APPENDIX C:
BIOLOGICAL RESOURCES DATA

Biological Resources Assessment for the Los Banos General Plan Update

Merced County, California

Prepared For:

The City of Los Banos

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
BA	Biological Assessment
BCC	Bird of Conservation Concern
BO	Biological Opinion
BRA	Biological Resources Assessment
CARI	California Aquatic Resource Inventory
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Ranks
CTS	California tiger salamander

Term	Description
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
GGS	Giant garter snake
GPS	Global Positioning System
HCP	Habitat Conservation Plan
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
NAIP	National Agricultural Imagery Program
NAS	Nelson's antelope squirrel
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Application
SFEI	San Francisco Estuary Institute
SJKF	San Joaquin Kit Fox
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	Valley elderberry longhorn beetle

1.0 INTRODUCTION

At the request of the City of Los Banos (City), ECORP Consulting, Inc. conducted a Biological Resources Assessment (BRA) for the Los Banos General Plan Environmental Impact Report (EIR) Study Area. As part of this assessment, ECORP collected information on the biological resources present within the EIR Study Area, identified regulatory requirements relating to those resources, and presented recommendations for protecting sensitive resources during future buildout of the General Plan.

1.1 EIR Study Area Location

The approximately14,559-acre EIR Study Area occurs within Section 31, Township 9 South, Range 11 East; Sections 13 and 24, Township 10 South, and Range 9 East; Sections 1-4 and 7-30, Township 10 South, Range 10 East; and Sections 5-8, 17-20, and 30; Township 10 South, Range 11 East (Mount Diablo Base and Meridian) of the "Los Banos, California" and "Volta, California" California" 7.5-minute quadrangles (U.S. Geological Survey [USGS] 1960a and 1960b, respectively; Figure 1). The approximate center of the EIR Study Area is located at 37.064165° North and -120.856429° West within the Middle San Juaquin-Lower Chowchilla Watershed (Hydrological Unit Code #18040001; Natural Resources Conservation Service [NRCS], et al. 2016).

1.2 Purpose of this Biological Resources Assessment

The purpose of this BRA is to assess the potential for occurrence of special-status plant and animal species or their habitat, and other sensitive resources such as wetlands or migratory wildlife corridors, within the EIR Study Area. This assessment does not include determinate field surveys conducted according to agency-promulgated protocols. The conclusions and recommendations presented in this report are based upon a review of the literature referenced in this report.

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the California Environmental Quality Act (CEQA) Guidelines;
- are identified as a Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- are birds identified as Birds of Conservation Concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);

Map Contents

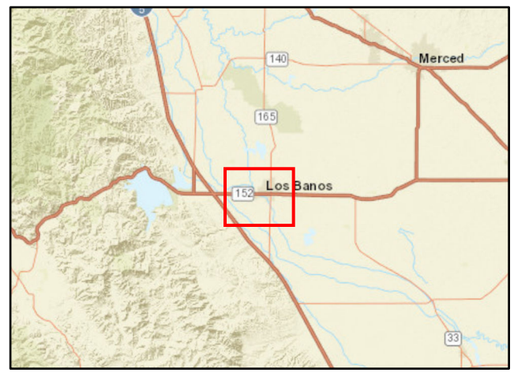
EIR Study Area - 14,559 acres

Merced County, California
§31, T.09S, R.11E,
§13, 24, T.10S, R.09E,
§1-4, 7-30, T.10S, R.10E,
§5-8, 17-20, 30, T.10S, R.11E, MDBM
Latitude (NAD83): 37.064165°
Longitude (NAD83): -120.856429°
Watershed: Middle San Joaquin-Lower Chowchilla (18040001)

Scale in Feet
0 2,000 4,000

Los Banos (1960 pr 1987, NAD 27)
Volta (1960, NAD 27)
CA 7.5-minute Topographic Quadrangle
US Geological Survey.

Sources: ESRI, USGS



Location: N:\2021\2021-293 Los Banos General Plan Update\MAPS\Location_Vicinity\LBGPU_LnV.aprx - LBGPO_LnV_20220119 (kturnquist - 1/19/2022)

Map Date: 1/19/2022

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Figure 1. EIR Study Area Location and Vicinity

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- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Rare Plant Ranks [CRPR] 1 and 2); plants for which more information is needed to determine their status (CRPR 3), or plants of limited distribution (CRPR 4);
- are plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, Sections 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes).

Only species that fall into one of the above-listed groups were considered for this assessment. Other species (e.g., California Natural Diversity Database [CNDDB] tracked species) sometimes found in database searches or within the literature were not included within this analysis.

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The ESA protects plants and animals that are listed as endangered or threatened by the USFWS or the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of ESA, federal agencies are required to consult with the USFWS or NMFS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a Biological Opinion (BO), the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise lawful activity provided the activity will not jeopardize the continued existence of the species. The BO may recommend *reasonable and prudent alternatives* to the project to avoid jeopardizing or adversely modifying habitat Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary, provided a Habitat Conservation Plan (HCP) is developed.

Critical Habitat is defined in Section 3 of ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and
2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide Primary Physical and Biological Features essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

- Space for individual and population growth and for normal behavior;
- Food, water, air, light, minerals, or other nutritional or physiological requirements;
- Cover or shelter;
- Sites for breeding, reproduction, or rearing (or development) of offspring; and
- Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

2.1.2 Essential Fish Habitat

Essential Fish Habitat (EFH) was defined by the U.S. Congress in the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act, or Magnuson-Stevens Act, as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." Implementing regulations clarified that waters include all aquatic areas and their physical, chemical, and biological properties; substrate includes the associated biological communities that make these areas suitable for fish habitats, and the description and identification of EFH should include habitats used at any time during the species' life cycle. EFH includes all types of aquatic habitat, such as wetlands, coral reefs, sand, seagrasses, and rivers.

2.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The protections of the MBTA extend to disturbances that result in abandonment of a nest with eggs or young. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

2.1.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or

egg, unless allowed by permit [16 USC 668(a); 50 CFR 22]. The USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

2.1.5 Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas:

> "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b).

The U.S. Environmental Protection Agency (USEPA) also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.2 State or Local Regulations

2.2.1 California Fish and Game Code

2.2.1.1 California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA also applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *Take* is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with the CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened or candidate species or result in destruction or adverse modification of essential habitat. For local agency projects with no discretionary state approvals, Section 2081 allows CDFW to authorize incidental take permits if certain conditions are met. Permittees must implement species-specific minimization and avoidance measures, and fully mitigate the impacts of the project.

2.2.1.2 Fully Protected Species

The State of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the state and/or federal ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish) provide that fully protected species may not be taken or possessed at any time. Fish and Game Code prohibits any state agency from issuing incidental take permits for fully protected species. The CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit.

2.2.1.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW and provided in California Fish and Game Code §§ 1900-1913. The Fish and Wildlife Commission has the authority to designate native plants as *endangered* or *rare* and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code §§ 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

2.2.1.4 Birds of Prey

Sections 3800, 3513, and 3503 of the California Fish and Game Code specifically protect birds of prey. Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the commission or a mitigation plan approved by CDFW for mining operations. Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Additionally, Subsection 3503.5 prohibits the take, possession, or destruction of any birds and their nests in the orders Strigiformes (owls) or Falconiformes (hawks and eagles). These provisions, along with the federal MBTA, serve to protect nesting raptors.

2.2.1.5 California Streambed Alteration Notification/Agreement

Section 1602 of the California Fish and Game Code requires that a Streambed Alteration Agreement (SAA) be obtained from CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, submits proposed measures to protect affected fish and wildlife resources to the applicant. The SAA is the final proposal mutually agreed upon by CDFW and the applicant. Projects that

require an SAA often also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the SAA overlap.

2.2.2 Species of Special Concern

The CDFW defines SSC as a species, subspecies, or distinct population of an animal native to California that is not legally protected under ESA, the California ESA, or the California Fish and Game Code but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered, or meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- SSC are typically associated with threatened habitats. Project-related impacts to SSC and state threatened or endangered species are considered significant under CEQA.

2.2.3 California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2022), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or have low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, nongovernmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the

least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (more than 80 percent of occurrences threatened/high degree and immediacy of threat).
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences are considered in setting the Threat Rank; differences in Threat Ranks do not constitute additional or different protection (CNPS 2022). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2 are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

2.2.4 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)), and includes waters that are not regulated by the USACE due to a lack of connectivity with a navigable water body. In 2021, the First Appellate District of the California Courts of Appeal issued an opinion that interpreted the RWQCB's authority to extend to discharges of dredge and fill materials into Waters of the State. The RWQCB may require issuance of Waste Discharge Requirements for these activities.

2.2.5 California Environmental Quality Act

Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the federal and California ESAs, and Sections 1900-1913 of the California Fish and Game Code, which deal with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

2.2.5.1 California Environmental Quality Act Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant and are particularly relevant to SSC. Generally, impacts to listed (i.e., rare, threatened, or endangered) species are considered significant and require lead agencies to prepare an EIR to thoroughly analyze and evaluate the impacts. Assessment of *impact significance* to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. Impacts to biological resources would normally be considered significant if a project would:

- 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 federally protected Waters of the U.S., including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) 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; or
- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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

3.0 METHODS

3.1 Literature Review

The following resources were reviewed to determine the special-status species that have been documented within or in the vicinity of the EIR Study Area or that otherwise have the potential to occur onsite:

- The CNDDB for the 12 USGS topographic quadrangles centered on the "Los Banos, California" and "Volta, California" 7.5-minute USGS topographic quadrangles (CDFW 2022).
- The USFWS Federal Endangered and Threatened Species list for the EIR Study Area (USFWS 2022).
- The CNPS electronic Inventory of Rare and Endangered Plants of California for the 12 USGS topographic quadrangles centered on the "Los Banos, California" and "Volta, California" 7.5-minute USGS topographic quadrangles (CNPS 2022).
- The National Oceanic and Atmospheric Administration (NOAA) Critical Habitat and Essential Fish Habitat Mapper (NOAA 2022a, b).

Results of the literature review are provided in Attachment A.

3.2 Special-Status Species Considered for the Project

Based on species occurrence information from the literature review, a list of special-status and CNDDB-tracked plant and animal species that have the potential to occur within the EIR Study Area was generated and is located in Section 4.0. Each of these species' potential to occur onsite was assessed based on the following criteria:

- **Potential to Occur** – Suitable habitat (including soils and elevation requirements) for the species occurs within the EIR Study Area and the species is known to occur within the vicinity of the EIR Study Area
- **Low Potential to Occur** - Marginal or limited amounts of habitat occur or the species is not known to occur within the vicinity of the EIR Study Area
- **Absent** - No suitable habitat (including soils and elevation requirements) or the species is not known to occur in the vicinity of the EIR Study Area

Due to the size of the EIR Study Area, an on-the-ground site reconnaissance was not conducted by ECORP. Determinations regarding each species potential to occur in the Study Area were made based on information available through the CNDDB, the available literature, and professional judgement. Final determinations regarding species presence should be made based on site investigations conducted during appropriate survey periods.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The EIR Study Area is located within relatively flat terrain situated at an elevational range of approximately 85 to 140 feet above mean sea level in the San Joaquin Valley Subregion of the Great Central Valley floristic region of California (Baldwin et al. 2012). The average winter low temperature in the vicinity of the EIR Study Area is 39.4 degrees Fahrenheit (˚F) and the average summer high temperature is 93.1˚F. Average annual precipitation is approximately 9.95 inches, which falls as rain (NOAA 2022a).

This BRA focuses on the undeveloped portions of the EIR Study Area. The central portion of the Study Area is occupied by the existing City of Los Banos, which includes a mix of commercial, industrial, residential, and recreational land uses. Biological resources associated with these developed areas are generally limited to common species that are tolerant of urban environments and would not be impacted by buildout of the General Plan.

The undeveloped portions of the EIR Study Area consist primarily of agriculture mixed with low-density residential uses. Surrounding land uses include agriculture, outdoor recreation, and managed wildlife areas. The Los Banos Wildlife Area and North Grassland Wildlife Areas are located northeast and east of the city, respectively, within the Grassland Resource Conservation District (GRCD). The GRCD is part of a large complex of restored and created wetlands established to provide habitat for nesting and wintering waterfowl and water-dependent migratory birds.

4.2 Plant Communities

Plant communities within the EIR Study Area were identified based on aerial photograph interpretation (National Agricultural Imagery Program [NAIP] 2020) and review of existing available literature, including the Draft EIR for the City of Los Banos 2030 General Plan (Dyett & Bhatia, 2007),

4.2.1 Mixed Agriculture

A large portion of the EIR Study Area consists of mixed agriculture, varying from row crops to orchards, vineyards and irrigated pasture. Row crops comprise the majority of the agricultural lands and occur in parcels of various sizes and shapes. Biodiversity within this plant community type is mostly homogenous, and dominant plant species vary from parcel to parcel. Many species of rodents and birds are adapted to agricultural areas. Agricultural fields may be used by foraging raptors and wintering waterfowl. Depending on the farming practices for each parcel, this plant community may offer foraging and cover opportunities for special-status animal species such as lesser sandhill crane *(Antigone canadensis canadensis)*. Flooded pastures, ponds, and ditches associated with agricultural communities also provide potential habitat for aquatic species such as giant garter snake (*Thamnophis gigas*)

4.2.2 Ruderal

The ruderal plant community is dominated by species that are well adapted and have naturalized in areas of frequent disturbance or urbanization. Ruderal plant communities can be found throughout the EIR

Study Area and are common along roadsides and irrigation ditches or within firebreaks. Ruderal species typically are nonnative and invasive plant species, but some native species can occur within this plant community.

4.2.3 Mixed Riparian Woodland

A mixed riparian woodland occurs along Los Banos Creek, which flows through the western portion of the EIR Study Area. This vegetation community consists of an intermittent to dense canopy typically dominated by oak (*Quercus* sp.), cottonwood (*Populus* sp.), and willow (*Salix* sp.). The mixed riparian woodland makes up a small portion of the EIR Study Area but provides roosting, foraging and cover habitat for numerous species of birds and waterfowl, and provides suitable habitat for some special-status species such as western pond turtle (*Actinemys marmorata*).

4.2.4 Nonnative Annual Grassland

Nonnative annual grassland is a plant community dominated by nonnative grasses that have naturalized throughout most of the California Central Valley. Nonnative annual grassland can be found within fallow parcels of the EIR Study Area. Wildlife use of annual grasslands includes common species such as black-tailed jackrabbits (*Lepus californicus*), California vole (*Microtus californicus*), and coyote (*Canis latrans)*. This plant community can provide habitat for burrowing animals and some special-status plant and wildlife species, such as San Joaquin kit fox *(Vulpes macrotis mutica)*. It also occurs in conjunction with aquatic habitats such as vernal pools or seasonal wetlands.

4.2.5 Fresh Emergent Wetland

Fresh emergent wetlands are primarily limited to the far eastern and northern portions of the EIR Study Area, which overlap with the GRCD. Fresh emergent wetlands are characterized by vegetation adapted to continually or seasonally flooded areas. This vegetation type is dominated by perennial monocots that may grow more than 6 feet tall. Fresh emergent wetlands support a high diversity of wildlife, providing food, water, and cover for numerous birds, mammals, reptiles and amphibians. Special-status species that may occur in this plant community include giant garter snake, lesser sandhill crane, and Aleutian Canada goose.

4.3 Soils

Based on aerial photo interpretation (NAIP 2020), much of the EIR Study Area has been altered due to historical agricultural land use. According to data last updated on September 17, 2021, to the Web Soil Survey for Merced County, Western Part (NRCS 2022a), 29 soil units, or types, have been mapped within the EIR Study Area, as summarized below in Table 4-1. A total of 23 of these soil units contain hydric components that are associated with soils found within basin floors, basin rims, alluvial fans, fan aprons, or sloughs (NRCS 2022b).

Table 4-1. Soil Units Occurring within the EIR Study Area[1]		
Soil Unit	**Hydric Components[2]**	**Hydric Component Landform**
101 - Agnal clay loam	Yes	Basin floors
141 - Britto clay loam	Yes	Basin floors
144 - Capay clay loam, 0 percent slopes, dry, MLRA 17	Yes	Alluvial fans
148 - Carranza-Woo , 0 to 2 percent slopes	Yes	Fans
153 - Chinvar loam	Yes	Alluvial fans and fan aprons
162 - Damluis clay loam, 2 to 8 percent slopes	No	-
168 - Dosamigos clay loam, partially drained	Yes	Alluvial fans and fan aprons
169 - Dosamigos clay, partially drained	Yes	Alluvial fans and basin floors
171 - Dospalos clay, partially drained	Yes	Basin floors
175 - Edminster loam	Yes	Basin floors
178 - Elnido sandy loam, partially drained	Yes	Basin floors
180 - Elnido clay loam, partially drained	Yes	Basin floors
186 - Fluvaquents, channeled	Yes	Fans and flood plains
192 - Henmel clay loam, partially drained	Yes	Fan aprons, basin floors, rims
228 - Palazzo sandy loam, partially drained	Yes	Basin Floors
234 - Pedcat loam, 0 to 2 percent slopes	Yes	Fan aprons and basin floors
236 - Pedcat clay loam, leveled, 0 to 2 percent slopes	Yes	Fan aprons, basin floors, rims, alluvial fans
253 - Stanislaus clay loam	Yes	Fan aprons
254 - Stanislaus clay loam, wet	Yes	Fan aprons
255 - Stanislaus-Dosamigos-Urban land complex	No	-
256 - Triangle clay	Yes	Basin floors and rims
274 - Woo loam, 0 to 2 percent slopes	No	-
275 - Woo loam, gravelly substratum, 0 to 2 percent slopes	Yes	Alluvial fans
277 - Woo clay loam, 0 to 2 percent slopes	No	-
280 - Woo clay, 0 to 2 percent slopes	Yes	Alluvial fans
282 - Woo-Urban land , 0 to 2 percent slopes	Yes	Alluvial fans
283 - Xerofluvents, channeled	Yes	Sloughs and basin floors
287 - Water	No	-
289 - Miscellaneous water	No	-

[1]Source: NRCS 2022a
[2]Source: NRCS 2022b

4.4 California Aquatic Resource Inventory

The California Aquatic Resource Inventory (CARI; San Francisco Estuary Institute [SFEI] 2017) is a statewide map of surface waters and related habitats combining multiple national and regional datasets, including the National Wetlands Inventory and the National Hydrography Dataset. CARI includes aquatic resource features mapped using a variety of remote sensing and modeling techniques.

As such, these aquatic features may or may not exist as represented. In addition, CARI data varies in detail, accuracy, and age, and is meant to be used as a tool to assist with an aquatic resource delineation but not as the only source of information (SFEI 2017). Therefore, it is recommended that ground-level surveys are conducted to determine the presence of the aquatic resources within the EIR Study Area that may be within the jurisdiction of state and federal agencies.

According to CARI (SFEI 2017, California Wetlands Monitoring Workgroup 2022), four aquatic feature types have been mapped within the EIR Study Area: fluvial unnatural; fluvial natural; lake, reservoir, and natural vegetation; and pond and associated vegetation.

Fluvial systems are dominated by rivers and streams. The fluvial unnatural aquatic feature type corresponds to the irrigation canals and drainage ditches found throughout the EIR Study Area. Fluvial natural corresponds to portions of Los Banos Creek and the drainage channels within the managed wildlife areas in the eastern and northeastern portions of the EIR Study Area.

Lake, reservoir, and natural vegetation corresponds to the larger ponds and wetlands within the managed wildlife areas in the eastern portions of the EIR Study Area.

Pond and associated vegetation correspond to smaller ponded areas along portions of Los Banos Creek and Main Canal, and within the managed wildlife area along the east side of the EIR Study Area.

4.5 Evaluation of Species Identified in the Literature Search

The CNDDB, CNPS, and USFWS database searches were conducted in February 2022. These queries reported a total of 89 special-status species historically and/or potentially occurring within the search areas. Table 4-2 lists the species identified through the database queries, presents a brief description of their habitat requirements, and provides determination for their potential to occur onsite.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Plants						
Santa Clara thorn-mint (*Acanthomintha lanceolata*)	-	-	4.2	Rocky areas within often serpentinite chaparral, cismontane woodland, and costal scrub (260'-3,935').	March-June	Absent. No suitable habitat onsite.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Forked fiddleneck *(Amsinckia furcata)*	–	–	4.2	Semi-barren loose shaly slopes in cismontane woodland and valley and foothill grassland (164'–3,281').	February–May	Potential to Occur.
California androsace *(Androsace elongata* ssp. *acuta)*	–	–	4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland (492'–4,281).	March–June	Potential to Occur.
Alkali milk-vetch *(Astragalus tener* var. *tener)*	–	–	1B.2	Playas, mesic areas within valley and foothill grasslands, and alkaline vernal pools (3'–197').	March–June	Potential to Occur.
Heartscale *(Atriplex cordulata* var. *cordulata)*	–	–	1B.2	Alkaline or saline valley and foothill grasslands, meadows and seeps, and chenopod scrub communities (0'–1,837').	April–October	Potential to Occur.
Crownscale *(Atriplex coronata* var. *coronata)*	–	–	4.2	Alkaline, often clay substrates in chenopod scrub, valley and foothill grassland, and vernal pools (3'–1,936').	March–October	Potential to Occur.
Lost Hills crownscale (*Atriplex coronata* var. *vallicola*)	–	–	1B.2	Alkaline soils in chenopod scrub, valley and foothill grassland and vernal pools (164'–2,087').	April–September	Potential to Occur.
Lesser saltscale *(Atriplex minuscula)*	–	–	1B.1	Alkaline, sandy soils in chenopod scrub, playas, and valley and foothill grassland (49'–656').	May–October	Potential to Occur.
Vernal pool smallscale *(Atriplex persistens)*	–	–	1B.2	Alkaline vernal pools (33'–377').	June–October	Low Potential to Occur. Marginally

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
						suitable habitat present onsite.
Lemmon's jewel flower (*Caulanthus lemmonii*)	–	–	1B.2	Pinyon and juniper woodland and valley and foothill grassland (262'–5,184').	February-May	Potential to Occur.
Parry's rough tarplant *(Centromadia parryi* ssp. *rudis)*	–	–	4.2	Alkaline, vernally mesic seeps in valley and foothill grassland and vernal pools, sometimes found on roadsides (0'–328').	May–October	Low Potential to Occur. Marginally suitable habitat present onsite.
Hispid salty bird's-beak *(Chloropyron molle* ssp. *hispidum)*	–	–	1B.1	Alkaline soils in meadows and seeps, playas, and valley and foothill grasslands (3'–509').	June–September	Potential to Occur.
Brewer's clarkia (*Clarkia breweri*)	-	-	4.2	Often within serpentinite chaparral, cismontane woodland, and coastal scrub (705-3,660')	April–June	Absent. No suitable habitat onsite.
Rattan's cryptantha (*Cryptantha rattanii*)	-	-	4.3	Cismontane woodland, riparian woodland, and valley and foothill grassland (805-3,000').	April–July	Potential to Occur.
Recurved larkspur *(Delphinium recurvatum)*	–	–	1B.2	Chenopod scrub, cismontane woodland, and valley and foothill grasslands (10'–2,592').	March–June	Potential to Occur.
Protruding buckwheat (*Eriogonum nudum* var. *indictum*)	-	-	4.2	Within clay or serpentinite areas of chaparral, chenopod scrub, and cismontane woodland (490-4,800').	March–October	Absent. No suitable habitat onsite.
Idria buckwheat (*Eriogonum vestitum*)	-	-	4.3	Valley and foothill grassland (770-2,955').	April–August	Potential to Occur.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Delta button-celery *(Eryngium racemosum)*	–	CE	1B.1	Vernally mesic clay depressions in riparian scrub communities (10'–98').	June–October	Low Potential to Occur. Marginally suitable habitat present onsite.
Spiny-sepaled button-celery *(Eryngium spinosepalum)*	–	–	1B.2	Swales, roadside ditches, vernal pools and valley and foothill grassland (262'–3,199').	April–June	Potential to Occur.
Hoover's spurge (*Euphorbia hooveri*)	FT	–	1B.2	Vernal pools (82'–821').	July–September	Low Potential to Occur. Marginally suitable habitat present onsite.
Hogwallow starfish *(Hesperevax caulescens)*	–	–	4.2	Mesic areas with clay soil within valley and foothill grassland and shallow vernal pools; sometimes in alkaline areas (0'–1,657').	March–June	Low Potential to Occur. Marginally suitable habitat present onsite.
Alkali-sink goldfields (*Lasthenia chrysantha*)	–	–	1B.1	Alkaline vernal pools (0–656').	February–April	Low Potential to Occur. Marginally suitable habitat present onsite.
Ferris' goldfields *(Lasthenia ferrisiae)*	–	–	4.2	Alkaline and clay vernal pools (66'–2,297').	February–May	Low Potential to Occur. Marginally suitable habitat present onsite.
Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri*)	–	–	1B.1	Coastal marshes and swamps, playas, and vernal pools (3'–4,003').	February–June	Potential to Occur.
Serpentine leptosiphon (*Leptosiphon ambiguus*)	–	–	4.2	Usually serpentinite soils of Cismontane woodland, coastal scrub, and valley and foothill grassland (395'–3710').	March–June	Low Potential to Occur. Marginally suitable habitat present onsite.
Hall's bush-mallow (*Malacothamnus hallii*)	–	–	1B.2	Chaparral and coastal scrub (32'–2,493').	May–September	Absent. No suitable habitat onsite.
Little mousetail	–	–	3.1	Mesic areas of valley and foothill grassland	March–June	Potential to Occur.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
(Myosurus minimus ssp. *apus)*				and alkaline vernal pools (66'–2,100').		
Shining navarretia *(Navarretia nigelliformis* ssp. *radians)*	–	–	1B.2	Vernal pools within cismontane woodland and valley or foothill grassland (213'–3,281').	April–July	Potential to Occur.
Prostrate vernal pool navarretia (*Navarretia prostrata*)	–	–	1B.1	Mesic soils within coastal scrub, meadows and seeps, alkaline valley and foothill grassland, and vernal pools (10'–3,970').	April–July	Potential to Occur.
Colusa Grass *(Neostapfia colusana)*	FT	CE	1B.1	Large vernal pools with adobe soils (16'–656').	May–August	Low Potential to Occur. Marginally suitable habitat present onsite.
California alkali grass (*Puccinellia simplex*)	–	–	1B.2	Alkaline, vernally mesic areas and sinks, flats and lake margins within chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools (7'–3,051').	March–May	Potential to Occur.
Sanford's arrowhead *(Sagittaria sanfordii)*	–	–	1B.2	Shallow marshes and freshwater swamps (0'–2,133').	May–October	Low Potential to Occur. Marginally suitable habitat present onsite.
Chaparral ragwort *(Senecio aphanactis)*	–	–	2B.2	Chaparral, cismontane woodland, coastal scrub; sometimes in alkaline soils (49'–2,625').	January–April	Absent. No suitable habitat onsite.
Arburua Ranch jewelflower (*Streptanthus insignis* ssp. *lyonia*)	-	-	1B.2	Grassland and chaparral habitat, usually on serpentine soils (755–2,805').	March–May	Absent. No suitable habitat onsite.
Slender-leaved pondweed	–	–	2B.2	Assorted shallow freshwater marshes	May–July	Low Potential to Occur. Marginally

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
(*Stuckenia filiformis* ssp. *alpina*)				and swamps (984'–7,054').		suitable habitat present onsite.
Wright's trichocoronis *(Trichocoronis wrightii* var. *wrightii)*	–	–	2B.1	Alkaline soils in meadows and seeps, marshes and swamps, riparian forest, and vernal pools (16'–1,427').	May–September	Low Potential to Occur. Marginally suitable habitat present onsite.
Invertebrates						
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	-	-	Vernal pools/ wetlands.	November–April	Potential to Occur.
Longhorn fairy shrimp *(Branchinecta longiantenna)*	FE	-	-	Vernal pools/ wetlands.	November–April	Potential to Occur.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	-	-	Vernal pools/ wetlands.	November-April	Potential to Occur.
Monarch butterfly (*Danaus plexippus*)	FC	-	-	Adult monarchs west of the Rocky Mountains typically overwinter in sheltered wooded groves of Monterey pine, Monterey cypress, and gum eucalyptus along coastal California, then disperse in spring throughout California, Nevada, Arizona, and parts of Oregon and Washington. Adults require milkweed and additional nectar sources during the breeding season. Larval caterpillars feed exclusively on milkweed.	Any season	Potential to Occur.
Valley elderberry longhorn beetle	FT	-	-	Elderberry shrubs.	Any season	Potential to Occur.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
(*Desmocerus californicus dimorphus*)						
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	-	-	Vernal pools/ wetlands.	November-April	Potential to Occur.
Fish						
Hardhead (*Mylopharodon conocephalus*)	-	-	SSC	Relatively undisturbed streams at low to mid elevations in the Sacramento-San Joaquin and Russian River drainages. In the San Joaquin River, scattered populations found in tributary streams, but only rarely in the valley reaches of the San Joaquin River.	N/A	Absent. No suitable habitat onsite.
Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss*)	FT	-	-	Undammed rivers, streams, creeks.	N/A	Absent. No suitable habitat onsite.
Amphibians						
California tiger salamander (Central California DPS) (*Ambystoma californiense*)	FT	CT	SSC	Vernal pools, wetlands (breeding) and adjacent grassland or oak woodland; needs underground refuge (e.g., ground squirrel and/or gopher burrows). Largely terrestrial as adults.	March-May	Potential to Occur.
Northern leopard frog (*Lithobates pipiens*)	-	-	SSC	Near permanent or semi-permanent water in a variety of habitats east of the Sierra Nevada-Cascade Crest. This highly aquatic species requires shoreline cover as well as	March - October	Absent. Outside of known range.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				submerged and emergent aquatic vegetation.		
Foothill yellow-legged frog (*Rana boylii*)	-	CE	SSC	Foothill yellow-legged frogs can be active all year in warmer locations but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed.	May–October	Absent. No suitable habitat onsite.
California red-legged frog (*Rana draytonii*)	FT	-	SSC	Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.	May 1– November 1	Absent. Outside of known range.
Western spadefoot (*Spea hammondii*)	-	-	SSC	California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.	March–May	Potential to Occur.
Reptiles						
Northern legless lizard (*Anniella pulchra*)	-	-	SSC	The most widespread of California's *Anniella* species. Occurs in sandy or loose soils under sparse vegetation from Antioch south coastally to Ventura. Bush lupine is often an indicator plant,	Generally spring, but depends on location and conditions	Low Potential to Occur. Marginally suitable habitat present onsite.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				and two melanistic populations are known.		
Northwestern pond turtle (*Actinemys marmorata*)	-	-	SSC	Uses ponds, streams, detention basins, and irrigation ditches. Requires basking sites and upland habitats up to 0.5 km from water for egg laying.	April–September	Potential to Occur.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE	CE	FP	Occurs in sparsely vegetated alkali scrub habitats in the southern San Joaquin Valley. Uses mammal burrows, shrubs and other structures for shade.	April–July	Absent. No suitable habitat onsite.
San Joaquin coachwhip (*Coluber flagellum ruddocki*)	-	-	SSC	Occurs in open, dry, usually flat habitats in Valley grassland and saltbush scrub with little to no shrub cover in the San Joaquin Valley. A dietary generalist.	March–October	Low Potential to Occur. Marginally suitable habitat present onsite.
Giant garter snake (*Thamnophis gigas*)	FT	CT	-	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.	April–October	Low Potential to Occur. Marginally suitable habitat present onsite except for managed wetland areas to east.
Birds						
Aleutian cackling goose *(Branta hutchinsii leucopareia)*	De-listed	-	CDFW WL	Pasture, marsh (Sacramento/San Joaquin Valley and Delta)	October–March	Potential to Occur. Suitable habitat present onsite.
Clark's grebe *(Aechmophorus clarkii)*	-	-	BCC	Winters on salt or brackish bays, estuaries, sheltered seacoasts, freshwater lakes, and rivers. Breeds on freshwater to brackish marshes,	June-August (breeding)	Absent. No suitable habitat onsite.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				lakes, reservoirs and ponds, with a preference for large stretches of open water fringed with emergent vegetation.		
Yellow rail *(Coturnicops noveboracensis)*	-	-	BCC, SSC	Found in sedge meadows, dense stands of bulrush, high marshlands dominated by sedges and grasses (in California, found in Lassen, Plumas, Siskiyou, Modoc counties, and San Francisco Bay and Tomales Bay regions)	May-September	Absent. No suitable habitat onsite.
Lesser sandhill crane *(Antigone canadensis canadensis)*	-	-	SSC	Breeds in Siberia, Alaska, and arctic Canada; winters in southwest US, including CA, south into Mexico. In winter, they forage in burned grasslands, pastures, and feed on waste grain in a variety of agricultural settings (e.g., corn, wheat, milo, rice, oats, and barley), tilled fields, recently planted fields, alfalfa fields, row crops and burned rice fields.	September–March (wintering)	Potential to Occur. Suitable wintering habitat onsite.
American avocet (*Recurvirostra americana*)			BCC	Nests in scrapes on the ground around wetlands, dikes/levees; or islands.	April–August	Potential to Occur.
Mountain plover (*Charadrius montanus*)	-	-	BCC, SSC	Breeds in the Great Plains/Midwestern US; winters in California, Arizona, Texas, and Mexico; wintering	September–March (wintering)	Potential to Occur.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				habitat in California includes tilled fields, heavily grazed open grassland, burned fields, and alfalfa fields.		
Long-billed curlew (*Numenius americanus*)	-	-	BCC	Breeds east of the Cascades in Washington, Oregon, northeastern California (Siskiyou, Modoc, Lassen counties), east-central California (Inyo County), through Great Basin region into Great Plains. Winters in California, Texas, and Louisiana. Wintering habitat includes tidal mudflats and estuaries, wet pastures, sandy beaches, salt marsh, managed wetlands, evaporation ponds, sewage ponds, and grasslands.	September–March (wintering)	Potential to Occur. Suitable wintering habitat onsite.
Willet (*Tringa semipalmata*)	-	-	BCC	Breeds locally in interior of western North America. In California, breeding range includes the Klamath Basin and Modoc Plateau and portions of Mono and possibly Inyo counties. Breeding habitat includes prairies, wetlands and grasslands on semiarid plains; in uplands near brackish or saline wetlands; prefers temporary, seasonal, and alkali	April–August	Absent. No suitable habitat onsite.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				wetlands over semipermanent and permanent wetlands.		
Black tern *(Chlidonias niger)*	-	-	BCC, SSC	Breeding range includes northeastern California, Central Valley, Great Plains of U.S. and Canada; winters in Central and South America; nesting habitat includes shallow freshwater marsh with emergent vegetation, prairie sloughs, lake margins, river islands, and cultivated rice fields.	May–August	Absent. No suitable habitat onsite.
White-tailed kite (*Elanus leucurus*)	-	-	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats.	March-August	Potential to Occur.
Golden eagle (*Aquila chrysaetos*)	-	-	BCC, CFP	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/savannah, and chaparral. Nesting occurs on cliff ledges, riverbanks, trees, and manufactured structures (e.g., windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region,	Nest (February–August); winter Central Valley (October-February)	Low Potential to Occur. Marginal foraging habitat present onsite.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				and the Colorado River region, where they can be found during Winter.		
Northern harrier (*Circus hudsonius*)	-	-	BCC, SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.	April–September	Potential to Occur. Foraging habitat present onsite.
Cooper's hawk *(Accipiter cooperii)*	-	-	CDFW WL	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes.	March–July	Low Potential to Occur. Marginal nesting habitat present onsite.
Bald eagle (*Haliaeetus leucocephalus*)	Delisted	CE	CFP, BCC	Typically nests in forested areas near large bodies of water in the northern half of California; nests in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands.	February–September (nesting); October-March (wintering)	Low Potential to Occur. Marginal foraging habitat present onsite.
Swainson's hawk (*Buteo swainsoni*)	-	CT	BCC	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly	March–August	Potential to Occur.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				during disking/ harvesting, and irrigated pastures.		
Ferruginous hawk (*Buteo regalis*)	-	-	BCC, CDFW WL	Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from Northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas.	September–March (wintering)	Potential to Occur. Suitable foraging habitat present onsite.
Burrowing owl *(Athene cunicularia)*	-	-	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use manufactured habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February–August	Potential to Occur.
Nuttall's woodpecker *(Dryobates nuttallii)*	-	-	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.	April–July	Potential to Occur.
Merlin *(Falco columbarius)*	-	-	CDFW WL	Breeds in Oregon, Washington and north into Canada. Winters in southern Canada to South America, including California. Breeds near forest	September–April (wintering in the Central Valley); does not breed in California	Low Potential to Occur. Marginal wintering habitat present onsite.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				openings, fragmented woodlots, and riparian areas. Wintering habitat includes wide variety, open forests, grasslands, tidal flats, plains, and urban settings.		
Prairie falcon (*Falco mexicanus*)	-	-	CDFW WL	Found in open habitat at all elevations up to 3,350 meters. Nests on cliffs and bluffs in arid plains and steppes. In California, nests throughout state except northwest corner, along immediate coast, and the Central Valley floor. Winters throughout California, in open habitats, such as grasslands in Central Valley.	March–July (breeding); September-February (wintering in Central Valley)	Potential to Occur. Suitable foraging habitat onsite.
Loggerhead shrike (*Lanius ludovicianus*)	-	-	BCC, SSC	Found throughout California in open country with short vegetation, pastures, old orchards, grasslands, agricultural areas, open woodlands. Not found in heavily forested habitats.	March–July	Potential to Occur.
Yellow-billed magpie (*Pica nuttallii*)	-	-	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large expanses of open ground; also found in	April–June	Potential to Occur.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				urban parklike settings.		
California horned lark (*Eremophila alpestris actia*)	-	-	CDFW WL	San Joaquin Valley, coast range from Sonoma County south to Baja California; grassland and agricultural areas.	March–July	Potential to Occur.
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	-	-	SSC	Resident in central and southwest California, including Central Valley; nests in marsh and scrub habitats.	April–June	Potential to Occur. Suitable nesting habitat present onsite.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	-	-	SSC	In California, breeds in the Great Basin region, along Colorado River south to Baja California, Salton Sea, Kern, Ventura, Riverside, San Diego and possibly Orange and Lake counties, and locally in the Central Valley, Nests are constructed over deep water in emergent vegetation of prairie wetlands, quaking aspen parklands, mountain meadows, forest edges, large lakes.	April–July	Low Potential to Occur. Marginal wintering habitat present onsite.
Bullock's oriole (*Icterus bullockii*)			BCC	Breeding habitat includes riparian and oak woodlands.	March–July	Potential to Occur.
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San	March–August	Potential to Occur.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (i.e., mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.		
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	-	-	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County	March–July	Absent. No suitable habitat onsite.
Mammals						
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)	-	CT	-	Dry, sparsely vegetated areas with loam soils in chenopod scrub habitats in the western San Joaquin Valley from 200-1200 feet in elevation. Needs widely scattered shrubs, forbs, and grasses in broken terrain with gullies and washes.	Any season	Low Potential to Occur. On the edge of the known range for the species.
Giant kangaroo rat (*Dipodomys ingens*)	FE	CE	-	Annual grasslands on the western side of the San Joaquin Valley. Marginal habitat in alkali scrub. Needs level terrain	Any season	Absent. Outside known range for the species.

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				and sandy loam soils for burrowing.		
Fresno kangaroo rat *(Dipodomys nitratoides exilis)*	FE	CE	-	Elevated grassy patches on alkali plains or in grassy terrain with scattered alkali patches. Friable soils for burrow digging and annual and native forbs and grasses for foraging are necessary habitat components. Distribution is limited to the flat San Joaquin Valley Floor from Merced County to the northern border of Kings County.	Any season	Absent. Outside known range for the species.
Western mastiff bat (*Eumops perotis californicus*)	-	-	SSC	Primarily a cliff-dwelling species, found in similar crevices in large boulders and buildings.	April-September	Low Potential to Occur. Marginal roosting habitat present.
Hoary bat (*Lasiurus cinerus*)	-	-	SSC	Dense foliage of medium to large trees; roost primarily in foliage of both coniferous and deciduous trees. Roosts are usually at the edge of a clearing. Some unusual roosting situations have been reported in caves, beneath a rock ledge, in a woodpecker hole, in a grey squirrel nest, under a driftwood plank, and clinging to the side of a building.	April–September	Potential to Occur.
American badger *(Taxidea taxus)*	-	-	SSC	Drier open stages of most shrub, forest, and herbaceous	Any season	Low Potential to Occur. Marginal

Table 4-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				habitats with friable soils.		habitat present onsite.
San Joaquin kit fox *(Vulpes macrotis mutica)*	FE	CT	-	Native and nonnative grasslands, oak savannah adjacent to grasslands, agricultural lands, lands that are dryland farmed, alkali scrub, and ruderal land.	May 1– November 1	Potential to Occur.

Status Codes:

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered.
FP	FESA listed, Protected
FT	FESA listed, Threatened
FC	Candidate for FESA listing as Threatened or Endangered
BCC	USFWS Bird of Conservation Concern (USFWS 2021)
CT	CESA- or NPPA listed, Threatened
CE	CESA or NPPA listed, Endangered
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5 050-reptiles/amphibians)
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern
1B	CRPR/Rare or Endangered in California and elsewhere
2B	CRPR/Plants rare, threatened, or endangered in California but more common elsewhere
3	CRPR/Plants About Which More Information is Needed – A Review List
4	CRPR/Plants of Limited Distribution – A Watch List
0.1	Threat Rank/Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted (delisted species are monitored for five years)

A total of 30 special-status plants, 6 invertebrates, 2 amphibians, 4 reptiles, 23 birds, and 5 mammal species were found to have some potential to occur within the EIR Study Area based on the literature review. Detailed descriptions of these species are provided in Attachment A.

4.6 Wildlife Movement Corridors, Linkages, and Significant Ecological Areas

The EIR Study Area was assessed for its ability to function as a wildlife corridor. The concept of habitat corridors addresses the linkage between large blocks of habitat that allow safe movement for mammals and other wildlife species from one habitat area to another. The definition of a corridor is varied, but corridors may include areas such as greenbelts, refuges, underpasses, riparian areas, creeks, and

biogeographic land bridges. In general, a corridor can be described as a linear habitat embedded within a dissimilar matrix that connects two or more larger blocks of habitat.

Habitat for wildlife species within the EIR Study Area is mainly fragmented by irrigation canals, Highways 165 and 33, and urban development. The agricultural fields and nonnative annual grassland habitats provide potential opportunities for wildlife movement through the EIR Study Area. Wildlife movement through these areas is likely limited to periods when vehicle traffic is at a minimum or when agricultural machinery is not in operation. The mixed riparian woodland within Los Banos Creek, which transects the western portion of the EIR Study Area, may serve as a wildlife corridor but is constrained by the narrow width of the corridor and lack of continuous vegetation cover.

The far eastern portion of the EIR Study Area overlaps with managed wetlands that are part of the GRCD. The GRCD contains approximately 75,000 acres and encompasses several state wildlife areas. The area is part of the largest contiguous block of wetlands remaining in California's Central Valley and is a major wintering ground for migratory waterfowl and shorebirds along the Pacific Flyway. The U.S. Fish and Wildlife Service ranks the habitat provided by the GRCD as the most important complex of wetlands in the San Joaquin Valley (GRCD, 2022).

4.7 Critical Habitat and Essential Fish Habitat

There is no designated critical habitat or essential fish habitat in the EIR Study Area.

4.8 Sensitive Natural Communities

Five sensitive natural communities were identified as having potential to occur within the EIR Study Area based on the literature review (CDFW 2022). These included Valley Sink Scrub, Cismontane Alkali Marsh, Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, and Sycamore Alluvial Woodland.

A review of aerial imagery shows historical and current land use impacts within the EIR Study Area. Past disturbance, urbanization, agricultural development, and introduction of non-native species limit the presence of sensitive natural communities; however, portions of the EIR Study Area support riparian woodland and freshwater wetlands habitats, as described in Section 3.

5.0 RECOMMENDATIONS

The following recommendations are included with the assumption that properties within the EIR Study Area will be developed, or the current land use will be altered in the future. Prior to development or change in land use within a property, the following measures are recommended to avoid and minimize potential impacts to biological resources.

5.1 Aquatic Resources

It is recommended that an aquatic resources delineation be conducted to detect potential Waters of the U.S./State that may be present within a proposed project area. The following mitigation measures are recommended to minimize any proposed impacts to Waters of the U.S./State:

- Obtain authorization to fill wetlands and other Waters of the U.S. under the Section 404 of the federal CWA (Section 404 Permit) from USACE prior to discharging any dredged or fill materials into any Waters of the U.S. Develop mitigation measures as part of the Section 404 Permit to ensure no net loss of wetland function and values.
- Obtain a Water Quality Certification or waiver pursuant to Section 401 of the CWA from the RWQCB for Section 404 permit actions.
- Pursuant to the Porter-Cologne Water Quality Act, obtain a permit authorization from the RWQCB prior to the discharge of material in an area that could affect Waters of the State.

If there are aquatic features present within a proposed project area that may be subject to CDFW Section 1602 jurisdiction, the following measure is recommended to minimize any proposed impacts to the bed, bank, or channel of rivers, streams, or lakes:

- Obtain an SAA pursuant to Section 1602 of the California Fish and Game Code for any activity that will impact the bed, bank, or channel of any river, stream, or lake. Develop mitigation measures in consultation with CDFW as part of the SAA process to ensure protections for affected fish and wildlife resources.

5.2 Special-Status Species

The EIR Study Area provides potential habitat for 70 special status plant and wildlife species. For proposed projects within the EIR Study Area, it is recommended that a BRA and a ground-level assessment be conducted to determine if there are any special-status species or their habitats that may be impacted by the project.

5.2.1 Plants

If the BRA conducted for a proposed project identifies there is habitat for special-status plants, the following measures are recommended to minimize potential impacts to special-status plants:

- Perform focused special-status plant surveys of the proposed project area according to CDFW, CNPS, and USFWS protocols (CDFW 2018; CNPS 2001; USFWS 2000). Surveys should be timed according to the blooming period for target species, and known reference populations should be visited prior to surveys to confirm the species is blooming where known to occur.
- If surveys identify any special-status plants within the proposed project area, the plant populations should be marked with flagging and avoided during project construction activities. If avoidance is not feasible, minimization or avoidance measures should be developed in consultation with CDFW and/or USFWS.
- If no special-status plants are found during the surveys, no further measures are necessary.

5.2.2 Invertebrates

If the BRA conducted for a proposed project identifies there is habitat for special-status invertebrates, the following measures are recommended to minimize potential impacts to special-status invertebrates such as federally listed large branchiopods (e.g., longhorn fairy shrimp, vernal pool fairy shrimp, conservancy fairy shrimp, and tadpole shrimp), monarch butterfly, and VELB.

5.2.2.1 Large Branchiopods

- Conduct a survey for federally listed large branchiopods pursuant to the USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2017a) within the aquatic resources that are suitable habitat within the proposed project area.
- If surveys identify the presence of listed large branchiopods within an aquatic feature, project-related impacts to that aquatic feature should be avoided. If avoidance is not feasible, minimization or avoidance measures should be developed in consultation with USFWS and incidental take authorization obtained pursuant to federal ESA Section 7 or Section 10.

5.2.2.2 Valley Elderberry Longhorn Beetle

- Per the USFWS *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017b), conduct an assessment for VELB habitat (i.e., elderberry shrubs) within the proposed project area and a165-foot buffer area.
- If elderberry shrubs are not present, no further action or mitigation is necessary.
- If elderberry shrubs are present within the survey area, project activities may occur up to 20 feet from the dripline of the elderberry shrubs if precautions are implemented to minimize the potential for indirect impacts (USFWS 2017b). If proposed impacts to the elderberry shrub are unavoidable, mitigation measures should be developed in consultation with USFWS and incidental take authorization obtained pursuant to federal ESA Section 7 or Section 10.

5.2.3 Amphibians

5.2.3.1 California Tiger Salamander (Central California DPS)

The EIR Study Area contains potential habitat for CTS. The following measures are recommended to avoid and minimize impacts to this species:

- Conduct a survey for CTS habitat within the proposed project area as outlined within the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (USFWS 2003). Additional surveys may be required in consultation with USFWS and CDFW (USFWS 2003).

- If the proposed project area supports CTS habitat, project-related impacts to that habitat should be avoided, and avoidance measures should be developed in consultation with USFWS and CDFW.
- If CTS breeding habitat is present within the proposed project area and proposed impacts are unavoidable, minimization or avoidance measures should be developed in consultation with USFWS and incidental take authorization obtained pursuant to federal ESA Section 7 or Section 10. In addition, a CDFW Incidental Take Permit (ITP) should be obtained pursuant to California ESA Section 2081.

5.2.3.2 Western Spadefoot

The EIR Study Area contains potential habitat for western spadefoot. To avoid or minimize impacts to western spadefoot, the following measures are recommended:

- Preconstruction surveys for western spadefoot should be conducted within the limits of construction to detect adults, larvae, and/or egg masses within 14 days prior to the start of construction.
- If no western spadefoots are found, no further measures pertaining to this species are necessary.
- If adults, larvae, or egg masses are found, they should be relocated to suitable habitat in consultation with CDFW.

5.2.4 Reptiles

The EIR Study Area contains potential habitat for four special-status reptile species. Recommendations relating to GGS are described in Section 5.2.4.1. The following measures are recommended to avoid and minimize impacts to northwestern pond turtle, northern legless lizard, and San Joaquin coachwhip:

- Preconstruction surveys should be conducted within 48 hours prior to the start of construction.
- If northwestern pond turtle, northern legless lizard, and San Joaquin coachwhip are not found, no further measures pertaining to these species are necessary.
- If any of the special-status reptiles are found within an area proposed for impact, a qualified biologist should relocate the animal to a suitable location away from the proposed work area, in consultation with CDFW.

5.2.4.1 Giant Garter Snake

The EIR Study Area contains potential habitat for the GGS. The following measures are recommended to avoid and minimize impacts this species:

- Conduct an assessment for GGS habitat as described in the *Draft Recovery Plan for the Giant Garter Snake* (USFWS 1999a). If GGS habitat is absent from the proposed project area, and CDFW

and USFWS concur with the assessment, no further measures pertaining to this species are necessary.

- If the proposed project area supports GGS habitat, project-related impacts to that habitat should be avoided, and avoidance measures should be developed in consultation with USFWS and CDFW.
- If proposed impacts to GGS habitat are unavoidable, minimization or avoidance measures should be developed in consultation with USFWS and incidental take authorization obtained pursuant to the federal ESA Section 7 or Section 10. In addition, a CDFW ITP should be obtained pursuant to California ESA Section 2081.

5.2.5 Birds

Suitable nesting habitat for several special-status birds is present within the EIR Study Area. In addition to the special-status birds, all native birds, including raptors, are protected under the California Fish and Game Code and the MBTA. If present, proposed projects could result in harassment to or take of nesting individuals. To avoid and minimize impacts to protected birds and/or active nests, the following measures are recommended.

5.2.5.1 Nesting Birds

A preconstruction survey for nesting birds should be conducted by a qualified wildlife biologist within the proposed project area and a 100-foot buffer. If an active nest is located, a no-disturbance buffer should be established as determined by the biologist in consultation with CDFW and maintained until it is confirmed by the biologist that nestlings have fledged or the nest is otherwise no longer active.

5.2.5.2 Raptors

A preconstruction survey for nesting raptors should be conducted by a qualified wildlife biologist within the proposed project area and a 500-foot buffer. If an active nest is located, a no-disturbance buffer should be established as determined by the biologist in consultation with CDFW and maintained until a qualified biologist determines that nestlings have fledged or the nest is otherwise no longer active.

5.2.5.3 Swainson's Hawk

A preconstruction survey for nesting raptors should be conducted by a qualified wildlife biologist within the proposed project area and a 0.25-mile buffer. If Swainson's hawks are found to be nesting in the survey area, a no-disturbance buffer should be established in consultation with CDFW and maintained until a qualified biologist determines that nestlings have fledged or the nest is otherwise no longer active.

5.2.5.4 Burrowing Owl

The EIR Study Area contains suitable habitat for the burrowing owl. The following measures are recommended to avoid and minimize impacts to this species:

- A habitat assessment for burrowing owl habitat should be conducted within the proposed project area and a 500-foot buffer in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). No further measures are necessary if the habitat assessment finds that the Proposed Project Area does not contain suitable burrowing owl habitat.
- If the proposed project area contains suitable habitat for burrowing owl, preconstruction surveys should be conducted to identify potential and active burrows.
- If the proposed project area supports suitable burrowing owl burrows, project-related impacts to those burrows should be avoided, and avoidance measures should be developed in consultation with CDFW. If proposed impacts to suitable burrowing owl burrows are unavoidable, exclusion and relocation measures should be developed in consultation with CDFW.

5.2.6 Mammals

5.2.6.1 Nelson's Antelope Squirrel

The Nelson's antelope squirrel (NAS) has low potential to occur within the EIR Study Area, and the EIR Study Area is on the edge of the known range of this species. The following are recommendations to minimize impacts to Nelson's antelope squirrel that may occur within a proposed project area:

- Conduct an assessment within the proposed project area for NAS habitat as described in *Annual Report on the Status of California State Listed Threatened and Endangered Animal and Plants* (CDFG 2005), and the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998). If NAS habitat is absent and CDFW concurs with the assessment, no further measures pertaining to this species are necessary.
- If the proposed project area supports NAS habitat, preconstruction surveys should be conducted to identify potential and active burrows.
- If the proposed project area supports suitable NAS burrows, project-related impacts to those burrows should be avoided, and avoidance measures should be developed in consultation with CDFW. If proposed impacts to suitable NAS burrows are unavoidable, minimization or alternative mitigation measures should be developed in consultation with CDFW.

5.2.6.2 Western Mastiff Bat and Hoary Bat

The EIR Study Area contains roosting habitat for western mastiff bat and hoary bat. To avoid and minimize impacts to special-status bats, the following measures are recommended:

- A preconstruction habitat assessment should be conducted to identify features that provide suitable bat-roosting habitat (e.g., trees with cavities or exfoliating bark, rock outcrops). Suitable habitat features should be surveyed for evidence of roosting bats (e.g., guano and urine staining), and if necessary, evening emergence surveys and/or acoustic monitoring should be conducted to determine the extent of use by bats.

- If any special-status bats are found, additional minimization and avoidance measure should be developed in consultation with CDFW.

5.2.6.3 American Badger

American badger has low potential to occur within the EIR Study Area; however, the EIR Study Area is within the known range of this species. The following measures are recommended to avoid and minimize impacts to American badger:

- A biologist should conduct a preconstruction survey 24 to 48 hours prior to the initiation of project construction for large mammal dens that occur onsite. If a large mammal den is encountered and contains sign of American badger activity, additional minimization and avoidance measures should be developed in consultation with CDFW.

5.2.6.4 San Joaquin Kit Fox

The EIR Study Area contains potential habitat for San Joaquin kit fox (SJKF). The following are recommendations to avoid and minimize impacts to SJKF that may occur within a proposed project area:

- Conduct an early evaluation survey for the proposed project area as outlined in the USFWS *San Joaquin Kit Fox Survey Protocol for the Northern Range* (USFWS 1999b). Additional surveys and avoidance measures may be required upon consultation with USFWS to determine if the proposed project will result in take of SJKF (USFWS 1999b).
- If the proposed project will result in take of SJKF, project modification or minimization measures should be developed in consultation with USFWS pursuant to Section 7 or Section 10 of the federal ESA.
- Prior to and during ground disturbance activities of a proposed project, preconstruction surveys and avoidance measures should be followed as out outlined in the USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011).

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LIST OF ATTACHMENTS

ATTACHMENT A

Special-Status Species Descriptions

Attachment A

Special-Status Species Descriptions

Plants

Forked Fiddleneck

Forked fiddleneck (*Amsinckia furcata*) is not listed pursuant to either the federal or California Endangered Species Acts (ESA), but is designated as a California Rare Plant Rank (CRPR) 4.2 species. This species is an herbaceous annual that occurs in cismontane woodland and valley and foothill grassland. Forked fiddleneck blooms from February through May and is known to occur at elevations ranging from 165 to 3,280 feet above mean sea level (MSL). Forked fiddleneck is endemic to California; its current range includes Fresno, Kings, Kern, Merced, San Benito, and San Luis Obispo counties (California Native Plant Society [CNPS] 2022).

No California Natural Diversity Database (CNDDB) occurrences of forked fiddleneck have been reported within 15 miles of the Environmental Impact Report (EIR) Study Area (California Department of Fish and Wildlife [CDFW] 2022); however, the nonnative annual grassland and ruderal areas within the EIR Study Area provides suitable habitat for this species. Forked fiddleneck has potential to occur within the EIR Study Area.

California Androsace

California androsace (*Androsace elongata* ssp. *acuta*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland. California androsace blooms from March through June and is known to occur at elevations ranging from 490 to 4,280 feet above MSL. The current range of this species in California includes Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Los Angeles, Merced, Monterey, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, Siskiyou, San Joaquin, San Luis Obispo, San Mateo, Stanislaus, and Tehama counties (CNPS 2022).

No CNDDB occurrences of California androsace have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the nonnative annual grassland and ruderal areas within the EIR Study Area provides suitable habitat for this species. California androsace has potential to occur within the EIR Study Area.

Akali Milk-Vetch

Alkali milk-vetch (*Astragalus tener* var. *tener*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in alkaline areas of playas, adobe clay valley and foothill grasslands, and vernal pools. Alkali milk-vetch blooms from March through June and is known to occur at elevations ranging from 5 to 195 feet above MSL. Alkali milk-vetch is endemic to California; the current range of this species includes Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, Santa Clara, San Francisco, San Joaquin, Solano, Sonoma, Stanislaus, and Yolo counties; it is likely extirpated from Contra Costa, Monterey, San Benito, Santa Clara, San Francisco, San Joaquin, Sonoma, and Stanislaus counties (CNPS 2022).

Three CNDDB occurrences of alkali milk-vetch have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland and ruderal areas within the EIR Study Area provide suitable habitat for this species. Alkali milk-vetch has potential to occur within the EIR Study Area.

Heartscale

Heartscale (*Atriplex cordulata* var. *cordulata*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual found within alkaline or saline sandy valley and foothill grasslands, meadows and seeps, and chenopod scrub communities. Heartscale flowers from April through October and is known to occur at elevations ranging from sea level to 1,835 feet above MSL. Heartscale is endemic to California; the current range of this species includes Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Kings, Madera, Merced, San Joaquin, Solano, Stanislaus, Tulare, and Yolo counties; it is considered extirpated from San Joaquin, Stanislaus, and Yolo counties (CNPS 2022).

Ten CNDDB occurrences of heartscale have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland, ruderal areas, and agriculture fields within the EIR Study Area provide suitable habitat for this species. Heartscale has potential to occur within the EIR Study Area.

Crownscale

Crownscale (*Atriplex coronata* var. *coronata*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in alkaline and often clay soils within chenopod scrub, valley and foothill grassland, and vernal pools. Crownscale blooms from March through October and is known to occur at elevations ranging from 5 to 1,935 feet above MSL. Crownscale is endemic to California; the current range of this species includes Alameda, Contra Costa, Fresno, Kings, Kern, Merced, Monterey, San Benito, San Luis Obispo, Solano, Stanislaus, and Tulare counties (CNPS 2022).

No CNDDB occurrences of crownscale have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the nonnative annual grassland, ruderal areas, and agriculture fields within the EIR Study Area provide suitable habitat for this species. Crownscale has potential to occur within the EIR Study Area.

Lost Hills Crownscale

Lost Hills crownscale (*Atriplex coronata* var. *vallicola*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in alkaline soils in chenopod scrub, valley and foothill grassland, and alkaline vernal pools. Lost Hills crownscale differs from heartscale primarily in the shape and size of the fruiting bracts. Lost Hills crownscale flowers from April through September and is known to occur at elevations ranging from 165 feet to 2,085 feet above MSL. Lost Hills crownscale is endemic to California; the current range of this species includes Fresno, Kings, Kern, Merced, Monterey, San Benito, San Luis Obispo, and Tulare counties (CNPS 2022).

Three CNDDB occurrences of Lost Hills crownscale have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland, ruderal areas, and agriculture fields within the EIR Study Area provide suitable habitat for this species. Lost Hills crownscale has potential to occur within the EIR Study Area.

Lesser Saltscale

Lesser saltscale (*Atriplex minuscula*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in alkaline and sandy soils in chenopod scrub, playas, and valley and foothill grassland. Lesser saltscale blooms from May through October and is known to occur from 50 to 655 feet above MSL. Lesser saltscale is endemic to California; the current range of this species includes Alameda, Butte, Fresno, Kern, Kings, Madera, Merced, Stanislaus, and Tulare counties. It is likely extirpated from Stanislaus County (CNPS 2022).

One CNDDB occurrence of lesser saltscale has been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland, ruderal areas, and agriculture fields within the EIR Study Area provide suitable habitat for this species. Lesser saltscale has potential to occur within the EIR Study Area.

Vernal Pool Smallscale

Vernal pool smallscale (*Atriplex persistens*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in alkaline vernal pools. Vernal pool smallscale blooms from June through October and is known to occur at elevations ranging from 35 to 375 feet above MSL. Vernal pool small scale is endemic to California; the current range of this species includes Colusa, Glenn, Madera, Merced, Solano, Stanislaus, and Tulare counties. It is likely extirpated in Stanislaus County (CNPS 2022).

Eight CNDDB occurrences of vernal pool smallscale have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grasslands within the EIR Study Area provide marginally suitable habitat for this species. Vernal pool smallscale has low potential to occur within the EIR Study Area.

Lemmon's Jewel Flower

Lemmon's jewel flower (*Caulanthus lemmonii*) is not listed pursuant to either the federal or California ESAs, but is designated a CRPR 1B.2 species. This species is an herbaceous annual that occurs in pinyon and juniper woodlands, and valley and foothill grasslands at elevations from 262 to 5,184 feet above MSL (CNPS 2022). Lemmon's jewel flower blooms from February through May (CNPS 2022). This species is endemic to California; its current range includes Alameda, Fresno, Kings, Kern, Merced, Monterey, Santa Barbara, San Benito, San Joaquin, San Luis Obispo, Stanislaus, and Ventura counties. Itis considered extirpated from Alameda County (CNPS 2022).

One CNDDB occurrence of Lemmon's jewel flower has been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland and ruderal areas within the EIR Study Area provide suitable habitat for this species. Lemmon's jewel flower has potential to occur within the EIR Study Area.

Parry's Rough Tarplant

Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in vernal pools and valley and foothill grassland with alkaline and vernally mesic soils, seeps, and sometimes roadsides. Parry's rough tarplant blooms from May through October and is known to occur at elevations ranging from sea level to 328 feet above MSL. Parry's rough tarplant is endemic to California; its current range includes Butte, Colusa, Glenn, Lake, Merced, Modoc, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo counties (CNPS 2022).

No CNDDB occurrences of Parry's rough tarplant have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, nonnative annual grassland and ruderal areas within the EIR Study Area provide marginally suitable habitat for this species. Parry's rough tarplant has low potential to occur within the EIR Study Area.

Hispid Salty Bird's-beak

Hispid salty bird's-beak (*Chloropyron molle* ssp. *hispidum*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. This species is an herbaceous, hemiparasite annual that occurs on alkaline soils in meadows and seeps, playas, and valley and foothill grasslands. Hispid salty bird's-beak blooms from June through September and is known to occur at elevations ranging from three feet to 509 feet above MSL (CNPS 2022). Hispid salty bird's-beak is endemic to California; the current range of this species includes Alameda, Fresno, Kern, Merced, Placer, and Solano counties (CNPS 2022).

Twenty-nine CNDDB occurrences of hispid salty bird's-beak have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland and ruderal areas within the EIR Study Area provide suitable habitat for this species. Hispid salty bird's-beak has potential to occur within the EIR Study Area.

Rattan's Cryptantha

Rattan's cryptantha (*Cryptantha rattanii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.3 species. This species is an herbaceous annual that occurs within cismontane woodland, riparian woodland, and valley and foothill grassland. Rattan's cryptantha blooms from April through July, and is known to occur at elevations ranging from 805 to 3,000 feet above MSL (CNPS 2022). This species endemic to California is its current range includes Fresno, Merced, Monterey, San Benito, Santa Barbara, Santa Clara, and Stanislaus counties (CNPS 2022).

No CNDDB occurrences of Rattan's cryptantha have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, nonnative annual grassland and ruderal areas within the EIR Study Area provide suitable habitat for this species. Rattan's cryptantha has potential to occur within the EIR Study Area.

Recurved Larkspur

Recurved larkspur (*Delphinium recurvatum*) is not listed pursuant to either the federal or California ESAs, but is designated a CRPR 1B.2 species. This species is an herbaceous perennial that occurs in alkaline substrates in chenopod scrub, cismontane woodland, and valley and foothill grasslands. Recurved larkspur blooms from March through June and is known to occur at elevations ranging from 9 to 2,592 feet above MSL (CNPS 2022). Recurved larkspur is endemic to California; the current range of this species includes Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, Sutter, and Tulare counties. The species is presumed extirpated from Butte and Colusa counties (CNPS 2022).

Two CNDDB occurrences of recurved larkspur have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland and ruderal areas within the EIR Study Area provide suitable habitat for this species. Recurved larkspur has potential to occur within the EIR Study Area.

Idria buckwheat

Idria buckwheat (*Eriogonum vestitum*) is not listed pursuant to either the federal or California ESAs, but is designated a CRPR 4.3 species. This species is an herbaceous annual that occurs in valley and foothill grasslands. Idria buckwheat blooms from April through August and is known to occur at elevations ranging from 770 to 2,955 feet above MSL (CNPS 2022). Idria buckwheat is endemic to California, and its current range includes Fresno, Merced, and San Benito counties (CNPS 2022).

No CNDDB occurrences of Idria buckwheat have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, nonnative annual grassland and ruderal areas within the EIR Study Area provide suitable habitat for this species. Idria buckwheat has potential to occur within the EIR Study Area.

Delta Button-celery

Delta button-celery (*Eryngium racemosum*) is not listed pursuant to the federal ESA but is listed as endangered pursuant to the California ESA and is designated as a CRPR 1B.1 species. This species is an herbaceous annual / perennial that occurs in vernally mesic clay depressions in riparian scrub

communities. Delta button-celery blooms from June through October and is known to occur at elevations ranging from 10 to 98 feet above MSL (CNPS 2022). Delta button-celery is endemic to California; the current range of this species includes Calaveras, Contra Costa, Merced, San Joaquin, and Stanislaus counties. It is believed to be extirpated from San Joaquin County (CNPS 2022).

Twelve CNDDB occurrences of Delta button-celery have been reported within 15 miles of the EIR Study Area (CDFW 2022); the mixed riparian areas within the EIR Study Area provide marginally suitable habitat for this species. Delta button-celery has low potential to occur within the EIR Study Area.

Spiny-sepaled Button-celery

Spiny-sepaled button-celery (*Eryngium spinosepalum*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual/perennial that occurs in valley and foothill grassland and vernal pools (CNPS 2022). Spiny-sepaled button-celery blooms from April through June and is known to occur at elevations ranging from 262 to 3,199 feet above MSL (CNPS 2022). Spiny-sepaled button-celery is endemic to California; the current range of this species includes Contra Costa, Fresno, Kern, Madera, Merced, San Luis Obispo, Stanislaus, Tulare, and Tuolumne counties (CNPS 2022).

Two CNDDB occurrences of spiny-sepaled button-celery have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland, ruderal areas, and ditches within the EIR Study Area provides suitable habitat for this species. Spiny-sepaled button-celery has potential to occur within the EIR Study Area.

Hoover's Spurge

Hoover's spurge (*Euphorbia hooveri)* is listed as threatened pursuant to the federal ESA, is not listed pursuant to the California ESA, and is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in vernal pools (CNPS 2022). Hoover's spurge blooms from July through September and is known to occur at elevations ranging from 82 to 820 feet above MSL (CNPS 2022). Hoover's spurge is endemic to California; its current range includes Butte, Colusa, Glenn, Merced, Stanislaus, Tehama, and Tulare counties (CNPS 2022).

One CNDDB occurrence of Hoover's spurge has been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland within the EIR Study Area provides marginally suitable habitat for this species. Hoover's spurge has low potential to occur within the EIR Study Area.

Hogwallow Starfish

Hogwallow starfish (*Hesperevax caulescens*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in mesic, clay areas within valley and foothill grassland and shallow vernal pools, sometimes in alkaline areas. Hogwallow starfish blooms from March through June and is known to occur from sea level to 1,655 feet above MSL. Hogwallow starfish is endemic to California; the current range of this species includes Alameda, Amador, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Mariposa, Merced, Monterey,

Sacramento, San Diego, San Joaquin, San Luis Obispo, Solano, Sonoma, Stanislaus, Sutter, Tehama, Tuolumne, Yolo, and Yuba counties. It is presumed extirpated in San Diego County (CNPS 2022).

No CNDDB occurrences of hogwallow starfish have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, nonnative annual grassland found within the EIR Study Area provides marginally suitable habitat for this species. Hogwallow starfish has low potential to occur within the EIR Study Area.

Alkali-sink Goldfields

Alkali-sink goldfields (*Lasthenia chrysantha*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in alkaline vernal pools (CNPS 2022). Alkali-sink goldfields blooms from February through April and is known to occur at elevations ranging from sea level to 600 feet above MSL (CNPS 2022). Alkali-sink goldfields is endemic to California; its current range includes Fresno, Kern, Kings, Madera, Merced, Sacramento, Solano, Stanislaus, and Tulare counties (CNPS 2022).

Two CNDDB occurrences of alkali-sink goldfields have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland within the EIR Study Area provides marginally suitable habitat for this species. Alkali-sink goldfields has low potential to occur within the EIR Study Area.

Ferris' Goldfields

Ferris goldfields (*Lasthenia ferrisiae*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in alkaline and clay soils in vernal pools. Ferris goldfields blooms from February through May and is known to occur at elevations ranging from 66 to 2,297 feet above MSL. Ferris goldfields is endemic to California; its current range includes Alameda, Butte, Contra Costa, Colusa, Fresno, Kings, Kern, Merced, Monterey, Sacramento, San Benito, San Joaquin, San Luis Obispo, Solano, Stanislaus, Tulare, Ventura, and Yolo counties (CNPS 2022).

No CNDDB occurrences of Ferris' goldfields have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, nonnative annual grassland within the EIR Study Area provides marginally suitable habitat for this species. Ferris' goldfields has low potential to occur within the EIR Study Area.

Coulter's Goldfields

Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in coastal salt marshes and swamps, playas, and vernal pools (CNPS 2022). Coulter's goldfields blooms from February through June and is known to occur at elevations ranging from three to 4,003 feet above MSL (CNPS 2022). The current range of this species in California includes Colusa, Kern, Los Angeles, Merced, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, Solano, Santa Rosa Island, Tehama, Tulare, Ventura, and Yolo counties. It is presumed extirpated in Kern, Los Angeles, and San Bernardino counties and its distribution is uncertain in Tulare County (CNPS 2022).

One CNDDB occurrence of Coulter's goldfields has been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland within the EIR Study Area provides suitable habitat for this species. Coulter's goldfields has potential to occur within the EIR Study Area.

Serpentine Leptosiphon

Serpentine leptosiphon (*Leptosiphon ambiguus*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that usually occurs in serpentinite soil within cismontane woodland, coastal scrub, and valley and foothill grassland (CNPS 2022). Serpentine leptosiphon blooms from March through June and is known to occur at elevations ranging from 393 to 3,707 feet above MSL (CNPS 2022). Serpentine bird's-beak is endemic to California; its current range includes Alameda, Contra Costa, Merced, San Benito, Santa Clara, Santa Cruz, San Joaquin, San Mateo, and Stanislaus counties (CNPS 2022).

No CNDDB occurrences of serpentine leptosiphon have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, nonnative annual grassland within the EIR Study Area provides marginally suitable habitat for this species. Serpentine leptosiphon has low potential to occur within the EIR Study Area.

Little Mousetail

Little mousetail (*Myosurus minimus* ssp. *apus*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 3.1 species. This species is an herbaceous annual that occurs in mesic areas of valley and foothill grassland and alkaline vernal pools (CNPS 2022). Little mousetail blooms from March through June and is known to occur at elevations ranging from 66 to 2,100 feet above MSL (CNPS 2022). The current range of little mousetail in California includes Alameda, Contra Costa, Colusa, Lake, Merced, Riverside, San Bernardino, San Diego, Solano, Tulare, and Yolo counties (CNPS 2022).

No CNDDB occurrences of little mousetail have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, nonnative annual grassland within the EIR Study Area provides suitable habitat for this species. Little mousetail has potential to occur within the EIR Study Area.

Shining Navarretia

Shining navarretia (*Navarretia nigelliformis* ssp. *radians*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in cismontane woodland, valley and foothill grassland, and vernal pools, sometimes in clayey soils (CNPS 2022). Shining navarretia blooms from April through July and is known to occur at elevations ranging from 213 to 3,281 feet above MSL (CNPS 2022). Shining navarretia is endemic to California; its current range includes Alameda, Contra Costa, Colusa, Fresno, Madera, Merced, Monterey, San Benito, San Joaquin, San Luis Obispo, Stanislaus, and Tulare counties (CNPS 2022).

One CNDDB occurrence of shining navarretia has been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland within the EIR Study Area provides suitable habitat for this species. Shining navarretia has potential to occur within the EIR Study Area.

Prostrate Vernal Pool Navarretia

Prostrate vernal pool navarretia (*Navarretia prostrata*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in mesic soils within coastal scrub, meadows and seeps, alkaline soils in valley and foothill grasslands, and vernal pools (CNPS 2022). Prostrate vernal pool navarretia blooms from April through July and is known to occur at elevations ranging from 10 to 3,970 feet above MSL (CNPS 2022). Prostrate vernal pool navarretia is endemic to California; the current range of this species includes Alameda, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, and San Luis Obispo counties (CNPS 2022).

Seven CNDDB occurrences of prostrate vernal pool navarretia have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland within the EIR Study Area provides suitable habitat for this species. Prostrate vernal pool navarretia has potential to occur within the EIR Study Area.

Colusa Grass

Colusa grass (*Neostapfia colusana*) is listed as threatened pursuant to the federal ESA, as endangered pursuant to the California ESA, and is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in large vernal pools with adobe soils (CNPS 2022). Colusa grass blooms from May through August and is known to occur at elevations ranging from 16 to 656 feet above MSL (CNPS 2022). Colusa grass is endemic to California; the current range of this species includes Colusa, Glenn, Merced, Solano, Stanislaus, and Yolo counties. It is likely extirpated from Colusa County (CNPS 2022).

One CNDDB occurrence of Colusa grass has been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland within the EIR Study Area provides marginally suitable habitat for this species. Colusa grass has low potential to occur within the EIR Study Area.

California Akali Grass

California alkali grass (*Puccinellia simplex*) is not listed pursuant to either the federal or California ESAs, and is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in alkaline, vernally mesic chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools along sinks, flats, and lake margins (CNPS 2022). California alkali grass blooms between March and May and is known to occur at elevations ranging from seven to 3,051 feet above MSL (CNPS 2022). The current range for this species in California includes Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo counties. It is presumed extirpated in Kings County (CNPS 2022).

Four CNDDB occurrences of California alkali grass have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland within the EIR Study Area provides suitable habitat for this species. California alkali grass has potential to occur within the EIR Study Area.

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not listed pursuant to the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is a perennial rhizomatous herb that occurs in shallow, freshwater marshes and swamps (CNPS 2022). Sanford's arrowhead blooms from May through October and is known to occur at elevations ranging from sea level to 2,135 feet above MSL (CNPS 2022). Sanford's arrowhead is endemic to California; the current range of this species includes Butte, Del Norte, El Dorado, Fresno, Madera, Marin, Mariposa, Merced, Napa, Sacramento, San Bernardino, San Joaquin, Shasta, Solano, Sutter, Tehama, Tulare, Ventura, and Yuba counties. It is presumed extirpated in Ventura County (CNPS 2022).

Four CNDDB occurrences of Sanford's arrowhead have been reported within 15 miles of the EIR Study Area (CDFW 2022); drainages or irrigation ditches within the EIR Study Area provide marginally suitable habitat for this species. Sanford's arrowhead has low potential to occur within the EIR Study Area.

Slender-leaved Pondweed

Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.2 species. This species is an herbaceous perennial aquatic rhizome that occurs in assorted shallow freshwater marshes and swamps (CNPS 2022). Slender-leaved pondweed blooms from May through July and is known to occur at elevations ranging from 984 to 7,054 feet above MSL (CNPS 2022). The current range of this species in California includes Alameda, Butte, Contra Costa, El Dorado, Lassen, Merced, Mono, Modoc, Mariposa, Nevada, Placer, Santa Clara, Shasta, Sierra, San Mateo, Solano, and Sonoma counties. It is presumed extirpated in Santa Clara County (CNPS 2022).

One CNDDB occurrence of slender-leaved pondweed has been reported within 15 miles of the EIR Study Area (CDFW 2022); drainages or irrigation ditches within the EIR Study Area provide marginally suitable habitat for this species. Slender-leaved pondweed has low potential to occur within the EIR Study Area.

Wright's Trichocoronis

Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.1 species. This species is an herbaceous annual that occurs on alkaline soils in meadows and seeps, marshes and swamps, riparian forest, and vernal pools (CNPS 2022). Wright's trichocoronis blooms from May through September and is known to occur at elevations ranging from 16 to 1,427 feet above MSL (CNPS 2022). The current range for this species in California includes Colusa, Merced, Riverside, San Joaquin, and Sutter counties. It is believed to be extirpated from Colusa, San Joaquin, and Sutter counties (CNPS 2022).

Four CNDDB occurrences of Wright's trichocoronis have been reported within 15 miles of the EIR Study Area (CDFW 2022); the mixed riparian woodland and the nonnative annual grassland within the EIR Study Area provide marginally suitable habitat for this species. Wright's trichocoronis has low potential to occur within the EIR Study Area.

Invertebrates

Conservancy Fairy Shrimp

The conservancy fairy shrimp (*Branchinecta conservatio*) is listed as endangered pursuant to the federal ESA. This fairy shrimp is endemic to California and is found in grasslands in the northern two thirds of the Central Valley (Eriksen and Belk 1999). The historic distribution of conservancy fairy shrimp is not known, but it likely occurred throughout a large portion of the Central Valley and Southern Coastal regions of California (U.S. Fish and Wildlife Service [USFWS] 2005a). Until recently, this species has only been known from a few disjunct populations in California, including four clustered populations in the Vina Plains area in Tehama and Butte counties, Jepson Prairie Preserve in Solano County, the Sacramento National Wildlife Refuge in Glenn County, the Tule Ranch Unit of CDFW's Yolo Basin Wildlife Area in Yolo County, the Grasslands Ecological Area in Merced County, one location in Stanislaus County, three locations in the Southern Sierra Foothills Vernal Pool Region, and two locations near the Santa Barbara Vernal Pool Region (USFWS 2003a, 2006). The USFWS reported in April 2007 that a single conservancy fairy shrimp was documented in one vernal pool within the Mariner Conservation Bank in Placer County near the city of Lincoln, California.

The life cycle of conservancy fairy shrimp is reliant on the ephemeral conditions of its vernal habitat. It inhabits a variety of different landforms and soil types, and is often found in large, turbid pools with low conductivity, total dissolved solids, and alkalinity (USFWS 2005a).

Eight CNDDB occurrences of conservancy shrimp have been reported within 15 miles of the EIR Study Area (CDFW 2022); vernal pools and seasonal wetlands found within the EIR Study Area provide suitable habitat for this species. Conservancy shrimp has potential to occur within the EIR Study Area.

Longhorn Fairy Shrimp

Longhorn fairy shrimp (*Branchinecta longiantenna*) was federally listed as endangered under the ESA on September 19, 1994 (USFWS 1994). The range of longhorn fairy shrimp is restricted to the eastern edge of the Central Coast Ranges. Known occurrences of longhorn fairy shrimp include Kesterson National Wildlife Refuge and Carrizo Plain National Monument (USFWS 2002), Vasco Caves Regional Preserve, Brushy Peak Regional Preserve (Jones & Stokes 2007; USFWS 2002), and on private lands in the Altamont Pass area (CDFW 2022). This species can be found in clear-water depressional pools in sandstone outcrops, grassland vernal pools, and in large playa pools in valley saltbush scrub. Longhorn fairy shrimp cysts (embryonic eggs) hatch soon after pools fill when water temperature is approximately 10ºC. Maturation is achieved in 23 days under optimal conditions, but 43 days is more typical (Eriksen and Belk 1999). The species has been observed from late December to mid-May in pools that are filled by winter and spring rains.

Two CNDDB occurrences of longhorn fairy shrimp have been reported within 15 miles of the EIR Study Area (CDFW 2022); vernal pools and seasonal wetlands found within the EIR Study Area provide suitable habitat for this species. Longhorn fairy shrimp has potential to occur within the EIR Study Area.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened pursuant to the federal ESA. Historically, the range of vernal pool fairy shrimp extended throughout the California Central Valley. Vernal pool fairy shrimp populations have been found in several locations throughout California, with habitat extending from Stillwater Plain in Shasta County through the Central Valley to Pixley in Tulare County, and along the Central Coast range from northern Solano County to Pinnacles National Monument in San Benito County (Eng et al. 1990; Fugate 1992; Sugnet and Associates 1993). Additional populations occur in San Luis Obispo, Santa Barbara, and Riverside counties. The historic and current ranges of vernal pool fairy shrimp are very similar in extent; however, the remaining populations are more fragmented and isolated than during historical times (USFWS 2005a).

The life cycle of vernal pool fairy shrimp is adapted to seasonally inundated features such as vernal pools, seasonal wetlands, and seasonal wetland swales. Fairy shrimp embryos survive the dry season in cyst form. Cysts hatch soon after pools become inundated during the wet season. Fairy shrimp complete their life cycle quickly and feed on small particles of detritus, algae, and bacteria (Eriksen and Belk 1999).

Critical Habitat for federally listed vernal pool species was designated in August 2003 by USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS 2006). The *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (Recovery Plan)* includes vernal pool fairy shrimp conservation strategies (USFWS 2005a). No Critical Habitat occurs in the EIR Study Area.

Nine CNDDB occurrences of vernal pool fairy shrimp have been reported within 15 miles of the EIR Study Area (CDFW 2022); vernal pools and seasonal wetlands found within the EIR Study Area provide suitable habitat for this species. Vernal pool fairy shrimp has potential to occur within the EIR Study Area.

Monarch

The monarch (*Danaus plexippus*) is a candidate for listing under the federal ESA. This butterfly occurs throughout a variety of habitats and requires blooming nectar resources for adults to feed on during breeding and migration, and milkweed (*Asclepias* spp.) for oviposition and larval feeding. During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily *Asclepias* spp.). Larvae emerge after two to five days and then develop through five larval instars over a period of 9 to 18 days, feeding on milkweed and sequestering toxic cardenolides as a defense against predators. The larvae then pupate into chrysalises before emerging six to 14 days later as adult butterflies. Multiple generations of monarchs are produced during the breeding season, with most adult butterflies living approximately two to five weeks. Overwintering adults enter into reproductive diapause and live six to nine months (USFWS 2020).

Monarchs breed year-round in many regions. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration. Monarchs may use a variety of roosting trees along fall migration routes. Migratory individuals of eastern and western North America require a specific microclimate at overwintering sites that provides protection from the elements and moderate

temperatures. Migratory monarchs in the western population primarily overwinter in groves of a variety of tree species along the coast of California and Baja California (USFWS 2020).

No CNDDB occurrences of monarch have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the mixed riparian woodland and nonnative annual grassland found within the EIR Study Area provide suitable habitat for this species. Monarch has potential to occur within the EIR Study Area.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*, VELB) is listed as threatened pursuant to the federal ESA (USFWS 1980). The VELB is completely dependent on its larval host plant, elderberry (*Sambucus* sp.), which occurs in riparian and other woodland and scrub communities (USFWS 1999a, 2017a). Elderberry plants are considered to be habitat for the species if located within the range of the beetle and having one or more stems measuring 1.0 inch or greater in diameter at ground level (USFWS 1999a). The adult flight season extends from late March through July (USFWS 2017). During that time, the adults feed on foliage and perhaps flowers, mate, and females lay eggs on living elderberry plants (Barr 1991). The first instar larvae bore into live elderberry stems, where they develop for one to two years feeding on the pith. The fifth instar larvae create exit holes in the stems and then plug the holes and remain in the stems through pupation (Talley et al. 2007).

VELB occurs in metapopulations throughout the Central Valley (Collinge et. al 2001 as cited in USFWS 2017). These metapopulations (subpopulations) occur throughout contiguous riparian habitat and shift temporarily and spatially based on changing environmental conditions. This temporal and spatial shifting of the metapopulations results in a patchy and ever-changing distribution of the species. Research indicates that dense elderberry shrub clumps in healthy riparian habitat is the primary habitat for the VELB (USFWS 2017). The beetle's current distribution extends from Shasta County in the north to Fresno County in the south and includes everything from the valley floor up into the lower foothills (USFWS 2017). The vast majority of VELB occurrences have been recorded below 500 feet (152 meters); however, rare occurrences have been recorded up to approximately 3,000 feet (USFWS 1999a; USFWS 2017).

One CNDDB occurrence of VELB has been reported within 15 miles of the EIR Study Area (CDFW 2022); the mixed riparian woodland found within the EIR Study Area provides suitable habitat for this species. VELB has potential to occur within the EIR Study Area.

Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp (*Lepidurus packardi)* is listed as endangered pursuant to the federal ESA. The historic range of the vernal pool tadpole shrimp likely extended throughout the Central Valley of California, and has been documented from east of Redding in Shasta County south to Fresno County, and from the San Francisco Bay Wildlife Refuge in Alameda County. The historic and current ranges of vernal pool tadpole shrimp are very similar in extent; however, the remaining populations are more fragmented and isolated than during historical times (USFWS 2005a).

This species is associated with low-alkalinity seasonal pools in grasslands throughout the northern and eastern portions of the Central Valley. Suitable vernal pools and seasonal swales are generally underlain

by hardpan or sandstone. Tadpole shrimp embryos survive the dry season in cyst form. Cysts hatch soon after pools become inundated during the wet season. Sexually mature adults may persist three to four weeks after habitat inundation (Sugnet and Associates 1993).

Critical Habitat for federally listed vernal pool species was designated in August 2003 by USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS 2006). The *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (Recovery Plan)* includes vernal pool tadpole shrimp conservation strategies (USFWS 2005a). No Critical Habitat occurs in the EIR Study Area.

Twelve CNDDB occurrences of vernal pool tadpole shrimp have been reported within 15 miles of the EIR Study Area (CDFW 2022); vernal pools and seasonal wetlands found within the EIR Study Area provide suitable habitat for this species. Vernal pool tadpole has potential to occur within the EIR Study Area.

Amphibians

California Tiger Salamander – Central Valley DPS (Ambystoma californiense)

The Central Valley Distinct Population Segment (DPS) of California tiger salamander (*Ambystoma californiense*, CTS) was listed as threatened by the USFWS on August 4, 2004 (Federal Register Vol. 69, No. 149: 47212). The Santa Barbara County DPS and Sonoma County DPS, both of which are disjunct from the larger range of the salamander, are federally listed as endangered. As of August 19, 2010, the CTS was listed as a threatened species under the California ESA throughout its range.

California tiger salamanders are endemic to California's Central Valley from Yolo County south to Kern County, and from Santa Barbara County north through the inner coast range to Sonoma County (USFWS 2003b, 2015). Populations at the north and south edges of the historical distribution are extirpated, many populations within the interior of the range have been lost, and abundance has been reduced in many areas. Large areas of habitat conversion to agriculture and urban infrastructure have caused extirpations throughout Central California. Conversion of ephemeral breeding waters to perennial ponds and streams allows the introduction of predators and competitors including fish, crayfish (*Procambarus clarkii*), American bullfrogs (*Lithobates catesbeianus*), and (in some locations) introduced tiger salamanders (*Ambystoma tigrinum*) (Ryan et al. 2009).

This species is most commonly associated with annual grassland habitats and vernal pool landscapes but may also occur within open woodlands in low hills and valleys. Necessary habitat components for California tiger salamanders include intact open terrestrial landscapes used by adults for most of their life history, and ponded aquatic features where reproduction occurs. Tiger salamanders spend most of their adult life within terrestrial subterranean refuges such as California ground squirrel (*Otospermophilus beecheyi*) or Botta's pocket gopher (*Thomomys bottae*) burrows (Stebbins 2003, Loredo et al. 1996). Foraging takes place within these subterranean refugia and out in the open at night or during rains. Suitable breeding sites include vernal pools, seasonal wetlands, stock ponds, or, rarely, slow-moving streams. They may use permanent manufactured ponds if predatory species (e.g., fish, crayfish) are absent.

Nine CNDDB occurrences of CTS have been reported within 15 miles of the EIR Study Area (CDFW 2022); vernal pools and seasonal wetlands found within the EIR Study Area may provide suitable breeding habitat for this species, and the nonnative annual grassland found within the EIR Study Area provides suitable terrestrial habitat for this species. CTS has potential to occur within the EIR Study Area.

Western Spadefoot

The western spadefoot (*Spea hammondii*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a CDFW species of special concern (SSC). Necessary habitat components of the western spadefoot include loose friable soils in which to burrow in upland habitats and breeding ponds. Breeding sites include temporary rain pools such as vernal pools and seasonal wetlands, or pools within portions of intermittent drainages (Thomson et al. 2016). Spadefoots spend most of their adult life within underground burrows or other suitable refugia such as rodent burrows. In California, western spadefoots are known to occur from the Redding area in Shasta County south to northwestern Baja California at elevations below 4,475 feet (Thomson et al. 2016).

Ten CNDDB occurrences of western spadefoot have been reported within 15 miles of the EIR Study Area (CDFW 2022); vernal pools and seasonal wetlands found within the EIR Study Area provide suitable breeding habitat for this species, and the nonnative annual grassland found within the EIR Study Area provides suitable terrestrial habitat. Western spadefoot has potential to occur within the EIR Study Area.

Reptiles

Northern Legless Lizard

The northern legless lizard (*Anniella pulchra*) is one of five species of legless lizard in California (Papenfuss and Parham 2013). Although CDFW only recognizes two subspecies (*A. p. pulchra* and *A. p. nigra*), all California legless lizards are considered SSCs. They are not listed under state or federal endangered species acts.

Although lacking legs, the legless lizards (*Anniella*) are decidedly lizards as shown by their eyelids, which are lacking in all snakes. Like snakes, however, these species lack external ear openings. The northern legless lizard has the largest range of all California *Anniella,* ranging from sites in and around Antioch, in the east Bay, south to northern San Luis Obispo County. Two disjunct segments of this species range occur: one in the eastern foothills of Tulare and Fresno counties, and another at the western edge of the Antelope Valley in Kern and Los Angeles counties. A large area of undetermined species status connects those populations to areas occupied by Southern Sierra legless lizard (*A. campi*), Bakersfield legless lizard (*A. grinnelli*), Temblor legless lizard (*A. alexanderae*), and southern California legless lizard (*A. stebbinsi*). Although not recognized by taxonomists, a melanistic form of *A. pulchra* that exists in Monterey Bay is considered to be the subspecies *A. p. nigra* by CDFW.

One CNDDB occurrence of northern legless lizard has been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland and the ruderal areas found within the EIR Study Area

provide marginally suitable habitat for this species. Northern legless lizard has low potential to occur within the EIR Study Area.

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) is not listed pursuant to either the California or federal ESAs; however, it is designated an SSC by CDFW. The range of the northwestern pond turtle in California extends from the Oregon border south to the Stockton area in the Central Valley, and the western slope of the Sierra-Cascade (Bury et al. 2012a). The elevational range extends from sea level to 2,000 meters, but it becomes rare at the higher elevations (Stebbins 2003).

Northwestern pond turtles can occur in a variety of waters including ponds, lakes, streams, reservoirs, rivers, settling ponds of wastewater treatment plants, and other permanent and ephemeral wetlands (Bury et al. 2012b). However, in streams and other lotic features they generally require slack- or slow-water aquatic microhabitats (Thomson et al. 2016). Northwestern pond turtles also require basking areas such as logs, rocks, banks, and brush piles for thermoregulation (Bury et al. 2012b).

Northwestern pond turtles are typically active between March or April through October or November, the timing of which depends on variables such as latitude, elevation, and local climate (Bury et al. 2012b). Courtship and mating typically occur during late April and early May, but could occur throughout summer and into fall (Bury et al. 2012b). Suitable nest sites are usually five to 500 meters upland from water in areas with short grasses and forbs (Bury et al. 2012b). Nesting sites are typically south- or west-facing in direct sunlight with soils that have a high silt or clay component (Rathbun et al. 1992, 2002). Hatchling northwestern pond turtles usually overwinter in nests (Reese and Welsh 1997) while adults overwinter on land or in the water depending on specific location and habitat (Bury et al. 2012b).

Nineteen CNDDB occurrences of northwestern pond turtle have been reported within 15 miles of the EIR Study Area (CDFW 2022); the mixed riparian woodland, irrigation ditches, and fresh emergent wetlands within the EIR Study Area provide suitable habitat for this species. Northwestern pond turtle has potential to occur within the EIR Study Area.

San Joaquin Coachwhip

The San Joaquin coachwhip (*Coluber flagellum ruddocki*) is a California SSC but is not listed pursuant to the federal or California ESAs. The San Joaquin coachwhip is found in dry, open areas (e.g., grassland and saltbush scrub [Thomson et al 2016]) in the western San Joaquin Valley from Colusa County, south along the west side of the San Joaquin Valley to the Grapevine in Kern County and west to the inner South Coast Ranges. An isolated population has been identified in the Sutter Buttes (Hayes and Cliff 1982). San Joaquin coachwhip populations have declined throughout much of their historical range due to habitat loss associated with agricultural and urban development.

The San Joaquin coachwhip, like other *C. flagellum* subspecies, maintains a higher active body temperature than many other snakes (Brattstrom 1965). It will not emerge from its burrow until temperatures reach 28ºC; therefore, it does not emerge from the burrow until late in the season (April or May) and late in the day (Hammerson 1977). This snake uses mammal burrows for refuge and for nesting

sites. The San Joaquin coachwhip feeds on lizards, small birds, and small mammals and may eat carrion (Thomson et al. 2016). This species needs large, open areas with little tree cover (Morafka and Banta 1976), and mating occurs in May, with oviposition occurring in June or July (Thomson et al. 2016.).

Eleven CNDDB occurrences of San Joaquin coachwhip have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland found within the EIR Study Area provides marginally suitable habitat for this species. San Joaquin coachwhip has low potential to occur within the EIR Study Area.

Giant Garter Snake

The giant garter snake (GGS) is listed as a threatened species pursuant to both the California and federal ESAs. Giant garter snakes typically inhabit perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water during the spring and summer months. Giant garter snakes are most active from early spring through mid-fall (USFWS 1999b). The GGS is endemic to the floors of the Sacramento and San Joaquin Valleys of California and probably occurred historically from Butte County south to Buena Vista Lake in Kern County (USFWS 1999b).

Seasonally, the GGS becomes active in early spring, emerging from overwintering sites to bask on emergent willows, tules, saltbush, and riprap (Hansen and Tremper in Rossman et al. 1996). Live young are born in late July through early September (Hansen and Hansen 1990) and by October, most snakes begin searching for overwintering sites. Most are in hibernacula by November (Hansen and Hansen 1990).

The GGS is one of the most aquatic garter snakes (USFWS 1999b). It is rarely found far from water and occupies habitat such as marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low gradient streams (USFWS 1999b). Waters inhabited by this species typically feature substrates of soil, mud, or other fines. Giant garter snakes use grassy bank-side habitats for basking and use higher elevation uplands for cover and retreat from floodwaters during the inactive winter season (USFWS 1999b). Essential habitat components required are permanent water to support a sufficient prey base, emergent vegetation for escape cover and foraging habitat, near-bank upland habitat for basking, and higher-elevation habitats for winter refugia (USFWS 1999b).

Networks of canals near rice agriculture (aquatic agriculture) are positively associated with GGS presence; however, population density and body condition are lower in rice agriculture than in natural landscapes (Halstead et al. 2010).

Thirty-three CNDDB occurrences of GGS have been reported within 15 miles of the EIR Study Area (CDFW 2022); the irrigation ditches within the EIR Study Area provide marginally suitable habitat for this species. Giant garter snake has low potential to occur within these portions EIR Study Area. Wetland communitiies associated with the managed wildlife areas in the eastern and northeastern portion of the EIR Study Area provide high quality habitat for this species.

Birds

Aleutian Cackling Goose

The Aleutian cackling goose (*Branta hutchinsii leucopareia*) was formerly listed and protected under the Federal ESA. It was considered recovered and delisted in 2001. The Aleutian cackling goose breeds on the outer Aleutian Islands, and winters in California within coastal Humboldt and Del Norte counties, and the Sacramento and San Joaquin Valleys. They can be found foraging on grasses, grains and other vegetation in pastures and wetlands during winter (October through March).

Two CNDDB occurrence of Aleutian cackling goose have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields, nonnative annual grassland, and fresh emergent wetland communities within the EIR Study Area provide suitable wintering habitat for this species. Aleutian cackling goose has potential to occur within the EIR Study Area.

Lesser Sandhill Crane

Lesser sandhill crane (*Antigone canadensis canadensis*) is not listed pursuant to the California or federal ESAs, but is considered a CDFW SSC. This subspecies nests from Alaska south to Oregon and winters in California, in the Central Valley. Wintering habitat includes wetlands and agricultural fields (Gerber et al. 2020).

No CNDDB occurrences of lesser sandhill crane have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the agricultural fields, nonnative annual grassland, and fresh emergent wetland communities within the EIR Study Area provide suitable wintering habitat for this species. Lesser sandhill crane has potential to occur within the EIR Study Area.

American Avocet

American avocet (*Recurvirostra americana*) is not listed pursuant to the California or federal ESAs but is considered a USFWS Bird of conservation concern (BCC). In California, American avocets breed from coastal Sonoma County south to the Mexican border; in the Central Valley and other lowland valleys west of the Cascades and Sierra Nevada; in the Antelope Valley, Los Angeles County; and east of the Sierra-Cascades in Siskiyou, Modoc, Lassen, Mono and Inyo counties (Ackerman et al. 2020). American avocets nest on the ground in scrapes around wetlands, on dikes/levees, or on islands (Ackerman et al. 2020). Breeding occurs from April through August.

No CNDDB occurrences of American avocet have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the agricultural fields, ditches, nonnative annual grassland, and fresh emergent wetland communities found within the EIR Study Area provide suitable habitat for this species. American avocet has potential to occur within the EIR Study Area.

Mountain Plover

The mountain plover (*Charadrius montanus*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and as an SSC by the CDFW. This species' breeding range includes Montana, eastern Colorado, Wyoming, New Mexico, Texas, and Oklahoma; the wintering range extends from north-central California to Mexico (Knopf and Wunder 2020). Within their wintering (September through March) range, which consists primarily of the Sacramento, San Joaquin, and Imperial Valleys, mountain plovers can be found in plowed fields, heavily grazed annual grassland, and burned fields (Knopf and Rupert 1995; Knopf and Wunder 2020).

Two CNDDB occurrences of mountain plover have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the agricultural fields and nonnative annual grassland found within the EIR Study Area provide suitable wintering habitat for this species. Mountain plover has potential to occur within the EIR Study Area.

Long-billed Curlew

The long-billed curlew (*Numenius americanus*) is not listed pursuant to either the California or federal ESAs but is designated as a BCC by the USFWS and is a CDFW *watch list* species. The breeding range of this species includes the Great Plains, Great Basin and intermontane valleys of the western U.S. and southwestern Canada (Dugger and Dugger 2020). Their wintering range in the U.S. includes California, Louisiana, and Texas. Winter foraging habitat includes rice fields (flooded and unflooded), managed wetlands, evaporation ponds, sewage ponds, and grasslands (Dugger and Dugger 2020).

No CNDDB occurrences of long-billed curlew have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the agricultural fields, nonnative annual grassland, and fresh emergent wetland communities found within the EIR Study Area provide suitable wintering habitat for this species. Long-billed curlew has potential to occur within the EIR Study Area.

White-tailed Kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the federal or California ESAS; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 2020). In northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 2020).

No CNDDB occurrences of white-tailed kite have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the mixed riparian woodland, agricultural fields, and nonnative annual grassland found within the EIR Study Area provide suitable habitat for this species. White-tailed kite has potential to occur within the EIR Study Area.

Golden Eagle

The golden eagle (*Aquila chrysaetos*) is not listed pursuant to either the California or federal ESAs. However, it is fully protected under Section 3511 of the California Fish and Game Code and the federal Bald and Golden Eagle Protection Act. Golden eagles generally nest on cliff ledges and/or large lone trees in rolling to mountainous terrain. Golden eagles nest throughout California except the flat portions of the Central Valley, the immediate coast, and portions of southeastern California (Katzner et al. 2020). Occurrences within the Central Valley are usually dispersing post-breeding birds, non-breeding sub-adults, or migrants. Foraging habitat includes open grassland and savannah. Nesting occurs during February through August.

Two CNDDB occurrences of golden eagle have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields and nonnative annual grassland found within the EIR Study Area provide marginally suitable foraging habitat for this species. Golden eagle has low potential to occur within the EIR Study Area.

Northern Harrier

The northern harrier (*Circus hudsonius*) is not listed pursuant to either the California or federal ESAs; however, it is a USFWS BCC and a CDFW SSC. This species is known to nest within the Central Valley, along the Pacific Coast, and in northeastern California. The northern harrier is a ground-nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah communities, usually in areas with dense vegetation (Smith et al. 2020). Foraging occurs within a variety of open environments such as marshes, agricultural fields, and grasslands. Nesting occurs during April through September.

Six CNDDB occurrences of northern harrier have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields, nonnative annual grassland, and fresh emergent wetland communities found within the EIR Study Area provide suitable nesting and foraging habitat for this species. Northern harrier has potential to occur within the EIR Study Area.

Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW *watch list* species and is currently tracked in the CNDDB. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawk nests throughout California from Siskiyou County to San Diego County, including the Central Valley (Rosenfield et al. 2020). Breeding occurs during March through July, with a peak from May through July.

No CNDDB occurrences of Cooper's hawk have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the mixed riparian woodland found within the EIR Study Area provides marginally suitable habitat for this species. Cooper's hawk has low potential to occur within the EIR Study Area.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) has been delisted under the federal ESA but remains listed as Endangered under the California ESA. It is fully protected pursuant to the California Fish and Game Code Section 3511 and the federal Bald and Golden Eagle Protection Act. It is a Bureau of Land Management sensitive species, and a U.S. Forest Service sensitive species. Bald eagles breed at lower elevations in the northern Sierra Nevada and North Coast ranges. Bald eagles breed in forested areas adjacent to large waterbodies (Buehler 2020). Tree species used for nesting is quite variable and includes conifers (dominant where available), oaks, hickories, cottonwoods and aspens (Buehler 2020). Nest trees are generally the largest tree available in a suitable area (Buehler 2020). Breeding activity occurs during late-February through September, with peaks in activity from March to June.

No CNDDB occurrences of bald eagle have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the mixed agricultural fields and nonnative annual grassland found within the EIR Study Area provide marginally suitable foraging habitat for this species. Bald eagle has low potential to occur within the EIR Study Area.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species pursuant to the California ESA. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2020). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Spermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanopulus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

Ninety-three CNDDB occurrences of the Swainson's hawk have been reported within 15 miles of the EIR Study Area (CDFW 2022); the mixed riparian woodland and nonnative annual grassland found within the EIR Study Area provide suitable nesting and foraging habitat for this species. Swainson's hawk has potential to occur within the EIR Study Area.

Ferruginous Hawk

Ferruginous hawks (*Buteo regalis*) are not listed pursuant to either the California or federal ESAs. However, they are a CDFW *watch list* species and USFWS BCC. This species typically occurs in open environments and nests from Oregon to Canada, though nesting has been documented in Lassen County, California (Small 1994). For the remainder of the state, including the Central Valley, ferruginous hawk occurrences are restricted to the non-breeding season (approximately September through March) (Small 1994). Wintering habitat includes a variety of open communities including annual grasslands, agricultural areas, deserts, and savannahs, where there is an abundance of ground squirrels, prairie dogs, lagomorphs, or pocket gophers (Ng et al. 2020).

Twenty-eight CNDDB occurrences of the ferruginous hawk have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields and nonnative annual grassland found within the EIR Study Area provide suitable wintering habitat for this species. Ferruginous hawk has potential to forage within the EIR Study Area.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and as an SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, city roadsides, airports, vacant lots in residential areas, school campuses, agricultural areas, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Spermophilus beecheyi*), but may also use man-made structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (California Department of Fish and Game [CDFG] 2012). The breeding season typically occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; CDFG 2012).

Eighteen CNDDB occurrences of burrowing owl have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields, nonnative annual grassland, and irrigation ditches found within the EIR Study Area provide suitable habitat for this species. Burrowing owl has potential to occur within the EIR Study Area.

Nuttall's Woodpecker

Nuttall's woodpecker (*Dryobates nuttallii*) is not listed under either the California or federal ESAs but is considered a USFWS BCC. They are resident from Siskiyou County south to Baja California. Nuttall's woodpeckers nest in tree cavities primarily within oak woodlands, but also can be found in riparian woodlands (Lowther et al. 2020). Breeding occurs during April through July.

No CNDDB occurrences of Nuttall's woodpecker have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the riparian oak woodland found within the EIR Study Area provides suitable habitat for this species. Nuttall's woodpecker has potential to nest and forage within the EIR Study Area

Merlin

The merlin (*Falco columbarius*) is not listed pursuant to either the California or federal ESAs but is a CDFW *watch list* species and is currently tracked in the CNDDB. This falcon breeds in Canada and Alaska and occurs in California as a migrant and during the non-breeding season (September through April). Foraging habitat in winter includes open forests, grasslands, and tidal flats (Warkentin et al. 2020).

No CNDDB occurrences of merlin have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the agricultural fields and nonnative annual grassland found within the EIR Study Area provide suitable wintering habitat for this species. Merlin has low potential to occur within the EIR Study Area.

Prairie Falcon

Prairie falcons (*Falco mexicanus*) are not listed pursuant to either the California or federal ESAs; however, they are a CDFW *watch list* species. The breeding distribution of prairie falcons includes the entire state except the extreme northwestern part of the state and coastal areas (Steenhof 2020). Breeding habitat includes open habitat at all elevation up to 3,350 meter in arid plains and steppes, wherever cliffs or bluffs are present (Steenhof 2020). They nest primarily on shelves, ledges, or potholes in cliffs, but may also use trees, power line structures, buildings, mine highwalls, caves, or stone quarries (Steenhof 2020). Nesting occurs during March through July. Prairie falcons have not been documented to nest in the Central Valley but may occur as migrants and wintering birds.

Four CNDDB occurrences of the prairie falcon has been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields and nonnative annual grassland found within the EIR Study Area provide suitable foraging habitat for this species. Prairie falcon has potential to forage within the EIR Study Area.

Loggerhead Shrike

Loggerhead shrike (*Lanius ludovicianus*) is not listed pursuant to either the California or federal ESAs but is considered an SSC by the CDFW. Loggerhead shrikes nest throughout California except the northwestern corner, montane forests, and high deserts (Small 1994). Loggerhead shrikes nest in small trees and shrubs in open country with short vegetation such as pastures, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 2020). The nesting season extends from March through July.

Two CNDDB occurrences of the loggerhead shrike have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields and nonnative annual grassland found within the EIR Study Area provide suitable habitat for this species. Loggerhead shrike has potential to occur within the EIR Study Area

Yellow-Billed Magpie

Yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal ESAs but is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast

Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures, or cropland. Nest building begins in late January to mid-February and may take up to six to eight weeks to complete, with eggs laid during April through May and fledging occurring during May through June (Koenig and Reynolds 2020). The young leave the nest at about 30 days after hatching (Koenig and Reynolds 2020). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006 (Koenig and Reynolds 2020).

No CNDDB occurrences of the yellow-billed magpie have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the mixed riparian woodland and nonnative annual grassland found within the EIR Study Area provide suitable habitat for this species. Yellow-billed magpie has potential to occur within the EIR Study Area.

California Horned Lark

The California horned lark (*Eremophila alpestris actia*) is not listed pursuant to either the California or federal ESAs but is a CDFW *watch list* species. Horned larks are widely distributed throughout North America, with 21 recognized subspecies (American Ornithologists' Union 1957). The California horned lark is one of approximately nine subspecies that breeds and/or winters in California and is found in the Coast Range and southern San Joaquin Valley south into northern Baja California (Beason 2020). The California horned lark is resident and non-migratory. They are found in grasslands and other open habitats with sparse vegetation. Nests are grass-lined and built on the ground. The breeding season extends from March through July, with a peak of activity in May.

Eight CNDDB occurrences of the California horned lark have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields and nonnative annual grassland found within the EIR Study Area provide suitable habitat for this species. California horned lark has potential occur within the EIR Study Area.

Song Sparrow "Modesto" Population

The song sparrow (*Melospiza melodia*) is considered one of the most polytypic songbirds in North America (Miller 1956 as cited in Arcese et al. 2020). The subspecies *Melospiza melodia heermanni* includes synonyms *M. m. mailliardi* (the *Modesto song sparrow*) and *M. m. cooperi* (Arcese et al. 2020). The *Modesto song sparrow* is not listed pursuant to either the California or federal ESAs but is a CDFW SSC. The subspecies *M. m. heermanni* can be found in central and southwestern California to northwestern Baja California (Arcese et al. 2020). Song sparrows in this group may have slight morphological differences but they are genetically indistinguishable. The *Modesto song sparrow* occurs in the Central Valley from Colusa County south to Stanislaus County, and east of the Suisun Marshes (Grinnell and Miller 1944). Nesting habitat includes riparian thickets and freshwater marsh communities, with nesting occurring from April through June.

No CNDDB occurrences of the song sparrow have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the mixed riparian woodland found within the EIR Study Area provides suitable nesting habitat for this species. Song sparrow has potential to nest within the EIR Study Area.

Yellow-headed Blackbird

The yellow-headed blackbird (*Xanthocephalus xanthocephalus*) is not listed pursuant to either the California or federal ESAs but is a CDFW SSC. In California, yellow-headed blackbirds breed along the lower Colorado River; at the Salton Sea; locally in Kern Ventura, Riverside, San Diego, and possibly Orange counties; at Clear Lake in Lake County; locally in the Central Valley from Tehama to Kern counties; in the Klamath Basin and Modoc Plateau; and in the Mono Basin (Twedt and Crawford 2020). Yellow-headed blackbirds nest in colonies in emergent vegetation of deep-water palustrine wetlands (Twedt and Crawford 2020). Foraging occurs in emergent marsh, along shorelines, or in adjacent grasslands and croplands. Nesting generally occurs from April through July.

One CNDDB occurrence of the yellow-headed blackbird has been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields, nonnative annual grassland, and fresh emergent wetland communities found within the EIR Study Area provides marginally suitable wintering habitat for this species. Yellow-headed blackbird has low potential to occur within the EIR Study Area.

Bullock's Oriole

The Bullock's oriole (*Icterus bullockii*) is not listed pursuant to either the California or federal ESAs but is a USFWS BCC. In California, Bullock's orioles are found throughout the state except at the higher elevations of mountain ranges and the eastern deserts (Small 1994). They are found in riparian and oak woodlands where nests are built in deciduous trees, but may also use orchards, conifers, and eucalyptus trees (Flood et al 2020). Nesting occurs from March through July.

No CNDDB occurrences of Bullock's oriole have been reported within 15 miles of the EIR Study Area (CDFW 2022); however, the mixed riparian woodland found within the EIR Study Area provides suitable nesting and foraging habitat for this species. Bullock's oriole has potential to occur within the EIR Study Area.

Tricolored Blackbird

Tricolored blackbird (*Agelaius tricolor*) was granted emergency listing for protection under the California ESA in December 2014, but the listing status was not renewed in June 2015. After an extensive status review, the California Fish and Game Commission listed tricolored blackbirds as a threatened species in 2018. In addition, it is a USFWS BCC and a CDFW SSC. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California (Beedy et al. 2020). Tricolored blackbirds nest in colonies that can range from several pairs to several thousand pairs depending on prey availability, the presence of predators, or level of human disturbance. Tricolored blackbird nesting habitat includes emergent marsh, riparian woodland/scrub, blackberry thickets, and densely vegetated agricultural and idle fields (e.g., wheat, triticale, safflower, fava bean fields,

thistle, mustard, cane, and fiddleneck), usually with some nearby standing water or ground saturation (Beedy et al. 2020). They feed mainly on grasshoppers during the breeding season, but may also forage upon a variety of other insects, grains, and seeds in open grasslands, wetlands, feedlots, dairies, and agricultural fields (Beedy et al. 2020). The nesting season is generally from March through August.

Forty-eight CNDDB occurrences of the tricolored blackbird have been reported within 15 miles of the EIR Study Area (CDFW 2022); the agricultural fields, nonnative annual grassland, and fresh emergent wetland communities within the EIR Study Area provide suitable nesting and foraging habitat for this species. Tricolored blackbird has potential to nest and forage within the EIR Study Area.

Mammals

Nelson's Antelope Squirrel

Nelson's antelope squirrel (*Ammospermophilus nelsoni*, NAS) is listed as threatened pursuant to the California ESA. The species' historical range included the western and southern portions of the Tulare Basin; San Joaquin Valley, Kern County to near Tipton (Tulare County); the upper Cuyama Valley; and the Carrizo and Elkhorn Plains (Williams and Kilburn 1992). Grinnell and Dixon (1918) noted that this species was unevenly distributed and occurred in abundance in only a few localities (Williams and Kilburn 1992). Today, only the Carrizo and Elkhorn Plains and western Kern County, around Elk Hills, support significant populations of NAS. Smaller populations also inhabit marginal habitat in the foothills of the western edge of the San Joaquin Valley (CDFG 2005). The NAS inhabits dry grasslands with sandy loam soils, widely spaced alkali scrub vegetation, and dry washes. NAS population declines are due to the conversion of approximately 80 percent of the species' original geographic range to agriculture, and no prime habitat remains within the San Joaquin Valley (CDFG 2005).

Two CNDDB occurrences of NAS have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland found within the EIR Study Area provide marginally suitable habitat for this species. The NAS has low potential to occur within the EIR Study Area.

Western Mastiff Bat

Western mastiff bat (*Eumops perotis californicus*) is not listed pursuant to either the California or federal ESAs; however, it is designated as an SSC by the CDFW. This species is distributed from central California to central Mexico and northern Argentina (Harvey et al. 2011). It is most commonly found in rugged rocky canyons and cliffs, where day roosting is available in crevices (Harvey et al. 2011). Colonies are usually fewer than 100, with adult males sometimes found in maternity colonies (Harvey et al. 2011). Roosting sites may be occupied year-round, but the four seasons are usually spent in different roosts (Harvey et al. 2011). One offspring is usually born between May and September in the United States, with twins occurring rarely. (Harvey et al. 2011).

One CNDDB occurrence of western mastiff bat has been reported within 15 miles of the EIR Study Area (CDFW 2022); the roofing of rural or abandoned structures found within the EIR Study Area provide

marginally suitable habitat for this species. Western mastiff bat has low potential to roost within the EIR Study Area.

Hoary Bat

Hoary bat (*Lasiurus cinereus*) is not listed pursuant to either the California or federal ESAs; however, this species is a CDFW SSC. Hoary bats can be distinguished from other species by a combination of its large size, frosted fur, and golden coloration around the face. This bat is widespread in California, although distribution is patchy in the southern deserts. Hoary bats are solitary roosters, concealing themselves in the foliage of both coniferous and deciduous trees. Suitable roosting habitat includes woodlands and forests with medium- to large-size trees and dense foliage, to elevations up to 13,000 feet. This species is highly migratory, making long migrations to and from warmer winter habitats. Sexes are separated geographically throughout most of the summer range. Hoary bats feed primarily on moths, foraging in open areas or along habitat edges (Zeiner et al. 1990).

One CNDDB occurrence of hoary bat has been reported within 15 miles of the EIR Study Area (CDFW 2022); the mixed riparian woodland found within the EIR Study Area provides suitable roosting habitat for this species. Hoary bat has potential to roost within the EIR Study Area.

American Badger

American badger (*Taxidea taxus*) is designated in California as an SSC. The species historically ranged throughout much of the state except in humid coastal forests. Badgers were once numerous in the Central Valley; however, populations now occur in low numbers in the surrounding peripheral parts of the valley and in the adjacent lowlands of eastern Monterey, San Benito, and San Luis Obispo counties (Williams 1986). Badgers occupy a variety of habitats including grasslands and savannas. The principal requirements seem to be significant food supply, friable soils, and relatively open, uncultivated ground (Williams 1986).

Twelve CNDDB occurrences of American badger have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland found within the EIR Study Area provides marginal habitat for this species. American badger has low potential to occur within the EIR Study Area.

San Joaquin Kit fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is listed as threatened under the California ESA and as endangered under the federal ESA. Although the precise historical range of the San Joaquin kit fox is unknown, Grinnell et al. (1937) believed that prior to 1930 San Joaquin kit fox occupied most of the San Joaquin Valley from southern Kern County north to Tracy, San Joaquin County, on the west side, and near La Grange, Stanislaus County, on the east side. Since then, the San Joaquin kit fox population has declined primarily as a result of habitat loss to agricultural, urban, industrial and mineral development in the San Joaquin Valley. San Joaquin kit fox has been listed as endangered for more than 30 years, yet despite the loss of habitat and apparent decline in numbers since the early 1970s, there has never been a comprehensive survey of its entire range or habitat that was once thought to be occupied (USFWS 1983;

Morrell 1975). Local surveys, research projects and incidental sightings indicate that kit foxes currently inhabit some areas of suitable habitat on the San Joaquin Valley floor and in the surrounding foothills of the coastal ranges and Sierra Nevada; Tehachapi Mountains, from southern Kern County north to Contra Costa, Alameda, and San Joaquin counties on the west; near La Grange in Stanislaus County on the east side of the Valley (Williams in litt. 1990); and across some of the larger scattered islands of natural land on the valley floor in Kern, Tulare, Kings, Fresno, Madera, and Merced counties (USFWS 1998).

In the central and northern portions of the range, the kit fox is associated with valley sink scrub, interior Coast Range saltbush scrub, upper Sonoran subshrub scrub, annual grassland, valley oak woodland, and the remaining native grasslands. Agriculture dominates this region where kit foxes mostly inhabit grazed, non-irrigated grasslands, but also live next to and forage in tilled or fallow fields, irrigated row crops, orchards, and vineyards (Bell 1994; Hall 1983; USFWS 1998). They usually inhabit areas with loose-textured (friable) soils, suitable for den excavation (USFWS 1983). Where soils make digging difficult, the foxes frequently use and modify burrows built by other animals (Orloff et al. 1986). Structures such as culverts, abandoned pipelines, and well casings also may be used as den sites (USFWS 1983).

Kit foxes are primarily nocturnal and carnivorous, but are commonly seen during the day in the late spring and early summer (Orloff et al. 1986). Major prey includes kangaroo rats, black-tailed hares, desert cottontails, deer mice, California ground squirrels, ground nesting birds, and insects (Scrivner et al. 1987).

Sixty CNDDB occurrences of San Joaquin kit fox have been reported within 15 miles of the EIR Study Area (CDFW 2022); the nonnative annual grassland, agricultural fields, and ruderal areas found within the EIR Study Area provide suitable habitat for this species. San Joaquin kit fox has potential to occur within the EIR Study Area.

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ATTACHMENT B

Literature Review Species Lists

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Volta (3712018) OR Los Banos (3712017) OR Howard Ranch (3712121) OR Ingomar (3712028) OR San Luis Ranch (3712027) OR Turner Ranch (3712026) OR Delta Ranch (3712016) OR Dos Palos (3612086) OR Charleston School (3612087) OR Ortigalita Peak NW (3612088) OR Los Banos Valley (3612181) OR San Luis Dam (3712111))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01181	***Ambystoma californiense pop. 1*** California tiger salamander - central California DPS	Threatened	Threatened	G2G3	S3	WL
AAABF02020	***Spea hammondii*** western spadefoot	None	None	G2G3	S3	SSC
AAABH01022	***Rana draytonii*** California red-legged frog	Threatened	None	G2G3	S2S3	SSC
AAABH01050	***Rana boylii*** foothill yellow-legged frog	None	Endangered	G3	S3	SSC
AAABH01170	***Lithobates pipiens*** northern leopard frog	None	None	G5	S2	SSC
ABNJB05035	***Branta hutchinsii leucopareia*** cackling (=Aleutian Canada) goose	Delisted	None	G5T3	S3	WL
ABNKC11011	***Circus hudsonius*** northern harrier	None	None	G5	S3	SSC
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S3	
ABNKC19120	***Buteo regalis*** ferruginous hawk	None	None	G4	S3S4	WL
ABNKC22010	***Aquila chrysaetos*** golden eagle	None	None	G5	S3	FP
ABNKD06090	***Falco mexicanus*** prairie falcon	None	None	G5	S4	WL
ABNME01010	***Coturnicops noveboracensis*** yellow rail	None	None	G4	S1S2	SSC
ABNNB03100	***Charadrius montanus*** mountain plover	None	None	G3	S2S3	SSC
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S3	SSC
ABPAT02011	***Eremophila alpestris actia*** California horned lark	None	None	G5T4Q	S4	WL
ABPBR01030	***Lanius ludovicianus*** loggerhead shrike	None	None	G4	S4	SSC
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G1G2	S1S2	SSC
ABPBXB3010	***Xanthocephalus xanthocephalus*** yellow-headed blackbird	None	None	G5	S3	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AFCHA0209K	***Oncorhynchus mykiss irideus pop. 11*** steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2	
AFCJB25010	***Mylopharodon conocephalus*** hardhead	None	None	G3	S3	SSC
AMACC01020	***Myotis yumanensis*** Yuma myotis	None	None	G5	S4	
AMACC05030	***Lasiurus cinereus*** hoary bat	None	None	G3G4	S4	
AMACD02011	***Eumops perotis californicus*** western mastiff bat	None	None	G4G5T4	S3S4	SSC
AMAFB04040	***Ammospermophilus nelsoni*** Nelson's (=San Joaquin) antelope squirrel	None	Threatened	G2G3	S2S3	
AMAFD01060	***Perognathus inornatus*** San Joaquin pocket mouse	None	None	G2G3	S2S3	
AMAFD03080	***Dipodomys ingens*** giant kangaroo rat	Endangered	Endangered	G1G2	S1S2	
AMAJA03041	***Vulpes macrotis mutica*** San Joaquin kit fox	Endangered	Threatened	G4T2	S2	
AMAJF04010	***Taxidea taxus*** American badger	None	None	G5	S3	SSC
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
ARACC01020	***Anniella pulchra*** Northern California legless lizard	None	None	G3	S3	SSC
ARACF07010	***Gambelia sila*** blunt-nosed leopard lizard	Endangered	Endangered	G1	S1	FP
ARADB21021	***Masticophis flagellum ruddocki*** San Joaquin coachwhip	None	None	G5T2T3	S2?	SSC
ARADB36150	***Thamnophis gigas*** giant gartersnake	Threatened	Threatened	G2	S2	
CTT36210CA	***Valley Sink Scrub*** Valley Sink Scrub	None	None	G1	S1.1	
CTT42120CA	***Valley Sacaton Grassland*** Valley Sacaton Grassland	None	None	G1	S1.1	
CTT45320CA	***Alkali Seep*** Alkali Seep	None	None	G3	S2.1	
CTT52310CA	***Cismontane Alkali Marsh*** Cismontane Alkali Marsh	None	None	G1	S1.1	
CTT52410CA	***Coastal and Valley Freshwater Marsh*** Coastal and Valley Freshwater Marsh	None	None	G3	S2.1	
CTT61410CA	***Great Valley Cottonwood Riparian Forest*** Great Valley Cottonwood Riparian Forest	None	None	G2	S2.1	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
CTT62100CA	***Sycamore Alluvial Woodland*** Sycamore Alluvial Woodland	None	None	G1	S1.1	
ICBRA03010	***Branchinecta conservatio*** Conservancy fairy shrimp	Endangered	None	G2	S2	
ICBRA03020	***Branchinecta longiantenna*** longhorn fairy shrimp	Endangered	None	G1	S1S2	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S3	
ICBRA06010	***Linderiella occidentalis*** California linderiella	None	None	G2G3	S2S3	
ICBRA10010	***Lepidurus packardi*** vernal pool tadpole shrimp	Endangered	None	G4	S3S4	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T2	S3	
IIHYM24480	***Bombus crotchii*** Crotch bumble bee	None	None	G3G4	S1S2	
IMBIV19010	***Gonidea angulata*** western ridged mussel	None	None	G3	S1S2	
PDAPI0Z0S0	***Eryngium racemosum*** Delta button-celery	None	Endangered	G1	S1	1B.1
PDAPI0Z0Y0	***Eryngium spinosepalum*** spiny-sepaled button-celery	None	None	G2	S2	1B.2
PDAST5L030	***Lasthenia chrysantha*** alkali-sink goldfields	None	None	G2	S2	1B.1
PDAST5L0A1	***Lasthenia glabrata ssp. coulteri*** Coulter's goldfields	None	None	G4T2	S2	1B.1
PDAST8H060	***Senecio aphanactis*** chaparral ragwort	None	None	G3	S2	2B.2
PDAST9F031	***Trichocoronis wrightii var. wrightii*** Wright's trichocoronis	None	None	G4T3	S1	2B.1
PDBRA0M0E0	***Caulanthus lemmonii*** Lemmon's jewelflower	None	None	G3	S3	1B.2
PDBRA2G0Q1	***Streptanthus insignis ssp. lyonii*** Arburua Ranch jewelflower	None	None	G3G4T2	S2	1B.2
PDCHE040B0	***Atriplex cordulata var. cordulata*** heartscale	None	None	G3T2	S2	1B.2
PDCHE042M0	***Atriplex minuscula*** lesser saltscale	None	None	G2	S2	1B.1
PDCHE042P0	***Atriplex persistens*** vernal pool smallscale	None	None	G2	S2	1B.2
PDCHE04371	***Atriplex coronata var. vallicola*** Lost Hills crownscale	None	None	G4T3	S3	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDEUP0D150	***Euphorbia hooveri*** Hoover's spurge	Threatened	None	G1	S1	1B.2
PDFAB0F8R1	***Astragalus tener var. tener*** alkali milk-vetch	None	None	G2T1	S1	1B.2
PDMAL0Q0F0	***Malacothamnus hallii*** Hall's bush-mallow	None	None	G2	S2	1B.2
PDPLM0C0J2	***Navarretia nigelliformis ssp. radians*** shining navarretia	None	None	G4T2	S2	1B.2
PDPLM0C0Q0	***Navarretia prostrata*** prostrate vernal pool navarretia	None	None	G2	S2	1B.2
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G2?	S2?	1B.2
PDSCR0J0D1	***Chloropyron molle ssp. hispidum*** hispid salty bird's-beak	None	None	G2T1	S1	1B.1
PMALI040Q0	***Sagittaria sanfordii*** Sanford's arrowhead	None	None	G3	S3	1B.2
PMPOA4C010	***Neostapfia colusana*** Colusa grass	Threatened	Endangered	G1	S1	1B.1
PMPOA53110	***Puccinellia simplex*** California alkali grass	None	None	G3	S2	1B.2
PMPOT03091	***Stuckenia filiformis ssp. alpina*** northern slender pondweed	None	None	G5T5	S2S3	2B.2

Record Count: 71

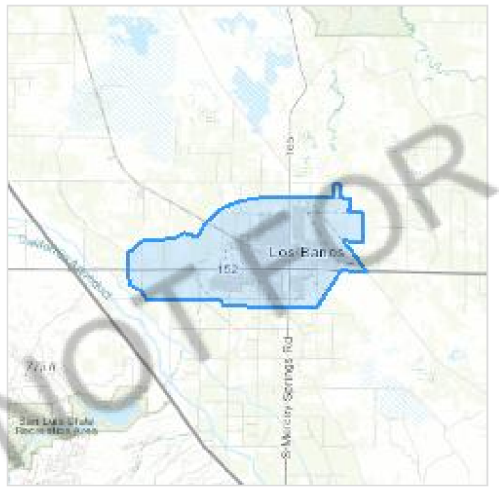
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Merced County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Fresno Kangaroo Rat Dipodomys nitratoides exilis Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5150	Endangered
San Joaquin Kit Fox Vulpes macrotis mutica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE

	WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus** This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black Tern *Chlidonias niger** This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Clark's Grebe *Aechmophorus clarkii** This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat *Geothlypis trichas sinuosa** This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle *Aquila chrysaetos** This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Nuttall's Woodpecker *Picoides nuttallii** This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Tricolored Blackbird *Agelaius tricolor** This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Willet *Tringa semipalmata** This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

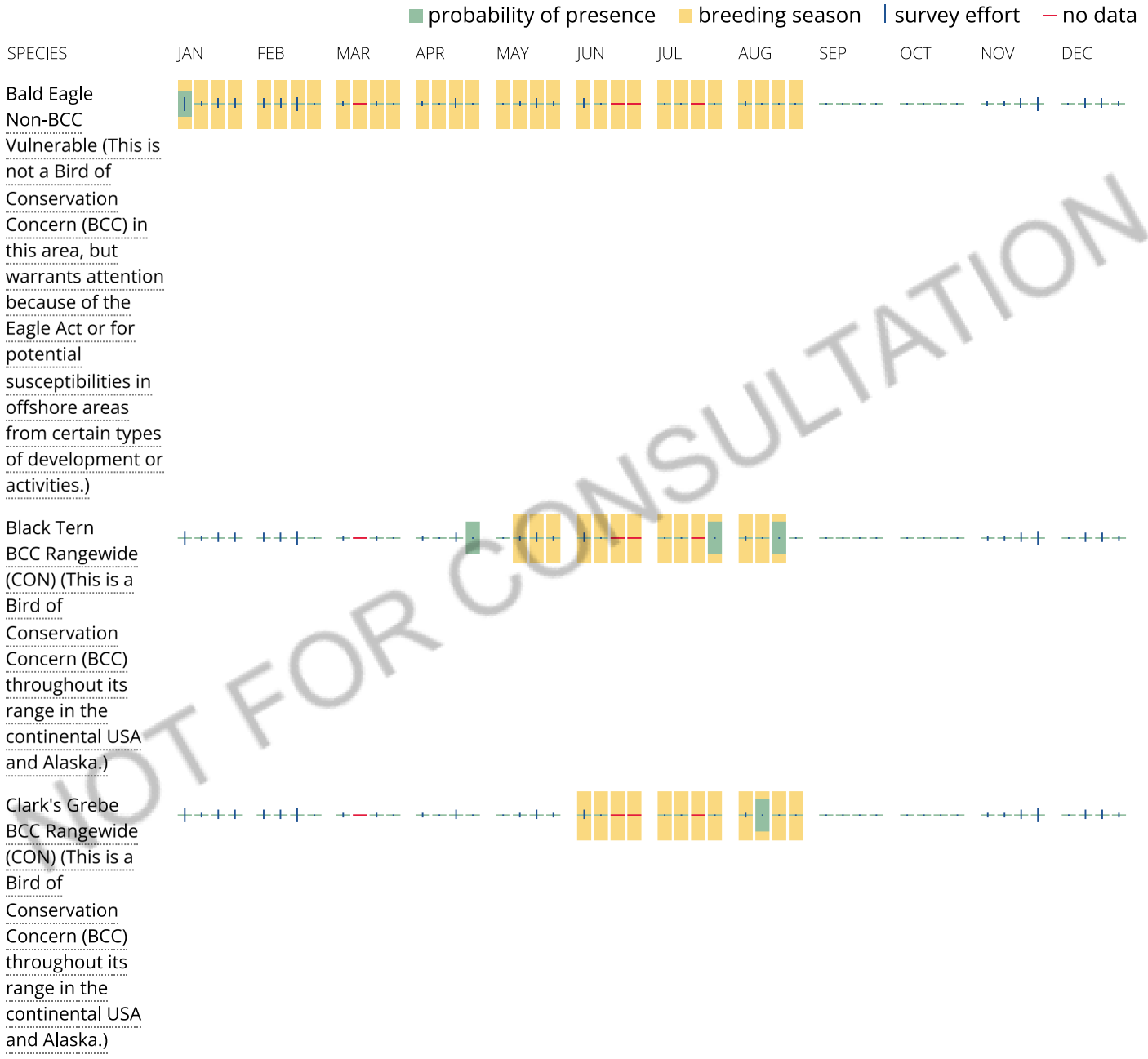
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

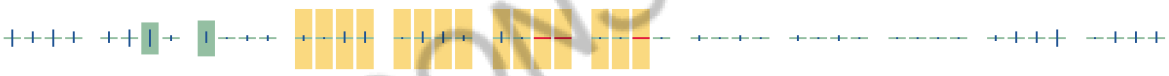
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Common Yellowthroat BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Nuttall's Woodpecker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Tricolored Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring

in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1K
- PEM1A
- PEM1C
- PEM1Fh
- PEM1Ch
- PEM1Kx
- PEM1F
- PEM1Cx
- PEM1Ah

FRESHWATER FORESTED/SHRUB WETLAND

- PFOC
- PSSC
- PSSCh

FRESHWATER POND

- PUBGh
- PABFh
- PABKx
- PUBKx
- PUBK
- PUBHh
- PUBF
- PUSC

LAKE

- L2ABKx
- L2UBGh

RIVERINE

- R2UBHx
- R5UBFx
- R2UBH
- R4SBCx
- R5UBF
- R4SBC
- R2USC

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

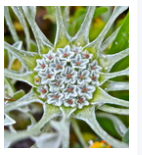
Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Search Results

36 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3712121:3712111:3612181:3612088:3612087:3712016:3712026:3712028:3712027:3612086:3712018:3712017**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	Mar-Jun	None	None	G4	S4	4.2	 © 2005 Barry Breckling
Amsinckia furcata	forked fiddleneck	Boraginaceae	annual herb	Feb-May	None	None	G4	S4	4.2	 © 2017 Keir Morse
Androsace elongata ssp. *acuta*	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5?T3T4	S3S4	4.2	 © 2008 Aaron Schusteff
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2	No Photo Available
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2	 © 1994 Robert E. Preston, Ph.D.
Atriplex coronata var. *coronata*	crownscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4T3	S3	4.2	 © 1994 Robert E. Preston, Ph.D.
Atriplex coronata var. *vallicola*	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	None	None	G4T3	S3	1B.2	No Photo Available
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	None	None	G2	S2	1B.1	 © 2000

										Robert E. Preston, Ph.D.
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G2	S2	1B.2	No Photo Available
Caulanthus lemmonii	Lemmon's jewelflower	Brassicaceae	annual herb	Feb-May	None	None	G3	S3	1B.2	No Photo Available
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	No Photo Available
Chloropyron molle ssp. *hispidum*	hispid salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1	No Photo Available
Clarkia breweri	Brewer's clarkia	Onagraceae	annual herb	Apr-Jun	None	None	G4	S4	4.2	No Photo Available
Cryptantha rattanii	Rattan's cryptantha	Boraginaceae	annual herb	Apr-Jul	None	None	G4	S4	4.3	No Photo Available
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	No Photo Available
Eriogonum nudum var. *indictum*	protruding buckwheat	Polygonaceae	perennial herb	(Apr)May-Oct(Dec)	None	None	G5T4	S4	4.2	No Photo Available
Eriogonum vestitum	Idria buckwheat	Polygonaceae	annual herb	Apr-Aug	None	None	G3	S3	4.3	No Photo Available
Eryngium racemosum	Delta button-celery	Apiaceae	annual/perennial herb	(May)Jun-Oct	None	CE	G1	S1	1B.1	No Photo Available
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual/perennial herb	Apr-Jun	None	None	G2	S2	1B.2	No Photo Available
Euphorbia hooveri	Hoover's spurge	Euphorbiaceae	annual herb	Jul-Sep(Oct)	FT	None	G1	S1	1B.2	No Photo Available
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	 © 2017 John Doyen
Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1	 © 2009 California State University,

										Stanislaus
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2	 © 2009 Zoya Akulova
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1	 © 2013 Keir Morse
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	Mar-Jun	None	None	G4	S4	4.2	 © 2010 Aaron Schusteff
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial deciduous shrub	(Apr)May-Sep(Oct)	None	None	G2	S2	1B.2	 © 2017 Keir Morse
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1	No Photo Available
Navarretia nigelliformis ssp. *radians*	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	None	None	G4T2	S2	1B.2	No Photo Available
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	No Photo Available
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	FT	CE	G1	S1	1B.1	No Photo Available
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G3	S2	1B.2	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2	No Photo Available
Streptanthus insignis ssp. *lyonii*	Arburua Ranch jewelflower	Brassicaceae	annual herb	Mar-May	None	None	G3G4T2	S2	1B.2	No Photo Available
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	None	None	G5T5	S2S3	2B.2	 Dana York (2016)

Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1	No Photo Available

Showing 1 to 36 of 36 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Website https://www.rareplants.cnps.org [accessed 2 February 2022].