endangered, rare or threatened, as it is listed in:

- (1) Sections 670.2 or 670.5, Title 14, California Code of Regulations; or
- (2) Title 50, Code of Federal Regulations Section 17.11 or 17.12 pursuant to the Federal Endangered Species Act as rare, threatened, or endangered.

A species not included in any listing identified in subdivision (c) shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet the criteria in subdivision (b).

² These CRPR categories are the result of a collaborative effort by CNPS and CDFW. The CRPR is based on reviews by numerous qualified botanical experts and provides a source of substantial evidence used by lead agencies to determine what plants meet the definition of endangered, rare, or threatened species, as described in Section 15380 of the State CEQA Guidelines. For purposes of this analysis, the most relevant categories are CRPRs 1 and 2.

- CRPR 4—Plants of limited distribution (a watch list). Plants in this category may not all be considered special-status plants.

Sensitive Natural Communities

Natural communities are evaluated using NatureServe's Heritage Methodology. The evaluation uses threat scope (typically assessed within a 20-year time frame for vegetation) and severity to calculate an overall threat score for a natural community, which is added to the overall rarity score for a single rank of 1 through 5. Evaluations are done at both the global level (full natural range within and outside of California) and the state level (within California), resulting in single G (global) and S (state) ranks ranging from 1 (very rare and threatened) to 5 (demonstrably secure). Natural communities with ranks of S1–S3 are considered sensitive natural communities.

Sensitive natural communities or habitats are those of special concern to resource agencies or those that are afforded special consideration. This concern may be triggered by the locally or regionally declining extent of these habitats, or because they provide important habitat to common and special-status species. Many of these communities are tracked in the CNDDDB, maintained by CDFW.

Critical Habitat

The U.S. Fish and Wildlife Service (USFWS) designates critical habitat for terrestrial wildlife. Critical habitat encompasses a geographic area that is considered essential for the conservation of a threatened or endangered species that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery.

A designation of critical habitat affects activities performed by federal agencies or that involve a federal permit, license, or funding, and that are likely to destroy or adversely modify the area of critical habitat.

Ecoregions in the Study Area

The study area—which encompasses the entire state of California—contains 13 ecoregions: Coast Range, Cascades, Sierra Nevada, Central California Foothills and Coastal Mountains, Central California Valley, Southern California Mountains, Eastern Cascades Slopes and Foothills, Central Basin and Range, Mojave Basin and Range, Klamath Mountains/California High North Coast Range, Northern Basin and Range, Sonoran Basin and Range, and Southern California/Northern Baja Coast. The ecoregions of California and Regional Boundries are described below and depicted in Figure 3.5-1.

Coast Range

This ecoregion covers the coastal mountains of California. The entire portion of the Coast Range ecoregion within California lies within 100 kilometers of the coast (USGS 2012). Topography is highly variable, with the Coast Ranges and valleys ranging from sea level to more than 3,000 feet in elevation. These relatively low mountains are covered by highly productive, rain-drenched evergreen forests. Redwood forests are a

dominant component of the region, along with some hardwoods such as tanoak, madrone, bigleaf maple, California bay, and red alder.

Figure 3.5-1 Ecoregions of California and Regional Board Boundaries

Source: ESRI 2018; RWQCB 2019; EPA 2019; ESA 2019



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The Coast Range ecoregion includes at least 218 known special-status plant species and at least 68 special-status terrestrial wildlife species. Among the special-status plant species are pink sand-verbena (*Abronia umbellata* var. *breviflora*), coastal triquetrella (*Triquetrella californica*), dark-eyed gilia (*Gilia millefoliata*), Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*), and short-leaved evax (*Hesperrevax sparsiflora* var. *brevifolia*). Special-status wildlife species include foothill yellow-legged frog, pallid bat, and western snowy plover.

This ecoregion also contains at least 19 sensitive natural communities, such as maritime Coast Range ponderosa pine forest, grand fir forest, coast Douglas fir western hemlock forest, Mendocino pygmy cypress forest, and Northern foredune grassland.

Landslides and debris slides are common. Coastal headlands, high and low marine terraces, sand dunes, and beaches also characterize the region. Urban development is minimal; Eureka, California, is the only urban center in the ecoregion, with a population of approximately 27,000 (U.S. Census Bureau 2020).

Cascades

This mountainous ecoregion includes a disjunct area in Northern California and extends up to western Washington. The Cascades ecoregion is underlain by Cenozoic volcanics and much of the region has been affected by alpine glaciation (McNab and Avers 1994). The west side of the ecoregion is characterized by long, steep ridges and wide river valleys (McNab and Avers 1994). Subalpine meadows are present at higher elevations, and alpine glaciers have left till and outwash deposits. Soils have mostly cryic and frigid (very cold) temperature regimes, with some mesic soil temperatures at lower elevations (USGS 2012). The Cascades have a moist temperature climate that supports an extensive, highly productive coniferous forest. Dominant vegetation includes incense cedar, white fir, and Shasta red fir along with other Sierran species. Jeffrey and ponderosa pines are at many mid-elevation locations. Subalpine meadows, conifers of whitebark pine and mountain hemlock, and rocky alpine zones occur at the highest elevations.

The Cascades ecoregion includes at least 133 known special-status plant species and at least 37 special-status terrestrial wildlife species. A few examples of these special-status plant species include slender Orcutt grass, Lassen paintbrush (*Castilleja lassenensis*), and Boggs Lake hedge-hyssop. Special-status wildlife species found in this ecoregion include Shasta crayfish (*Pacifastacus fortis*), northern goshawk, Pacific fisher, and tricolored blackbird. This ecoregion contains at least five sensitive natural communities including northern basalt flow vernal pool, northern interior cypress forest, and sphagnum bog.

The portion of this ecoregion within California is prone to frequent lightning-caused fires, with fire return periods (the time between fires) of about every half century (USGS 2012). Forest replanting practices have resulted in a more uniform, even-aged forest structure and greater habitat fragmentation.

Sierra Nevada

The Sierra Nevada is a mountainous, deeply dissected, and westerly tilting fault block. The central and southern parts of this ecoregion are composed largely of granitic rock. The Sierra Nevada ecoregion is generally oriented north-south and is essentially defined by the Sierra Nevada physiographic province, which separates California's Central Valley to the west from the Great Basin to the east (USGS 2012). The Sierra Nevada range is a granitic batholith, much of which is exposed at higher elevations, with a gradual western slope and a generally steep eastern escarpment.

The climate of the Sierra Nevada ecoregion is primarily Mediterranean, characterized by cool, wet winters and long dry summers (USGS 2012). Most areas at elevations of about 6,000 feet have a boreal climate, and the highest elevations, typically about 11,000 feet, have an alpine climate. Storm systems moving from the west are subject to orographic uplift (in which airflow that encounters a mountain is forced to rise), causing rain and snowfall to increase with elevation from west to east.

Because most precipitation from storm systems falls on the western slope of the Sierra Nevada, a strong rain shadow limits precipitation on the steep eastern slope (USGS 2012). This climatic gradient plays a major role in determining the type and distribution of ecological communities. To provide water resources for the growing populations of low-elevation areas in California and Nevada, numerous reservoirs on both the western and eastern slopes of the Sierra Nevada collect runoff from the winter snowpack. Water is often considered the Sierra Nevada's most valuable resource, and it is controlled in nearly every major river basin in the Sierra Nevada ecoregion and managed to provide municipal water supplies and hydroelectric power.

Frequent low- to moderate-intensity fires are an integral driver of change in the Sierra Nevada ecoregion's ecological communities. Fire creates a cycle of disturbance and succession to which floral and faunal communities have adapted and that these communities often require to propagate and thrive (Skinner and Chang 1996). By the late 20th century, the regional fire regime had been greatly altered, primarily as a result of logging during the settlement period of the 1950s and 1960s and the effective fire suppression activities mandated by federal and state policies since the 1920s. Consequently, by century's end, fires were less frequent and more severe than before. Forest density increased, which contributed to higher tree mortality because of greater intertree competition, insect attacks, disease, and storm damage. These conditions led to an increased supply of fuel, which in turn increased the fire hazard, including the likelihood of high-severity fire. A shift to a warmer and moister climate have also contributed to this altered fire regime by reducing the severity of winter conditions and providing a longer growing season.

The Sierra Nevada ecoregion includes at least 314 known special-status plant species and at least 81 special-status terrestrial wildlife species. Some examples of the special-status plant species found in this ecoregion include slender Davy's sedge (*Carex davyi*), mud sedge (*C. limosa*), Tahoe yellow cress (*Rorippa subumbellata*), and closed-throated beardtongue (*Penstemon personatus*). Special-status wildlife species that can be found in the Sierra Nevada ecoregion include American badger, northern goshawk, Pacific fisher, and Sierra Nevada yellow-legged frog (*Rana sierrae*). This ecoregion

contains at least 10 sensitive natural communities including Darlingtonia seep, lone chaparral, Mono pumice flat, and Big Tree forest.

Central California Foothills and Coastal Mountains

The primary distinguishing characteristics of the Central California Foothills and Coastal Mountains ecoregion are its Mediterranean climate of hot dry summers and cool moist winters, and the associated vegetative cover that consists primarily of chaparral and oak woodlands. Grasslands are present in some low elevations and patches of pine are found at high elevations (USGS 2012). Surrounding the lower and flatter portions of this ecoregion are open low mountains or foothills; there are also some areas of irregular plains and some narrow valleys. Large areas are ranchlands grazed by domestic livestock. Relatively little land has been cultivated, although some valleys are major agricultural centers (e.g., the Napa, Sonoma, and Salinas Valleys). Natural vegetation includes coast live oak woodlands, Coulter pine, and unique native stands of Monterey pine.

This ecoregion includes riparian corridors adjacent to many creeks and rivers (e.g., American, Feather, Merced, Tuolumne, Stanislaus rivers and Cottonwood, Cache, and Putah creeks) that drain the Sierra Nevada and Coast Range mountains.

The Central California Foothills and Coastal Mountains ecoregion includes at least 550 known special-status plant species and at least 131 terrestrial wildlife species. Among the special-status plant species in this ecoregion are Madera leptosiphon (*Leptosiphon serrulatus*), Hartweg's golden sunburst (*Pseudobahia bahiifolia*), and succulent owl's-clover (*Castilleja campestris* ssp. *succulenta*). Special-status wildlife species in this ecoregion include golden eagle (*Aquila chrysaetos*), burrowing owl, pallid bat, tricolored blackbird, and western pond turtle.

This ecoregion also contains at least 39 sensitive natural communities including wildflower field, valley sink scrub, northern Bishop pine forest, coastal terrace prairie, and central maritime chaparral.

Central California Valley

Flat, intensively farmed plains with long, hot, dry summers and mild winters distinguish the Central California Valley ecoregion from its neighboring ecoregions, which are either hilly or mountainous, covered with forest or shrub, and generally nonagricultural (USGS 2012). This ecoregion includes the flat valley basins of deep sediments adjacent to the Sacramento and San Joaquin rivers and their tributaries (e.g., American, Feather, Merced, Tuolumne, Stanislaus rivers), as well as the fans and terraces, around the edge of the California Valley. The state's two major rivers flow from opposite ends of the Central California Valley ecoregion, entering the Sacramento–San Joaquin Delta and San Pablo Bay.

This ecoregion once contained extensive prairies, oak savannas, desert grasslands in the south, riparian woodlands, freshwater marshes, and vernal pools. More than half of the region is now in cropland, about three-fourths of which is irrigated. The Central California Valley ecoregion accounts for more than half of the state's agricultural production value and is one of the country's most important agricultural regions with its

flat terrain, fertile soils, and favorable climate. Commodities produced in the ecoregion include milk and dairy, cattle and calves, cotton, almonds, citrus, and grapes, among others. Environmental concerns include salinity caused by evaporation of irrigation water, groundwater contamination from the heavy use of agricultural chemicals, loss of wildlife and flora habitats, and urban sprawl.

A major driver of change in this ecoregion is population growth (USGS 2012). Population growth in the San Francisco Bay area and Los Angeles, and in the Central Valley itself, has resulted in higher demand for land for urban uses. As new development adjacent to existing urban areas converts agricultural land to homes, businesses, and other urban uses, farms are relocating to the ecoregion's periphery and then converting traditional grazing lands into new agricultural areas.

The Central California Valley ecoregion includes at least 127 known special-status plant species and at least 87 special-status terrestrial wildlife species. A few of the special-status plant species in this ecoregion include woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*), recurved larkspur (*Delphinium recurvatum*), heartscale (*Atriplex cordulata*), brittlescale (*A. depressa*), and Sanford's arrowhead (*Sagittaria sanfordii*). Special-status wildlife species in this ecoregion include giant garter snake (*Thamnophis gigas*), American badger, burrowing owl, mountain plover (*Charadrius montanus*), tricolored blackbird, and western pond turtle.

This ecoregion also contains at least 22 sensitive natural communities including valley saltbrush scrub, valley sacaton grassland, elderberry savanna, and great valley mixed riparian forest.

Southern California Mountains

Like other ecoregions in Central and Southern California, the Southern California Mountains ecoregion has a Mediterranean climate of hot dry summers and moist cool winters (USGS 2012). The ecoregion is bounded on the far north by the Sierra Nevada ecoregion, on the east by the Mojave Basin and Range ecoregion, on the southeast by the Sonoran Basin and Range Ecoregion, and on the north by the Central California Valley Ecoregion.

Mediterranean vegetation types such as chaparral and oak woodlands predominate in the Southern California Mountains ecoregion. However, elevations are considerably higher, summers are slightly cooler, and precipitation is greater than in adjacent ecoregions, resulting in denser vegetation and some large areas of coniferous woodlands. In parts of the Transverse Ranges, a slope effect causes distinct ecological differences. South-facing slopes receive more precipitation (30–40 inches) than northern slopes (15–20 inches), but high evaporation rates on the southern side contribute to a cover of chaparral. On the northern side in parts of the ecoregion, low evaporation, low annual temperatures, and slow snowmelt allow a coniferous forest to blend into desert montane habitats as they approach the Mojave Basin and Range ecoregion boundary.

The Southern California Mountains ecoregion includes several Pacific Coast mountain ranges, from northwest to southeast: the Santa Ynez, Tehachapi, San Gabriel, San

Bernardino, San Jacinto, and Santa Rosa Mountains. These mountain ranges are composed primarily of Mesozoic granitic and metamorphic rocks, in addition to Tertiary sedimentary rocks. The mountains are fractured and discontinuous, owing to movement on the San Andreas Fault and the associated thrust faults that underlie the region. In addition, the Santa Ynez Mountains, San Gabriel Mountains, and San Bernardino Mountains make up part of the geologic province known informally as the “Transverse Ranges Province,” so-named because of its atypical east-west orientation, which differs from the more typical northwest-southeast orientation (roughly parallel to the San Andreas Fault) of most mountain ranges and valleys elsewhere in California.

The mountains of the Southern California Mountains ecoregion act as a barrier between the coastal Mediterranean climate to the west and the dry desert climate to the east (USGS 2012). The physiographic barrier between the coastal and desert climates also sets the stage for the annual fire season, which occurs from late summer to early fall. Dry conditions on the ground, coupled with the seasonal strong, offshore Santa Ana winds (created from steep pressure gradients that develop between the desert and the coast), have fueled frequent major wildfires throughout the region for more than 500 years.

Conifer species, such as Jeffrey, Coulter, and ponderosa pines, occur along with sugar pine, white fir, bigcone Douglas-fir, and at the highest elevations, some lodgepole and limber pines. Severe erosion problems are common where the vegetation cover has been removed by fire, overgrazing, or land clearing. Large parts of the ecoregion are National Forest public lands.

The Southern California Mountains ecoregion includes at least 215 known special-status plant species and at least 75 special-status terrestrial wildlife species. Among the special-status plant species found in this ecoregion are Nevin’s barberry (*Berberis nevinii*), Mojave tarplant (*Deinandra mohavensis*), lemon lily (*Lilium parryi*), and Parry’s spineflower (*Chorizanthe parryi* var. *parryi*). Special-status wildlife species in this ecoregion include least Bell’s vireo, arroyo toad (*Anaxyrus californicus*), golden eagle, American badger, coast horned lizard, and two-striped garter snake (*Thamnophis hammondi*).

This ecoregion contains at least 16 sensitive natural communities including canyon live oak ravine forest, pebble plains, Riversidian alluvial fan sage scrub, and southern cottonwood willow riparian forest.

Eastern Cascades Slopes and Foothills

This ecoregion is located in the rain shadow of the Cascade Range. It has a more continental climate than ecoregions to the west, with greater temperature extremes, less precipitation, and frequent fires (USGS 2012). Precipitation (either rain or snow) falls mostly in the fall, through winter into spring. The Eastern Cascades Slopes and Foothills ecoregion formed from tectonic uplift with mountain ranges and valleys generally oriented north to south. This ecoregion is relatively young, with numerous lava flows, volcanic cones, and buttes. Forest is the primary land cover. Open forests of ponderosa pine, western juniper, and occasionally Jeffrey pine are abundant at middle elevations. Lodgepole pine and western white pine are often present at the highest elevations and

distinguish this region from the higher elevation ecoregions to the west where mountain hemlock and fir forests are common, and from the lower elevation, drier ecoregions to the east where xeric shrubs and grasslands are predominant.

Historically, creeping ground fires consumed accumulated fuel and devastating crown fires were less common in dry forests. Volcanic cones, plateau, and buttes are common in much of the ecoregion. A few areas of cropland and pastureland occur in the lake basins or larger river valleys, which also provide habitat for migrating waterfowl, such as sandhill cranes, ducks, and geese.

The Eastern Cascades Slopes and Foothills ecoregion includes at least 123 known special-status plant species and at least 42 special-status terrestrial wildlife species. Among the special-status plant species found in this ecoregion are Ash Creek ivesia (*Ivesia paniculata*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), and Columbia yellow cress (*Rorippa columbia*). Some of the special-status wildlife species in this ecoregion include northern goshawk, Swainson's hawk, and greater sandhill crane.

In California, this ecoregion includes at least one sensitive natural community: northern basalt flow vernal pool.

Central Basin and Range

This ecoregion is composed of north-trending, fault-block ranges and intervening, drier basins. It stretches from the Sierra Nevada range in California, across most of state of Nevada and into western Utah. It also covers part of southeastern Idaho and a very small portion of southeastern Oregon. Approximately 3.7 percent of this ecoregion lies within California. Woodland, mountain brush, and scattered open forest are found in the high-elevation mountains. Low-elevation basins, slopes, and alluvial fans are either shrub- and grass-covered, shrub-covered, or barren (USGS 2012). The potential natural vegetation is, in order of decreasing elevation and ruggedness, scattered western spruce-fir forest, juniper woodland, Great Basin sagebrush, and saltbush-greasewood. The Central Basin and Range ecoregion is internally drained by ephemeral streams and once contained ancient Lake Lahontan. The land is used primarily for grazing.

This ecoregion includes at least 174 known special-status plant species and at least 51 special-status terrestrial wildlife species. Among the special-status plant species found in this ecoregion are alkali ivesia (*Ivesia kingii* var. *kingii*), Bodie Hills cusickiella (*Cusickiella quadricostata*), broad-keeled milk-vetch (*Astragalus platytropis*), and fiddleleaf hawksbeard (*Crepis runcinata*). Special-status terrestrial wildlife species found in this ecoregion include Carson wandering skipper (*Pseudocopaeodes eunus obscurus*), long-eared owl (*Asio otus*), and northern leopard frog (*Lithobates pipiens*).

In California, this ecoregion contains at least eight sensitive natural communities: northern vernal pool, montane freshwater marsh, Mono pumice flat, and bristlecone pine forest.

Mojave Basin and Range

Stretching across southeastern California, southern Nevada, southwestern Utah, and northwestern Arizona, this ecoregion is composed of broad basins and scattered

mountains that generally are lower, warmer, and drier than those of the Central Basin and Range ecoregion. The Mojave Basin and Range ecoregion is bounded on the north by the Central Basin and Range ecoregion, on the east by the Colorado Plateaus and Arizona/New Mexico Plateau ecoregions, on the south by the Sonoran Basin and Range ecoregion, and on the west by the Southern California Mountains and Sierra Nevada ecoregions.

This ecoregion is characterized by distinct fault-bounded mountain ranges that typically run northeast to southwest (USGS 2012). The ecoregion receives very little annual precipitation (50–250 millimeters in the valleys), which, when combined with high temperatures during summer months, results in an ecoregion slow to recover from anthropogenic (human-caused) disturbances.

Approximately four-fifths of the ecoregion is federal land; major holdings are under the jurisdiction of the U.S. Bureau of Land Management (BLM), National Park Service (NPS), and U.S. Department of Defense (DoD). Each federal agency manages public lands to meet distinct goals and objectives. For instance, BLM lands are often open for public use and recreation such as off-highway vehicle activities. DoD has a substantially different mandate for its land ownership and management policies. DoD manages vast areas of the ecoregion for conducting military training activities. Unlike BLM and DoD, NPS attempts to preserve natural desert lands while promoting low-impact public recreation such as camping, hiking, and sightseeing. NPS's largest holding in the ecoregion is Death Valley National Park. Other NPS areas include Mojave National Preserve and Joshua Tree National Park.

In the Mojave, creosote bush, white bursage, Joshua tree and other yuccas, and blackbrush are typical. On alkali flats, saltbush, saltgrass, alkali sacaton, and iodine bush are found. In the mountains, sagebrush, juniper, and singleleaf pinyon occur. At high elevations, some ponderosa pine, white fir, limber pine, and bristlecone pine can be found. The basin soils are mostly entisols and aridisols that typically have a thermic temperature regime. Heavy use of off-road vehicles and motorcycles in some areas has made the soils susceptible to wind and water erosion. Most of this ecoregion is federally owned and grazing is constrained by the lack of water and forage for livestock.

The Mojave Basin and Range ecoregion includes at least 265 known special-status plant species and at least 85 special-status terrestrial wildlife species. A few of the special-status plant species found in this ecoregion include alkali mariposa-lily (*Calochortus striatus*), Charlotte's phacelia (*Phacelia nashiana*), Clokey's cryptantha (*Cryptantha clokeyi*), Red Rock poppy (*Eschscholzia minutiflora* ssp. *twisselmannii*), and Red Rock tarplant (*Deinandra arida*). Special-status terrestrial wildlife species in this ecoregion include desert tortoise, American badger, burrowing owl, Crissal thrasher (*Toxostoma crissale*), Le Conte's thrasher (*T. lecontei*), pallid bat, and Townsend's big-eared bat (*Corynorhinus townsendii*).

This ecoregion contains at least 13 sensitive natural communities including wildflower field, Mojave Yucca scrub and steppe, crucifixion thorn woodland, and active desert dunes.

Klamath Mountains/California High North Coast Range

This ecoregion encompasses the highly dissected ridges, foothills, and valleys of the Klamath and Siskiyou Mountains. It extends south into California to include the mixed conifer and montane hardwood forests that occur on mostly mesic soils in the North Coast Ranges. The mild Mediterranean climate of the Klamath Mountains/California High North Coast Range ecoregion is characterized by hot, dry summers and wet winters; the amount of winter moisture in the ecoregion varies, decreasing from west to east.

The Klamath–Siskiyou Mountains region is widely recognized as an important biodiversity hotspot (Whittaker 1960; DellaSala et al. 1999). The region contains more than 3,500 plant species, more than 200 of which are endemic (Sawyer 2007). The ecoregion's mix of granitic, sedimentary, metamorphic, and extrusive rocks contrasts with the predominantly younger volcanic rocks of the Cascades ecoregion to the east. It includes ultramafic substrates, such as serpentinite and mafic lithologies that directly affect vegetation.

Most of the Klamath Mountains/California High North Coast Range ecoregion was unglaciated during the Pleistocene epoch, when it likely served as a refuge for northern plant species. The region's diverse flora, a mosaic of both Northern Californian and Pacific Northwestern conifers and hardwoods, is rich in endemic and relic species. The mild, subhumid climate of this ecoregion is characterized by a lengthy summer drought.

The ecoregion includes at least 223 known special-status plant species and at least 49 terrestrial wildlife species. Special-status plant species in this ecoregion include Heckner's lewisia (*Lewisia cotyledon* var. *heckneri*), white-flowered rein orchid (*Piperia candida*), Shasta chaenactis (*Chaenactis suffrutescens*), Dudley's rush (*Juncus dudleyi*), and water bulrush (*Schoenoplectus subterminalis*). Terrestrial special-status wildlife species in this ecoregion include foothill yellow-legged frog, northern goshawk (*Accipiter gentilis*), Pacific fisher (*Martes pennanti* [pacific] distinct population segment), Pacific tailed frog (*Ascaphus truei*), and western pond turtle.

In California, this ecoregion contains at least six sensitive natural communities including upland Douglas fir forest, Darlington seep, and northern interior cypress forest. Forests cover approximately three-quarters of the ecoregion, and grasslands, shrublands, and agriculture account for most of the rest.

Northern Basin and Range

The Northern Basin and Range ecoregion is characterized by basin-and-range topography. This ecoregion is located mostly in eastern Oregon, but also covers portions of northern Nevada, southwestern Idaho, and a small portion of northeastern. In California it is bordered on the west by the Eastern Cascades Slopes and Foothills and the Sierra Nevada Ecoregions. The ecoregion contains several wide basins bordered by scattered low mountains. Despite its regional aridity, natural springs and spring-fed wetlands are scattered around the landscape, sustaining much of the region's wildlife (USGS 2012).

The Northern Basin and Range ecoregion consists of dissected lava plains, rocky uplands, valleys, alluvial fans, and scattered mountain ranges. Overall, it is cooler and

has more available moisture than the Central Basin and Range ecoregion. Valleys support sagebrush steppe or saltbush vegetation. Juniper woodlands occur on rugged, stony uplands. Ranges are covered by mountain brush, grasses (for example, Idaho fescue), and aspen groves. Most of this ecoregion is used as rangeland. Ultimately, the scarcity of economic activity explains the absence of any large municipalities and the general lack of developed land across the region's landscape. The western part of the ecoregion is internally drained; its eastern stream network drains to the Snake River system.

The ecoregion includes at least 61 known special-status plant species and at least 20 special-status terrestrial wildlife species. Some special-status plant species in this ecoregion include Paiute lomatium (*Lomatium ravenii* var. *paiutense*), Howell's thelypodium (*Thelypodium howellii* ssp. *howellii*), and green-flowered prince's plume (*Stanleya viridiflora*). Special-status terrestrial wildlife species in this ecoregion include greater sandhill crane, yellow rail (*Coturnicops noveboracensis*), and golden eagle.

In California, this ecoregion contains at least one sensitive natural community: Ponderosa dune forest.

Sonoran Basin and Range

Similar in topography to the Mojave Basin and Range ecoregion to the north, this ecoregion contains scattered low mountains and has large tracts of federally owned land, a large portion of which is used for military training. However, the Sonoran Basin and Range ecoregion is slightly hotter than the Mojave and contains large areas of paloverde-cactus shrub and giant saguaro cactus, whereas the potential natural vegetation in the Mojave is largely creosote bush (USGS 2012). Other typical Sonoran plants include white bursage, ocotillo, brittlebrush, creosote bush, catclaw acacia, cholla, desert saltbush, prickly pear, and mesquite. Microphyll woodland trees and shrubs, such as ironwood, blue paloverde, smoketree, and desert willow, generally are unique to this desert, occupying desert washes with occasional moisture flow. In this ecoregion, winter rainfall decreases from west to east, whereas summer rainfall decreases from east to west. Aridisols and entisols are dominant with hyperthermic soil temperatures and extremely aridic soil moisture regimes, creating some harsh environments for plant growth.

The ecoregion includes at least 124 known special-status plant species and at least 99 special-status terrestrial wildlife species. Some of the special-status plant species in this ecoregion include triple-ribbed milk-vetch (*Astragalus tricarinatus*), bitter hymenoxys (*Hymenoxys odorata*), and Munz's cholla (*Cylindropuntia munzii*). Special-status terrestrial wildlife species in this ecoregion include American badger, Colorado River cotton rat (*Sigmodon arizonae plenus*), and yellow-breasted chat (*Icteria virens*).

In California, this ecoregion contains at least 11 sensitive natural communities including transmontana alkali marsh, Sonoran cottonwood willow riparian forest, and Arizonan woodland.

Southern California/Northern Baja Coast

This ecoregion includes coastal and alluvial plains, marine terraces, and some low hills in the coastal area of Southern California, and it extends more than 200 miles south into Baja California. Coastal sage scrub and chaparral vegetation communities with many endemic species were once widespread, before overgrazing, clearance for agriculture, and massive urbanization occurred (USGS 2012). Coastal sage scrub includes chamise, white sage, black sage, California buckwheat, golden yarrow, and coastal cholla. Small stands of the unique Torrey pine occur near San Diego and on one of the Channel Islands. The chaparral-covered hills include ceanothus, manzanita, scrub oak, and mountain-mahogany. Coast live oak, canyon live oak, poison oak, and California black walnut also occur.

The ecoregion includes at least 291 known special-status plant species and at least 123 special-status terrestrial wildlife species. Special-status plant species in this ecoregion include Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), and Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*). A few of the special-status terrestrial wildlife species found in this ecoregion include least Bell's vireo (*Vireo bellii pusillus*), American badger, coast horned lizard, pallid bat, San Diego desert woodrat (*Neotoma lepida intermedia*), and western pond turtle.

In California, this ecoregion contains at least 29 sensitive natural communities, including walnut forest, southern maritime chaparral, southern coastal bluff scrub, southern coastal salt marsh, southern dune scrub, San Diego mesa hardpan vernal pool, open Engelmann oak woodland, and island cherry forest.

3.5.3 Regulatory Setting

This section discusses the key federal, state, regional and local plans, policies, regulations, laws and ordinances pertaining to terrestrial biological resources. This list does not include federal land management policies applicable on BLM or U.S. Forest Service lands, which comprise the largest federal land holdings in California.

Restoration projects permitted under the Order may be subject to the laws and regulations listed below, as well as other local or individual restoration project requirements, depending on the project location.

Federal

Federal Endangered Species Act

The FESA applies to proposed federal, state, and local projects that may result in the "take" of a fish or wildlife species that is federally listed as threatened or endangered. The law also applies to actions that are proposed to be authorized, funded, or undertaken by a federal agency and that may jeopardize the continued existence of a federally listed fish, wildlife, or plant species or may adversely modify or destroy designated critical habitat for such species.

Section 9 of the FESA protects listed wildlife species from take, defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct” (U.S. Code Title 16, Section 1532[19] [16 USC 1532(19)]). Federal regulations define “harm” as “an act which actually kills or injures wildlife.” This definition includes significant habitat modification or degradation that results—or is reasonably expected to result—in death or injury to wildlife by substantially impairing essential behavioral patterns, including breeding, feeding, sheltering, spawning, rearing, and migrating (Code of Federal Regulations [CFR] Title 50, Sections 17.3 and 222.102 [50 CFR 17.3, 222.102]). “Harass” is defined similarly broadly.

If a project could result in take of a federally listed species, either a habitat conservation plan (HCP) and incidental take permit under FESA Section 10(a) or a federal interagency consultation under FESA Section 7 is required. Under the FESA, USFWS has jurisdiction over all terrestrial and plant species, as well as freshwater fish species and a few marine mammals (such as the California sea otter).

Under FESA Section 10, an HCP and incidental take permit are the mechanism for authorizing take of listed species for projects authorized, funded, or carried out by a state or local government agency. The FESA Section 7 process, which includes a biological opinion and accompanying incidental take statement, is the mechanism for authorizing take of listed species for actions authorized, funded, or carried out by a federal agency. In addition, regardless of whether take may occur, a federal interagency consultation under FESA Section 7 is required if a federal agency action “may affect” a federally listed species or designated critical habitat.

Besides listing species within its jurisdiction as threatened or endangered, issuing incidental take permits, and conducting interagency consultations, USFWS designates “critical habitat” for threatened and endangered species, which the FESA defines as follows (16 USC 1532[5][A]):

- (1) Specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to a species’ conservation, and those features may require special management considerations or protection; and
- (2) Specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation of the species.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC 651 et seq.), as amended in 1964, was enacted to protect fish and wildlife when federal actions control or modify a natural stream or body of water. The law requires federal agencies to consider the effect of water-related projects on fish and wildlife resources. The agencies must consult and coordinate with USFWS and state fish and game agencies to identify ways to prevent the loss of and damage to fish and wildlife resources, and to further develop and improve these resources.

Coastal Zone Management Act

The Coastal Zone Management Act is summarized in Section 3.11, *Hydrology and Water Quality*. This law established a federal/state partnership for coastal resource management. Federal projects must be consistent with the state's certified program. A federal agency must provide a consistency determination to the Federal Consistency Unit of the California Coastal Commission (which implements the federal Coastal Zone Management Act as it applies to federal activities in California) no later than 90 days before final approval of the federal activity.

Executive Order 13112: Invasive Species

Executive Order 13112 (February 3, 1999) directs all federal agencies to prevent and control the introduction and spread of invasive nonnative species in a cost-effective, environmentally sound manner to minimize their effects on economic, ecological, and human health. The executive order was intended to build on existing laws, such as the National Environmental Policy Act, the Nonindigenous Aquatic Nuisance Prevention and Control Act, the Lacey Act, the Plant Pest Act, the federal Noxious Weed Act, and the FESA.

Noxious Weed Act and Code of Federal Regulations (Title 7, Part 360)

The federal Noxious Weed Act (7 USC 2801–2813) and CFR Title 7, Part 360, are concerned primarily with the introduction of federally designated noxious weed plants or seeds across the borders of the United States. The Noxious Weed Act also regulates the interstate movement of designated noxious weeds under the U.S. Department of Agriculture's permit system.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements a series of international treaties to protect migratory birds. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds, providing that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in the direct loss of birds, nests, or eggs. The current list of species protected by the MBTA was published in the *Federal Register* on November 1, 2013 (Volume 78, page 65844). In addition to the MBTA, Fish and Game Code Section 3513 states: "It is unlawful to take or possess any migratory nongame bird as designated in the federal Migratory Bird Treaty Act (16 U.S.C. Sec. 703 et seq.) before January 1, 2017, any additional migratory nongame bird that may be designated in that federal act after that date, or any part of a migratory nongame bird described in this section, except as provided by rules and regulations adopted by the United States Secretary of the Interior under that federal act before January 1, 2017, or subsequent rules or regulations adopted pursuant to that federal act, unless those rules or regulations are inconsistent with this code."

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

Executive Order 13186 (January 10, 2001) directs federal agencies that have, or are likely to have, a measurable negative effect on migratory bird populations to develop

and implement a memorandum of understanding with USFWS to promote the conservation of migratory bird populations. The memorandum of understanding should include implementation actions and reporting procedures that would be followed through each agency's formal planning process, such as resource management plans and fisheries management plans.

North American Waterfowl Management Plan and Central Valley Joint Venture

The North American Waterfowl Management Plan was signed by the United States and Canada in 1986 and a revision was released in 2012. The plan provides a broad framework for waterfowl management and includes recommendations for protection, restoration, and enhancement of wetland and upland habitats.

Implementing the North American Waterfowl Management Plan is the responsibility of designated joint ventures. The Central Valley Habitat Joint Venture, formally organized in 1988, was one of the original six priority joint ventures. Renamed the Central Valley Joint Venture in 2004, it is composed of 21 federal and state agencies and conservation organizations, as well as Pacific Gas and Electric Company.

Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation

The purpose of Executive Order 13443 (August 16, 2007) is to direct federal agencies maintaining programs and activities that measurably affect public land management, outdoor recreation, and wildlife management to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

Comprehensive Conservation Plans for National Wildlife Refuges

USFWS is directed to develop comprehensive conservation plans to guide management and resource use for each refuge of the National Wildlife Refuge System under requirements of the National Wildlife Refuge Improvement Act of 1997. Refuge planning policy also directs the process and development of comprehensive conservation plans. A comprehensive conservation plan describes desired future conditions and the long-range guidance necessary for meeting refuge purposes. It also guides management decisions and sets forth strategies for achieving refuge goals and objectives within a 15-year time frame.

Clean Water Act, Section 404

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

Waters of the United States are areas subject to federal jurisdiction pursuant to CWA Section 404. Waters of the United States are typically divided into two types: (1) wetlands and (2) other waters of the United States. Wetlands are "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[c][4], 40 CFR

230.3[o][3][iv])). To be considered subject to federal jurisdiction, a wetland must normally support hydrophytic vegetation (plants growing in water or wet soils), hydric soils, and wetland hydrology. Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for the three wetland parameters (33 CFR 328.4).

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. Applicants must obtain a permit from the U.S. Army Corps of Engineers (USACE) for discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity.

Executive Order 11990: Protection of Wetlands

Executive Order 11990 (May 24, 1977) established the protection of wetlands and riparian systems as the official policy of the federal government. The executive order requires federal agencies to consider wetland protection as an important part of their policies, and to act to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance their natural and beneficial values.

Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act (16 USC 668–668c) prohibits the “take” of bald and golden eagles, including their parts, nests, or eggs, without a permit issued by the Secretary of the Interior. The law defines take as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” In addition to immediate impacts, this definition covers the impacts of human-induced alterations around a previously used nest site when eagles are not present, if, upon the eagle’s return, such alterations agitate or bother the eagle enough to interfere with or interrupt normal breeding, feeding, or sheltering habits, and cause injury, death, or nest abandonment.

State

California Endangered Species Act

Sections 2050 through 2115.5 of the Fish and Game Code—CESA—addresses threats to native fish, wildlife, and plant species. The CESA states that these species are in danger of or threatened with extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors. These species are of ecological, educational, historical, recreational, esthetic, economic, and scientific value to the people of the state, and the conservation, protection, and enhancement of these species and their habitat is of statewide concern (Fish and Game Code Section 2051).

The Fish and Game Code (Sections 2062 and 2067, respectively) defines “endangered” and “threatened” species as follows:

- ♦ *Endangered species*: A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes

including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

- ♦ *Threatened species:* A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

The California Fish and Game Commission is responsible for listing species under CESA; CDFW implements CESA, enforcing the act and issuing permits.

Similar to the FESA, CESA in Fish and Game Code Section 2080 strictly prohibits the “take” and “possession,” among other things, of any California native species or subspecies designated (i.e., listed) as an endangered or threatened or endangered fish, wildlife, or plant species or species, except as authorized under the Fish and Game Code. “Take” for purposes of CESA is defined in Section 86 of the Fish and Game Code to mean hunt, pursue, catch, capture, or kill, or attempt to do so. The Fish and Game Code definition of take does not, in contrast to the FESA, include “harm” or “harass.” Further, in contrast to FESA, the take prohibition under CESA applies to candidate species pursuant to Fish and Game Code Section 2085. Under Section 2081 of the Fish and Game Code, an incidental take permit from CDFW is required for projects that could result in the “take” of a species that is state-listed as threatened or endangered, or that is a candidate for listing.

The Fish and Game Code includes a number of different exceptions to CESA take prohibition and permitting mechanisms for CDFW to authorize otherwise prohibited take and possession of species and subspecies protected by CESA. CDFW, for example, pursuant to Fish and Game Code Section 2081, subdivision (a), may also authorize otherwise prohibited take and possession, by permit or memorandum of understanding, to certain entities for scientific, educational, or management purposes, and subdivision (b), may authorize by permit, take that is incidental to otherwise lawful activity, subject to certain criteria prescribed by the statute. CDFW, pursuant to Fish and Game Code Section 2081. Finally, by way of example, among others, for species protected under both CESA and FESA, the Department pursuant to Fish and Game Code Section 2080.1, may determine that a federal incidental take permit or statement is consistent with CESA and that no further authorization is necessary under the Fish and Game Code.

The CESA defines take as an activity that would directly or indirectly kill an individual of a species, including to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code Section 86), but the definition does not include “harm” or “harass,” as the FESA definition does. As a result, the threshold for take under CESA may be higher than that under the FESA.

Under Section 2080.1 of the Fish and Game Code, a project proponent can notify CDFW that the project has received an incidental take statement/permit under the FESA for species listed under both the FESA and CESA, and can request a consistency determination. If CDFW determines that the conditions in the federal incidental take statement/permit are consistent with CESA, it can issue a consistency determination,

which allows incidental take under CESA with the same provisions as those included in the federal incidental take statement/permit.

Sections 3503, 3503.5, 3505, 3511, 3513, 3800, 4700, 5050, and 5515 of the Fish and Game Code strictly prohibit the take of fully protected wildlife species. (Birds are addressed in Sections 3503–3800, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515.) With certain narrow exceptions, CDFW cannot issue a take permit for fully protected species; therefore, avoidance measures may be required to avoid take.

Fish and Game Code Safe Harbor Agreements

Fish and Game Code Sections 2089.2 through 2089.26 allow CDFW to authorize incidental take of a species listed as endangered, threatened, candidate, or a rare plant, through a Safe Harbor Agreement (SHA) if implementation of the agreement is reasonably expected to provide a net conservation benefit to the species, among other provisions. SHAs are intended to encourage landowners to voluntarily manage their lands to benefit CESA-listed species without subjecting those landowners to additional regulatory restrictions as a result of their conservation efforts. In addition, at the end of the agreement period, participants may return the enrolled property to the baseline conditions that existed at the beginning of the SHA.

Fish and Game Code Designated Fully Protected Species

Fish and Game Code Sections 3511, 4700, 5050, and 5515 designate a number of birds, mammals, reptiles and amphibians, and fish, respectively, as fully protected species. Take and possession is prohibited under the Fish and Game Code and may not be authorized by the Department, except in limited circumstances. For example, the Department may authorize take of a fully protected species by permit for necessary scientific research, including efforts to recover the species.

California Native Plant Protection Act

Sections 1900–1913 of the Fish and Game Code codify the Native Plant Protection Act (NPPA) of 1977, which is intended to preserve, protect, and enhance endangered or rare native plants in the state. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is present in such small numbers throughout its range that it may become endangered if its environment worsens.

The California Fish and Game Commission exercises authority to designate native plants as rare under the NPPA and, for endangered plants, both under the NPPA and CESA. CDFW, like CESA, enforces the NPPA and exercises related permitting authority by regulation, as well as through complimentary regulations governing CDFW's incidental take permitting program under CESA. (See California Code of Regulations Title 14, Sections 783.0–783.8 and 786.9.) Also similar to CESA, take and possession, among other things of native rare and endangered plants protected under the NPPA is prohibited, except as authorized by law. In addition, there are a few exceptions to the take prohibition in the NPPA, including for agricultural and nursery operations;

emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

The California Fish and Game Commission designates native plants as endangered or rare, and CDFW implements and enforces the Native Plant Protection Act. Like CESA, the Native Plant Protection Act strictly prohibits the take of endangered and rare plant species. However, this law contains certain exceptions to this take prohibition that are not included in CESA. The relationship between CESA and the Native Plant Protection Act is complex and subject to legal debate. Generally speaking, a CESA Section 2081 permit for incidental take of listed threatened and endangered plants is required, with certain exceptions. Because CESA does not cover rare plants, mitigation measures for impacts on rare plants are specified in a formal agreement between CDFW and the project proponent.

CDFW maintains the Special Vascular Plants, Bryophytes, and Lichens List for California (CNDDDB 2019b) as part of the CNDDDB. The list is updated quarterly and is reviewed and updated by rare-plant status review groups (more than 300 botany experts from government, academia, nongovernment organizations, and the private sector) managed jointly by CDFW and CNPS. Plant species, subspecies, or varieties are assigned a California Rare Plant Rank based on their level of endangerment. Plants with CRPR 1A, 1B, or 2 meet the definitions of Fish and Game Code Section 1901 and may qualify for state listing. Therefore, for purposes of this analysis, they are considered rare plants under CEQA Section 15380. For plants with a CRPR 3 rank, CDFW and CNPS lack sufficient information to assign them another code, and CRPR 4 indicates limited distribution of plants that may become rare in the future. Plants with CRPR 3 and 4 ranks may be reviewed on a case-by-case basis to determine whether they should be considered rare plants under CEQA Section 15380.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act (Fish and Game Code Sections 2800–2835) details the state’s policies on the conservation, protection, restoration, and enhancement of the state’s natural resources and ecosystems. This law identifies conservation planning as an officially recognized policy that can be used to eliminate conflicts between protection of the state’s natural resources and the need for growth and development. The law also promotes conservation planning to enhance coordination and cooperation among private interests, agencies, and landowners, and aid in multispecies, multihabitat management. Where CDFW approves a natural community conservation plan, it may authorize by permit the otherwise prohibited taking of any covered species whose conservation and management is provided for in the plan, including CESA-listed species and fully protected species. The Natural Community Conservation Planning Act provides an alternative means for CDFW to authorize the incidental take of species that are listed as threatened or endangered or are candidates for listing under CESA.

California Fish and Game Code Section 1600

Fish and Game Code Section 1602 states that it is unlawful for any entity to “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, stream, or lake” without first notifying CDFW of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFW determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement, which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity or activities described in the notification. (Fish and Game Code Section 1602.)

Sections 1600–1616 of the Fish and Game Code state that it is unlawful for any person or agency to do any of the following without first notifying CDFW:

- ♦ Substantially divert or obstruct the natural flow of the bed, channel, or bank of any river, stream, or lake
- ♦ Substantially change the bed, channel, or bank of any river, stream, or lake
- ♦ Use any material from the bed, channel or bank of any river, stream, or lake
- ♦ Deposit or dispose of debris, waste or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake in California

With certain exceptions, a streambed alteration agreement must be obtained if CDFW determines that a project is expected to result in substantial adverse effects on existing fish and wildlife resources. The streambed alteration agreement must include measures to protect the affected fish and wildlife and associated riparian resources. The regulatory definition of a “stream” is a body of water that flows at least periodically or intermittently through a bed or channel having banks, and that body of water supports wildlife, fish, or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFW’s jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

Clean Water Act, Section 401

Under CWA Section 401, project proponents for a federal license or permit to conduct activities which may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (State Water Board), through its nine Regional Water Quality Control Boards (Regional Boards), regulates waters of the state

through the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The State Water Board and Regional Boards may exert jurisdiction over waters of the state regardless of federal jurisdictional status. The Porter-Cologne Act also charges the State Water Board and Regional Boards with establishing and protecting beneficial uses of waters of the state. These beneficial uses may include protection for uses of water that support terrestrial ecosystems, aquatic ecosystems, and habitat for special-status species.

California Food and Agriculture Code

More than 30 different laws address the state's mandate to prevent the introduction and spread of injurious animal pests, plant diseases, and noxious weeds. These laws describe procedures and regulations related to the following topics:

- ◆ Plant quarantines
- ◆ Regulation of noxious weed seed
- ◆ Emergency pest eradications to protect agriculture
- ◆ Pests as public nuisances
- ◆ Vectors of infestation and infection
- ◆ The sale, transport, and propagation of noxious weeds
- ◆ The protection of native species and forests from weeds

Most of these laws and their associated regulations (California Code of Regulations Title 3) are enforced by the California Department of Food and Agriculture.

California Department of Food and Agriculture Integrated Pest Control Branch Programs

The Integrated Pest Control Branch of the California Department of Food and Agriculture conducts a wide range of pest management and eradication projects as part of the Plant Health and Pest Prevention Services Division's Pest Prevention Program. Assessments and fees are collected for some program activities and services. The branch cooperates with other state agencies, federal and county agencies, research institutions, agricultural industries, and other nongovernmental organizations.

California's Weed Management Area Program

"Weed management areas" are local organizations that bring together landowners and managers (federal, state, county, city, and private) in a county or multicounty geographic area to coordinate efforts and expertise against common invasive and noxious weed species. The weed management area functions under the authority of a mutually developed memorandum of understanding. It develops a strategic plan that helps to prioritize eradication, control, and containment projects, as well as other weed management area activities. The strategic plan also identifies what each partner contributes toward the overall cooperative nature of the weed management area. The program includes 48 weed management areas covering all 58 counties in the state.

Sections of the California Fish and Game Code Pertaining to Invasive and Noxious Plant Species

At least five laws and their associated regulations address or relate to invasive and noxious plant species. The applicable code sections include Fish and Game Code

Sections 2080–2089, 2118, 2270–2272, 2300, 6400–6403, and 15000 et seq. The intent of these laws is to regulate the importation and transportation of live wild animals and plants, restrict placement of live aquatic animals or plants in state waters, and regulate the operation of aquaculture industries. CDFW is responsible for implementing these laws.

California Wetlands Conservation Policy

The California Wetlands Conservation Policy was adopted in 1993 (Executive Order W-59-93). The goal of this policy is to ensure no overall net loss of wetlands and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.

State Wildlife Action Plan

Each state develops a state wildlife action plan to serve as the comprehensive wildlife conservation strategy required for the receipt of federal funds through the State and Tribal Wildlife Grants program. California last updated its plan in 2015 (CDFW 2015). The State Wildlife Action Plan provides a blueprint for the actions necessary to address the highest priorities for conserving California’s aquatic, marine, and terrestrial resources. Implementation of this plan relies on making important and helpful conservation information more accessible to resources managers and the public, and on developing lasting partnerships with a broad array of governments, agencies, organizations, businesses, and citizens.

Habitat Restoration and Enhancement Act

The Habitat Restoration and Enhancement Act of 2014 is an expedited permitting process with CDFW for landowners, state and local government agencies, and conservation organizations wanting to implement small-scale, voluntary habitat restoration projects across California. Restoration and enhancement projects approved by CDFW, pursuant to the Act, do not require additional permits from CDFW, such as a Lake or Streambed Alteration agreement or CESA permit.

Habitat restoration or enhancement projects, as defined by the Habitat Restoration and Enhancement Act, are projects with the primary purpose of improving fish and wildlife habitat and meet the eligibility requirements for the State Water Board’s Order for Small Habitat Restoration Projects. Projects approved under the Habitat Restoration and Enhancement Act must meet the current size limitations in the State Water Board’s Order for Small Habitat Restoration Projects, be consistent with widely recognized restoration practices, and avoid or minimize incidental impacts.

Regional and Local

The study area encompasses multiple counties with multiple cities throughout California. Each county and city has local regulations and a general plan with unique goals and policies that guide development and encourage the consideration of terrestrial biological resources. County-specific regulations are implemented in accordance with federal and state regulations.

3.5.4 Impacts and Mitigation Measures

Methods of Analysis

Terrestrial biological resource (e.g., natural communities and terrestrial wildlife) impacts from the types of restoration projects permitted under the Order are evaluated in terms of how typical construction and operation of project components could result in the loss or degradation of terrestrial habitats, including wetlands (e.g., tidal wetlands) for special-status species; sensitive natural communities; and designated critical habitat. The project types permitted under the Order were also assessed for their potential to conflict with existing regional and local policies, ordinances, and plans, including HCPs and natural community conservation plans (NCCPs). However, the precise locations and detailed characteristics of potential future individual restoration projects are not yet determined. Therefore, this terrestrial biological resources analysis focuses on reasonably foreseeable changes from implementation of the types of projects and actions that might be taken in the future consistent with the level of detail appropriate for a program-level analysis.

Permanent impacts are considered those that would continue through the life of a project as a result of the environmental conditions caused by restoration projects permitted under the Order (e.g., removal of stream crossings and fish passage improvements). Temporary impacts are considered those that would be temporary in nature (e.g. construction-related activities).

The approach to assessing impacts on terrestrial biological resources was to identify and review existing environmental studies, data, model results, and other information for projects that are consistent with those identified in Section 2.6, *Categories of Restoration Projects in the Order*, and Section 2.7, *Typical Construction, Operation, and Maintenance Activities and Methods*.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, an impact related to terrestrial biological resources is considered significant if the types of projects that would be permitted under the Order would do any of the following:

- ◆ Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS
- ◆ Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS
- ◆ Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- ◆ Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

- ◆ Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- ◆ Conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or state HCP

Impacts and Mitigation Measures

Table 3.5-1 summarizes the impact conclusions presented in this section for easy reference.

Table 3.5-1
Summary of Impact Conclusions—Biological Resources—Terrestrial

Impact Statement	Construction Activities	Constructed Facilities and Operations and Maintenance
3.5-1: Implementing restoration projects permitted under the Order could adversely affect habitat for special-status plant species.	SU	SU
3.5-2: Implementing restoration projects permitted under the Order could result in adverse direct effects on special-status wildlife species.	SU	SU
3.5-3: Implementing restoration projects permitted under the Order could result in adverse effects on riparian habitat or sensitive natural communities.	LTSG	SU
3.5-4: Implementing restoration projects permitted under the Order could result in adverse effects on state and federally protected wetlands through direct removal, hydrological interruption, or other means.	LTSG	LTS
3.5-5: Implementing restoration projects permitted under the Order could interfere with the movement of native resident and migratory wildlife species.	LTSG	LTSG
3.5-6: Implementing restoration projects permitted under the Order could conflict with local policies or ordinances protecting biological resources.	LTSG	LTSG
3.5-7: Implementing restoration projects permitted under the Order could conflict with the provisions of an adopted habitat conservation plan or natural community conservation plan.	LTS	LTSM

SOURCE: Data compiled by Environmental Science Associates in 2019 and 2020

NOTES: LTS = less than significant; LTSG = less than significant with implementation of general protection measures; LTSM = less than significant with mitigation; SU = significant and unavoidable

As part of the State Water Board or Regional Board’s issuance of a Notice of Applicability (NOA) for a restoration project under the Order, compliance with the general protection measures and mitigation measures listed below would be required when applicable to a given project. Not all general protection measures and mitigation measures would apply to all restoration projects. The applicability of the general protection measures and mitigation measures would depend on the individual restoration activities, project location, and the potentially significant impacts of the individual restoration project. Implementation of the mitigation measures would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency. Alternative measures to accommodate individual restoration project conditions or technological constraints or advances may be proposed by project proponents, subject to approval by NMFS, USFWS, and/or CDFW, as applicable to their authority and jurisdiction.

Impact 3.5-1: Implementing restoration projects permitted under the Order could adversely affect habitat for special-status plant species.

Effects of Project Construction Activities

Appendix G summarizes the CNDDDB occurrences of special-status plant species in each of the state's 13 U.S. Geological Survey (USGS) Level III ecoregions. This analysis conservatively assumes that restoration projects permitted under the Order that would occur in a given ecoregion would have the potential to directly or indirectly affect any special-status plant species identified in that ecoregion.

During project-level planning, when the specific location of and design approach for a given project permitted under the Order would be defined further, other data sources would be used to more specifically determine which special-status plant could be affected by that project. These data sources may include:

- ◆ Reconnaissance and/or protocol-level surveys of the project site
- ◆ CNPS's online Inventory of Rare and Endangered Plants (CNPS 2020)
- ◆ USFWS species lists (IPaC tool [Information for Planning and Consultation])
- ◆ The professional knowledge of local biologists, including those connected to the agency authorizing the project
- ◆ Relevant environmental documents and reports for the project or other nearby projects

Localized information about soil conditions, elevations, types of natural communities present, local precipitation patterns, disturbance regimes (e.g., vegetation could be regularly disked or mowed), and local hydrology could help to eliminate species from consideration based on a lack of suitable habitat conditions. Consideration of these additional data is expected to substantially reduce the number of special-status plant species considered to have the potential to occur within a given project's footprint.

Special-status plants could be affected either permanently or temporarily by construction of restoration projects (e.g., removal of pilings and other in-water structures, stream crossing and fish passage improvements, floodplain and side-channel restoration) permitted under the Order. Temporary habitat disturbance and permanent habitat loss could result from the clearing of vegetation within haul routes and in equipment staging areas; temporary dewatering of channel sections to allow for construction of certain project elements (e.g., fish screens, removal of dams); accumulation of fugitive dust on leaves, which impedes a plant's ability to photosynthesize; and general grading, recontouring, relocation, and/or filling of portions of channels or wetlands to accommodate restoration activities.

Vehicle access and equipment staging during construction work could disturb sensitive natural communities. In addition, construction equipment would increase the potential for an accidental spill of contaminants (e.g., fuels or lubricants), which could degrade sensitive habitats such as riparian forest and wetland habitats.

Direct impacts on special-status plants from constructing a restoration project would often be related to site preparation work involving grading and excavation (e.g., to ensure that a seasonal wetland restoration site would have proper drainage patterns and depths, maximizing benefits for targeted wildlife species). This ground work could bury, crush, or remove an individual or cluster of special-status plants.

Project construction could also result in indirect impacts on special-status plants. For example, scour could occur adjacent to the location of an excavated levee breach (e.g., as part of an action to restore tidal wetlands), resulting in the loss of suitable habitat for a special-status plant present on the existing levee.

These construction-related impacts of projects permitted under the Order would not be expected to cause a major decline in the population of special-status plant species in most cases; however, in cases where the plant species' distribution is already very limited because of very specific and specialized habitat niches/requirements (e.g., requiring specific soil types such as serpentine and soil temperature range; specific requirements along tidal water and land interface), even small losses could be important and potentially significant.

The construction of restoration projects permitted under the Order could have another indirect impact: They could accidentally introduce invasive plant species, carried as seeds on construction equipment or personnel, or could spread invasive plant species through soil disturbance, which tends to promote the growth of invasive and other nonnative species. Populations of invasive plant species are present throughout the state. The California Invasive Plant Council recognizes more than 200 nonnative plants that invade California. Invasive rankings, ecological impact potential, habitat associations, and floristic regions for these species are summarized by the California Invasive Plant Database (<https://www.cal-ipc.org/plants/inventory/>; Cal-IPC 2020). Examples of highly invasive species in various ecoregions of California include cheatgrass (*Bromus tectorum*), yellow starthistle (*Centaurea solstitialis*), Scotch broom (*Cytisus scoparius*), Saharan mustard (*Brassica tournefortii*), pampasgrass (*Cortaderia selloana*), saltcedar (tamarisk) (*Tamarix ramosissima*), Eurasian watermilfoil (*Myriophyllum spicatum*), iceplant (*Carpobrotus edulis*), and perennial pepperweed (tall whitetop) (*Lepidium latifolium*).

Invasive plant species can outcompete native plant species, reducing habitat complexity and quality for both special-status plant and wildlife species. It can reasonably be expected that one or more invasive plant species could already be established in restoration project areas before any construction work begins. However, construction activities could introduce new invasive plant species to the project areas or expand the footprint of invasive plants already established in the area. The unintentional introduction or spread of invasive plants could reduce or eliminate the diversity and abundance of native plants, including those considered to be special-status plants.

Restoration projects permitted under the Order may result in temporary habitat disturbance, permanent plant and/or habitat loss/conversion, or the accidental introduction of invasive plant species. Therefore, this impact on special-status plants would be **potentially significant**.

The Order contains the following general protection measures that also reduce the potential for adverse impacts on special-status plants:

- ◆ GPM-5: Monitoring
- ◆ GPM-7: Environmentally Sensitive Areas
- ◆ GPM-8: Prevent Spread of Invasive Exotic Plants
- ◆ GPM-12: Fugitive Dust Reduction
- ◆ GPM-15: Revegetate Disturbed Areas
- ◆ IWW-6: Dewatering/Diversion Restrictions
- ◆ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ◆ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ◆ VHDR-3: Revegetation Materials and Methods

Additionally, restoration projects that could adversely affect habitat for special-status plant species would implement the following species protection measures (see Appendix F), as applicable.

- ◆ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
 - SPM-3: Species Protection Construction Work Windows
 - SPM-4: Species Capture, Handling and Translocation
 - SPM-5: Sensitive Species Entrapment Prevention
 - SPM-6: Airborne Noise Reduction
- ◆ Plant Species Protection Measures
 - PLANT-1: Habitat Assessment and Surveys
 - PLANT-2: Avoidance of Vernal Pool and Other Annual and Perennial Species
 - PLANT-3: Exclusion Buffer Establishment
 - PLANT-4: Work Restrictions in the Exclusion Buffer
 - PLANT-5: Biological Monitoring
 - PLANT-6: Herbicide Application, Clearing, and Ground Disturbance
 - PLANT-7: Measures for When Effects Cannot Be Avoided

Implementing these general protection measures and species protection measures would avoid or minimize direct construction-related impacts on special-status plant species and would address many indirect effects of construction activities. These measures would identify and protect (through fencing or monitoring) sensitive resources, including special-status plants, reduce opportunities for invasive plant species to dominate vegetative cover within restoration project sites once construction activities are complete. At the project-level, species with potential to be affected and requiring preconstruction surveys would be determined based on the species' distribution/range and known occurrences relative to the project area and the presence of suitable habitat for the species in or near the project area. Surveys to determine the presence or absence of special-status plant species would be conducted in suitable habitat that could be affected directly or indirectly by the project, and timed to coincide with the blooming or other appropriate phenological period of the target species (as determined by a qualified biologist). If any special-status plants are located, they would be avoided and protected by implementing GPM-5, which requires establishing and

maintaining a protective area around sensitive resources, which would include special-status plants, during construction. Construction-related dust and erosion impacts would be minimized in accordance with other general protection measures identified above. Further, because any dewatering activity would typically be limited in scope and designed to be as short in duration as feasible, the indirect impacts of dewatering on special-status species from projects permitted under the Order would be minimal with implementation of these general protection measures.

Nonetheless, because the general protection measures and species protection measures are general, they do not necessarily address the unique characteristics and habitat requirements of all special-status plant species that could be affected by projects permitted under the Order. Additionally, if removal of or damage to special-status plants that are highly specialized and limited in distribution as a result of construction cannot be avoided, this would be considered a **potentially significant impact**.

If the CEQA lead agency for a future restoration project determines that the project's impacts on a special-status plant species may remain significant even with these general protection measures and species protection measures, additional project-specific and species-specific mitigation measures would be required. In such a case, the lead agency would coordinate with CDFW or USFWS to develop additional project-specific measures to reduce these impacts. This coordination would be initiated as part of the CEQA review (e.g., CDFW is a CEQA trustee agency when projects may affect protected biological resources) and/or part of a required permitting process (e.g., Fish and Game Code Section 1600 and informal and formal consultation under the FESA and CESA).

For the purposes of this programmatic analysis, construction-related impacts on special-status plants would be **significant and unavoidable**. It cannot be determined with certainty that all projects permitted under the Order would be able to implement appropriate mitigation measures to reduce their construction-related impacts on special-status plants to a less-than-significant level.

Typically, however, the majority (if not all) future projects permitted under the Order should be able to identify and implement feasible and appropriate mitigation measures to reduce construction-associated impacts on special-status plants to a less-than-significant level. In such a circumstance, the project-level CEQA analysis conducted for individual projects permitted under the Order would arrive at a conclusion of "less than significant" for impacts on special-status plants.

Effects of Constructed Facilities (Natural or Artificial Infrastructure) and Operations and Maintenance of those Facilities

Most long-term impacts on terrestrial biological resources of implementing the restoration projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation. For example, seasonal floodplain restoration and setback levee projects would result in benefits by causing more frequent and longer flood inundation, which would promote the establishment of more vigorous wetland and riparian communities in areas that currently may be too dry or otherwise unsuitable to

support those natural communities. Nevertheless, as described below, there are foreseeable circumstances in which restoration projects targeted to specifically benefit aquatic organisms may result in conflicts with terrestrial special-status plant species.

Maintenance of constructed facilities for restoration projects permitted under the Order, including restored habitats, is expected to have effects on special-status plants similar to those described above for project construction. The magnitude and duration of these impacts would likely be reduced, because the scale of equipment use and ground disturbance would be limited and spread out over months, years, or decades. However, the actual effects of projects on sensitive natural communities would depend on the sizes of facility footprints and their locations relative to occurrences of sensitive communities.

One foreseeable routine maintenance activity would be to remove excess vegetation and/or sediment from channel habitat, should it be determined to be detrimental to fish passage (e.g., logs or other debris occluding the channel opening under a road crossing). Most special-status plants that would be present during these types of maintenance activities are herbaceous plants that would not likely reduce water flow, reducing the likelihood that they would be removed during maintenance efforts for improving flow.

Operations of artificial infrastructure projects, such as those for water conservation (e.g., offstream storage tanks) and stream crossing improvements, should not adversely affect special-status plants. The restoration work for projects permitted under the Order may have either a beneficial or a deleterious effect, or both, on special-status plant species, particularly depending on the nature of the action being undertaken and the special-status plant being considered.

Certain restoration projects—wetland restoration, floodplain restoration, and off-channel/side-channel restoration—are likely to permanently convert an upland-based natural community (e.g., grassland) to an wetland-based natural community (e.g., tidal marsh). Restoration actions that would create more tidal or freshwater marsh habitat would likely expand habitat opportunities for many special-status plant species that rely on such habitat types. The historical extent of wetlands in California has declined by 90 percent or more since the 1800s (California Assembly 1984). As a result, many of the special-species plants that rely on these habitat types would benefit from restoration. Conversely, expanding the footprint of aquatic habitat and wetlands may adversely affect upland special-status plants. These species may not adapt to periods of extended inundation, and they could be lost if inundated as a result of aquatic habitat restoration projects permitted under the Order.

For some special-status plants, the effects of restoring seasonal floodplain, wetlands, and/or adjacent upland areas would be either beneficial or adverse. For example, Delta button-celery (*Eryngium racemosum*), which is state-listed as endangered, inhabits seasonally inundated floodplain depressions in riparian scrub habitat. Altering the hydrologic regime in the areas where this species are found could result in both beneficial and adverse impacts. For example, efforts to expand the availability of seasonal floodplain habitat (e.g., to improve juvenile rearing habitat conditions for Chinook Salmon) could adversely affect Delta button-celery if occupied habitat ends up becoming inundated for too long during the growing season for the plant species to successfully complete its life cycle. Although periodic flood flows are necessary to

sustain Delta button-celery habitat, prolonged inundation during spring and summer can negatively affect this species. Conversely, beneficial effects on Delta button-celery could result from restoration or enhancement of floodplain if it were to create additional suitable habitat for this species and promote a hydrologic regime that would enhance conditions for growth and reproduction of existing populations.

Operations and maintenance (O&M) of restoration projects permitted under the Order could result in the loss of habitat for special-status plants through direct disturbance, or substantial alterations to the existing hydrologic regime within a project site. Therefore, this impact would be **potentially significant**.

The Order contains the following general protection measures to reduce the impacts of O&M activities (similar to those for construction) on special-status plants:

- ◆ GPM-5: Environmental Monitoring
- ◆ GPM-7: Environmentally Sensitive Areas
- ◆ GPM-8: Prevent Spread of Invasive Exotic Plants
- ◆ GPM-12: Fugitive Dust Reduction
- ◆ GPM-15: Revegetate Disturbed Areas
- ◆ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ◆ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ◆ VHDR-3: Revegetation Materials and Methods

Additionally, as part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with species protection measures (described in Appendix F) would be required when applicable to a given project for O&M activities:

- ◆ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
 - SPM-3: Species Protection Construction Work Windows
 - SPM-4: Species Capture, Handling and Translocation
 - SPM-5: Sensitive Species Entrapment Prevention
 - SPM-6: Airborne Noise Reduction
- ◆ Plant Species Protection Measures
 - PLANT-1: Habitat Assessment and Surveys
 - PLANT-2: Avoidance of Vernal Pool and Other Annual and Perennial Species
 - PLANT-3: Exclusion Buffer Establishment
 - PLANT-4: Work Restrictions in the Exclusion Buffer
 - PLANT-5: Biological Monitoring
 - PLANT-6: Herbicide Application, Clearing, and Ground Disturbance
 - PLANT-7: Measures for When Effects Cannot Be Avoided

However, these general protection measures and species protection measures may not be sufficient on their own to address all the potential long-term O&M effects of individual restoration projects. If the CEQA lead agency for a future restoration project determines that the project's impacts on special-status plants may remain significant even with

implementation of these general protection measures and species protection measures, additional project-specific mitigation would be required. In such a case, the lead agency would coordinate with CDFW or USFWS to design additional project-specific measures to reduce operational impacts on special-status plants. This coordination would be initiated as part of the CEQA review (e.g., CDFW is always a CEQA trustee agency when projects may affect protected biological resources) and/or part of a required permitting process (e.g., Fish and Game Code Section 1600 and FESA/CESA consultation). To be able to proceed, the project would be required to adhere to any additional avoidance and minimization measures established under these permitting process (e.g., biological opinions and streambed alteration agreements). However, no specific mitigation measures can be identified at the time of this analysis to address this issue because the precise scope, location, and description of these restoration projects are yet to be determined (they would be defined in the future by project proponents seeking permits under the Order).

For the purposes of this programmatic analysis, impacts on special-status plants would be **significant and unavoidable**. Although it is anticipated that with general protection measures, species protection measures, and other mitigation measures, most impacts would be avoided and minimized, it cannot be determined with certainty that all projects permitted under the Order would be able to implement appropriate mitigation measures to reduce impacts on special-status plants to a less-than-significant level.

However, based on a review of prior CEQA analyses for mid- to large-scale restoration projects, only in rare circumstances would projects permitted under the Order be unable to identify and implement feasible, appropriate mitigation measures (or adjust the restoration design during project planning to avoid habitat for special-status plants) that would reduce O&M impacts on special-status plants to a less-than-significant level.

Impact 3.5-2: Implementing restoration projects permitted under the Order could result in adverse direct effects on special-status wildlife species.

Effects of Project Construction Activities

Construction activities for restoration projects permitted under the Order could result in the disturbance or loss of special-status amphibians, birds, invertebrates, and reptiles and their habitats if they are present in the project area. Appendix G summarizes the CNDDDB occurrences of special-status terrestrial wildlife species in each of the state's 13 USGS Level III ecoregions. This analysis conservatively assumes that restoration projects permitted under the Order that would occur in a given ecoregion would have the potential to directly or indirectly affect the special-status terrestrial wildlife species identified in an ecoregion.

During project-level planning, when the specific location of and design approach for a given project permitted under the Order would be defined further, other data sources would be used to more specifically determine which special-status wildlife species could be affected by that project. These data sources may include:

- ◆ Reconnaissance and/or protocol-level surveys of the project site
- ◆ USFWS species lists

- ◆ The professional knowledge of local biologists, including those connected to the agency authorizing the project
- ◆ Relevant environmental documents and reports for the project or other nearby projects

Localized information about vegetation patterns, disturbance regimes (e.g., vegetation could be regularly disked or mowed), and local hydrology could help to determine whether suitable refuge, breeding, movement, and foraging conditions are present or absent for a given wildlife species. Consideration of these additional data is expected to substantially reduce the number of special-status terrestrial wildlife species considered to have the potential to occur with a given project's footprint.

This analysis of potential impacts on special-status terrestrial wildlife examined previous environmental documents for restoration and infrastructure improvement efforts similar to those that would be permitted under the Order. These projects included setback levees; restoration of floodplains, tidal marshes, seasonal wetlands, and streams; and improvements to water infrastructure and stream crossings.

Construction-related direct impacts on special-status terrestrial wildlife may include trampling or crushing by heavy equipment, vehicles, and foot traffic. In addition, hydrologic conditions may be modified. For example, introducing tidal action to a site to create tidal marsh habitat may initially drown small rodents, amphibians, and the eggs of ground-nesting birds. Ground disturbance would be limited to the construction footprint; still, construction work could result in other types of disturbance. Examples include excess noise that could disturb the normal behavior patterns of wildlife, or spillover of nighttime construction lighting that could disturb the resting patterns of wildlife.

Restoration projects permitted under the Order would likely generate elevated levels of noise, vibration, and visual and proximity-related disturbances during construction work and operation of heavy machinery. Construction activities would typically increase the presence of humans in the immediate project area, unless the actions would occur in an urbanized area, in which case the local wildlife are likely already acclimated to human activity.

USFWS-designated critical habitat for federally listed terrestrial wildlife species is identified at <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>. A designation of critical habitat only affects activities performed by federal agencies or that involve a federal permit, license, or funding, and that are likely to destroy or adversely modify the area of critical habitat. Additional analysis would be required during project-level planning, when the specific location and design approach for a given project permitted under the Order would be defined further. The additional analysis would determine whether the project footprint overlaps with designated critical habitat for a federally listed species, and if so, would evaluate the potential of the action to interfere with the functional values provided by the affected critical habitat for that species.

Restoration projects permitted under the Order would temporarily disturb habitat (e.g., from loud noises generated by heavy machinery and generation of sedimentation into aquatic features). In addition, activities such as grading and vegetation removal could

physically disturb existing habitat. Therefore, this impact on special-status terrestrial wildlife would be **potentially significant**.

The presence and extent of special-status terrestrial wildlife in the construction area of restoration projects permitted under the Order are yet to be determined at this time. However, the Order contains the following general protection measures to protect special-status terrestrial wildlife:

- ♦ GPM-2: Construction Work Windows
- ♦ GPM-3: Construction Hours
- ♦ GPM-4: Environmental Awareness Training
- ♦ GPM-5: Environmental Monitoring
- ♦ GPM-6: Work Area and Speed Limits
- ♦ GPM-7: Environmentally Sensitive Areas
- ♦ GPM-10: Equipment Maintenance and Materials Storage
- ♦ GPM-13: Trash Removed Daily
- ♦ GPM-15: Revegetated Disturbed Areas
- ♦ WQHM-1: Staging Areas and Stockpiling of Materials and Equipment
- ♦ WQHM-2: Storm Water Pollution Prevention Plan
- ♦ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ♦ WQHM-5: In-Water Concrete Use
- ♦ WQHM-6: Accidental Discharge of Hazardous Materials
- ♦ VHDR-1: Avoidance of Vegetation Disturbance
- ♦ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ♦ VHDR-3: Revegetation Materials and Methods
- ♦ VHDR-4: Revegetation Erosion Control Materials and Methods
- ♦ VHDR-5: Revegetation Monitoring and Reporting

Additionally, restoration projects that could adversely affect habitat for special-status wildlife species would implement the following species protection measures (see Appendix F), as applicable.

- ♦ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
 - SPM-3: Species Protection Construction Work Windows
 - SPM-4: Species Capture, Handling and Translocation
 - SPM-5: Sensitive Species Entrapment Prevention
 - SPM-6: Airborne Noise Reduction
- ♦ Amphibian Species Protection Measures
 - AMP-1: Wildlife Passage Design
 - AMP-2: Rain Event Limitations
 - AMP-3: Pre-Construction Survey
 - AMP-4: Disease Prevention and Decontamination
 - AMP-5: Lighting
 - AMP-6: Clearing and Grubbing Vegetation
 - AMP-7: Pump Screens
 - AMP-8: Removal of Non-native Species

- AMP-9: Placement of Suitable Erosion Control Material
- AMP-10: Encounters with Species
- AMP-11: Species Observations and Handling Protocol
- ♦ Reptile Species Protection Measures
 - REP-1: Pre-Construction Survey
 - REP-2: Environmentally Sensitive Area Fencing
 - REP-3: Clearing and Grubbing Vegetation
 - REP-4: Prohibited Use of Rodenticides
 - REP-5: Species Observations and Encounters
 - REP-6: Species Handling and Relocation
- ♦ Bird Species Protection Measures
 - BIRD-1: Habitat Assessment
 - BIRD-2: Nest Protection Work Window
 - BIRD-3: Work Area Limits
 - BIRD-4: Site Access Restrictions
 - BIRD-5: Monitoring
- ♦ Mammal Species Protection Measures
 - MAM-1: Conduct Habitat Assessment
 - MAM-2: Exclusion Areas
 - MAM-3: Use of Handheld Tools
 - MAM-4: Species Trapping and Relocating
 - MAM-5: Reporting Requirements
- ♦ Invertebrate Species Protection Measures
 - INVERT-1: Implement California Freshwater Shrimp Measures
 - INVERT-2: Vernal Pool Branchiopods Measures
 - INVERT-3: Implement Valley Elderberry Longhorn Beetle Protocol
 - INVERT-4: Implement Butterfly Protection Measures

Implementing these general protection measures and species protection measures would reduce the potential for impacts on special-status terrestrial wildlife resources. Nonetheless, because the general protection measures are, by their nature, general, they do not necessarily address the unique characteristics and habitat requirements of all special-status terrestrial wildlife species that could be affected by projects permitted under the Order. Therefore, this impact would remain **potentially significant**, even with the general protection measures and species protection measures.

Prior to project implementation, project proponents would be required consult with appropriate federal, state, and/or local agencies. In addition to consulting with the appropriate State and/or Regional Board, depending on the type of habitat that would be impacted and regulatory status, these agencies may include USACE (Section 404 of the CWA), EPA (Section 404[b][1] of the CWA), USFWS (Section 7 of the FESA), and CDFW (California Fish and Game Code). As part of the permitting process, these agencies may require project proponents to develop and implement additional measures to protect sensitive resources under their jurisdiction. Additionally, if the CEQA lead agency for a future restoration project determines that the project's impacts

on special-status wildlife species may remain significant even with implementation of these general protection measures, then additional project-specific and species-specific mitigation measures would be required. In such a case, the lead agency would coordinate with CDFW, USFWS, and/or others to design additional project-specific measures to reduce these impacts, if required. This coordination would be initiated as part of the CEQA review (e.g., CDFW is always a CEQA trustee agency when projects may affect protected biological resources) and/or part of a required permitting process (e.g., CWA Section 404, Fish and Game Code Section 1600, and informal/formal consultation under the FESA and CESA).

For the purposes of this programmatic analysis, construction-related impacts on special-status terrestrial wildlife species would be **significant and unavoidable**. It cannot be determined with certainty that all projects permitted under the Order would be able to implement appropriate avoidance and/or minimization measures to reduce their construction-related impacts on special-status terrestrial wildlife to a less-than-significant level.

Typically, the overwhelming majority (if not all) future projects permitted under the Order should be able to identify and implement feasible and appropriate mitigation measures to reduce construction-associated impacts on special-status terrestrial wildlife to a less-than-significant level. In such a circumstance, the project-level CEQA analysis conducted for individual projects permitted under the Order would arrive at a conclusion of “less than significant” for impacts on special-status terrestrial wildlife.

Effects of Constructed Facilities (Natural or Artificial Infrastructure) and Operations and Maintenance of those Facilities

Most long-term impacts on terrestrial biological resources of implementing the restoration projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation. For example, as stated above, seasonal floodplain restoration and setback levee projects would result in benefits by causing more frequent and longer flood inundation, which would promote the establishment of more vigorous wetland and riparian communities in areas that currently may be too dry or otherwise unsuitable to support those natural communities. Nonetheless, as described below, there are foreseeable circumstances in which restoration projects targeted to specifically benefit aquatic organisms may result in conflicts with mainly terrestrial special-status wildlife species.

Maintenance of constructed facilities for restoration projects permitted under the Order, including restored habitats and artificial infrastructure (e.g., water conservation projects) is expected to have effects on special-status terrestrial wildlife similar to those described above for project construction. Maintenance work may involve using heavy machinery for re-grading, sediment excavation, and removal of vegetation (e.g., sediment or vegetation clogging fish passage structures). The effects of O&M on special-status terrestrial wildlife is expected to be similar to construction impacts, albeit reduced in scope because the scale of equipment use, ground disturbance, and tree removal would be much smaller and more spread out over time.

Large-scale setback levee and wetland restoration projects permitted under the Order could convert larger areas of agricultural land. Some of this agricultural land is used by migratory waterfowl, which have adapted to exploit these areas as foraging habitat. Although these projects could reduce agricultural foraging habitat, this area would be replaced by seasonal floodplain and wetland habitats. These restored habitats are expected to support suitable foraging and resting habitat for migratory waterfowl.

For some special-status terrestrial species, restoring seasonal floodplain, freshwater or tidal marsh, or seasonal wetlands may have temporary or even long-term impacts. For example, flooding grasslands and agricultural row crops to create additional wetland habitat could permanently reduce the extent of available foraging habitat for certain raptor species. Furthermore, conversion of agricultural fields and associated canals and ditches could result in loss of important habitat elements for giant garter snake, a species that is federally- and state-listed as threatened.

Another example of a species that could be temporarily affected by creation and restoration of tidal wetland habitats is salt marsh harvest mouse (*Reithrodontomys raviventris*). This species is federally listed and state-listed, and is endemic to coastal areas in the San Francisco Bay Area. Because much of the Bay Area's tidal and salt marsh habitat has been lost, this species has acclimated to using more managed or modified habitat types, such as seasonally managed wetlands used by waterfowl hunting clubs and the slopes of artificially constructed levees. Many of these areas that are managed for waterfowl could be restored back to tidal and salt marsh habitat, given sufficient site preparation. Converting habitat to tidal wetlands, however, would result in a temporal reduction in salt marsh harvest mouse as tidal action is reintroduced to those sites. As the restored area evolves into a functioning, vegetated tidal wetland, it should eventually return to providing permanent suitable habitat for this species. Restoration activities concentrated in a small geographic area occupied by salt marsh harvest mouse or in a narrow time frame could have a greater effect on this species, as salt marsh harvest mice individuals become more concentrated in remaining suitable habitat until restoration sites are sufficiently mature.

Routine O&M activities for restoration projects permitted under the Order would create disturbances from the use of heavy machinery and result in the conversion of terrestrial habitat to aquatic habitat. Therefore, this impact would be **potentially significant**.

The Order contains the following applicable general protection measures to protect special-status terrestrial wildlife:

- ◆ GPM-4: Construction Hours
- ◆ GPM-6: Environmental Awareness Training
- ◆ GPM-7: Environmental Monitoring
- ◆ GPM-8: Work Area and Speed Limits
- ◆ GPM-9: Environmentally Sensitive Areas
- ◆ GPM-14: Equipment Maintenance and Materials Storage
- ◆ GPM-18: Trash Removed Daily
- ◆ GPM-20: Revegetated Disturbed Areas
- ◆ WQHM-1: Staging Areas and Stockpiling of Materials and Equipment
- ◆ WQHM-2: Storm Water Pollution Prevention Plan

- ◆ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ◆ WQHM-5: In-Water Concrete Use
- ◆ WQHM-6: Accidental Discharge of Hazardous Materials
- ◆ VHDR-1: Avoidance of Vegetation Disturbance
- ◆ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ◆ VHDR-3: Revegetation Materials and Methods
- ◆ VHDR-4: Revegetation Erosion Control Materials and Methods
- ◆ VHDR-5: Revegetation Monitoring and Reporting

Additionally, restoration projects that could adversely affect habitat for special-status wildlife species would implement the following species protection measures (see Appendix F), as applicable.

- ◆ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
 - SPM-3: Species Protection Construction Work Windows
 - SPM-4: Species Capture, Handling and Translocation
 - SPM-5: Sensitive Species Entrapment Prevention
 - SPM-6: Airborne Noise Reduction
- ◆ Amphibian Species Protection Measures
 - AMP-1: Wildlife Passage Design
 - AMP-2: Rain Event Limitations
 - AMP-3: Pre-Construction Survey
 - AMP-4: Disease Prevention and Decontamination
 - AMP-5: Lighting
 - AMP-6: Clearing and Grubbing Vegetation
 - AMP-7: Pump Screens
 - AMP-8: Removal of Non-native Species
 - AMP-9: Placement of Suitable Erosion Control Material
 - AMP-10: Encounters with Species
 - AMP-11: Species Observations and Handling Protocol
- ◆ Reptile Species Protection Measures
 - REP-1: Pre-Construction Survey
 - REP-2: Environmentally Sensitive Area Fencing
 - REP-3: Clearing and Grubbing Vegetation
 - REP-4: Prohibited Use of Rodenticides
 - REP-5: Species Observations and Encounters
 - REP-6: Species Handling and Relocation
- ◆ Bird Species Protection Measures
 - BIRD-1: Habitat Assessment
 - BIRD-2: Nest Protection Work Window
 - BIRD-3: Work Area Limits
 - BIRD-4: Site Access Restrictions
 - BIRD-5: Monitoring

- ◆ Mammal Species Protection Measures
 - MAM-1: Conduct Habitat Assessment
 - MAM-2: Exclusion Areas
 - MAM-3: Use of Handheld Tools
 - MAM-4: Species Trapping and Relocating
 - MAM-5: Reporting Requirements
- ◆ Invertebrate Species Protection Measures
 - INVERT-1: Implement California Freshwater Shrimp Measures
 - INVERT-2: Vernal Pool Branchiopods Measures
 - INVERT-3: Implement Valley Elderberry Longhorn Beetle Protocol
 - INVERT-4: Implement Butterfly Protection Measures

However, these general protection measures may not be sufficient on their own to address all long-term effects of restoration projects on special-status wildlife and this impact would remain **potentially significant**.

As described above, if the CEQA lead agency for a future restoration project determines that the project's impacts on special-status terrestrial wildlife may remain significant even with implementation of these general protection measures, additional project-specific measures would be required. Over the long-term, large-scale restoration projects permitted by the Order may result in large-scale conversion of habitat currently used by terrestrial wildlife to features designed principally to benefit aquatic species. No specific mitigation measures can be identified at the time of this analysis to address this issue because the precise scope, locations, and descriptions of these restoration projects are yet to be determined (they will be defined in the future by project proponents seeking permitting under the Order).

Thus, for the purposes of this programmatic analysis, impacts on terrestrial wildlife resources would be **significant and unavoidable**, because it cannot be determined with certainty that all projects permitted under the Order would be able to implement appropriate mitigation measures to reduce impacts on special-status terrestrial wildlife to a less-than-significant level.

However, based on a review of prior CEQA analyses for large-scale restoration projects, only in rare circumstances would future projects permitted under the Order be unable to identify and implement feasible, appropriate general protection and/or species protection measures (or adjust the restoration design during project planning to avoid habitat for special-status wildlife) that would reduce O&M impacts on special-status terrestrial wildlife to a less-than-significant level.

Impact 3.5-3: Implementing restoration projects permitted under the Order could result in adverse effects on riparian habitat or sensitive natural communities.

Effects of Project Construction Activities

Appendix G summarizes the CNDDDB occurrences of special-status natural communities in each of the state's 13 USGS Level III ecoregions. This analysis conservatively assumes that these natural communities could occur within the footprint of restoration projects permitted under the Order if it is determined that they are present in the same

ecoregion. During project-level planning, other data sources, including reconnaissance surveys for biological resources, would be used to determine whether special-status natural communities and other sensitive habitats have the potential to occur in the specific project area.

Construction of restoration projects permitted under the Order could result in the disturbance or removal of sensitive habitats, including wetlands and other waters of the United States and riparian habitat. Sensitive natural communities or habitats are those that are of special concern to resource agencies or are afforded specific consideration, based on Sections 1600 et seq. of the California Fish and Game Code, the California Coastal Act (e.g., Environmentally Sensitive Habitat Areas), and other applicable regulations. Depending on their specific locations, projects permitted under the Order could remove or disturb sensitive habitats, thus potentially affecting sensitive natural communities, when vegetation is trimmed and removed to facilitate construction access, grading work. In addition, hydrology could be altered.

Restoration projects permitted under the Order are expected to result in long-term improvements in the extent of sensitive natural communities, including riparian habitat. However, project construction work could result in unavoidable short-term impacts, including minor vegetation removal or trampling, hydrologic changes, deposition of dust or debris, soil compaction, or other temporary disturbances that could affect habitat conditions and function. This impact would be **potentially significant**.

The locations of sensitive natural communities relative to the footprints of restoration projects permitted under the Order are yet to be determined. However, the Order contains the following general protection measures to reduce this impact:

- ◆ GPM-5: Environmental Monitoring
- ◆ GPM-7: Environmentally Sensitive Areas
- ◆ GPM-8: Prevent Spread of Invasive Exotic Plants
- ◆ GPM-12: Fugitive Dust Reduction
- ◆ GPM-15: Revegetate Disturbed Areas
- ◆ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ◆ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ◆ VHDR-3: Revegetation Materials and Methods

Additionally, restoration projects that could adversely affect riparian habitat or sensitive natural communities, would implement the following species protection measures (see Appendix F), as applicable.

- ◆ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
- ◆ Invertebrate Species Protection Measures
 - INVERT-1: Implement California Freshwater Shrimp Measures
 - INVERT-2: Vernal Pool Branchiopods Measures
 - INVERT-3: Implement Valley Elderberry Longhorn Beetle Protocol

Implementing these general protection measures and species protection measures would reduce the potential for impacts on riparian habitat and sensitive natural communities. Further, as described above, prior to project implementation, project proponents would be required to consult with appropriate federal, state, and/or local agencies, potentially including USACE, EPA, USFWS, and CDFW in addition to the State and/or Regional Boards. As part of the permitting process, these agencies may require project proponents to develop and implement modified and/or additional measures to protect sensitive resources under their jurisdiction. Additionally, as part of the CEQA process, the lead agency would consult with the applicable resource agencies to develop adequate project-specific mitigation measures to address impacts on sensitive natural communities. In addition, much of this mitigation for sensitive natural communities would go hand-in-hand with species protection measures developed under FESA and CESA consultation with the federal and state wildlife agencies. Completing these processes and implementing the aforementioned general protection measures and species protection would reduce the impact of construction on sensitive natural communities to a **less-than-significant** level.

Effects of Constructed Facilities (Natural or Artificial Infrastructure) and Operations and Maintenance of those Facilities

Most long-term impacts on terrestrial biological resources of implementing the restoration projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation. For example, seasonal floodplain restoration and setback levee projects would result in benefits by causing more frequent and longer flood inundation, which would promote the establishment of more vigorous wetland and riparian communities in areas that currently may be too dry or otherwise unsuitable to support those natural communities. Nevertheless, as described below, there are foreseeable circumstances in which restoration projects targeted to specifically benefit aquatic organisms may result in conflicts with sensitive natural communities.

Ongoing long-term maintenance of restoration sites may result in short-term impacts on sensitive natural communities, particularly if the maintenance would involve ground disturbance and vegetation management. However, operation of infrastructure-focused projects (e.g., fish passage improvements, water conservation projects) is not expected to result in ongoing effects on sensitive natural communities. Restoration-related activities permitted under the Order are expected to result in the expansion of many sensitive natural communities, particularly riparian habitat, which would be a focus of many of the targeted project types.

In the unlikely case that the CEQA lead agency for a restoration project determines that the project's impacts on sensitive natural communities may be significant (e.g., conversion of a terrestrial-based sensitive natural community such as Great Valley oak riparian forest into side-channel riverine habitat) even with previously identified general protection measures, additional project-specific mitigation may be required. Much of the protection of sensitive natural communities would go hand-in-hand with species-specific protection measures developed under FESA and CESA consultation with the federal and state wildlife agencies.

Ongoing maintenance of restoration projects would result in impacts on sensitive natural communities similar to those described above for project construction. This impact would be **potentially significant**.

The following general protection measures applicable to protection of sensitive natural communities during construction of projects permitted under the Order also apply to maintenance of those same projects:

- ♦ GPM-7: Environmental Monitoring
- ♦ GPM-9: Environmentally Sensitive Areas
- ♦ GPM-12: Prevent Spread of Invasive Exotic Plants
- ♦ GPM-17: Fugitive Dust Reduction
- ♦ GPM-20: Revegetate Disturbed Areas
- ♦ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ♦ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ♦ VHDR-3: Revegetation Materials and Methods

Additionally, restoration projects that could adversely affect riparian habitat or sensitive natural communities, would implement the following species protection measures (see Appendix F), as applicable.

- ♦ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
- ♦ Invertebrate Species Protection Measures
 - INVERT-1: Implement California Freshwater Shrimp Measures
 - INVERT-2: Vernal Pool Branchiopods Measures
 - INVERT-3: Implement Valley Elderberry Longhorn Beetle Protocol

Over the long-term, restoration-related activities permitted under the Order should result in the expansion of many sensitive natural communities.

Nonetheless, operation of large-scale restoration projects permitted by the Order may convert particular sensitive natural community habitats to other natural community types, even ones considered sensitive by CDFW. For example, large-scale floodplain restoration efforts in the Central Valley may convert one sensitive natural community, sacaton grasslands, to another sensitive natural community, Great Valley mixed riparian forest. In this circumstance, although the project would result in no net loss in the extent of sensitive natural communities within the project footprint, it would reduce the extent of a particular sensitive natural community.

Thus, for the purposes of this programmatic analysis, impacts on sensitive natural communities would be **significant and unavoidable**. It cannot be determined with certainty that all projects permitted under the Order would be able to implement appropriate avoidance, mitigation, and/or minimization measures to reduce impacts on any sensitive natural community to a less-than-significant level.

Based on a review of prior CEQA analyses for large-scale restoration projects, only in rare circumstances would future CEQA analyses for individual projects permitted under

the Order conclude that there would be a significant impact on a particular sensitive natural community. (This is principally because most restoration activities would focus on highly altered areas where sensitive natural communities have been already degraded or eliminated.) Most projects would generally increase the extent of certain sensitive natural communities such as riparian forest (e.g., Southern cottonwood willow riparian forest, Great Valley oak riparian forest) and marsh habitat (e.g., montane freshwater marsh).

Impact 3.5-4: Implementing restoration projects permitted under the Order could result in adverse effects on state or federally protected wetlands through direct removal, hydrological interruption, or other means.

Effects of Project Construction Activities

Although long-term beneficial effects are expected through implementation of restoration projects, construction activities for projects permitted under the Order could disturb or remove wetlands and other waters of the United States and/or state (by regulatory definition, waters of the state also encompass all waters of the United States). For example, infrastructure improvements to improve fish passage (e.g., installing a new bridge footing to replace an undersized culvert) could result in minor amounts of fill of rivers or streambeds. This new infrastructure may require installing the minimum amount of rock slope protection along the channel banks (including below the ordinary high-water mark) that would be needed to ensure that flows do not undermine the foundations of the new infrastructure. Additionally, some restoration projects could convert an area from one wetland type to another. For example, projects that involve levee setbacks or breaching projects could convert freshwater emergent wetlands to salt marsh. Similarly, construction adjacent to wetlands or other waters of the United States and/or state could indirectly or directly affect these resources through increased erosion, sedimentation from soil disturbance, or spills of hazardous materials. Construction activities could also affect the hydrologic patterns that sustain existing wetland features.

During project-level planning, it is expected that the project proponent would conduct an aquatic resources delineation in concert with field reconnaissance visits to map and identify the extent of jurisdictional waters of the United States and/or state, including wetlands.

Restoration projects permitted under the Order may result in direct fill, alteration of local hydrology, and/or erosion and sedimentation of federally and state protected wetlands and waters. Therefore, this impact would be **potentially significant**.

The Order contains the following general protection measures to reduce impacts on federally and state protected wetlands and waters:

- ◆ GPM-5: Environmental Monitoring
- ◆ GPM-7: Environmentally Sensitive Areas
- ◆ GPM-10: Equipment Maintenance and Materials Storage
- ◆ GPM-11: Materials Disposal
- ◆ GPM-14: Project Cleanup after Completion

- ◆ GPM-15: Revegetate Disturbed Areas
- ◆ WQHM-1: Staging Areas and Stockpiling of Materials and Equipment
- ◆ WQHM-2: Storm Water Pollution Prevention Plan
- ◆ WQHM-3: Erosion Control Plans
- ◆ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ◆ WQHM-5: In-Water Concrete Use
- ◆ WQHM-6: Accidental Discharge of Hazardous Materials
- ◆ IWW-1: Appropriate In-Water Materials
- ◆ IWW-2: In-Water Vehicle Selection and Work Access
- ◆ IWW-3: In-Water Placement of Materials, Structures, and Operation of Equipment
- ◆ IWW-4: In-Water Staging Areas and Use of Barges
- ◆ IWW-8: Removal of Diversion and Barriers to Flow
- ◆ IWW-11: Sediment Containment during In-Water Pile Driving
- ◆ IWW-13: Dredging Operations and Dredging Materials Reuse Plan

Incorporation of appropriate general protection measures and species protection measures would be expected to result in functional lift of state or federally protected wetlands and other waters that may otherwise be impacted through direct removal, hydrological interruption, or other means.

In addition, as described above, projects would have to comply with requirements identified during the following permitting processes for impacts on jurisdictional wetlands and waters of the United States and/or state:

- ◆ U.S. Army Corps of Engineers—Clean Water Act Section 404 permit
- ◆ The respective Regional Boards—Clean Water Act Section 401 water quality certification and/or waste discharge requirements
- ◆ CDFW—Section 1600 Lake or Streambed Alteration Agreement

Implementing these regulatory requirements, the general protection measures, and species protection measures identified above would reduce the impact of project construction on jurisdictional waters and other waters to a **less-than-significant** level.

Effects of Constructed Facilities (Natural or Artificial Infrastructure) and Operations and Maintenance of those Facilities

Most long-term impacts on terrestrial biological resources of implementing projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation. For example, seasonal floodplain restoration and wetland restoration projects are expected to expand the footprint of wetlands and other waters under federal and/or state jurisdiction. Such restoration projects may also result in conversion of the type of wetland habitat types; for example, projects involving removal of tide gates may result in gradual conversion of adjacent managed freshwater wetlands into tidal marsh as the area becomes fully tidally influenced.

Maintenance of constructed facilities, including restored habitats, is expected to have effects on wetlands and other waters of the United States and/or state similar to those described for project construction. However, the effects should be reduced in

scope, because the scale of equipment use and ground disturbance is expected to be much smaller.

A few example maintenance activities for projects permitted under the Order include removing sediment buildup at fish passage facilities; removing invasive aquatic weeds clogging up channels; and excavating tidal starter channels in a tidal marsh restoration site if a dendritic tidal channel network is not forming as efficiently as expected. These actions may temporarily disturb wetlands and waters of the United States and/or state; however, such maintenance actions are not anticipated to result in permanent fill or impacts on these resources.

Operations of constructed infrastructure facilities would not be expected to affect wetlands or other waters of the United States and/or state; all of the impacts of these projects on wetlands and waters would have occurred during construction. Restoration projects permitted under the Order would often expand the extent of aquatic habitat, including by reestablishing wetlands in areas that were previously diked and drained for urban development or agricultural production, or by restoring side-channel habitat, seasonal floodplain, and floodplain benches in areas currently constrained by constructed levees. Thus, the net effect of many restoration projects permitted under the Order should be to increase the acreage of wetlands and other waters and/or improve the functioning of existing features of these types. The impact of constructed facilities and associated O&M on jurisdictional waters and other waters would be **less than significant**.

Maintenance of constructed facilities would have effects on wetlands and other waters of the United States and/or state similar to those previously described for construction. The Order contains the following general protection measures to further reduce these impacts:

- ◆ GPM-5: Environmental Monitoring
- ◆ GPM-7: Environmentally Sensitive Areas
- ◆ GPM-10: Equipment Maintenance and Materials Storage
- ◆ GPM-11: Materials Disposal
- ◆ GPM-14: Project Cleanup after Completion
- ◆ GPM-15: Revegetate Disturbed Areas
- ◆ WQHM-1: Staging Areas and Stockpiling of Materials and Equipment
- ◆ WQHM-2: Storm Water Pollution Prevention Plan
- ◆ WQHM-3: Erosion Control Plans
- ◆ WQHM-4: Hazardous Materials Management and Spill Response Plan
- ◆ WQHM-5: In-Water Concrete Use
- ◆ WQHM-6: Accidental Discharge of Hazardous Materials
- ◆ IWW-1: Appropriate In-Water Materials
- ◆ IWW-2: In-Water Vehicle Selection and Work Access
- ◆ IWW-3: In-Water Placement of Materials, Structures, and Operation of Equipment
- ◆ IWW-4: In-Water Staging Areas and Use of Barges
- ◆ IWW-8: Removal of Diversion and Barriers to Flow
- ◆ IWW-11: Sediment Containment during In-Water Pile Driving
- ◆ IWW-13: Dredging Operations and Dredging Materials Reuse Plan

Incorporation of appropriate general protection measures would be expected to result in functional lift of state or federally protected wetlands or waterways that may otherwise be impacted through direct removal, hydrological interruption, or other means.

Operation of restoration projects permitted under the Order would typically expand the extent of state and federally protected wetlands and other waters. Overall, implementing the general protection measures identified above would further reduce the **less-than-significant** impact of constructed facilities and associated O&M on wetlands and other waters.

Impact 3.5-5: Implementing restoration projects permitted under the Order could interfere with the movement of native resident and migratory wildlife species.

Effects of Project Construction Activities

Appendix G summarizes the CNDDDB occurrences of special-status wildlife species in each of the state's 13 USGS Level III ecoregions. This analysis conservatively assumes that special-status species identified in an ecoregion would have the potential to be directly or indirectly affected by the types of projects that would be permitted under the Order. During project-level planning, in addition to CNDDDB records, other data sources would be necessary to determine which special-status wildlife species would have the potential to occur in a particular project area. These data sources may include reconnaissance surveys of the project site; USFWS species lists; the professional knowledge of local biologists, including those connected to the agency implementing the project; and relevant environmental documents and reports for the project or other nearby projects.

Construction work could interfere with the local movement of native resident or migratory wildlife species. For example, ground disturbance could temporarily disrupt movement by amphibians and reptiles. However, these construction activities would not interfere substantially with the movement of these animals because they could move through adjacent habitat to nearby unaffected habitat. Construction activities, including movement of equipment and personal vehicles and removal of vegetation, could interfere with the movement of other terrestrial wildlife species, such as large mammals or birds, but these activities would not likely result in substantial effects on movement by these species because they are mobile and can move away from construction activities to other areas not being affected by construction.

Construction work for restoration projects permitted under the Order could temporarily affect wildlife movement and migration conditions and alter the foraging patterns of resident wildlife species in the project area. These effects would result primarily from ground and noise disturbances generated by construction equipment and personnel. This impact would be **potentially significant**.

To reduce this impact on the movement of native resident and migratory wildlife species, the Order includes the following general protection measures:

- ◆ GPM-2: Construction Work Windows
- ◆ GPM-3: Construction Hours
- ◆ GPM-4: Environmental Awareness Training

- ◆ GPM-5: Environmental Monitoring
- ◆ GPM-6: Work Area and Speed Limits
- ◆ GPM-7: Environmentally Sensitive Areas
- ◆ GPM-18: Trash Removed Daily
- ◆ VHDR-1: Avoidance of Vegetation Disturbance
- ◆ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ◆ VHDR-3: Revegetation Materials and Methods

Additionally, restoration projects that could interfere with the movement of native resident and migratory wildlife species would implement the following species protection measures (see Appendix F), as applicable.

- ◆ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
 - SPM-3: Species Protection Construction Work Windows
 - SPM-4: Species Capture, Handling and Translocation
 - SPM-5: Sensitive Species Entrapment Prevention
 - SPM-6: Airborne Noise Reduction
- ◆ Amphibian Species Protection Measures
 - AMP-1: Wildlife Passage Design
 - AMP-2: Rain Event Limitations
 - AMP-3: Pre-Construction Survey
 - AMP-4: Disease Prevention and Decontamination
 - AMP-5: Lighting
 - AMP-6: Clearing and Grubbing Vegetation
 - AMP-7: Pump Screens
 - AMP-8: Removal of Non-native Species
 - AMP-9: Placement of Suitable Erosion Control Material
 - AMP-10: Encounters with Species
 - AMP-11: Species Observations and Handling Protocol
- ◆ Reptile Species Protection Measures
 - REP-1: Pre-Construction Survey
 - REP-2: Environmentally Sensitive Area Fencing
 - REP-3: Clearing and Grubbing Vegetation
 - REP-4: Prohibited Use of Rodenticides
 - REP-5: Species Observations and Encounters
 - REP-6: Species Handling and Relocation
- ◆ Bird Species Protection Measures
 - BIRD-1: Habitat Assessment
 - BIRD-2: Nest Protection Work Window
 - BIRD-3: Work Area Limits
 - BIRD-4: Site Access Restrictions
 - BIRD-5: Monitoring

- ♦ Mammal Species Protection Measures
 - MAM-1: Conduct Habitat Assessment
 - MAM-2: Exclusion Areas
 - MAM-3: Use of Handheld Tools
 - MAM-4: Species Trapping and Relocating
 - MAM-5: Reporting Requirements
- ♦ Invertebrate Species Protection Measures
 - INVERT-1: Implement California Freshwater Shrimp Measures
 - INVERT-2: Vernal Pool Branchiopods Measures
 - INVERT-3: Implement Valley Elderberry Longhorn Beetle Protocol
 - INVERT-4: Implement Butterfly Protection Measures

Implementing the general protection measures and species protection measures identified above would reduce the impact on the movement and migratory conditions of terrestrial wildlife to a **less-than-significant** level.

Effects of Constructed Facilities (Natural or Artificial Infrastructure) and Operations and Maintenance of those Facilities

Most long-term impacts on terrestrial biological resources of implementing projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation.

Constructed facilities and O&M activities are generally not expected to adversely affect movement by terrestrial wildlife species. Operation of projects that would improve hydrologic connectivity may be beneficial to the movement of certain terrestrial wildlife species that are highly aquatic (e.g., giant garter snake and western pond turtle).

Implementing seasonal wetland or tidal wetland restoration projects is expected to improve the value of the project sites as stopover sites for migratory birds by improving the quality of both wetland and upland habitats. This would be a beneficial effect on wildlife movement and avian migratory corridors.

Seasonal floodplain restoration and setback levee projects, once operational, would be expected to result in an increase in the expected average number of wet days. These operational changes are generally not expected to impair wildlife movement. Different areas within the project footprint would experience different conditions (e.g., some areas would likely remain largely unaffected while others may experience much greater numbers of wet days), and most wildlife should be able to move around to adapt to such environmental changes.

There may be terrestrial species with more limited mobility that could be negatively affected by large-scale conversion of terrestrial habitat types to aquatic and wetland habitat features. Overall, however, the types of restoration projects that would be permitted under the Order are largely expected to improve movement and migration for terrestrial wildlife. This impact would be **less than significant**.

Routine O&M activities for restoration projects permitted under the Order are generally not expected to adversely affect the movement and migration of terrestrial wildlife, especially given adherence to the following applicable general protection measures:

- ◆ GPM-2: Construction Work Windows
- ◆ GPM-3: Construction Hours
- ◆ GPM-4: Environmental Awareness Training
- ◆ GPM-5: Environmental Monitoring
- ◆ GPM-6: Work Area and Speed Limits
- ◆ GPM-7: Environmentally Sensitive Areas
- ◆ GPM-18: Trash Removed Daily
- ◆ VHDR-1: Avoidance of Vegetation Disturbance
- ◆ VHDR-2: Native and Invasive Vegetation Removal Materials and Methods
- ◆ VHDR-3: Revegetation Materials and Methods

Additionally, restoration projects that could interfere with the movement of native resident and migratory wildlife species would implement the following species protection measures (see Appendix F), as applicable.

- ◆ General Species Protection Measures
 - SPM-1: Preconstruction Surveys
 - SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion
 - SPM-3: Species Protection Construction Work Windows
 - SPM-4: Species Capture, Handling and Translocation
 - SPM-5: Sensitive Species Entrapment Prevention
 - SPM-6: Airborne Noise Reduction
- ◆ Amphibian Species Protection Measures
 - AMP-1: Wildlife Passage Design
 - AMP-2: Rain Event Limitations
 - AMP-3: Pre-Construction Survey
 - AMP-4: Disease Prevention and Decontamination
 - AMP-5: Lighting
 - AMP-6: Clearing and Grubbing Vegetation
 - AMP-7: Pump Screens
 - AMP-8: Removal of Non-native Species
 - AMP-9: Placement of Suitable Erosion Control Material
 - AMP-10: Encounters with Species
 - AMP-11: Species Observations and Handling Protocol
- ◆ Reptile Species Protection Measures
 - REP-1: Pre-Construction Survey
 - REP-2: Environmentally Sensitive Area Fencing
 - REP-3: Clearing and Grubbing Vegetation
 - REP-4: Prohibited Use of Rodenticides
 - REP-5: Species Observations and Encounters
 - REP-6: Species Handling and Relocation

- ◆ Bird Species Protection Measures
 - BIRD-1: Habitat Assessment
 - BIRD-2: Nest Protection Work Window
 - BIRD-3: Work Area Limits
 - BIRD-4: Site Access Restrictions
 - BIRD-5: Monitoring
- ◆ Mammal Species Protection Measures
 - MAM-1: Conduct Habitat Assessment
 - MAM-2: Exclusion Areas
 - MAM-3: Use of Handheld Tools
 - MAM-4: Species Trapping and Relocating
 - MAM-5: Reporting Requirements
- ◆ Invertebrate Species Protection Measures
 - INVERT-1: Implement California Freshwater Shrimp Measures
 - INVERT-2: Vernal Pool Branchiopods Measures
 - INVERT-3: Implement Valley Elderberry Longhorn Beetle Protocol
 - INVERT-4: Implement Butterfly Protection Measures

Incorporation of appropriate general protection measures and species protection measures would be expected to result in projects that would not interfere with the movement of native resident and migratory wildlife species; conversely, many projects would improve these conditions.

Generally, restoration projects permitted under the Order are not expected to result in substantial alterations to the movement and migration patterns of most terrestrial wildlife species. Operation of restoration projects is expected to improve movement and migration conditions for certain species such as migratory waterfowl, because it would improve their foraging conditions. Expanding riparian habitat would result in a beneficial effect on functionality for movement of many riparian species, particularly those whose distribution is restricted to riparian habitat (e.g., western yellow-billed cuckoo). There may be terrestrial species with more limited mobility that could be negatively affected by large-scale conversion of terrestrial habitat types to aquatic and wetland habitat features if suitable terrestrial habitat for these species were to become fragmented or isolated, but these situations would be rare. Overall, implementing the general protection measures identified above would further reduce the **less-than-significant** impacts of O&M activities on migration and movement conditions of terrestrial wildlife.

Impact 3.5-6: Implementing restoration projects permitted under the Order could conflict with local policies or ordinances protecting biological resources.

Effects of Project Construction Activities

Cities, counties, and local districts may adopt local policies or ordinances for conservation of biological resources. These policies or ordinances may mandate the local protection of special-status species, waterways, native trees, or other selected resources. Depending on the specific project locations and applicable local policies, projects permitted under the Order could conflict with local policies and ordinances.

Generally, restoration projects undertaken by state agencies would be exempted from local policies or ordinances, thereby eliminating the potential for identification of a “conflict.” Most state agencies have adopted environmental commitments similar to those often identified in local policies and ordinances for biological resources, which increases the likelihood that state agencies would comply with those local requirements, even though they would not be obligated to do so.

Local agencies carrying out projects permitted under the Order would need to evaluate and disclose in their CEQA documents whether their actions would or would not conflict with local policies or ordinances protecting biological resources. For example, constructing an infrastructure project to improve fish passage could require removing a tree that is considered protected under a local ordinance. If authorized and implemented without the concurrence of the relevant local agency, the subsequent activity could conflict with the local policy or ordinance, resulting in a significant impact.

Construction of restoration projects permitted under the Order could affect biological resources that are protected by local policies and ordinances (e.g., heritage trees) if these resources are present within the footprint of construction activities. The locations and characteristics of projects permitted under the Order are currently not known. Therefore, the specific conflicts between proposed restoration projects and local policies and ordinances protecting biological resources are not precisely known; only the general nature of the potential conflicts can be assessed. As a result, this impact would be **potentially significant**.

In general, it is expected that the general protection measures previously identified that would protect special-status plants, special-status wildlife, sensitive natural communities, and jurisdictional wetlands and waters of the United States and/or state (see Impacts 3.5-1 through 3.5-5 and Appendices E and F) would be adequate to satisfy any requirements set forth by a local jurisdiction intended to protect biological resources. Thus, implementing these general protection measures would reduce this impact to a **less-than-significant** level.

Effects of Constructed Facilities (Natural or Artificial Infrastructure) and Operations and Maintenance of those Facilities

Most long-term impacts on terrestrial biological resources of implementing projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation.

Ongoing O&M activities for constructed facilities, including restoration sites, could involve ground disturbance and vegetation management. Therefore, the effects of O&M work related to conflicts with local policies and ordinances protecting biological resources would be similar to the effects described for project construction. The specific locations of and implementation timing for projects permitted under the Order are yet to be determined at this time. Therefore, the specific effects cannot be determined. The factors necessary to identify specific impacts include the design and footprint of a project, the type and precise location of maintenance activities, and the detailed information about the facility itself. Although constructed facilities and O&M are

expected to provide a net benefit to biological resources, some conflicts with local policies or ordinances protecting biological resources could arise. As a result, this impact would be **potentially significant**.

It is expected that the general protection measures previously identified that would protect special-status plants, special-status wildlife, sensitive natural communities, and jurisdictional wetlands and waters of the United States and state (see Impacts 3.5-1 through 3.5-5 and Appendices E and F) would be adequate to satisfy any requirements protecting biological resources set forth by a local jurisdiction. Thus, implementing these general protection measures would reduce this impact to a **less-than-significant** level.

Impact 3.5-7: Implementing restoration projects permitted under the Order could conflict with the provisions of an adopted habitat conservation plan or natural community conservation plan.

Effects of Project Construction Activities

HCPs, NCCPs, and similar plans for conservation of biological resources in certain areas have been adopted or are being prepared. These conservation plans are typically developed for a variety of non-restoration projects/activities and generally permit incidental take of federally listed or state-listed species for specific activities, as identified in each plan. Authorized incidental take is mitigated by measures specified in each plan, which generally include habitat conservation and management to offset permitted take. Conservation plan conditions are applicable to plan participants (which generally include land use agencies or private entities).

Restoration projects permitted under the Order may occur in areas permitted by an adopted HCP or NCCP. During project-level planning and CEQA analysis, the potential for an overlap of project footprints with the planning areas of approved conservation plans would be evaluated. Should the analysis identify an overlap, the compatibility of the project's construction activities with the provisions of the conservation plans would need to be assessed further. Actions occurring outside the plan areas of these conservation plans would not likely result in a conflict unless the influence of the actions would extend within the conservation plan's boundaries.

In some cases, an HCP, NCCP, or similar conservation plan may be in its early planning phase or in preparation, but not yet adopted. A conflict, if any, with a conservation plan that has not been adopted would not meet the criterion for a significant impact according to CEQA standards.

The impact of construction activities for proposed restoration projects permitted under the Order related to a conflict with an adopted HCP or NCCP would be **less than significant**.

The general protection measures identified in Impacts 3.5-1 through 3.5-5 (also see Appendices E and F) should be adequate to eliminate any conflicts with approved conservation plans. Thus, implementing these general protection measures would further reduce this **less-than-significant** construction-related impact associated with a conflict with approved conservation plans.

Effects of Constructed Facilities (Natural or Artificial Infrastructure) and Operations and Maintenance of those Facilities

Most long-term impacts on terrestrial biological resources of implementing projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation. For example, seasonal floodplain restoration and setback levee projects would result in benefits by causing more frequent and longer flood inundation, which would promote the establishment of more vigorous wetland and riparian acreage in areas that currently may be too dry to support those natural communities. Nonetheless, as described below, there are foreseeable circumstances in which restoration projects targeted to specifically benefit aquatic organisms may conflict with already approved conservation plans.

Depending on their specific locations and the applicable plans, constructed facilities established by projects permitted under the Order could conflict with adopted HCPs, NCCPs, or similar conservation plans. An example of such a conflict would be restoring perennial wetlands in an area specifically targeted for preservation (e.g., grasslands or agricultural row crops) for the benefit of foraging raptor species covered in an adopted conservation plan.

Although constructed facilities and O&M are expected to provide a net benefit, the potential exists for conflicts with approved conservation plans. The projects permitted under the Order would focus primarily on benefits to aquatic species, particularly fish; by contrast, the overwhelming majority of conservation plans in California focus on terrestrial plants and wildlife (in part because of the complexity in obtaining long-term programmatic take coverage for fish species). Thus, there is a foreseeable situation in which such a conflict could occur, and this impact would be **potentially significant**. The Order does not include any general protection measures applicable to this impact.

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure TERR-1 would be required when applicable to a given project. Implementation of this mitigation measure would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency.

Mitigation Measure TERR-1: Coordinate with CDFW, USFWS, and Permittees Regarding HCPs, NCCPs, and Other Conservation Plans

If the site for a restoration project permitted under the Order is within the planning area for any adopted HCP, NCCP, or similar conservation plan, the CEQA lead agency for the project shall consult with the plan permittee(s), CDFW and/or USFWS, as applicable, to identify any potential conflicts with the plan's goals, objectives, or conservation measures. As part of this consultation, the CEQA lead agency shall seek input regarding potential design features, conservation measures, or other mitigation strategies to avoid potential conflicts and achieve substantial conformance with the objectives of the HCP, NCCP, or similar conservation plan. The CEQA lead agency shall implement these elements as applicable to ensure that

the restoration project conforms to applicable goals and policies set forth in the adopted conservation plan.

If such a restoration project would eliminate habitat that contributes to the conservation goals of species covered under an HCP or NCCP, the resource agencies that previously issued take permits under the conservation plan (e.g., CDFW and USFWS) may need to review the incidental take permits for those covered species. Based on this assessment, these agencies may determine that with the impact of the restoration project permitted under the Order on covered species' habitat, new or revised conditions would be required to offset those impacts and achieve the net conservation benefits originally identified in the HCP or NCCP.

In such a case, the CEQA lead agency for the project permitted under the Order would need to coordinate with the local entities implementing the approved conservation plan, and the resource agencies that previously issued take permits under the conservation plan. The purpose of this coordination would be to design additional project-specific measures to reduce conflicts between the project and implementation of the approved conservation plan.

For these reasons, the impact of constructed facilities and O&M activities with regard to a potential conflict with approved conservation plans would be **less than significant with mitigation incorporated**.