

DRAFT

Biological Resources Assessment for the Century Palms Project

Sacramento County, California

Prepared For:

D. R. Horton CA2, Inc.

Prepared By:



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2525 Warren Drive
Rocklin, CA 95677

DRAFT

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
°F	degrees Fahrenheit
BCC	Bird of Conservation Concern
BIOS	Biogeographic Information and Observation System
BRA	Biological Resources Assessment
BSA	Biological Study Area
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dbh	diameter at breast height
DPS	Distinct Population Segment
ECORP	ECORP Consulting, Inc.
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
Guidelines	2017 Survey Guidelines for the Listed Large Branchiopods
HCP	Habitat Conservation Plan
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
N/A	Not Applicable
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
Project	Century Palms Project
RWQCB	Regional Water Quality Control Board
SPA	Special Planning Area
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VELB	valley elderberry longhorn beetle
WDR	Waste Discharge Requirement

1.0 INTRODUCTION

ECORP Consulting, Inc. (ECORP) has conducted a Biological Resources Assessment (BRA) at the request of DR Horton CA2, Inc., for the proposed Century Palms Project (Project) located in Sacramento County, California. The results of this assessment will support environmental review of the Project in accordance with the California Environmental Quality Act (CEQA) and provide the basis for identifying appropriate measures to lessen or avoid significant impacts to biological resources.

1.1 Project Location and Description

The approximately 13.04-acre Project Area is located southwest of the intersection of M Street and Rio Linda Boulevard (Figure 1). The Proposed Project is a residential, 120-lot in-fill development located within the Downtown Rio Linda Special Planning Area (SPA) consisting of three parcels (Assessor's Parcel Numbers: 206-0210-016, 206-0210-019, and 206-0210-038) with subzone designations as Residential and Commercial-Mixed Use (County of Sacramento 2025).

1.2 Biological Study Area

The Biological Study Area (BSA) includes all areas where Project-related activities may result in impacts to sensitive biological resources and for this Project is the same as the Project Area. The 13.04-acre BSA corresponds to a portion of Section 29, Township 10 North, and Range 5 East (Mount Diablo Base and Meridian) and a portion of the unsectioned Del Paso Land Grant of the "Rio Linda, California" 7.5-minute quadrangle (U.S. Geological Survey 1992) (Figure 1). The approximate center of the BSA is located at 38.690248° North and -121.458671° West within the Lower American watershed (Hydrological Unit Code #18020111) (Natural Resources Conservation Service [NRCS] et al. 2024).

1.3 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 habitats, and other sensitive or protected resources such as migratory birds, sensitive natural communities, riparian habitat, oak woodlands, and potential Waters of the U.S. or state, including wetlands, within the BSA. This assessment does not include determinate field surveys conducted according to agency-promulgated protocols, except for those described in Section 3.3. The conclusions and recommendations presented in this report are based upon a review of available literature and the results of site reconnaissance and field surveys. Protocol-level surveys included a rare plant survey, valley elderberry longhorn beetle survey, branchiopod dry-season survey, an aquatic resource delineation, and an arborist survey, and the results of those surveys are reported within this document.

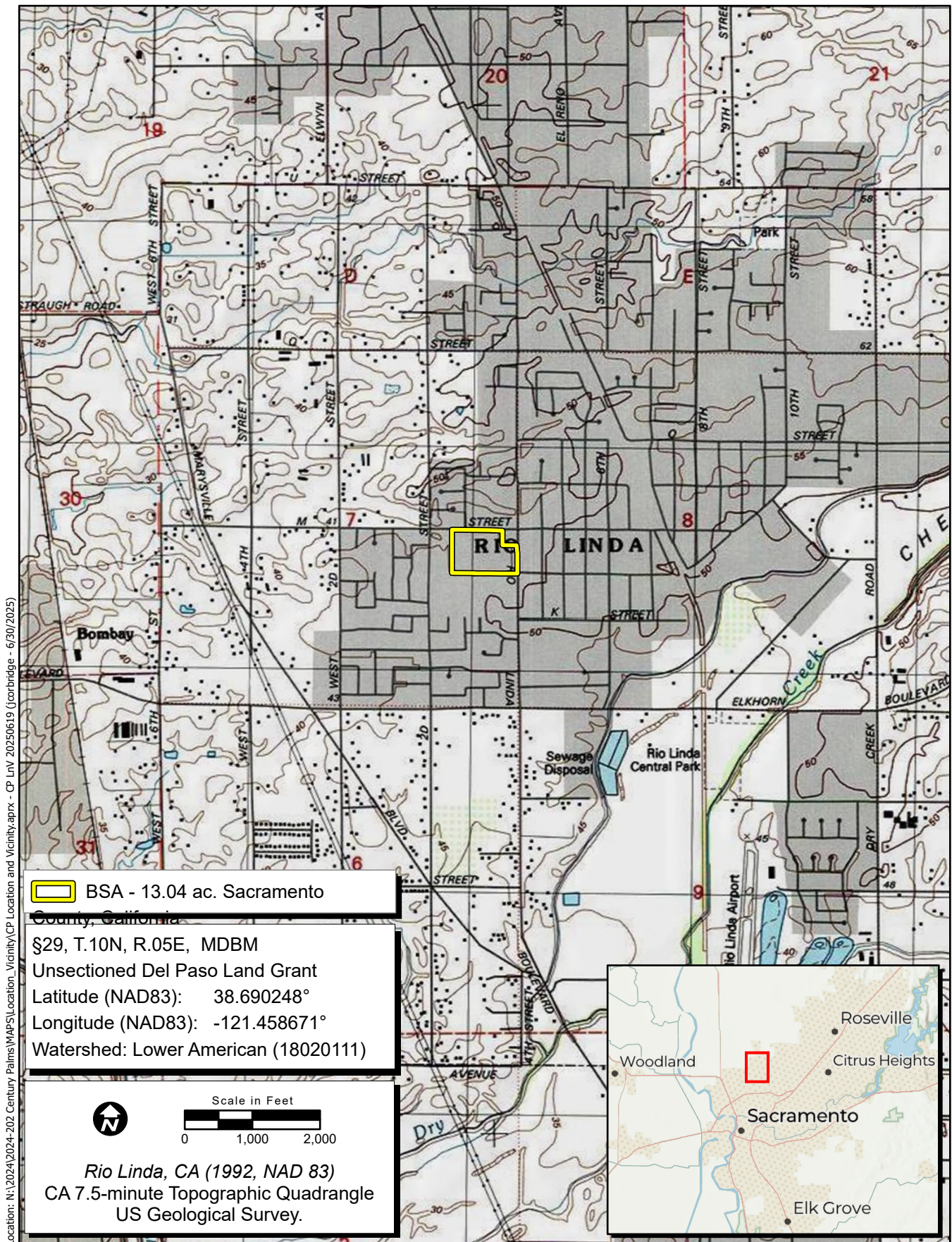


Figure 1. Project Location and Vicinity

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 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);
- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Rare Plant Ranks [CRPRs] 1 and 2), plants listed by CNPS as species about which more information is needed to determine their status (CRPR 3), and plants of limited distribution (CRPR 4);
- are plants listed as rare under the California Native Plant Protection Act (NPPA) (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).

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by USFWS or the National Marine Fisheries Service (NMFS). Section 9 of the 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, the ESA prohibits removing or possessing any listed plant on federal land, maliciously damaging or destroying any listed plant in any area, or removing, cutting, digging up, damaging, or destroying any such species in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of ESA, federal agencies are required to consult with USFWS and/or NMFS if their actions, including permit approvals or funding, may affect a listed species (including plants) or its designated critical habitat. Through consultation and the issuance of a Biological Opinion (formal consultation), USFWS and/or NMFS may authorize take of a listed species that is incidental to an otherwise legal activity provided the activity will not jeopardize the continued existence of the species. USFWS and/or NMFS may issue a letter of concurrence through an informal consultation process if the federal agency demonstrates that the action is not likely to adversely affect a listed species. 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.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States 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. USFWS may issue permits to qualified applicants as authorized by the MBTA 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.

2.1.3 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 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 Sections 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA 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.” Section 2081 allows CDFW to authorize incidental take permits if species-specific minimization and avoidance measures are incorporated to fully mitigate the impacts of a 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. Previously, the regulations that implement the Fully Protected Species Statute (California Fish and Game Code Sections 4700 for mammals, 3511 for birds, 5050 for reptiles and amphibians, and 5515 for fish) provided that fully protected species may not be taken or possessed at any time. However, on July 10, 2023, Senate Bill 147 was signed into law, authorizing CDFW to issue take permits under the California ESA for fully protected species for qualifying projects through 2033. Qualifying projects include:

- a maintenance, repair, or improvement project to the State Water Project, including existing infrastructure, undertaken by the Department of Water Resources;

- a maintenance, repair, or improvement project to critical regional or local water agency infrastructure;
- a transportation project, including any associated habitat connectivity and wildlife crossing project, undertaken by a state, regional, or local agency, that does not increase highway or street capacity for automobile or truck travel;
- a wind project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the State to a point of junction with any California based balancing authority; or
- a solar photovoltaic project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the State to a point of junction with any California-based balancing authority.

CDFW may also issue licenses or permits for take of these species for necessary scientific research or live capture and relocation, and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

2.2.1.3 *Native Plant Protection Act*

The 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 Sections 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 Sections 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 *Special Protections for Birds*

Sections 3503, 3513, and 3800 of the California Fish and Game Code specifically protect birds. Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 prohibits the take, possession, or destruction of any birds in the orders Strigiformes (owls) or Falconiformes (hawks and eagles), as well as their nests and eggs. Section 3513 prohibits the take or possession of any migratory nongame bird as designated in the MBTA. Section 3800 states that, with limited exceptions, it is unlawful to take any nongame bird, defined as all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. These provisions, along with the federal MBTA, serve to protect all nongame birds and their nests and eggs, except as otherwise provided in the code.

2.2.1.5 *Lake or Streambed Alteration Agreements*

Section 1602 of the California Fish and Game Code requires an entity to notify CDFW of activities that may: “substantially divert or obstruct the natural flow of any river stream or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit or dispose of

debris, waste or other materials containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.” The statute has been interpreted by CDFW to include modification of adjacent wetland and riparian habitat. If CDFW determines the activity may “substantially adversely affect a fish or wildlife resource,” the entity may not commence the activity without a Lake or Streambed Alteration Agreement (LSAA). The LSAA establishes measures necessary to protect the resource, and is mutually agreed upon by CDFW and the applicant.

2.2.2 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 1 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 also 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]). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of Waste Discharge Requirements (WDRs) for these activities.

2.2.3 California Environmental Quality Act

CEQA requires state and local agencies to disclose and evaluate the significant environmental impacts of proposed projects. Where significant impacts are identified, the agency must adopt all feasible mitigation measures to reduce or eliminate those impacts.

2.2.3.1 CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (i.e., rare, threatened, or endangered) species are considered significant. Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if it meets certain criteria. A species is considered “endangered” if its survival and reproduction in the wild are in immediate jeopardy; a species is considered “rare” when it is present in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.

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.

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. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Pursuant to Appendix G, 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 state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; 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 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.

2.2.3.2 *Species of Special Concern*

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the ESA, the California ESA or the California Fish and Game Code, but currently satisfy 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, and meets the state definition of threatened or endangered but has not formally been listed.

- The species has or is experiencing serious (nonscyclical) 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.

Projects that result in substantial impacts to SSC may be considered significant under CEQA.

2.2.3.3 USFWS Bird of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA.” To meet this requirement, USFWS published a list of BCC (USFWS 2021) for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS’ highest conservation priorities. Projects that result in substantial impacts to BCC may be considered significant under CEQA.

2.2.3.4 California Rare Plant Ranks

The CNPS maintains the *Rare Plant Inventory* (CNPS 2025b), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or 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, academic, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDDB). 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 0.1 through 0.3, with 0.1 being the most threatened and 0.3 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 (greater than 80 percent of occurrences threatened/high degree and immediacy of threat)
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent 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; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2025b). Substantial impacts to plants ranked 1A, 1B, 2A, or 2B 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.

2.2.3.5 Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are imperiled or vulnerable to environmental effects of projects. CDFW maintains the California Natural Community List (CDFW 2025a), which provides a list of vegetation alliances, associations, and special stands as defined in *A Manual of California Vegetation*, Online Edition (MCV) (CNPS 2025a), along with their respective state and global rarity ranks, if applicable. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Substantial impacts to sensitive natural communities may be considered significant under CEQA.

2.2.3.6 Wildlife Movement Corridors and Nursery Sites

Impacts to wildlife movement corridors or nursery sites may be considered significant under CEQA. As part of the California Essential Habitat Connectivity Project, CDFW and California Department of Transportation maintain data on Essential Habitat Connectivity areas. This data is available in the CNDDDB. The goal of this Project is to map large intact habitat or natural landscapes and potential linkages that could provide corridors for wildlife. In urban settings, riparian vegetated stream corridors can also serve as wildlife movement corridors. Nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries, bat maternity roosts, and mule deer critical fawning areas. These data are available through CDFW's Biogeographic Information and Observation System (BIOS) database or as occurrence records in the CNDDDB and are supplemented with the results of the field reconnaissance.

2.2.4 Sacramento County Tree Preservation Ordinance

All native oak trees and some specified non-oak native trees that are six inches in diameter at breast height (dbh) (or 10-inch aggregate dbh for multi-trunk oaks and native walnut trees) are protected under the Sacramento County Tree Preservation Ordinance. In addition, the County has a nonnative tree canopy policy which is sometimes invoked to require mitigation for nonnative tree canopy impacts by creating equivalent canopy onsite. If onsite mitigation is not possible, mitigation can be achieved through funding pursuant to the Tree Preservation Ordinance.

2.2.5 Sacramento County Swainson's Hawk Ordinance

The Sacramento County Swainson's Hawk Mitigation Program, amended by the Board of Supervisors in December of 2009, provides voluntary means for mitigation of impacts to Swainson's Hawk foraging habitat. Those voluntary means differ for projects with impacts under 40 acres and projects with impacts of 40 acres and greater. Options for projects with impacts under 40 acres include paying an impact fee; or providing title or easement to suitable Swainson's Hawk mitigation lands on a per-acre basis. The requirement for projects with impacts of 40 acres and greater is to provide title or easement to Swainson's Hawk mitigation lands. A per acre endowment fee must be paid by the applicant for projects delivering title or easement.

3.0 METHODS

3.1 Literature Review

ECORP biologists reviewed existing available information for the BSA. Literature sources included current and historical aerial imagery, any previous biological studies conducted for the area, topographic mapping, soil survey mapping available from the NRCS *Web Soil Survey*, USFWS Critical Habitat Mapper, NMFS Essential Fish Habitat Mapper, and other relevant literature as cited throughout this document. ECORP reviewed the following resources to identify special-status plant and wildlife species that have been documented within or near the BSA:

- CDFW's CNDDDB data for the "Rio Linda, California" 7.5-minute quadrangle and the surrounding eight quadrangles (CDFW 2025b);
- CNPS Rare Plant Inventory data for the "Rio Linda, California" 7.5-minute quadrangle and the surrounding eight quadrangles (CNPS 2025b);
- USFWS Information for Planning and Consultation Resource Report List for the BSA (USFWS 2025); and
- NMFS Resources data for the "Rio Linda, California" 7.5-minute quadrangle (National Oceanic and Atmospheric Administration [NOAA] 2025a).

The results of the database queries are provided in Appendix A. Each special-status species identified in the literature review is evaluated for its potential to occur in the BSA in Section 4 based on available information concerning species habitat requirements and distribution, occurrence data, and the findings of the site reconnaissance.

3.2 Site Reconnaissance

ECORP Senior biologist Daniel Wong conducted site reconnaissance visits on October 30, 2024 and June 19, 2025. The biologist visually assessed the BSA while walking meandering transects through all portions of the site, paying special attention to identifying those portions of the BSA with the potential to support special-status species or sensitive habitats. The biologist(s) collected the following biological resource information:

- characteristics and approximate boundaries of vegetation communities and other land cover types;
- plant and animal species or their sign directly observed;
- characteristics and approximate extents of potential aquatic resources observed; and
- incidental observations of special habitat features such as burrows, active raptor nests, and potential bat roost sites.

Mr. Wong qualitatively assessed and mapped vegetation communities based on dominant plant composition. Vegetation community classification was based on the classification systems presented in

the MCV. Data were recorded on a global positioning system unit, field notebooks, and/or maps. Photographs were taken during the survey to provide visual representation of the conditions within the BSA.

3.3 Focused Surveys

3.3.1 Aquatic Resources Delineation

ECORP biologist Daniel Wong conducted an aquatic resources delineation for the BSA on October 30, 2024 and April 18, 2025 in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). The delineation was submitted to the USACE on June 2, 2025 with a request for an Approved Jurisdictional Determination (ECORP 2025) (SPK-2025-00366).

3.3.2 Rare Plant Survey

ECORP biologist Daniel Wong conducted the survey on April 18 and June 19, 2025. The survey was conducted in accordance with guidelines promulgated by USFWS (2000), CDFW (2018), and CNPS (2001). Mr. Wong walked meandering transects throughout the BSA during the survey, including all suitable habitat for target species, and identified all plant species to the lowest possible taxonomic level required to assess rarity. The results of this survey are reported in Section 4.

3.3.3 Valley Elderberry Longhorn Beetle Survey

ECORP biologist Daniel Wong conducted a survey for valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*) concurrently with the site reconnaissance. The determinate-level survey for VELB was conducted following the guidelines in the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017a). The survey requires that all elderberry shrubs (*Sambucus* spp.) with at least one stem measuring 1.0 inch or greater in diameter at ground level within the BSA be identified, their locations mapped, and the shrubs thoroughly searched for evidence of valley elderberry longhorn beetle presence (i.e., exit holes). The guidelines typically require a 165-foot survey buffer around the Project Area; however, a survey buffer was not included for this survey because the BSA is located in an urbanized area and is surrounded by properties that have been developed or are highly disturbed.

3.3.4 Federally Listed Large Branchiopods

ECORP biologist Annie Lightell collected soil samples on June 9, 2025 from all aquatic features identified as potential habitat for federally listed large branchiopods within the BSA. The sampling was conducted pursuant to conditions and authorizations of USFWS Recovery Permit TE-012973-13.1 and the methods followed the 2017 *Survey Guidelines for the Listed Large Branchiopods* (hereinafter referred to as *the Guidelines*) (USFWS 2017b). Soil samples were processed following methods outlined in the Guidelines. Under the supervision of permitted ECORP biologist Daniel Wong, all sieved fractions were thoroughly inspected using a dissecting scope for the presence of large branchiopod eggs. No eggs of federally listed

large branchiopods were found. A wet season survey pursuant to the Guidelines is anticipated to begin in December 2025.

3.3.5 Arborist Survey

ECORP arborist Gabrielle Attisani (International Society of Arboriculture Certification # WE-15575A), with ECORP biologist Lena Molteni, conducted the field survey on June 3, 2025, by walking the BSA and recording tree data using a submeter capable Global Positioning System unit.

ECORP surveyed all trees with trunks or a portion of their dripline radius within the BSA. Where available, ECORP used tree tags installed during prior surveys. For trees without existing tree tags, ECORP installed new tree tags on trees that were accessible. Trees on private property were not tagged and were assigned numbers 1 to 4.

The surveyors collected data, which included species, tree tag number, dbh, dripline radius, health, structure, dripline environment, and overall tree condition. The survey results are intended for general Project planning purposes only; therefore, these results should not be considered a detailed tree analysis (i.e., results do not include hazard assessment, tree health diagnosis, preservation/removal recommendations, or pruning advisement). The arborist report is included as Appendix B.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The BSA is located on relatively level terrain in a suburban area. The BSA is situated at an elevational range of approximately 39 to 41 feet above mean sea level in the Sacramento Valley Subregion of the Great Central Valley floristic region of the California floristic province (Jepson Flora Project [eds.] 2025). The average winter low temperature is 38.5 degrees Fahrenheit (°F) and the average summer high temperature is 91.5°F; the average annual precipitation is approximately 17.97 at the Sacramento Metropolitan Airport station, which is approximately 7 miles from the BSA (NOAA 2025b).

The BSA is currently occupied by annual grassland and bare ground from off-road vehicle disturbance. A firebreak is annually maintained along the perimeter of the BSA. Vegetation communities and plant species composition are described in further detail in Section 4.3.

Land uses surrounding the BSA include commercial and residential developments.

Representative photographs of the BSA are provided in Appendix C.

4.2 Soils and Geology

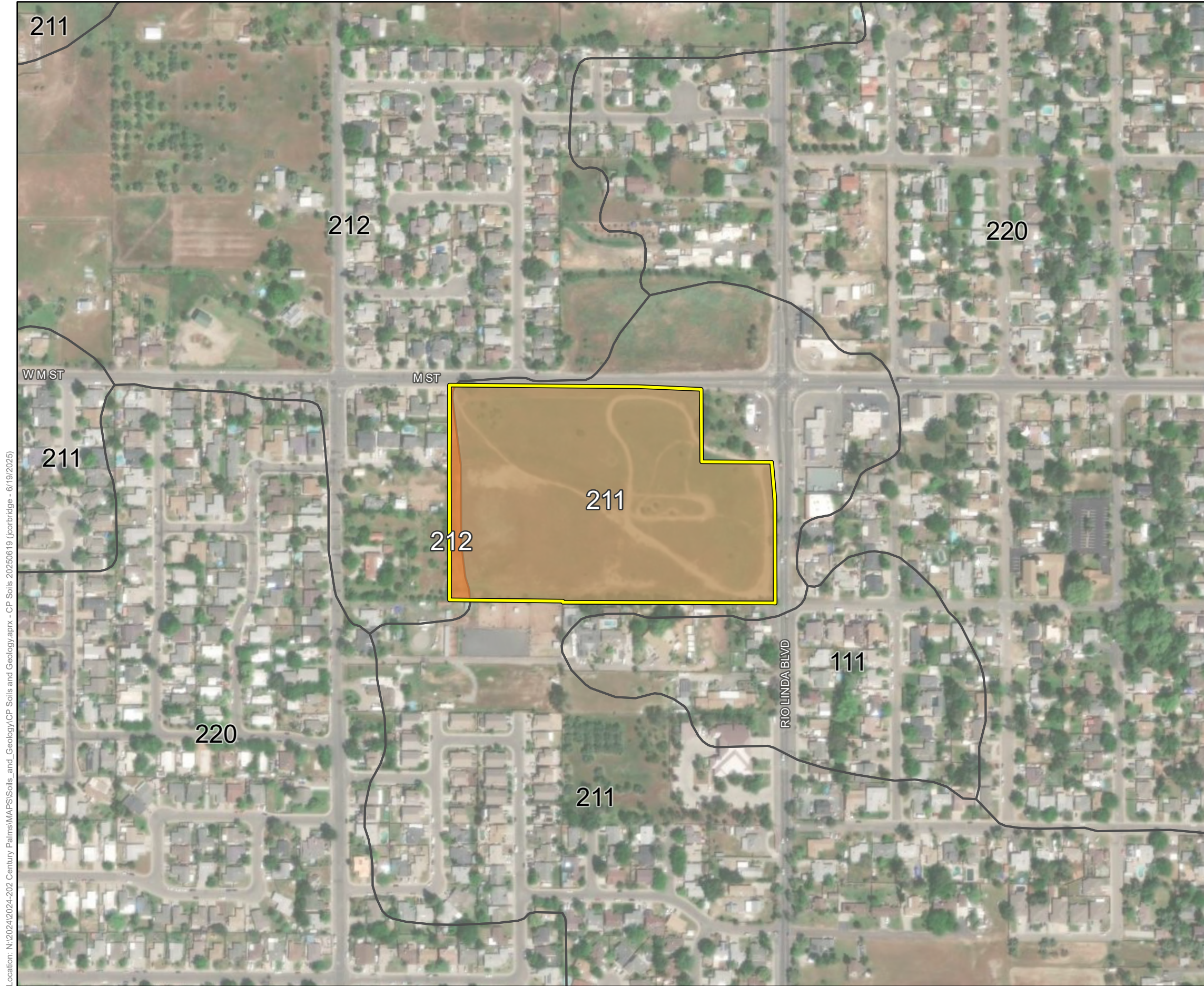
ECORP staff obtained soil survey mapping for the BSA from the NRCS *Web Soil Survey* (Figure 2) (NRCS 2025). Table 1 provides an overview of the soil map units within the BSA, including the presence of hydric soils, parent materials, or other key features that may influence the potential for sensitive biological resources to occur onsite.

Table 1. Soil Map Units within the Biological Study Area			
Map Unit Symbol	Map Unit Name	Parent Material or Key Features	Hydric Soils Present
211	211 – San Joaquin fine sandy loam, 0 to 3 percent slopes	Alluvium derived from granite	None
212	212 – San Joaquin fine sandy loam, 3 to 8 percent slopes	Alluvium derived from granite	None

Source: Natural Resources Conservation Service 2025

4.3 Vegetation Communities and Land Cover Types

The following sections describe vegetation communities and land cover types within the BSA as observed during the site reconnaissance. A list of plants observed within the BSA during the site reconnaissance can be found in Appendix D.



Map Contents

BSA - 13.04 ac.

NRCS Soil Type

211 - San Joaquin fine sandy loam, 0 to 3 percent slopes

212 - San Joaquin fine sandy loam, 3 to 8 percent slopes

gSSURGO Soil Boundary

Sources: CBGCE, ESRI, Maxar (2022), Sacramento County, USDA NRCS SSURGO (2019)



Figure 2. Natural Resources Conservation Service Soils
2024-202 Century Palms

4.3.1 Annual Grassland

The annual grassland community is found throughout the BSA. The annual grassland within the BSA is dominated by nonnative annual grasses including wild oats (*Avena* sp.), foxtail barley (*Hordeum murinum*), and hairy vetch (*Vicia villosa*). The southwestern portion of the BSA is dominated by perennial ryegrass (*Festuca perennis*), Mediterranean barley (*Hordeum marinum*), and curly dock (*Rumex crispus*).

The annual grasslands can be characterized as the *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance (CNPS 2025b). Semi-natural alliances are strongly dominated by nonnative plants that have become naturalized in the State, do not have state rarity rankings, and are not considered sensitive natural communities.

4.4 Aquatic Resources

ECORP conducted an aquatic resources delineation for the BSA (ECORP 2025) and mapped a total of 0.135 acre of aquatic resources. The aquatic features identified onsite include four seasonal wetlands and two vernal pools (Figure 3). These features are further described in the following sections.

4.4.1 Seasonal Wetland

Seasonal wetlands are ephemeral wet due to accumulation of surface runoff and rainwater within low-lying areas. Inundation periods tend to be relatively short, and these features are commonly dominated by nonnative annual and sometimes perennial hydrophytic species. Predominant plant species within the seasonal wetlands onsite include slender popcorn-flower (*Plagiobothrys stipitatus*), perennial ryegrass (*Festuca perennis*), and aquatic pigmy-weed (*Crassula aquatica*).

4.4.2 Vernal Pool

Vernal pools are topographic basins within a grassland community that are typically underlain with an impermeable or semipermeable soil layer near the surface, such as a hardpan or duripan layer. Vernal pools are generally inundated during the wet season, and are dry by late spring and until the following wet season. There are two vernal pools within the BSA. Dominant plant species observed within the vernal pools included slender popcorn-flower (*Plagiobothrys stipitatus*), short woolly-marbles (*Psilocarphus brevissimus*), and interwoven navarretia (*Navarretia intertexta*).

4.5 Wildlife

The BSA provides habitat for wildlife species tolerant of suburban environments. Wildlife species observed onsite include Northern mockingbird, bushtit, and turkey vulture. Other species typically associated with the habitat types found within the BSA include oak titmouse, and yellow-billed magpie. A full list of wildlife species observed within the BSA is provided in Appendix E.



Map Contents

BSA - 13.04 ac.

Sample Point

- ◆ Upland ARD Upland Sample Point
- ◆ Waters ARD Waters Sample Point

Aquatic Resource Types - 0.135 ac.

- Seasonal Wetland - 0.118 ac.
- Vernal Pool - 0.017 ac.

Photo Source: Maxar (2022)
Boundary Source: CBGCE/Sacramento County
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

¹ Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.
* The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

4.6 Special-Status Species

Table 2 presents the full list of special-status plant and animal species identified through the literature review. For each species, the table provides the listing status, a brief description of habitat requirements and/or species ecology, a determination of the potential to occur within the BSA, and the rationale for that determination. The potential for each species to occur onsite was assessed using the following criteria:

- *Present* – Species was observed during the site visit or is known to occur within the BSA based on recent documented occurrences within the CNDDDB or other literature.
- *Potential to Occur* – Suitable habitat (including soils and elevation requirements) occurs within the BSA and the species is known to occur in the vicinity of the BSA based on available data sources.
- *Low Potential to Occur* – Marginal or limited amounts of habitat occurs within the BSA or the species is not known to occur in the vicinity of the BSA based on available data sources.
- *Presumed Absent* – No suitable habitat (including soils and elevation requirements) occurs within the BSA, or the BSA is outside of the current known geographical range for the species.

Further discussion is provided below for species that are state or federally threatened or endangered, or are candidates for listing, and have potential to occur within the BSA.

Table 2. Special-Status Species Evaluation					
Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Plants ¹					
Ferris' milk-vetch (<i>Astragalus tener</i> var. <i>ferrisiae</i>)	–	–	1B.1	Vernally mesic meadows and seeps and in sub-alkaline flats within valley and foothill grasslands. Elevation: 5–245 feet Bloom Period: April–May	Presumed absent. There are no sub-alkaline flats within the BSA.
Big-scale balsamroot (<i>Balsamorhiza</i> <i>macrolepis</i>)	–	–	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine soils. Elevation: 150–5,100 feet Bloom Period: March–June	Presumed absent. The BSA is considered outside of the current known range for this species. There is only one occurrence of this species in the vicinity of the BSA and it hasn't been observed in over 60 years.

¹ Plant species information is from the CNPS Rare Plant Inventory (CNPS 2025), unless otherwise cited.

Table 2. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Valley brodiaea (<i>Brodiaea rosea</i> ssp. <i>vallicola</i>)	–	–	4.2	Occurs in valley and foothill grassland on old alluvial terraces and silt, sandy, or gravelly soils, often in association with vernal pools and swales. Elevation: 35–1,100 feet Bloom Period: April–May	Low potential to occur. The grassland within the BSA may provide marginally suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.
Parry's rough tarplant (<i>Centromadia parryi</i> ssp. <i>rudis</i>)	–	–	4.2	Alkaline, vernal mesic areas, and seeps in valley and foothill grassland and vernal pools, sometimes found on roadsides. Elevation: 0–330 feet Bloom Period: May–October	Low potential to occur. Mesic areas in the grassland and the aquatic features may provide marginally suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.
Hispid salty bird's-beak (<i>Chloropyron molle</i> ssp. <i>hispidum</i>)	–	–	1B.1	Alkaline soils in meadows and seeps, playas, and valley and foothill grasslands. Elevation: 5–510 feet Bloom Period: June–September	Presumed absent. There are no alkaline soils within the BSA.
Dwarf downingia (<i>Downingia pusilla</i>)	–	–	2B.2	Mesic areas in valley and foothill grassland, and vernal pools. Species has also been found in disturbed areas such as tire ruts and scraped depressions (CDFW 2025b). Elevation: 5–1,460 feet Bloom Period: March–May	Potential to occur. Mesic areas in the grassland and the aquatic features may provide suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.
Stinkbells (<i>Fritillaria agrestis</i>)	–	–	4.2	Clay and sometimes serpentine soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 35–5,100 feet Bloom Period: March–June	Low potential to occur. The grassland within the BSA may provide marginally suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.

Table 2. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Boggs Lake hedge- hyssop (<i>Gratiola heterosepala</i>)	–	CE	1B.2	Clay substrates of marshes and swamps (lake margins) and vernal pools. Elevation: 35–7,790 feet Bloom Period: April–August	Low potential to occur. The aquatic features within the BSA may provide marginally suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.
Woolly rose-mallow (<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>)	–	–	1B.2	Marshes and freshwater swamps (river banks and low peat islands in sloughs), and riprap on sides of levees. Elevation: 0–395 feet Bloom Period: June–September	Presumed absent. There are no marshes within the BSA.
Ahart's dwarf rush (<i>Juncus leiospermus</i> var. <i>ahartii</i>)	–	–	1B.2	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005). Elevation: 100–750 feet Bloom Period: March–May	Low potential to occur. The aquatic features within the BSA may provide marginally suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.
Red Bluff dwarf rush (<i>Juncus leiospermus</i> var. <i>leiospermus</i>)	–	–	1B.1	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation: 115–4,100 feet Bloom Period: March–June	Presumed absent. The BSA is outside the known geographic range for this species.
Legenere (<i>Legenere limosa</i>)	–	–	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005). Elevation: 5–2,885 feet Bloom Period: April–June	Low potential to occur. The aquatic features within the BSA may provide marginally suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.

Table 2. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Sacramento Orcutt grass (<i>Orcuttia viscida</i>)	FE	CE	1B.1	Vernal pools. Elevation: 100–330 feet Bloom Period: April–July	Low potential to occur. The aquatic features within the BSA may provide marginally suitable habitat. This species was not observed during protocol-level surveys conducted in April and June 2025.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	–	–	1B.2	Shallow marshes and freshwater swamps. Elevation: 0–2,135 feet Bloom Period: May–October	Presumed absent. There are no marshes within the BSA.
Suisun Marsh aster (<i>Symphyotrichum lentum</i>)	–	–	1B.2	Brackish and freshwater marshes and swamps. Elevation: 0–10 feet Bloom Period: May–November	Presumed absent. There are no marshes within the BSA.
Invertebrates					
Crotch bumble bee (<i>Bombus crotchii</i>)	–	CC	–	Primarily nests underground, found in variety of habitats including open grasslands, shrublands, chaparral, desert margins, and semi-urban settings, from the California coast east to the Sierra Cascade and from Redding south to Mexico. Survey Period: February–October (Preferably April–August)	Potential to occur. The annual grassland within the BSA may provide suitable habitat.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	–	–	Vernal pools/wetlands. Survey Period: November–April	Potential to occur. The vernal pools and other wetlands within the BSA may provide suitable habitat.
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	–	–	Elderberry shrubs. Survey Period: Any season	Presumed absent. There is no suitable habitat within the BSA.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	–	–	Vernal pools/wetlands. Survey Period: November–April	Potential to occur. The vernal pools and other wetlands within the BSA may provide suitable habitat.

Table 2. Special-Status Species Evaluation					
Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Fish					
Steelhead (CA Central Valley DPS) (<i>Oncorhynchus mykiss irideus</i>)	FT	–	SSC	Fast-flowing, well-oxygenated rivers and streams below dams in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.
Chinook salmon (Central Valley spring-run ESU) (<i>Oncorhynchus tshawytscha</i>)	FT	CT	–	Undammed rivers, streams, creeks in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.
Chinook salmon (Sacramento River winter-run ESU) (<i>Oncorhynchus tshawytscha</i>)	FE	CE	–	Undammed reaches of the mainstem and tributaries to the Sacramento River downstream of Shasta Reservoir. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.
Amphibians					
Western spadefoot (Northern DPS) (<i>Spea hammondi</i>)	FPT	–	SSC	California endemic species of vernal pools, swales, and seasonal wetlands in grassland, scrub and woodland habitats throughout the Central Valley and South Coast Ranges. Prefers open areas with sandy or gravelly soils. Survey Period: Winter-Spring.	Presumed absent. The wetlands onsite are too shallow and ephemeral to serve as breeding habitat. Furthermore, the site is a disturbed lot which is surrounded by existing development and there is no adjacent habitat for the species.
Reptiles					
Northwestern pond turtle (<i>Actinemys marmorata</i>)	FPT	–	SSC	Requires basking sites and upland habitats up to 0.5 kilometers from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches. Survey Period: April-September	Presumed absent. There is no suitable habitat within the BSA.
Giant garter snake (<i>Thamnophis gigas</i>)	FT	CT	–	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range. Survey Period: April-October	Presumed absent. There is no suitable habitat within the BSA.

Table 2. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Birds					
Western grebe (<i>Aechmophorus occidentalis</i>)	–	–	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Nests on freshwater lakes and marshes with open water bordered by emergent vegetation. Nesting: June-August	Presumed absent. There is no suitable habitat within the BSA.
Clark’s grebe (<i>Aechmophorus clarkii</i>)	–	–	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Breeds on freshwater to brackish marshes, lakes, reservoirs and ponds, with a preference for large stretches of open water fringed with emergent vegetation. Nesting: June-August	Presumed absent. There is no suitable habitat within the BSA.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	FT	CE	–	Breeding habitat is generally open woodland with clearings and low, dense, scrubby vegetation associated with watercourses, and includes desert riparian woodlands with willow, Fremont’s cottonwood, alder, walnut, box-elder, and dense mesquite. Nests are generally found in deciduous hardwoods with thick bushes, vines, or hedgerows providing dense foliage within 10 meters (33 feet) of ground; prefer riparian patches of at least 81 hectares (200 acres) (Hughes 2020). Winters in South America. Nesting: June 15-August 15	Presumed absent. There is no suitable habitat within the BSA.

Table 2. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	–	CT	CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties). Nesting: March-September	Presumed absent. There is no suitable habitat within the BSA.
Marbled godwit (<i>Limosa fedoa</i>)	–	–	BCC	Nests in Montana, North and South Dakota, Minnesota, into Canada. Winter range along Pacific Coast from British Columbia south to Central America, with small numbers wintering in interior California. Wintering habitat includes coastal mudflats, meadows, estuaries, sandy beaches, sandflats, and salt ponds. Migrant/Wintering in CA: August-April	Presumed absent. There is no suitable habitat within the BSA.
Short-billed Dowitcher (<i>Limnodromus griseus</i>)	–	–	BCC	Nests in Canada, southern Alaska; winters in coastal California south to South America; wintering habitat includes coastal mudflats and brackish lagoons. Migrant/Wintering: late-August-May	Presumed absent. There is no suitable habitat within the BSA.
California gull (nesting colony) (<i>Larus californicus</i>)	–	–	BCC, CDFW WL	Nesting occurs in the Great Basin, Great Plains, Mono Lake, and south San Francisco Bay. Breeding colonies located on islands on natural lakes, rivers, or reservoirs. Winters along Pacific Coast from southern British Columbia south to Baja California and Mexico. In California, winters along coast and inland (Central Valley, Salton Sea). Nesting: April-August	Presumed absent. There is no suitable habitat within the BSA.

Table 2. Special-Status Species Evaluation					
Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
White-tailed kite (<i>Elanus leucurus</i>)	–	–	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats. Nesting: March-August	Low Potential to occur. The trees represent marginally suitable nesting habitat and there is limited foraging habitat within the BSA.
Northern harrier (<i>Circus hudsonius</i>)	–	–	BCC, SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, and shrub-steppe. Nesting: April-September	Presumed absent. There is no suitable nesting or foraging habitat within the BSA.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	De-listed	CE	CFP	Typically nests in forested areas near large bodies of water in the northern half of California; nest 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. Nesting: February-September	Presumed absent. There is no suitable nesting or foraging habitat within the BSA.
Swainson's hawk (<i>Buteo swainsoni</i>)	–	CT	–	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures. Nesting: March-August	Low Potential to occur. The trees represent marginally suitable nesting habitat and there is limited foraging habitat within the BSA.

Table 2. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Burrowing owl (<i>Athene cunicularia</i>)	–	CC	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 human- landscapes such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. Nesting: February-August	Low Potential to occur. The annual grassland within the BSA provides marginally suitable habitat.
Olive-sided flycatcher (<i>Contopus cooperi</i>)	–	–	SSC, BCC	Nests in montane and northern coniferous forests, in forest openings, forest edges, semiopen forest stands. In California, nests in coastal forests, Cascade and Sierra Nevada region. Winters in Central to South America. Nesting: May-August	Presumed absent. There is no suitable habitat within the BSA.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE	CE	–	In California, breeding range includes Ventura, Los Angeles, Riverside, Orange, San Diego, and San Bernardino counties, and rarely Stanislaus and Santa Clara counties. Nesting habitat includes dense, low shrubby vegetation in riparian areas, brushy fields, young second- growth woodland, scrub oak, coastal chaparral and mesquite brushland. Winters in southern Baja California Sur. Nesting: April 1-July 31	Presumed absent. There is no suitable habitat within the BSA.
Oak titmouse (<i>Baeolophus inornatus</i>)	–	–	BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree). Nesting: March-July	Potential to occur. Trees onsite represent potential nesting habitat.

Table 2. Special-Status Species Evaluation					
Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Bank swallow (<i>Riparia riparia</i>)	–	CT	–	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California. Nesting: May-July	Presumed absent. There is no suitable habitat within the BSA.
Purple martin (<i>Progne subis</i>)	–	–	SSC	In California, breeds along coast range, Cascade-northern Sierra Nevada region and isolated population in Sacramento. Nesting habitat includes montane forests, Pacific lowlands with dead snags; the isolated Sacramento population nests in weep holes under elevated highways/bridges. Winters in South America. Nesting: May-August	Presumed absent. There is no suitable habitat within the BSA.
Belding's savannah sparrow (<i>Passerculus sandwichensis beldingi</i>)	–	CE	BCC	Resident coastally from Point Conception south into Baja California; coastal salt marsh. Year-round resident; nests March-August	Presumed absent. There is no suitable habitat within the BSA.
Santa Barbara song sparrow (<i>Melospiza melodia graminea</i>)	–	–	BCC	Breeding habitat includes dense shrubs and thickets of giant coreopsis (<i>Coreopsis gigantea</i>), grasslands with scattered shrubs, Artemisia-Opuntia grass associations, and dense grasslands. Resident on California Channel Islands (San Clemente, San Miguel, Santa Cruz, Santa Rosa, Anacapa) and Isla Los Coronados, Baja California.; nests February-July	Presumed absent. This subspecies is endemic to the Channel Islands.

Table 2. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Bullock's oriole (<i>Icterus bullockii</i>)	–	–	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July	Potential to occur. Trees onsite represent potential nesting habitat.
Tricolored blackbird (<i>Agelaius tricolor</i>)	–	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 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 (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields (Beedy et al 2023). Nesting: March-August	Presumed absent. There is no suitable habitat within the BSA.
Saltmarsh common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	–	–	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County. Nesting: March-July	Presumed absent. There is no suitable habitat within the BSA.

Table 2. Special-Status Species Evaluation					
Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur within the BSA
	ESA	CESA/ NPPA	Other		
Mammals					
American badger (<i>Taxidea taxus</i>)	–	–	SSC	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Survey Period: Any season	Presumed absent. The annual grassland habitat within the BSA is located in a disturbed suburban setting and does not provide suitable habitat for this species.

Notes: BSA = Biological Study Area; CDFW = California Department of Fish and Wildlife;
 CESA = California Endangered Species Act; CNPS = California Native Plant Society;
 DPS = Distinct Population Segment; ESA = federal Endangered Species Act;
 ESU = Evolutionarily Significant Unit; N/A = Not Applicable; NPPA = Native Plant Protection Act;
 USFWS = U.S. Fish and Wildlife Service

Status Codes:

1A	CRPR/Presumed extinct
1B	CRPR/Rare or Endangered in California and elsewhere
2A	CRPR/Plants presumed extirpated in California but common 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% of occurrences threatened/high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
BCC	USFWS Bird of Conservation Concern
CC	Candidate for CESA listing as Endangered or Threatened
CDFW WL	CDFW Watch List
CE	CESA- or NPPA listed, Endangered
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, reptiles/amphibians)
CT	CESA- or NPPA-listed, Threatened
Delisted	Formally Delisted
FE	ESA listed, Endangered
FPT	Formally Proposed for ESA listing as Threatened
FT	ESA listed, Threatened
SSC	CDFW Species of Special Concern

Sources: Beedy et al 2023; CDFW 2025b; Hughes 2020; USFWS 2005, 2021

4.6.1 Special-Status Plants

Following literature review, eight special-status plant species were determined to have potential or low potential to occur within the BSA. ECRP biologists conducted surveys on April 18 and June 19, 2025, and observed no special-status species within the BSA. A complete plant list is provided in Appendix D.

4.6.2 Special-Status Invertebrates

4.6.2.1 Crotch Bumble Bee

The Crotch bumble bee (*Bombus crotchii*) is a candidate for listing as endangered under the California ESA. The historic range of the Crotch bumble bee extends from coastal areas east to the edges of the desert in central California south to Baja California del Norte, Mexico, excluding mountainous areas (Thorp et al. 1983; Williams et al. 2014). The species was historically common throughout the southern two-thirds of its range but is now largely absent from much of that area and is nearly extirpated from the center of its historic range, the Central Valley (Hatfield et al. 2014).

The Crotch bumble bee inhabits open grassland and scrub habitats (Williams et al. 2014). The species primarily nests underground (Williams et al. 2014). Little is known about overwintering sites for the species, but bumble bees generally overwinter in soft, disturbed soils or under leaf litter or other debris (Goulson 2010; Williams et al. 2014). The flight period for Crotch bumble bee queens in California is from late February to late October, peaking in early April with a second pulse in July (Thorp et al. 1983). The flight period for workers and males in California is from late March through September with peak abundance in early July (Thorp et al. 1983).

There are no CNDDDB records of Crotch bumblebee occurring within 5 miles of the BSA (CDFW 2025b). The annual grassland within the BSA provides potentially suitable foraging and nesting habitat for this species, although much of the site has been heavily disturbed. Crotch bumblebee has potential to occur within the BSA.

4.6.2.2 Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened pursuant to the federal ESA. Vernal pool fairy shrimp may occur in seasonal ponds, vernal pools, and swales during the wet season, which generally occurs from December through May. This species can be found in a variety of pool sizes, ranging from less than 0.001 acre to more than 24.5 acres (Eriksen and Belk 1999). The shrimp hatch from cysts when colder water (10°C [50°F] or less) fills the pool and mature in as few as 18 days, under optimal conditions (Eriksen and Belk 1999). At maturity, mating takes place and cysts are dropped. Vernal pool fairy shrimp occur in disjunct patches dispersed across California's Central Valley from Shasta County to Tulare County, the central and southern Coast Ranges from northern Solano County to Ventura County, and three areas in Riverside County (USFWS 2003).

There are 17 CNDDDB records of vernal pool fairy shrimp occurring within five miles of the BSA (CDFW 2025b). The vernal pools and seasonal wetlands onsite provide suitable habitat for this species, and there is potential for vernal pool fairy shrimp to occur within the BSA. ECORP conducted a Guideline-level dry season survey on June 2025, and did not observe any evidence of *Branchinecta* sp. cysts. Guideline-level wet season surveys are scheduled for December 2025 and results will be provided under a separate report of findings.

4.6.2.3 Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp (*Lepidurus packardii*) is listed as endangered pursuant to the federal ESA. This species inhabits vernal pools containing clear to highly turbid water, ranging in size from 0.001 to 89.0 acres (USFWS 1994). Vernal pool tadpole shrimp are distinguished from other vernal pool branchiopods discussed in this report by a large, shield-like carapace that covers the anterior half of their body (USFWS 2003). Cysts hatch during the wet season and the shrimp reach maturity in a few weeks. This species matures slowly and is long-lived, relative to other species. Vernal pool tadpole shrimp will continue to grow as long as the pools in which they occur remain inundated, and in some instances can survive for 6 months or longer (USFWS 2003). The geographic range of vernal pool tadpole shrimp extends from Shasta County to northern Tulare County in California's Central Valley, and in the central coast range from Solano County to Alameda County (USFWS 2003).

There is one CNDDDB record for vernal pool tadpole shrimp occurring within 5 miles of the BSA (CDFW 2025b). The seasonal wetlands and vernal pools within the BSA provide suitable habitat for this species, and there is potential for vernal pool tadpole shrimp to occur within the BSA. ECORP conducted a Guideline-level dry season survey in June 2025, and did not observe any evidence of vernal pool tadpole shrimp cysts. Guideline-level wet season surveys are scheduled for December 2025 and results will be provided under a separate report of findings.

4.6.3 Special-Status Bird Species

4.6.3.1 Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and is protected pursuant to the California Endangered Species Act. 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 in tall trees in a variety of vegetation communities and land cover types, 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. Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, disking, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are 12 CNDDDB occurrences of Swainson's hawk within 5 miles of the BSA. The closest recorded occurrence of a nesting Swainson's hawk is approximately 1.2 miles southeast of the BSA in a riparian corridor along Dry Creek (CDFW 2025b). The BSA provides a marginally suitable foraging and marginally suitable nesting habitat for this species due to the small size of the annual grassland, its location within the developed area of Rio Linda, relative isolation from nearby areas of suitable foraging habitat, and the ongoing disturbance from off-road vehicle use. Therefore, there is low potential for this species to occur within the BSA.

4.6.3.2 Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to the federal ESA but is currently a candidate for listing under the California ESA; in addition, it is designated as a BCC by the USFWS and an SSC by 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, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*) but may also use manmade 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 (CDFG 2012).

There are 17 CNDDDB records of burrowing owl occurring within 5 miles of the BSA, with the closest occurrence recorded approximately 1.25 miles northwest of the BSA (CDFW 2025b). This occurrence is located in an open grassland area at the perimeter of Rio Linda, in close proximity to agricultural lands to the west. The BSA provides marginally suitable habitat for this species due to lack of ground-squirrel activity, limited extent of foraging habitat within the annual grassland, isolation from larger areas of suitable foraging habitat, and ongoing disturbance from off-road vehicle use. Therefore, burrowing owls have low potential to occur within the BSA.

4.7 Critical Habitat or Essential Fish Habitat

There is no designated critical habitat mapped within the BSA (USFWS 2025).

Based on the literature review, anadromous fish critical habitat for California Central Valley Steelhead may be present within the Rio Linda, California 7.5-minute quadrangle (NOAA 2025a). However, because no suitable aquatic habitat occurs within the BSA, no anadromous fish critical habitat or Essential Fish Habitat are present within the BSA.

4.8 Wildlife Movement Corridors and Nursery Sites

The BSA does not fall within an Essential Habitat Connectivity area (CDFW 2025b), a natural area that could support wildlife movement, or a natural habitat block.

No nursery sites have been documented within the BSA (CDFW 2025b) and none were observed during the site reconnaissance. However, trees within the BSA may provide suitable habitat for nesting birds.

4.9 Protected Trees/Oak Woodlands (As Protected by Local Policy or Ordinance)

An arborist survey was conducted for this BSA on June 3, 2025, by ECORP arborist Gabrielle Attisani (International Society of Arboriculture Certification # WE-15575A). ECORP inventoried a total of 45 Protected Trees within the BSA consisting of 14 interior live oaks, (*Quercus wislizeni*) and 31 valley oaks (*Quercus lobata*). A map depicting the locations of the inventoried trees is included in the arborist report in Appendix B, along with the detailed tree survey data for each tree.

5.0 IMPACT ASSESSMENT AND RECOMMENDATIONS

This section specifically addresses questions raised by the Biological Resources section of the Environmental Checklist Form in Appendix G of the CEQA Guidelines.

5.1 CEQA Checklist Criteria IV(a) – Special-Status Species

Would the Project:

- a) 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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

5.1.1 Special-Status Plants

Eight special-status plants have potential to occur within the BSA. On April 18 and June 19, 2025, ECORP conducted protocol-level special-status plant surveys and no special-status plants were found within the BSA; therefore, no mitigation measures are recommended.

5.1.2 Special-Status Wildlife Species

5.1.2.1 Crotch Bumble Bee

The BSA contains potentially suitable habitat for Crotch bumble bee. If present, individual Crotch bumble bees could be injured or killed, particularly if a nest site is encountered or damaged by machinery or heavy equipment during Proposed Project activities.

The following measures are recommended to minimize potential impacts to Crotch bumble bee:

- If the Crotch bumble bee is no longer a Candidate species or formally Listed under the California ESA at the time ground-disturbing activities occur, then no additional protection measures are required.
- If the Crotch bumble bee is legally protected under the California ESA as a Candidate or Listed species and ground-disturbing activities are scheduled to begin between February 1 and October 31, preconstruction surveys shall be conducted by a qualified biologist. Based on CDFW's Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023), it is recommended that three Crotch bumble bee surveys be conducted at two to four week intervals during the colony active period (April-August) if possible. If surveys are conducted during the queen flight season (February-March) it's recommended that three surveys be conducted spaced one to two weeks apart during acceptable weather conditions with the final survey occurring within one week of construction initiation.

- If Crotch bumble bees are detected, any remaining surveys will focus on nest location. If no nests are found but the species is observed during preconstruction surveys, work crews should be informed of the possibility of Crotch bumble bees or their nests being present onsite. If a Crotch bumble bee is encountered during construction, work shall stop until the individual leaves of its own volition. If an active Crotch bumble bee nest is detected, an appropriate no disturbance buffer zone (including foraging resources and flight corridors essential for supporting the colony) shall be established around the nest to reduce the risk of disturbance or accidental take, and the designated biologist shall coordinate with CDFW to determine if an Incidental Take Permit under Section 2081 of the California ESA will be required. Nest avoidance buffers may be removed at the completion of the flight season (October 31) and/or once the qualified biologist deems the nesting colony is no longer active.
- If initial grading does not start within 2 weeks of the final Crotch bumble bee survey completion date during the colony active period, or within 1 week prior to the colony active period (e.g., construction is phased or delayed), preconstruction surveys will be repeated prior to ground-disturbing activities if nesting habitat is still present or has re-established and will be affected.

5.1.2.2 *Federally Listed Large Branchiopods*

The BSA includes aquatic resources which are potential habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. Guideline-level dry and wet season surveys for federally listed large branchiopods are required to determine the presence or absence of the species within the BSA. A Guideline-level dry season branchiopod survey was conducted on June 9, 2025, and no evidence federally listed large branchiopod cysts was observed. The Guideline-level wet season survey is anticipated to begin in December 2025.

Final survey results have not yet been submitted to USFWS. Therefore, the following measure is recommended:

- Conduct Guideline-level wet season surveys and submit a report of findings to USFWS. If no federally listed large branchiopods are found, the results of the surveys are accepted, and the surveys are still considered recent by USFWS at the time of Project construction, no further measures are needed.
- If federally listed large branchiopods are found or if the applicant chooses to assume presence, prior to initiation of Project-related ground disturbance, incidental take authorization shall be obtained from USFWS to establish mitigation, avoidance, and minimization measures.

5.1.2.3 *Nesting Birds (Including Raptors)*

The BSA contains suitable nesting and/or wintering and foraging habitat for several special-status birds and other birds protected under the California Fish and Game Code and MBTA. If Project-related activities occur during the nesting season, the removal of active nests or disruption of nesting activities could lead to “take” of a protected bird, or an active nest with eggs or young, which would be considered a

significant impact under CEQA. Impacts to wintering and foraging habitat is typically not considered significant under CEQA.

To avoid or minimize impacts to protected birds and active nests, the following mitigation measures are recommended:

- To the extent feasible, tree and shrub removal or trimming shall be conducted outside of the bird nesting season (typically February 1–August 31, and as early as January 1 for raptors).
- During the nesting season, a preconstruction nesting bird survey shall be conducted within 14 days prior to the commencement of Project-related activities to identify active nests that could be impacted by construction.
- The preconstruction nesting bird survey shall include accessible areas within 100 feet of the Project boundaries, including any temporary disturbance areas. For raptors, the preconstruction nesting bird survey shall include accessible areas within 500 feet of the Project boundary.
- If active nests are found, an appropriate no-disturbance buffer shall be established around the nest. A qualified biologist, in consultation with CDFW, shall establish the buffer distance. The buffer shall be maintained until the nestlings have fledged (e.g., are capable of flight and become independent of the nest), to be determined by a qualified biologist. The avoidance buffer can be removed and no further measures are necessary once the young have fledged or the nest is no longer occupied, as determined by a qualified biologist.

5.1.2.4 *Swainson's Hawk*

The BSA primarily consists of annual grassland, frequently disturbed by off-road vehicle use, surrounded by residential and commercial development. The larger sized trees at the perimeter of the property represent potentially suitable nesting habitat, but the nearest reported nesting occurrence is over a mile away in the Dry Creek riparian corridor. Given the limited size of the annual grassland in the BSA, its location within the developed area of Rio Linda, and its isolation from larger areas of suitable foraging habitat, the potential for Swainson's hawk to nest or forage in the BSA is low. Larger trees in the vicinity may provide suitable nesting habitat, particularly if located in closer proximity to available foraging habitat. If nests are present in the vicinity, they could be disturbed by Project construction activity during the nesting season.

The BSA includes APNs 206-0210-016, 206-0210-019, and 206-0210-038 which have been designated as Residential and Commercial-Mixed Use subzones (County of Sacramento 2025). Per the Sacramento County Swainson's Hawk Mitigation Program, parcels that are designated as Commercial or Residential zones are considered to have no Habitat Value Remaining (County of Sacramento 2016). Therefore, compensatory mitigation for Swainson's Hawk foraging habitat is not required for the Proposed Project.

There is low potential to impact Swainson's hawk to nest in or adjacent to the BSA. The following measures are recommended to avoid disturbing Swainson's hawks nests in the vicinity:

- If Project activities are scheduled during the Swainson's hawk nesting season (March 1 to August 31), then, prior to beginning work on the Project, a qualified biologist shall survey for Swainson's hawk nesting activity.
- A qualified biologist shall conduct pre-construction surveys within 14 days prior to the commencement of Project-related activities to identify active nests that could be affected by construction. The pre-construction survey shall include accessible areas within 500 feet of the Project Area, including any temporary disturbance areas. If Swainson's hawk nesting activity is observed during the survey, the survey results shall be submitted to CDFW for review and acceptance prior to the initiation of Project activities.
- If the qualified biologist identifies nesting Swainson's hawks, they shall recommend a no-disturbance buffer, and the contractor shall implement this buffer under the supervision of a qualified biologist. Project activities shall be prohibited within the no-disturbance buffer from March 1 to August 31, unless otherwise approved in writing by CDFW or a qualified biologist determines that the nest is no longer active. If there is a lapse in Project-related work of 14 days or longer, an additional survey shall be conducted prior to resuming Project activities.

5.1.2.5 *Burrowing Owl*

The BSA primarily consists of annual grassland, frequently disturbed by off-road vehicle use. During the site reconnaissance and other focused surveys within the BSA, ECORP biologists did not observe any small mammal burrows or other features that could provide suitable nesting habitat for this species. The nearest known occurrence of burrowing owl is at the perimeter of the Rio Linda developed area, adjacent to agricultural lands to the west. There is a low likelihood that burrowing owls nest or forage in the BSA. The following measures are recommended to avoid potential impacts to burrowing owl if a nest is established in or near the BSA:

- A pre-construction survey for nesting burrowing owl will be conducted by a qualified biologist within 14 days prior to commencement of Project activities within the BSA and a 250-foot buffer. Surveys shall be conducted at appropriate times and in appropriate weather conditions to maximize detection. If active burrowing owl burrows are found, an avoidance buffer will be immediately established, and an avoidance plan will be prepared in consultation with CDFW prior to the commencement of any ground-disturbing activities.

5.2 CEQA Checklist Criteria IV(b) – Sensitive Natural Communities

Would the Project:

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No riparian habitat or sensitive natural communities were identified within the BSA; therefore, the Project would not impact riparian habitat or sensitive natural communities.

5.3 CEQA Checklist Criteria IV(c) – Aquatic Resources

Would the Project:

- c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

There are six aquatic resources within the BSA. The aquatic resources within the BSA are likely not considered Waters of the U.S. because they are ephemeral and/or isolated waterbodies with no continuous surface connection to a navigable water. Regardless of CWA Section 404 jurisdictional status, all the aquatic features would likely be considered Waters of the State, and as such, are regulated by the RWQCB. Aquatic resources would not be subject to regulation under Section 1602 of the California Fish and Game Code, as there are no streams or riparian habitat. Aquatic resources within the BSA will all be directly impacted during Project implementation. Direct impacts to aquatic resources would include grading, trenching, excavation, or placement of fill within a regulated feature.

The following mitigation measures are recommended to address potential impacts to aquatic resources:

- Submit the Aquatic Resources Delineation to the USACE and obtain a verification, Approved Jurisdictional Determination, or Preliminary Jurisdictional Determination.
- If aquatic resources onsite are determined to be jurisdictional waters of the U.S., request authorization to fill wetlands and other Waters of the U.S. under Sections 404 and 401 of the federal CWA (Section 404 Permit and Section 401 Water Quality Certification) prior to discharging any dredged or fill materials into any Waters of the U.S. Because the Waters of the U.S. are also Waters of the State, the 401 Water Quality Certification will authorize fill to Waters of the State. These
- If aquatic resources are verified by the USACE as not meeting the definition of Waters of the U.S., they would be considered Waters of the State. The applicant shall request authorization to fill Waters of the State via the WDR Program.

- Specific impact avoidance, minimization, and/or compensation measures shall be developed and implemented in accordance with the Section 404 Permit or WDRs to ensure no net loss of wetland function and values. Measures may include purchase of mitigation credits at an agency-approved mitigation bank and/or Permittee-responsible mitigation (e.g., preservation and creation) in an onsite preserve or offsite mitigation property.

5.4 CEQA Checklist Criteria IV(d) – Movement Corridors and Nursery Sites

Would the Project:

- d) 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?

The BSA does not represent a migratory wildlife corridor, and no nursery sites are located within the BSA. No impacts to these resources would occur as a result of the Project.

5.5 CEQA Checklist Criteria IV(e) – Conflicts with Local Policies or Ordinances

Would the Project:

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

Mitigation for tree removal and preserved trees within the Project Area must comply with County and Downtown Rio Linda SPA guidelines. The following sections provide a general outline of the applicable mitigation requirements.

5.5.1 Direct Impact/Removed Trees

- a) Any substantial (>20 percent) encroachment and/or removal of native oak trees shall be compensated by planting native oaks and California black walnut, equivalent to the dbh inches lost, based on the ratios listed below, at locations that are authorized by the Department of Planning and Environmental Review. On-site preservation of native oak trees that are less than 6 inches (<6 inches) dbh, may also be used to meet this compensation requirement. Encroachment of over 20 percent within the dripline radius of native trees will require compensatory mitigation based on the percentage of encroachment multiplied by the dbh. Encroachment over 50 percent will require compensation for the entire tree. Equivalent compensation based on the following ratio is required:
 - i. one preserved native oak tree < 6 inches dbh on-site = 1 inch dbh
 - ii. one “deepot” seedling (40 cubic inches or larger) = 1 inch dbh

- iii. one 15-gallon tree = 1 inch dbh
- iv. one 24-inch box tree = 2 inches dbh
- v. one 36-inch box tree = 3 inches dbh
- b) Replacement tree planting shall be completed prior to the issuance of building permits or a bond shall be posted by the applicant in order to provide funding for purchase, planting, irrigation, and 3-year maintenance period, should the applicant default on replacement tree mitigation. The bond shall be in an amount equal to the prevailing rate of the County Tree Preservation Fund.
- c) Prior to the approval of Improvement Plans or building permits, a Replacement Oak Tree Planting Plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the Environmental Coordinator for approval.

5.5.2 Indirect Impact/Preserved Trees

All healthy native trees that are 6 inches dbh or larger within the BSA, all portions of adjacent off-site healthy native oak trees that are 6 inches dbh or larger which have driplines that extend into the BSA, and all off-site healthy native oak trees that are 6 inches dbh or larger which may be impacted by utility installation and/or improvements associated with this Project, shall be preserved and protected as follows:

- a) A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of each tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs that make up the dripline does not change the protected area.
- b) Any protected trees on the site that require pruning shall be pruned by a certified arborist prior to the start of construction work.
- c) Prior to initiating construction, temporary protective fencing shall be installed at least one foot outside the driplines of the protected trees within 100-feet of construction related activities. Where encroachment occurs, temporary high visibility protective fencing shall be installed a maximum of one foot outside the work areas.
- d) Any removal of paving or structures (i.e., demolition) that occurs within the dripline of a protected oak tree shall be done under the direct supervision of a certified arborist. To the maximum extent feasible, demolition work within the dripline protection area of the oak tree shall be performed by hand. If the certified arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.
- e) No signs, ropes, cables (except those which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the protected trees. Small metallic numbering tags for the purpose of preparing tree reports and inventories shall be allowed.

- f) No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of protected trees.
- g) No grading (grade cuts or fills) shall be allowed within the driplines of protected trees, except for the minimum required for construction and streetscape improvements.
- h) Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of any protected tree.
- i) No trenching shall be allowed within the driplines of protected trees. If it is absolutely necessary to install underground utilities within the dripline of a protected tree, the utility line shall be bored and jacked under the supervision of a certified arborist.
- j) The construction of impervious surfaces within the driplines of protected trees shall be stringently minimized. When it is absolutely necessary, a piped aeration system per County standard detail shall be installed under the supervision of a certified arborist.
- k) All portions of any masonry wall that will encroach into the dripline protection area of any protected tree shall be constructed using grade beam wall panels and posts set no closer than 10 feet on center. Any wrought iron fencing shall be similarly installed, with posts set no closer than 10 feet on center. Posts shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts in order to reduce impacts to the trees.
- l) Trunk protection measures, per Sacramento County standards, shall be used for all protected trees where development or construction activity, including installation of masonry walls or wrought iron fences, occurs within 10 feet of the trunk of a tree.

5.6 CEQA Checklist Criteria IV(f) – Conflicts with Conservation Plans

Would the Project:

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

The BSA is not covered by any local, regional, or state habitat conservation plans and would not conflict with such plans.

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LIST OF APPENDICES

Appendix A – Results of Database Queries

Appendix B – Arborist Report

Appendix C – Representative Photographs

Appendix D – Plant Species Observed (April 18 and June 19, 2025)

Appendix E – Wildlife Species Observed (June 9 and 19, 2025)



Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad< IS (Rio Linda (3812164) OR Pleasant Grove (3812174) OR Roseville (3812173) OR Citrus Heights (3812163) OR Carmichael (3812153) OR Sacramento East (3812154) OR Sacramento West (3812155) OR Taylor Monument (3812165) OR Verona (3812175))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAABF02020	<i>Spea hammondi</i> western spadefoot	Proposed Threatened	None	G2G3	S3S4	SSC
ABNGA04010	<i>Ardea herodias</i> great blue heron	None	None	G5	S4	
ABNGA04040	<i>Ardea alba</i> great egret	None	None	G5	S4	
ABNGA06030	<i>Egretta thula</i> snowy egret	None	None	G5	S4	
ABNGA11010	<i>Nycticorax nycticorax</i> black-crowned night heron	None	None	G5	S4	
ABNKC06010	<i>Elanus leucurus</i> white-tailed kite	None	None	G5	S3S4	FP
ABNKC12040	<i>Accipiter cooperii</i> Cooper's hawk	None	None	G5	S4	WL
ABNKC19070	<i>Buteo swainsoni</i> Swainson's hawk	None	Threatened	G5	S4	
ABNKC19120	<i>Buteo regalis</i> ferruginous hawk	None	None	G4	S3S4	WL
ABNKC22010	<i>Aquila chrysaetos</i> golden eagle	None	None	G5	S3	FP
ABNME03041	<i>Lateralus jamaicensis coturniculus</i> California black rail	None	Threatened	G3T1	S2	FP
ABNRB02022	<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	Threatened	Endangered	G5T2T3	S1	
ABNSB10010	<i>Athene cunicularia</i> burrowing owl	None	Candidate Endangered	G4	S2	SSC
ABPAU01010	<i>Progne subis</i> purple martin	None	None	G5	S3	SSC
ABPAU08010	<i>Riparia riparia</i> bank swallow	None	Threatened	G5	S3	
ABPBW01114	<i>Vireo bellii pusillus</i> least Bell's vireo	Endangered	Endangered	G5T2	S3	
ABPBXA0020	<i>Ammodramus savannarum</i> grasshopper sparrow	None	None	G5	S3	SSC
ABPBXA3013	<i>Melospiza melodia pop. 1</i> song sparrow ("Modesto" population)	None	None	G5T3?Q	S3?	SSC
ABPBXB0020	<i>Agelaius tricolor</i> tricolored blackbird	None	Threatened	G1G2	S2	SSC



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AFCAA01031	<i>Acipenser medirostris</i> pop. 1 green sturgeon - southern DPS	Threatened	None	G2T1	S1	SSC
AFCHA0205B	<i>Oncorhynchus tshawytscha</i> pop. 7 chinook salmon - Sacramento River winter-run ESU	Endangered	Endangered	G5T1Q	S2	
AFCHA0205L	<i>Oncorhynchus tshawytscha</i> pop. 11 chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	G5T2Q	S2	
AFCHA0209K	<i>Oncorhynchus mykiss irideus</i> pop. 11 steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2	SSC
AFCHB03040	<i>Spirinchus thaleichthys</i> pop. 2 longfin smelt - San Francisco Bay-Delta DPS	Endangered	Threatened	G5TNRQ	S1	
AFCJB34020	<i>Pogonichthys macrolepidotus</i> Sacramento splittail	None	None	G3	S3	SSC
AFCQB07010	<i>Archoplites interruptus</i> Sacramento perch	None	None	G1	S1	SSC
AMACC05032	<i>Lasiurus cinereus</i> hoary bat	None	None	G3G4	S4	
AMAJF04010	<i>Taxidea taxus</i> American badger	None	None	G5	S3	SSC
ARAAD02031	<i>Actinemys marmorata</i> northwestern pond turtle	Proposed Threatened	None	G2	SNR	SSC
ARADB36150	<i>Thamnophis gigas</i> giant gartersnake	Threatened	Threatened	G2	S2	
CTT44110CA	Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	None	None	G3	S3.1	
CTT44120CA	Northern Claypan Vernal Pool Northern Claypan Vernal Pool	None	None	G1	S1.1	
CTT44132CA	Northern Volcanic Mud Flow Vernal Pool Northern Volcanic Mud Flow Vernal Pool	None	None	G1	S1.1	
CTT45310CA	Alkali Meadow Alkali Meadow	None	None	G3	S2.1	
CTT45320CA	Alkali Seep Alkali Seep	None	None	G3	S2.1	
CTT61410CA	Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	None	None	G2	S2.1	
CTT63440CA	Elderberry Savanna Elderberry Savanna	None	None	G2	S2.1	
ICBRA03030	<i>Branchinecta lynchi</i> vernal pool fairy shrimp	Threatened	None	G3	S3	
ICBRA03150	<i>Branchinecta mesovallensis</i> midvalley fairy shrimp	None	None	G2	S2S3	
ICBRA06010	<i>Linderiella occidentalis</i> California linderiella	None	None	G2G3	S2S3	



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ICBRA10010	<i>Lepidurus packardii</i> vernal pool tadpole shrimp	Endangered	None	G3	S3	
ICBRA23010	<i>Dumontia oregonensis</i> hairy water flea	None	None	G1G3	S1	
IICOL02106	<i>Cicindela hirticollis abrupta</i> Sacramento Valley tiger beetle	None	None	G5TH	SH	
IICOL48011	<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	Threatened	None	G3T3	S3	
IICOL5V010	<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle	None	None	G2?	S2?	
IIHYM24260	<i>Bombus pensylvanicus</i> American bumble bee	None	None	G3G4	S2	
IIHYM24480	<i>Bombus crotchii</i> Crotch's bumble bee	None	Candidate Endangered	G2	S2	
IIHYM35210	<i>Andrena subapasta</i> An andrenid bee	None	None	G1G2	S1S2	
IMBIV19010	<i>Gonidea angulata</i> western ridged mussel	None	None	G3	S2	
PDAST11061	<i>Balsamorhiza macrolepis</i> big-scale balsamroot	None	None	G2	S2	1B.2
PDASTE8470	<i>Symphotrichum lentum</i> Suisun Marsh aster	None	None	G2	S2	1B.2
PDCAM060C0	<i>Downingia pusilla</i> dwarf downingia	None	None	GU	S2	2B.2
PDCAM0C010	<i>Legenere limosa</i> legenere	None	None	G2	S2	1B.1
PDFAB0F8R3	<i>Astragalus tener var. ferrisiae</i> Ferris' milk-vetch	None	None	G2T1	S1	1B.1
PDMAL0H0R3	<i>Hibiscus lasiocarpus var. occidentalis</i> woolly rose-mallow	None	None	G5T3	S3	1B.2
PDSCR0J0D1	<i>Chloropyron molle ssp. hispidum</i> hispid salty bird's-beak	None	None	G2T1	S1	1B.1
PDSCR0R060	<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	None	Endangered	G2	S2	1B.2
PMALI040Q0	<i>Sagittaria sanfordii</i> Sanford's arrowhead	None	None	G3	S3	1B.2
PMJUN011L1	<i>Juncus leiospermus var. ahartii</i> Ahart's dwarf rush	None	None	G2T1	S1	1B.2
PMJUN011L2	<i>Juncus leiospermus var. leiospermus</i> Red Bluff dwarf rush	None	None	G2T2	S2	1B.1
PMLILOV010	<i>Fritillaria agrestis</i> stinkbells	None	None	G3	S3	4.2



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PMPOA4G070	<i>Orcuttia viscida</i> Sacramento Orcutt grass	Endangered	Endangered	G1	S1	1B.1

Record Count: 62



CNPS Rare Plant Inventory

Search Results

15 matches found. Click on scientific name for details

Search Criteria: , 9-Quad include [3812164:3812174:3812173:3812163:3812153:3812154:3812155:3812165:3812175]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	1994-01-01	No Photo Available
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 ©1998 Dean Wm. Taylor
<i>Brodiaea rosea</i> ssp. <i>vallicola</i>	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	None	None	G4G5T3	S3	4.2	Yes	2019-01-07	 © 2011 Steven Perry
<i>Centromadia parryi</i> ssp. <i>rudis</i>	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22	 © 2019 John Doyen
<i>Chloropyron molle</i> ssp. <i>hispidum</i>	hispid salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
<i>Downingia pusilla</i>	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2		1980-01-01	 © 2013 Aaron Arthur
<i>Fritillaria agrestis</i>	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1980-01-01	 © 2016 Aaron Schusteff
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2		1974-01-01	 ©2004 Carol W. Witham
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01	 © 2020 Steven Perry

<i>Juncus leiospermus</i> var. <i>ahartii</i>	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	None	None	G2T1	S1	1B.2	Yes	1984-01-01	 © 2004 Carol W. Witham
<i>Juncus leiospermus</i> var. <i>leiospermus</i>	Red Bluff dwarf rush	Juncaceae	annual herb	Mar-Jun	None	None	G2T2	S2	1B.1	Yes	1974-01-01	 ©2016 Dylan Neubauer
<i>Legenere limosa</i>	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	Yes	1974-01-01	 ©2000 John Game
<i>Orcuttia viscida</i>	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	FE	CE	G1	S1	1B.1	Yes	1974-01-01	 © Rick York and CNPS
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May- Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	 ©2013 Debra L. Cook
<i>Symphyotrichum lentum</i>	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May- Nov	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available

Showing 1 to 15 of 15 entries

Go to top

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website https://www.rareplants.cnps.org [accessed 2 June 2025].
}

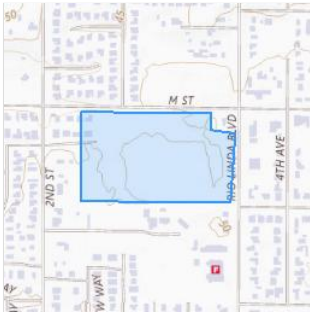
IPaC resource list

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

Sacramento 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 species¹ 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 Fisheries²).

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](#).

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:

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened
Northwestern Pond Turtle <i>Actinemys marmorata</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
Western Spadefoot <i>Spea hammondi</i> No critical habitat has been designated for this species.	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
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Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i>	Threatened
Wherever found	
There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i>	Endangered
Wherever found	
There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2246	

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.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i>	Breeds Jan 1 to Aug 31
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	

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 ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "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.

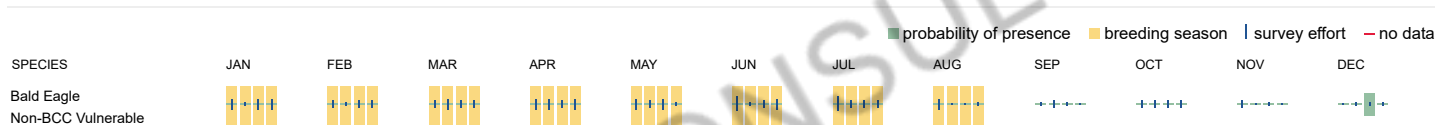
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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 an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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.

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

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.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> 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
Belding's Savannah Sparrow <i>Passerculus sandwichensis beldingi</i> 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/8	Breeds Apr 1 to Aug 15
Bullock's Oriole <i>Icterus bullockii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull <i>Larus californicus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Clark's Grebe <i>Aechmophorus clarkii</i> 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 <i>Geothlypis trichas sinuosa</i> 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
Lawrence's Goldfinch <i>Spinus lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20

Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Northern Harrier <i>Circus hudsonius</i> 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/8350	Breeds Apr 1 to Sep 15
Nuttall's Woodpecker <i>Dryobates nuttallii</i> 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
Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Santa Barbara Song Sparrow <i>Melospiza melodia graminea</i> 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/5513	Breeds Mar 1 to Sep 5
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Tricolored Blackbird <i>Agelaius tricolor</i> 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
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie <i>Pica nuttalli</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

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 "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "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 (I)

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.

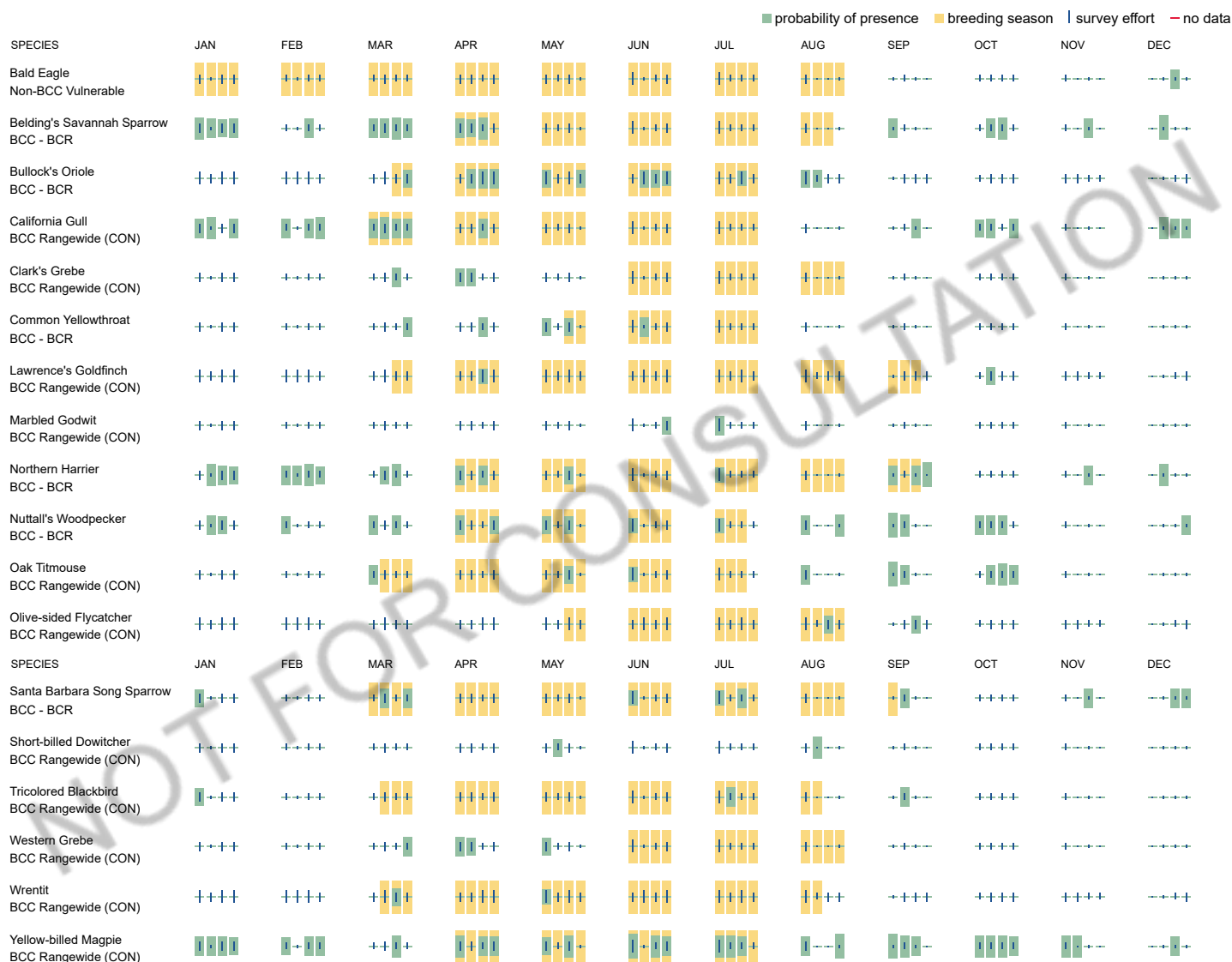
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Migratory Bird FAQs

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

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed 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 list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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 to 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, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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 [Bald and Golden Eagle Protection 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 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

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.

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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

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.

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 (NWI)

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](#).

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

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 tubercificid 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.

Quad Name **Rio Linda**

Quad Number **38121-F4**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) - **X**

SRWR Chinook Salmon ESU (E) - **X**

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) -

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - **X**

Eulachon (T) -

sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat - **X**

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -

North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -

Fin Whale (E) -

Humpback Whale (E) -

Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -

Sei Whale (E) -

Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -

Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -

Chinook Salmon EFH - **X**

Groundfish EFH -

Coastal Pelagics EFH -

Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS Long Beach office
562-980-4000**

MMPA Cetaceans -

MMPA Pinnipeds -

APPENDIX B

Arborist Report

Arborist Survey Report for the Century Palms Project

Sacramento County, California

Prepared For:

D. R. Horton CA2, Inc.

Prepared By:



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2525 Warren Drive
Rocklin, CA 95677

July 2025

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Appendix B – Tree Survey Data (June 3, 2025)
Appendix C – Representative Site Photographs

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
County Guidelines	Section 1.3.4 of the Downtown Rio Lindo SPA Ordinance, Chapter 19.12 of the Sacramento County Code for Tree Preservation and Protection, and Arborist Report Submittal Guidelines
dbh	diameter at breast height
ECORP	ECORP Consulting, Inc.
Project	Century Palms Project
SPA	Special Planning Area
Study Area	The Approximately 13.04-Acre Century Palms Project Area
USGS	U.S. Geological Survey

1.0 INTRODUCTION

ECORP Consulting, Inc. (ECORP) conducted an arborist survey for the approximately 13.04-acre Century Palms Project (Project) Area (Study Area) located in Sacramento County, California (Figure 1). The purpose of this survey was to identify, map, and assess the general condition of all trees within the Study Area according to Section 1.3.4 of the Downtown Rio Lindo Special Planning Area (SPA) Ordinance, Chapter 19.12 of the Sacramento County Code for Tree Preservation and Protection, and Arborist Report Submittal Guidelines (collectively County Guidelines).

2.0 SITE DESCRIPTION

The Study Area is located southwest of the intersection of M Street and Rio Linda Boulevard (Figure 1). The Study Area corresponds to a portion of Section 29, Township 10 north, Range 5 east and a portion of the unsectioned Del Paso Land Grant of the "Rio Linda, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1992). The approximate center of the Study Area is located at 38.690248° latitude and -121.458671° longitude within the Lower American Watershed (Hydrologic Unit Code #18020111) (USGS 1992). The Study Area is an undeveloped lot and primarily composed of annual grassland plant species. The surrounding land use is a mix of residential and commercial.

3.0 METHODS

ECORP arborist Gabrielle Attisani (International Society of Arboriculture Certification # WE-15575A), with ECORP biologist Lena Molteni, conducted the field survey on June 3, 2025 by walking the Study Area during the field survey and recording data using a submeter capable Global Positioning System unit.

ECORP surveyed all trees that fall under the County Guidelines and that had trunks or a portion of their dripline radius within the Study Area. ECORP did not install tree tags on trees that were inaccessible or were located on private property; these trees were assigned numbers 1 through 4. Tree tag numbers from past surveys were recorded when the old tags were detectable in the field and new tags were installed if none were found. The following terms are defined in the County Guidelines:

- *Diameter at breast height (dbh)*: Measured diameter of the trunk at 54 inches above grade; if other than dbh, then alternate measurement height must be identified. If the tree is multi-trunked, include the diameter of all stems that are 1-inch dbh and larger. Size must be rounded to the nearest inch. *For multi-trunked trees, this report lists total aggregate diameter along with each trunk's diameter.*
- *Dripline*: A circle with the radius being the measurement of the length of the distance from the trunk to the end of the longest limb.

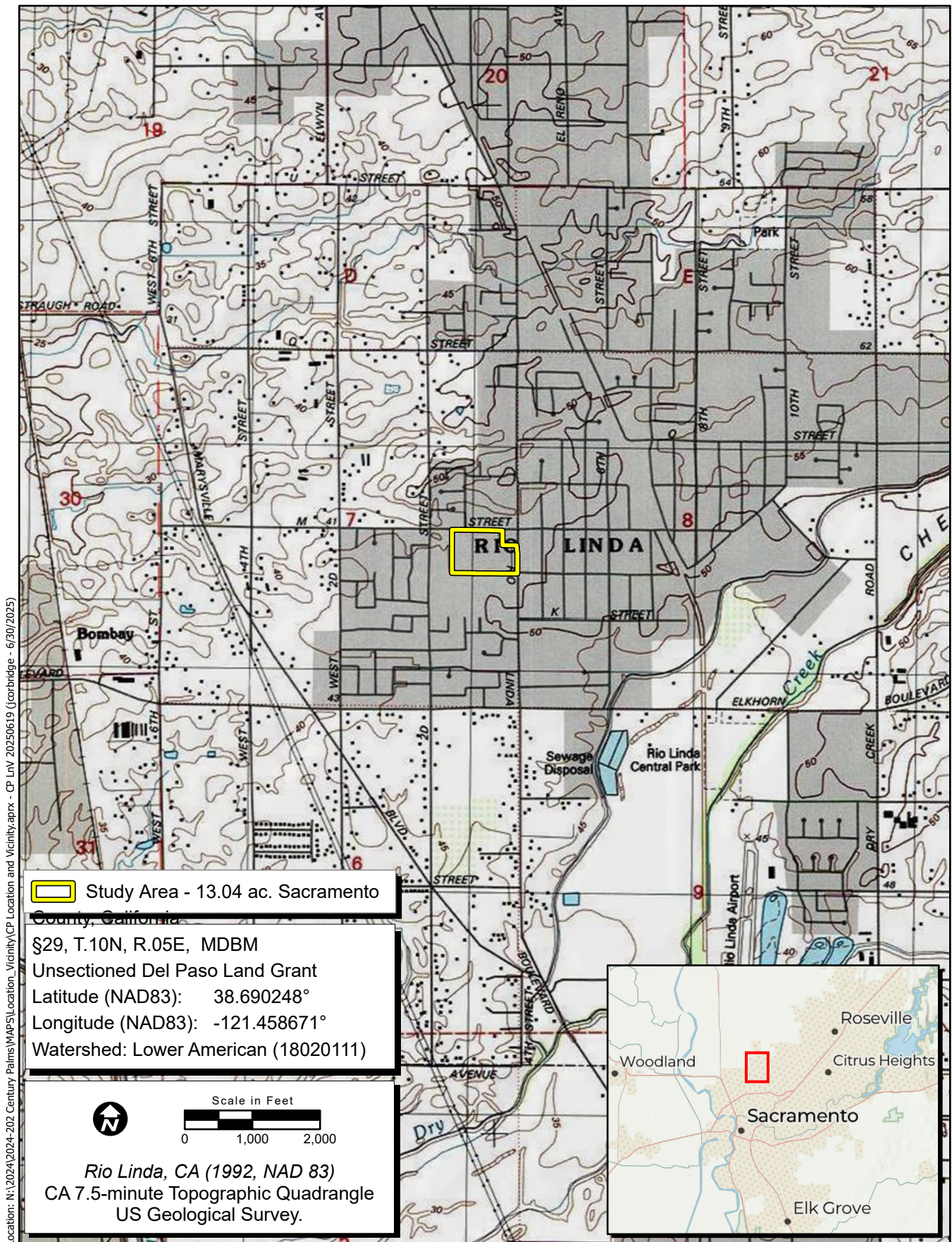


Figure 1. Project Location and Vicinity

- *Dripline Environment*: A brief written description of the growing condition of the immediate area beneath the defined dripline protection zone (i.e., natural grasses, steep terrain, existing roadway or structure, utility lines, drainage swales, previous grading cuts or fills, fire damage).
- *Health*: A measure of overall vigor and vitality of the tree and rated as good, fair, or poor based on an assessment of crown density, leaf color and size, active callusing, shoot growth rate, extent of crown dieback, cambium layer health, and tree age.
- *Heritage Tree*: This classification is for a California native oak tree growing on any land in Sacramento County, including privately owned land, with a trunk 60 inches or greater in girth (equal to 19 inches dbh or larger) measured 4.5 feet above the ground.
- *Landmark Tree*: An especially prominent or stately tree, or a special variety of a certain tree. It can be any native or nonnative tree that is exceptional for its type that is in good health and structural condition. Size is not a mandatory criterion.
- *Native Tree*: All native oak and specified non-oak native trees (refer to species list) that are 4 inches in diameter (dbh) and larger, or 10-inch aggregate diameter for multi-trunk native oak and Northern California black walnut trees.
- *Overall Tree Condition*: Based on the foregoing tree health and structural assessment, the arborist shall assign a numerical rating of the tree based on the following ratings: 0) dead, 1) severe decline, 2) declining, 3) fair, 4) good, and 5) excellent.
- *Species List*:
 - Valley oak (*Quercus lobata*)
 - Interior live oak (*Quercus wislizeni*)
 - Blue oak (*Quercus douglasii*)
 - Coast live oak (*Quercus agrifolia*), in the Delta area
 - Oracle oak (*Quercus X morehus*)
 - Native oak hybrids
 - California sycamore (*Platanus racemosa*)
 - Northern California black walnut (*Juglans californica* var. *hindsii*)
 - Oregon ash (*Fraxinus latifolia*)

- Goodding's black willow (*Salix gooddingii*)
 - Box elder (*Acer negundo* var. *californicum*)
 - White alder (*Alnus rhombifolia*)
 - California buckeye (*Aesculus californica*)
- **Structure:** A measure of the tree's structural stability and failure potential and rated as good, fair, or poor based on assessment of specific structural features (e.g., decay, conks, codominant trunks, included bark, abnormal lean, one-sided canopy, history of failure, prior construction impact, pruning history).

The surveyors collected data, which included species, tree tag number, dbh, dripline radius, health, structure, dripline environment, and overall tree condition. The survey results are intended for general Project planning purposes only; therefore, these results should not be considered a detailed tree analysis (i.e., results do not include hazard assessment, tree health diagnosis, preservation/removal recommendations, or pruning advisement).

4.0 RESULTS

ECORP inventoried a total of 45 Protected Trees within the Study Area consisting of 14 interior live oaks, (*Quercus wislizeni*) and 31 valley oak (*Quercus lobata*). A map depicting the locations of the inventoried trees is included as Appendix A. Detailed tree survey data for each tree are included as Appendix B. Representative site photographs are included as Appendix C.

5.0 IMPACTS

Based on the limits of work provided by D. R. Horton CA2, Inc., 42 of the 45 trees found during the inventory are proposed for removal/direct impact¹. Trees with trunks located outside the Study Area but with driplines that extend into the Study Area are considered to incur indirect impacts. This means that there will be impacts at the soil level within the dripline of the tree through some form of ground disturbance. See sections 6.1 and 6.2 for mitigation and protection measures for both direct and indirect impacts.

Tree 4's trunk is located on private property, so it is not anticipated that it will be removed. It is anticipated that there will be indirect impacts within Tree 4's root zone that will require tree protection measures that are noted in section 6.2 below. Trees 3 and 949 have trunks that are located between a chain-link fence on the southern border of the Study Area and a wood fence along the adjacent property

¹ This assumes that trees growing through or against the fences along the Study Area limits will be removed.

line. These two trees appear to be within the Study Area based on the survey boundaries provided and global positioning system location (collected with submeter accuracy). However, it is recommended that direct impacts to Trees 3 and 949 be avoided if the Project doesn't require their removal.

6.0 MITIGATION REQUIREMENTS AND TREE PROTECTION MEASURES

Mitigation for tree removal and preserved trees within the Project Area must comply with County and Downtown Rio Linda SPA guidelines. The following sections provide a general outline of the applicable mitigation requirements.

6.1 Direct Impact/Removed Trees

- a) Any substantial (>20 percent) encroachment and/or removal of native oak trees shall be compensated by planting native oaks and California black walnuts, equivalent to the dbh inches lost, based on the ratios listed below, at locations that are authorized by the Department of Planning and Environmental Review. On-site preservation of native oak trees that are less than 6 inches (<6 inches) dbh, may also be used to meet this compensation requirement. Encroachment of over 20 percent within the dripline radius of native trees will require compensatory mitigation based on the percentage of encroachment multiplied by the dbh. Encroachment over 50 percent will require compensation for the entire tree. Equivalent compensation based on the following ratios is required:
 - i. one preserved native oak tree < 6 inches dbh on-site = 1 inch dbh
 - ii. one "deepot" seedling (40 cubic inches or larger) = 1 inch dbh
 - iii. one 15-gallon tree = 1 inch dbh
 - iv. one 24-inch box tree = 2 inches dbh
 - v. one 36-inch box tree = 3 inches dbh
- b) Replacement tree planting shall be completed prior to the issuance of building permits or a bond shall be posted by the applicant to provide funding for purchase, planting, irrigation, and three years of maintenance, should the applicant default on replacement tree mitigation. The bond shall be in an amount equal to the prevailing rate of the County Tree Preservation Fund.
- c) Prior to the approval of Improvement Plans or building permits, a Replacement Oak Tree Planting Plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the Environmental Coordinator for approval.

- d) If oak tree replacement plantings are demonstrated to the satisfaction of the Environmental Coordinator to be infeasible for any or all trees removed, then compensation shall be through payment into the County Tree Preservation Fund. Payment shall be made at a rate of \$325.00 per dbh inch removed but not otherwise compensated, or at the prevailing rate at the time payment into the fund is made.

6.2 Indirect Impact/Preserved Trees

All healthy native trees that are 6 inches dbh or larger within the Project Area, all portions of adjacent off-site healthy native oak trees that are 6 inches dbh or larger which have driplines that extend into the Project Area, and all off-site healthy native oak trees that are 6 inches dbh or larger which may be impacted by utility installation and/or improvements associated with this Project, shall be preserved and protected as follows:

- a) A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of each tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs that make up the dripline does not change the protected area.
- b) Any protected trees on the site that require pruning shall be pruned by a certified arborist prior to the start of construction work.
- c) Prior to initiating construction, temporary protective fencing shall be installed at least one foot outside the driplines of protected trees within 100-feet of construction related activities. Where encroachment occurs, temporary high visibility protective fencing shall be installed a maximum of one foot outside the work areas.
- d) Any removal of paving or structures (i.e., demolition) that occurs within the dripline of a protected oak tree shall be done under the direct supervision of a certified arborist. To the maximum extent feasible, demolition work within the dripline protection area of the oak tree shall be performed by hand. If the certified arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.
- e) No signs, ropes, cables (except those which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the protected trees. Small metallic numbering tags for the purpose of preparing tree reports and inventories shall be allowed.
- f) No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of protected trees.

- g) No grading (grade cuts or fills) shall be allowed within the driplines of protected trees, except for the minimum required for construction and streetscape improvements.
- h) Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of any protected tree.
- i) No trenching shall be allowed within the driplines of protected trees. If it is absolutely necessary to install underground utilities within the dripline of a protected tree, the utility line shall be bored and jacked under the supervision of a certified arborist.
- j) The construction of impervious surfaces within the driplines of protected trees shall be stringently minimized. When it is absolutely necessary, a piped aeration system per County standard detail shall be installed under the supervision of a certified arborist.
- k) All portions of any masonry wall that will encroach into the dripline protection area of any protected tree shall be constructed using grade beam wall panels and posts set no closer than 10 feet on center. Any wrought iron fencing shall be similarly installed, with posts set no closer than 10 feet on center. Posts shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts in order to reduce impacts to the trees.
- l) Trunk protection measures, per Sacramento County standards, shall be used for all protected trees where development or construction activity, including installation of masonry walls or wrought iron fences, occurs within 10 feet of the trunk of a tree.

7.0 ANTICIPATED MITIGATION

For the 42 trees that are proposed for removal, there is a total of 585 inches dbh that will be lost. As such, mitigation can be achieved through one of the following options:

- i. Preserve 585 native oak trees < 6 inches dbh on-site
- ii. Plant 585 "deepot" seedlings (40 cubic inches or larger)
- iii. Plant 585 15-gallon trees
- iv. Plant 293 24-inch box trees
- v. Plant 195 36-inch box tree
- vi. Preserve and/or plant a mix of these options to reach the equivalent compensation to cover the loss of 585 inches.
- vii. Payment of \$190,125 to the County Tree Preservation Fund, subject to County Environmental Coordinator approval.

8.0 REFERENCES

- Sacramento County. 2025a. *Downtown Rio Linda Special Planning Area Ordinance - Chapter 1.3.4 Native Oak Tree Protection*.
[https://planning.saccounty.gov/Documents/Downtown%20Rio%20Linda%20\(Amended%2011.13.2023\)%20\(506-50\).pdf](https://planning.saccounty.gov/Documents/Downtown%20Rio%20Linda%20(Amended%2011.13.2023)%20(506-50).pdf). Accessed June 11, 2025.
- _____. 2025b. *Tree Preservation and Protection - Chapter 19.12, Article 19.50 Woodland Conservation*.
<https://ecode360.com/44038090#44038136>. Accessed June 2, 2025.
- U.S. Geological Survey (USGS). 1992. *Rio Linda, California 7.5-Minute Topographic Quadrangle*. United States Department of the Interior, Geological Survey, Denver.

LIST OF APPENDICES

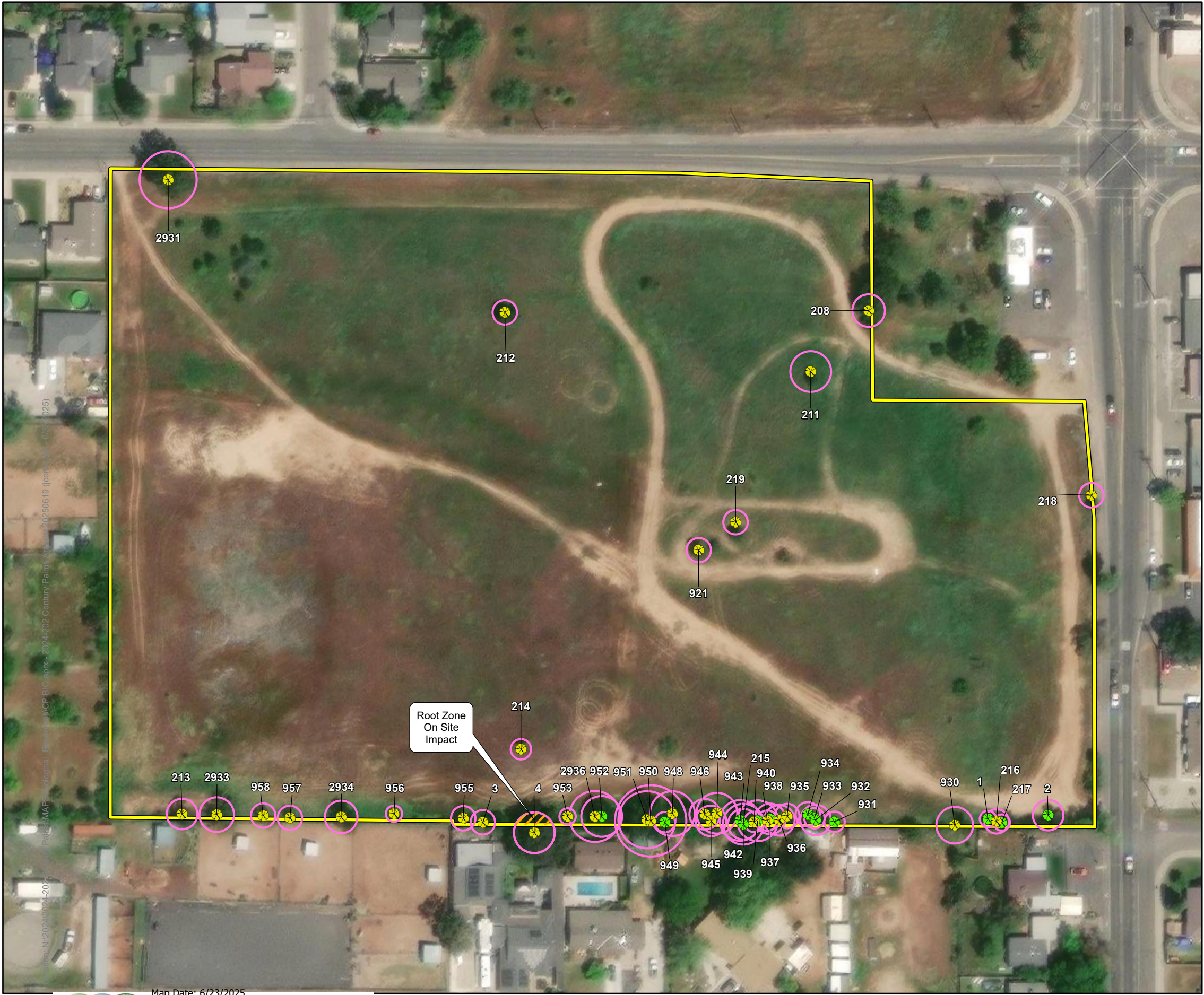
Appendix A – Arborist Survey Results

Appendix B – Tree Survey Data (June 3, 2025)

Appendix C – Representative Site Photographs

APPENDIX A

Arborist Survey Results



Map Contents

- Study Area - 13.04 ac.
- Surveyed Tree Dripline
- Root Zone OnSite Impact - 0.0073 ac.

Tree Species

- Live Oak
- Valley Oak

Sources: Esri, Maxar, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap



Appendix A. Arborist Results

2024-202 Century Palms

APPENDIX B

Tree Survey Data (June 3, 2025)

Appendix B – Tree Survey Data (June 3, 2025)

Tree Tag #	Common Name	Latin Name	DBH (inches, rounded)	Stem Description	Dripline	Dripline Environment	Height (feet)	Structure	Health	Overall Tree Condition	Field Notes
1	Interior Live Oak	<i>Quercus wislizeni</i>	19	1, 2, 2.5, 3, 3.5, 4, 3	8	Annual grassland	15	Fair to Good	Fair to Good	Good	Untagged due to accessibility.
2	Interior Live Oak	<i>Quercus wislizeni</i>	10	–	15	Duff	25	Fair	Good	Good	Untagged due to accessibility, along property line. Treehouse present.
3	Valley Oak	<i>Quercus lobata</i>	5	–	12	Annual grassland	20	Good	Good	Good	Untagged due to location between wire fencing and wooden fence of adjacent property.
4	Valley Oak	<i>Quercus lobata</i>	20	–	20	Annual grassland	35	Fair to Good	Good	Good	Untagged due to location in neighbor's yard, drip line extending into project boundary. DBH and dripline very rough estimate due to fence
208	Valley Oak	<i>Quercus lobata</i>	17	2.3, 2.4, 6, 6.4	16	Annual grassland	15	Fair	Fair to Good	Fair	–
211	Valley Oak	<i>Quercus lobata</i>	14	6.5, 7	20	Annual grassland	22	Fair	Fair to Poor	Declining	Significant branch death
212	Valley Oak	<i>Quercus lobata</i>	41	6.5, 6, 8, 10,0	12	Annual grassland	25	Fair	Fair to Good	Good	Codominant stems at base
213	Valley Oak	<i>Quercus lobata</i>	13	–	15	Annual grassland	30	Fair to Good	Fair to Good	Fair	Codominant stems, some branch death and galls

Appendix B – Tree Survey Data (June 3, 2025)

Tree Tag #	Common Name	Latin Name	DBH (inches, rounded)	Stem Description	Dripline	Dripline Environment	Height (feet)	Structure	Health	Overall Tree Condition	Field Notes
214	Valley Oak	<i>Quercus lobata</i>	11	4.2, 4.1, 2.5	10	Annual grassland	18	Fair	Fair to Good	Good	–
215	Interior Live Oak	<i>Quercus wislizeni</i>	8	–	15	Annual grassland	20	Good	Good	Good	–
216	Valley Oak	<i>Quercus lobata</i>	11	3.7, 3.8, 3.6	12	Duff	20	Fair to Good	Fair	Fair	–
217	Interior Live Oak	<i>Quercus wislizeni</i>	40	1.2, 1.3, 1.3, 1, 1, 1, 2.8, 2.5, 2, 3.2, 1, 1.3, 2, 3, 2.5, 3, 4, 1.8, 1.8, 2	8	Duff	18	Fair	Good	Good	–
218	Valley Oak	<i>Quercus lobata</i>	36	26,10	12	Annual grassland/ Asphalt	28	Good	Good	Good	–
219	Valley Oak	<i>Quercus lobata</i>	25	4, 3.8, 4.2, 4, 4, 3.8, 1, 1	12	Annual grassland	15	Fair	Fair	Fair	Codominant stems, branch death in lower canopy
921	Valley Oak	<i>Quercus lobata</i>	28	5, 5, 4.7, 5.2, 4.2, 2, 1.5	12	Annual grassland	20	Fair	Fair	Fair	Many galls, codominant stems
930	Valley Oak	<i>Quercus lobata</i>	17	4.8, 6, 1.5, 5	18	Annual grassland	25	Fair	Fair to Good	Good	–
931	Interior Live Oak	<i>Quercus wislizeni</i>	8	5.3, 3	10	Duff	15	Fair	Fair	Fair	Codominant stems
932	Interior Live Oak	<i>Quercus wislizeni</i>	5	–	15	Duff	20	Good	Good	Good	–
933	Interior Live Oak	<i>Quercus wislizeni</i>	7	–	10	Annual grassland	20	Fair to Good	Fair to Good	Good	–

Appendix B – Tree Survey Data (June 3, 2025)

Tree Tag #	Common Name	Latin Name	DBH (inches, rounded)	Stem Description	Dripline	Dripline Environment	Height (feet)	Structure	Health	Overall Tree Condition	Field Notes
934	Interior Live Oak	<i>Quercus wislizeni</i>	4	–	12	Duff	12	Fair	Fair	Fair	–
935	Valley Oak	<i>Quercus lobata</i>	7	–	12	Annual grassland	18	Fair to Good	Fair	Fair	–
936	Valley Oak	<i>Quercus lobata</i>	7	–	15	Annual grassland	18	Fair to Good	Poor	Declining	Extensive branch death
937	Interior Live Oak	<i>Quercus wislizeni</i>	9	–	15	Annual grassland	20	Fair	Good	Good	Codominant stems
938	Valley Oak	<i>Quercus lobata</i>	9	2.8, 6.2	10	Annual grassland	8	Fair	Fair to Poor	Declining	–
939	Interior Live Oak	<i>Quercus wislizeni</i>	10	–	20	Annual grassland	25	Fair to Good	Good	Good	–
940	Valley Oak	<i>Quercus lobata</i>	7	–	10	Annual grassland	20	Fair	Fair to Poor	Declining	Codominant stems, galls
942	Interior Live Oak	<i>Quercus wislizeni</i>	9	5.7, 3	20	Annual grassland	25	Fair	Fair to Good	Good	Codominant stems
943	Interior Live Oak	<i>Quercus wislizeni</i>	11	–	20	Annual grassland	25	Good	Good	Good	–
944	Valley Oak	<i>Quercus lobata</i>	10	–	20	Duff	30	Good	Fair	Fair	–
945	Valley Oak	<i>Quercus lobata</i>	10	4, 5.9	15	Duff	28	Fair	Fair	Fair	–
946	Valley Oak	<i>Quercus lobata</i>	8	–	15	Duff	25	Good	Good	Good	–
948	Valley Oak	<i>Quercus lobata</i>	16	8.1, 8	22	Annual grassland	25	Fair to Good	Fair	Fair	Codominant stems, some branch death

Appendix B – Tree Survey Data (June 3, 2025)

Tree Tag #	Common Name	Latin Name	DBH (inches, rounded)	Stem Description	Dripline	Dripline Environment	Height (feet)	Structure	Health	Overall Tree Condition	Field Notes
949	Interior Live Oak	<i>Quercus wislizeni</i>	11	5, 5.7	10	Annual grassland	25	Fair to Good	Good	Good	Between wire fencing and neighbors wood fence, codominant stems
950	Valley Oak	<i>Quercus lobata</i>	19	–	35	Annual grassland	35	Fair	Fair to Good	Fair	Codominance, occluded bark, some branch death
951	Valley Oak	<i>Quercus lobata</i>	13	–	28	Annual grassland	30	Fair to Poor	Fair	Fair	Strong lean, some branch death
952	Interior Live Oak	<i>Quercus wislizeni</i>	9	–	20	Duff	12	Fair	Good	Fair	Trunk is horizontal/growing sideways
953	Valley Oak	<i>Quercus lobata</i>	5	–	8	Annual grassland	15	Good	Fair to Good	Good	–
955	Valley Oak	<i>Quercus lobata</i>	10	–	12	Annual grassland	25	Fair	Fair	Fair	Codominance, some branch death
956	Valley Oak	<i>Quercus lobata</i>	6	–	8	Annual grassland	12	Fair to Good	Fair	Fair	Some dead branches
957	Valley Oak	<i>Quercus lobata</i>	11	–	12	Annual grassland	15	Fair to Poor	Fair to Poor	Declining	Galls, branch death
958	Valley Oak	<i>Quercus lobata</i>	10	–	12	Annual grassland	25	Good	Good	Good	–
2931	Valley Oak	<i>Quercus lobata</i>	30	27.4, 2.2	28	Annual grassland/ Asphalt	40	Fair	Fair to Good	Fair	Compacted soil along the roadside
2933	Valley Oak	<i>Quercus lobata</i>	16	–	17	Annual grassland	22	Fair	Poor	Declining	Most of canopy dead, watersprouts

Appendix B – Tree Survey Data (June 3, 2025)

Tree Tag #	Common Name	Latin Name	DBH (inches, rounded)	Stem Description	Dripline	Dripline Environment	Height (feet)	Structure	Health	Overall Tree Condition	Field Notes
2934	Valley Oak	<i>Quercus lobata</i>	13	–	16	Annual grassland	25	Fair	Fair	Fair	–
2936	Valley Oak	<i>Quercus lobata</i>	16	–	25	Annual grassland	25	Fair to Good	Fair	Fair	Many galls

Notes: dbh = diameter at breast height

APPENDIX C

Representative Site Photographs



Photo 1. Representative Photo of the Trees within the Study Area (facing southeast; July 12, 2025).



Photo 2. Representative Photo of the Trees within the Study Area (facing northwest; July 12, 2025).



Photo 3. Representative Photo of the Trees within the Study Area (facing west; July 12, 2025).



Photo 4. Representative Photo of the Trees within the Study Area (facing northeast; October 30, 2024).



APPENDIX C

Representative Photographs



Photo Point 1. Representative Photo of Seasonal Wetlands within the BSA (view north; April 18, 2025).



Photo Point 2. Representative Photo of Annual Grassland in the Southeastern Portion of the BSA (view north; April 18, 2025).



Photo Point 3. Representative Photo of Off-Road Vehicle Disturbance within the BSA (view west; April 18, 2025).



Photo Point 4. Representative Photo of the Firebreaks within the BSA (view from northwest corner of the BSA; April 18, 2025).



**Photo Point 5. Representative Photo of the BSA
(view southwest; June 19, 2025).**



**Photo Point 6. Representative Photo of the BSA
(view northeast; June 19, 2025).**



**Photo Point 7. Representative Photo of the Annual Grassland within the BSA
(view south; June 19, 2025).**



**Photo Point 8. Representative Photo of the Annual Grassland within the BSA
(view southeast; June 19, 2025).**

Plant Species Observed (April 18 and June 19, 2025)

SCIENTIFIC NAME	COMMON NAME
ALISMATACEAE	WATER-PLANTAIN FAMILY
<i>Damasonium californicum</i>	California damasonium
AMARANTHACEAE	AMARANTH FAMILY
<i>Amaranthus albus</i> *	Pigweed amaranth
APIACEAE	CARROT FAMILY
<i>Eryngium castrense</i>	Great Valley button-celery
APOCYNACEAE	DOGBANE FAMILY
<i>Asclepias eriocarpa</i>	Woolypod milkweed
<i>Asclepias fascicularis</i>	Narrow-leaf milkweed
ASTERACEAE	SUNFLOWER FAMILY
<i>Achyrachaena mollis</i>	Blowwives
<i>Baccharis pilularis</i>	Coyote brush
<i>Centaurea solstitialis</i> *	Yellow star-thistle
<i>Centromadia fitchii</i>	Fitch's spikeweed
<i>Cichorium intybus</i> *	Chicory
<i>Dittrichia graveolens</i> *	Stinkwort
<i>Erigeron canadensis</i>	Canada horseweed
<i>Grindelia camporum</i>	Common gumplant
<i>Holocarpha virgata</i> ssp. <i>virgata</i>	Narrow tarplant
<i>Hypochaeris radicata</i> *	Rough cat's-ear
<i>Lactuca saligna</i> *	Narrow leaved wild lettuce
<i>Lactuca serriola</i> *	Prickly lettuce
<i>Lasthenia glaberrima</i>	Smooth goldfields
<i>Leontodon saxatilis</i> *	Hairy hawkbit
<i>Logfia gallica</i> *	Narrowleaf cotton rose
<i>Madia elegans</i>	Common madia
<i>Matricaria discoidea</i>	Pineapple weed
<i>Psilocarphus brevissimus</i> var. <i>brevissimus</i>	Short woolly-marbles
<i>Psilocarphus oregonus</i>	Oregon woolly-heads
<i>Psilocarphus tenellus</i>	Slender woolly-heads
<i>Wyethia angustifolia</i>	Narrow leaved mule ears

SCIENTIFIC NAME	COMMON NAME
BORAGINACEAE	BORAGE FAMILY
<i>Amsinckia menziesii</i>	Small flowered fiddleneck
<i>Plagiobothrys stipitatus</i>	Slender popcorn-flower
BRASSICACEAE	MUSTARD FAMILY
<i>Hirschfeldia incana</i> *	Shortpod mustard
<i>Lepidium nitidum</i>	Shining peppergrass
<i>Raphanus sativus</i> *	Purple wild radish
CARYOPHYLLACEAE	PINK FAMILY
<i>Spergula arvensis</i> *	Corn spurry
<i>Spergularia rubra</i> *	Purple sandspurry
<i>Stellaria media</i> *	Common chickweed
CHENOPODIACEAE	GOOSEFOOT FAMILY
<i>Chenopodium album</i> *	White goosefoot
CONVOLVULACEAE	MORNING-GLORY FAMILY
<i>Convolvulus arvensis</i> *	Field bindweed
CRASSULACEAE	STONECROP FAMILY
<i>Crassula aquatica</i>	Aquatic pygmy-weed
CYPERACEAE	SEDGE FAMILY
<i>Eleocharis macrostachya</i>	Creeping spikerush
EUPHORBIACEAE	SPURGE FAMILY
<i>Croton setiger</i>	Turkey mullein
FABACEAE	LEGUME FAMILY
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish clover
<i>Acmispon brachycarpus</i>	Short-podded lotus
<i>Acmispon</i> sp.	Lotus
<i>Lupinus bicolor</i>	Bicolored lupine
<i>Lupinus nanus</i>	Sky lupine
<i>Robinia pseudoacacia</i> *	Black locust (cultivated)
<i>Trifolium hirtum</i> *	Rose clover
<i>Trifolium repens</i> *	White clover
<i>Trifolium</i> sp.	Clover
<i>Vicia sativa</i> *	Spring vetch

SCIENTIFIC NAME	COMMON NAME
<i>Vicia villosa</i> *	Hairy vetch
FAGACEAE	OAK FAMILY
<i>Quercus lobata</i>	Valley oak
GENTIANACEAE	GENTIAN FAMILY
<i>Cicendia quadrangularis</i>	Oregon timwort
GERANIACEAE	GERANIUM FAMILY
<i>Erodium brachycarpum</i> *	Short fruited filaree
<i>Erodium cicutarium</i> *	Red-stemmed filaree
<i>Erodium moschatum</i> *	White-stemmed filaree
JUNCACEAE	RUSH FAMILY
<i>Juncus balticus</i> ssp. <i>ater</i>	Baltic rush
<i>Juncus bufonius</i>	Toad rush
<i>Juncus capitatus</i> *	Capped rush
<i>Juncus effusus</i>	Soft rush
<i>Juncus xiphioides</i>	Iris-leaf rush
JUNCAGINACEAE	ARROW-GRASS FAMILY
<i>Triglochin scilloides</i>	Flowering quillwort
LAMIACEAE	MINT FAMILY
<i>Trichostema lanceolatum</i>	Vinegar weed
LYTHRACEAE	LOOSESTRIFE FAMILY
<i>Lythrum hyssopifolia</i> *	Hyssop loosestrife
ONAGRACEAE	EVENING PRIMROSE FAMILY
<i>Clarkia purpurea</i>	Purple clarkia
<i>Epilobium brachycarpum</i>	Panicled willow-herb
OROBANCHACEAE	BROOMRAPE FAMILY
<i>Castilleja attenuata</i>	Narrow leaved owl's clover
<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	Butter 'n' eggs
PAPAVERACEAE	POPPY FAMILY
<i>Eschscholzia californica</i>	California poppy
PLANTAGINACEAE	PLANTAIN FAMILY
<i>Gratiola ebracteata</i>	Bractless hedgehyssop

SCIENTIFIC NAME	COMMON NAME
<i>Plantago coronopus</i> *	Cut-leaf plantain
<i>Plantago erecta</i>	California plantain
<i>Plantago lanceolata</i> *	English plantain
<i>Plantago major</i> *	Broad-leaf plantain
POACEAE	GRASS FAMILY
<i>Aegilops triuncialis</i> *	Barbed goatgrass
<i>Avena fatua</i> *	Wild oat
<i>Avena</i> sp.*	Wild oat
<i>Briza minor</i> *	Little quaking grass
<i>Bromus diandrus</i> *	Ripgut brome
<i>Bromus hordeaceus</i> *	Soft brome
<i>Cynodon dactylon</i> *	Bermuda grass
<i>Elymus caput-medusae</i> *	Medusahead grass
<i>Festuca myuros</i> *	Rat-tail fescue
<i>Festuca perennis</i> *	Italian ryegrass
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i> *	Mediterranean barley
<i>Hordeum murinum</i> ssp. <i>glaucum</i> *	Foxtail barley
<i>Poa annua</i> *	Annual bluegrass
POLEMONIACEAE	PHLOX FAMILY
<i>Navarretia intertexta</i>	Interwoven navarretia
POLYGONACEAE	BUCKWHEAT FAMILY
<i>Polygonum aviculare</i> *	Prostrate knotweed
<i>Rumex crispus</i> *	Curly dock
RANUNCULACEAE	BUTTERCUP FAMILY
<i>Ranunculus bonariensis</i> var. <i>trisepalus</i>	Carter's buttercup
ROSACEAE	ROSE FAMILY
<i>Prunus</i> sp.*	Prunus (cultivated)
RUBIACEAE	MADDER FAMILY
<i>Galium aparine</i>	Common bedstraw
SALICACEAE	WILLOW FAMILY
<i>Salix laevigata</i>	Red willow

SCIENTIFIC NAME	COMMON NAME
SIMAROUBACEAE	QUASSIA FAMILY
<i>Ailanthus altissima</i> *	Tree-of-heaven
THEMIDACEAE	BRODIAEA FAMILY
<i>Brodiaea elegans</i>	Harvest brodiaea
<i>Dichelostemma multiflorum</i>	Wild hyacinth
<i>Triteleia hyacinthina</i>	Hyacinth brodiaea
<i>Triteleia laxa</i>	Ithuriel's spear

Notes: * = non-native species

APPENDIX E

Wildlife Species Observed (June 9 and 19, 2025)

COMMON NAME	SCIENTIFIC NAME
Birds	
Mallard	<i>Anas platyrhynchos</i>
Rock Pigeon	<i>Columba livia</i>
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>
Mourning Dove	<i>Zenaida macroura</i>
Anna's Hummingbird	<i>Calypte anna</i>
Killdeer	<i>Charadrius vociferus</i>
Turkey Vulture	<i>Cathartes aura</i>
Acorn Woodpecker	<i>Melanerpes formicivorus</i>
Western Kingbird	<i>Tyrannus verticalis</i>
California Scrub-jay	<i>Aphelocoma californica</i>
American Crow	<i>Corvus brachyrhynchos</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Bushtit	<i>Psaltirparus minimus</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
European Starling	<i>Sturnus vulgaris</i>
House Sparrow	<i>Passer domesticus</i>
House Finch	<i>Haemorhous mexicanus</i>
Lesser Goldfinch	<i>Spinus psaltria</i>
Song Sparrow	<i>Melospiza melodia</i>