

BIOLOGICAL RESOURCE EVALUATION

DECEMBER 2020

**LEMOORE RESIDENTIAL DEVELOPMENT PROJECT
KINGS COUNTY, CALIFORNIA**



PREPARED FOR:
Crawford & Bowen Planning, Inc.
113 N Church Street, Suite 302
Visalia, CA 93290

PREPARED BY:
Colibri Ecological Consulting, LLC
9493 N Fort Washington Road, Suite 108
Fresno, CA 93730
www.colibri-ecology.com

Contents

- Executive Summary..... iii
- Abbreviations iv
- 1.0 Introduction 1
 - 1.1 Background 1
 - 1.2 Project Description 1
 - 1.3 Project Location 1
 - 1.4 Purpose and Need of Proposed Project 4
 - 1.5 Regulatory Framework 4
 - 1.5.1 State Requirements..... 4
 - 1.5.2 Federal Requirements 6
- 2.0 Methods..... 8
 - 2.1 Desktop Review..... 8
 - 2.2 Reconnaissance Survey..... 8
 - 2.3 Significance Criteria 8
- 3.0 Results..... 11
 - 3.1 Desktop Review..... 11
 - 3.2 Reconnaissance Survey..... 18
 - 3.2.1 Land Use and Habitats 18
 - 3.2.2 Plant and Animal Species Observed..... 21
 - 3.2.3 Nesting Birds..... 23
 - 3.2.4 Regulated Habitats 23
 - 3.3 Special-Status Species..... 23
 - 3.3.1 Swainson’s hawk (*Buteo swainsoni*) (ST) 23
- 4.0 Environmental Impacts..... 25
 - 4.1 Significance Determinations..... 25
 - 4.1.1 Direct and Indirect Impacts..... 25
 - 4.1.2 Cumulative Effects..... 27
 - 4.1.3 Unavoidable Significant Adverse Effects..... 28
- 5.0 Literature Cited..... 29

Figures

Figure 1. Project site vicinity map.2
Figure 2. Project site map.3
Figure 3. Reconnaissance survey area map. 10
Figure 4. CNDDDB occurrence map. 17
Figure 5. Photograph of the Project site, looking south along the west side of the Project site. . 18
Figure 6. Photograph of the Project site, looking northeast from the southwest corner. 19
Figure 7. Photograph of the south side of the Project site, looking west, showing the adjacent residential area (left). 19
Figure 8. Photograph of the southeast corner of the Project site, looking east toward an adjacent irrigation ditch (right). 20
Figure 9. Photograph of the Project site, looking south from the northern border, showing a dirt road that bisects the Project site. 20

Tables

Table 1. Special-status species, their listing status, habitats, and potential to occur on or near the Project site. 12
Table 2. Plant and animal species observed during the reconnaissance survey..... 21

Appendices

Appendix A. USFWS list of threatened and endangered species.31
Appendix B. CNDDDB occurrence records.39
Appendix C. CNPS plant list.43

Appendix D. Recommended timing and methodology for Swainson’s hawk nesting surveys in California’s Central Valley.46

Appendix E. Staff report regarding mitigation for impacts to Swainson’s hawk (*Buteo swainsoni*) in the Central Valley of California.52

Executive Summary

The Assemi Group / Granville Homes proposes to construct a residential development in Lemoore, Kings County, California. The proposed project (Project) will involve developing a 156-acre parcel that currently supports an alfalfa field into a 900-unit residential development.

To evaluate whether the Project may affect biological resources under California Environmental Quality Act (CEQA) purview, we (1) obtained lists of special-status species from the California Department of Fish and Wildlife, the United States Fish and Wildlife Service, and the California Native Plant Society; (2) reviewed other relevant background information such as aerial images and topographic maps; and (3) conducted a field reconnaissance survey at the Project site.

This biological resource evaluation summarizes (1) existing biological conditions on the Project site, (2) the potential for special-status species and regulated habitats to occur on or near the Project site, (3) the potential impacts of the proposed Project on biological resources and regulated habitats, and (4) measures to reduce those potential impacts to less-than-significant levels under CEQA.

We concluded that the Project could impact one special-status species, the state listed as threatened Swainson's hawk (*Buteo swainsoni*). Nesting migratory birds could also be impacted. Impacts to all species can be reduced to less-than-significant levels with mitigation.

Abbreviations

Abbreviation	Definition
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWC	California Water Code
FE	Federally listed as Endangered
FESA	Federal Endangered Species Act
FP	State Fully Protected
FT	Federally listed as Threatened
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Association
NRCS	Natural Resources Conservation Science
SE	State listed as Endangered
SSSC	State Species of Special Concern
ST	State listed as Threatened
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

1.1 Background

The Assemi Group / Granville Homes proposes to construct a 900-unit residential development (the Project) on a 156-acre site south of Lacey Boulevard and east of 18th Avenue in Lemoore, Kings County, California.

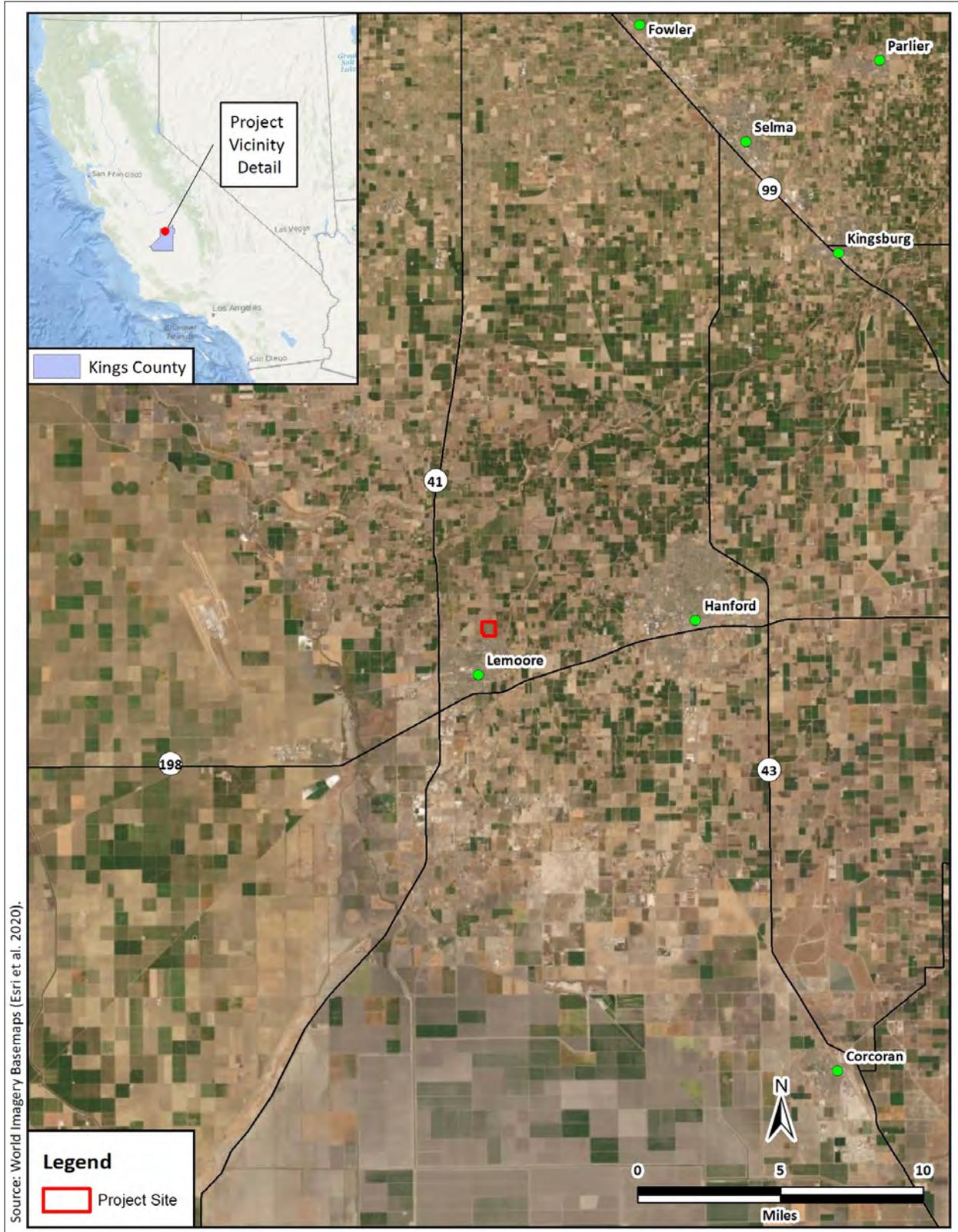
The purpose of this biological resource evaluation is to assess whether the Project will affect protected biological resources pursuant to the California Environmental Quality Act (CEQA) guidelines. Such resources include species of plants or animals listed or proposed for listing under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA) as well as those covered under the Migratory Bird Treaty Act (MBTA), the California Native Plant Protection Act, and various other sections of California Fish and Game Code. This biological resource evaluation also addresses Project-related impacts to regulated habitats, which are those under the jurisdiction of the United States Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB), or California Department of Fish and Wildlife (CDFW).

1.2 Project Description

This Project will involve constructing a 900-unit residential development on a 156-acre parcel that currently supports an alfalfa field.

1.3 Project Location

The 156-acre Project site is in Lemoore, Kings County, California (Figure 1). It is bounded by Lacey Boulevard to the north, residential development to the south, a walnut orchard to the east, and 18th Avenue to the west (Figure 2).



Source: World Imagery Basemaps (Esri et al. 2020).

Figure 1. Project site vicinity map.



Figure 2. Project site map.

1.4 Purpose and Need of Proposed Project

The purpose of the Project is to construct a residential development on the Project site and annex the parcel into the City of Lemoore. The Project is needed to increase single-family residences in the City.

1.5 Regulatory Framework

The relevant state and federal regulatory requirements and policies that guide the impact analysis of the Project are summarized below.

1.5.1 State Requirements

California Endangered Species Act. The California Endangered Species Act (CESA) of 1970 (Fish and Game Code § 2050 et seq., and California Code of Regulations [CCR] Title 14, Subsection 670.2, 670.51) prohibits the take of species listed under CESA (14 CCR Subsection 670.2, 670.5). Take is defined as hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill. Under CESA, state agencies are required to consult with the CDFW when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on state listed species. During consultation, CDFW determines whether take would occur and identifies “reasonable and prudent alternatives” for the project and conservation of special-status species. CDFW can authorize take of state listed species under Sections 2080.1 and 2081(b) of the California Fish and Game Code in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under section 2081(b) must be minimized and fully mitigated. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of threatened and endangered species designated under state law (Fish and Game Code § 2070). CDFW also maintains lists of species of special concern, which serve as “watch lists.” Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation. Impacts to species of concern or fully protected species would be considered significant under certain circumstances.

California Environmental Quality Act. The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000–21178) requires that CDFW be consulted during the CEQA review process regarding impacts of proposed projects on special-status species. Special-status species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA and species that are not currently protected by statute or regulation but would be considered rare, threatened, or endangered under these criteria or by the scientific community. Therefore, species considered rare or endangered are addressed in this biological resource evaluation regardless of whether they are afforded protection through any other statute or regulation. The

California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity (CNPS 2020). Plants with Rare Plant Ranks 1A, 1B, 2A, or 2B are considered special-status species under CEQA.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with rare and endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the United States Fish and Wildlife Service or CDFW (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

California Native Plant Protection Act. The California Native Plant Protection Act of 1977 (California Fish and Game Code §§ 1900–1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFW at least 10 days in advance of any change in land use, which allows CDFW to salvage listed plants that would otherwise be destroyed.

Nesting birds. California Fish and Game Code Sections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are “Fully Protected” as those that may not be taken or possessed except under specific permit.

California Department of Fish and Wildlife Jurisdiction. The CDFW has regulatory jurisdiction over lakes and streams in California. Activities that divert or obstruct the natural flow of a stream; substantially change its bed, channel, or bank; or use any materials (including vegetation) from the streambed, may require that the project applicant enter into a Lake and Streambed Alteration Agreement with the CDFW in accordance with California Fish and Game Code Section 1602.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (CWC § 13000 et. sec.) was established in 1969 and entrusts the State Water Resources Control Board and nine Regional Water Quality Control Boards (collectively Water Boards) with the responsibility to preserve and enhance all beneficial uses of California’s diverse waters. The Act grants the Water Boards authority to establish water quality objectives and regulate point- and nonpoint-source pollution discharge to the state’s surface and ground waters. Under the auspices of the United States Environmental Protection Agency, the Water Boards are responsible for certifying, under Section 401 of the federal Clean Water Act, that activities affecting waters of the United States comply California water quality standards. The Porter-Cologne Water Quality Control Act addresses all “waters of the State,” which are more broadly

defined than waters of the United States. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. They include artificial as well as natural water bodies and federally jurisdictional and federally non-jurisdictional waters. The Water Boards may issue a Waste Discharge Requirement permit for projects that will affect only federally non-jurisdictional waters of the State.

1.5.2 Federal Requirements

Federal Endangered Species Act. The United States Fish and Wildlife Service (USFWS) and the National Oceanographic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) enforce the provisions stipulated in the Federal Endangered Species Act of 1973 (FESA, 16 United States Code [USC] § 1531 et seq.). Threatened and endangered species on the federal list (50 Code of Federal Regulations [CFR] 17.11 and 17.12) are protected from take unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Pursuant to the requirements of the FESA, an agency reviewing a proposed action within its jurisdiction must determine whether any federally listed species may be present in the proposed action area and determine whether the proposed action may affect such species. Under the FESA, habitat loss is considered an effect to a species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species that is listed or proposed for listing under the FESA (16 USC § 1536[3], [4]). Therefore, proposed action-related effects to these species or their habitats would be considered significant and would require mitigation.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) (16 USC § 703, Supp. I, 1989) prohibits killing, possessing, trading, or other forms of take of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. "Take" is defined as the pursuing, hunting, shooting, capturing, collecting, or killing of birds, their nests, eggs, or young (16 USC § 703 and § 715n). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA specifically protects migratory bird nests from possession, sale, purchase, barter transport, import, and export, and take. For nests, the definition of take per 50 CFR 10.12 is to collect. The MBTA does not include a definition of an "active nest." However, the "Migratory Bird Permit Memorandum" issued by the USFWS in 2003 and updated in 2018 clarifies the MBTA in that regard and states that the removal of nests, without eggs or birds, is legal under the MBTA, provided no possession (which is interpreted as holding the nest with the intent of retaining it) occurs during the destruction (USFWS 2018).

United States Army Corps of Engineers Jurisdiction. Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and

flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands adjacent to waters of the United States (33 CFR part 328.3). Ditches and drainage canals where water flows intermittently or ephemerally are not regulated as waters of the United States. Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

2.0 Methods

2.1 Desktop Review

We obtained a USFWS species list for the Project as a framework for the evaluation and reconnaissance survey (USFWS 2020, Appendix A). In addition, we searched the California Natural Diversity Data Base (CDFW 2020, Appendix B) and the California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2020, Appendix C) for records of special-status plant and animal species from the vicinity of the Project site. Regional lists of special-status species were compiled using USFWS, CNDDDB, and CNPS database searches confined to the Lemoore 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site and the eight surrounding quadrangles (Burrel, Riverdale, Laton, Vanguard, Hanford, Westhaven, Stratford, and Guernsey). A local list of special-status species was compiled using CNDDDB records from within 5 miles of the Project site. Species that lack a special-status designation by state or federal regulatory agencies or public interest groups were omitted from the final list. Species for which the Project site does not provide habitat were eliminated from further consideration. We also reviewed aerial imagery from Google Earth (Google 2020) and other sources, USGS topographic maps, the Web Soil Survey (NRCS 2020), and relevant literature.

2.2 Reconnaissance Survey

Colibri Senior Scientist Joshua Reece, Staff Scientist Malachi Whitford, and Field Scientist Rachel Lopez conducted a field reconnaissance survey of the Project site on 3 December 2020. The Project site and a 50-foot buffer surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the area to support state- or federally protected resources. The survey area also included a 0.5-mile buffer around the Project site to evaluate the potential occurrence of nesting special-status raptors (Figure 3). The 0.5-mile buffer was surveyed by driving public roads and identifying the presence of large trees or other potentially suitable substrates for nesting raptors as well as open areas that could provide foraging habitat. The main survey area, including the Project site and surrounding 50-foot buffer, was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the *Wetlands Delineation Manual* and regional supplement (USACE 1987, 2008) and as defined by the CDFW (<https://www.wildlife.ca.gov/conservation/lsa>) and under the Porter-Cologne Water Quality Control Act. All plants except ornamentals and all animals (vertebrate wildlife species) observed in the survey area were identified and documented.

2.3 Significance Criteria

CEQA defines “significant effect on the environment” as “a substantial, or potentially substantial, adverse change in the environment” (Pub. Res. Code § 21068). Under CEQA Guidelines Section 15065, a Project's effects on biological resources are deemed significant where the Project would do the following:

- a) Substantially reduce the habitat of a fish or wildlife species,
- b) Cause a fish or wildlife population to drop below self-sustaining levels,
- c) Threaten to eliminate a plant or animal community, or
- d) Substantially reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines includes six additional impacts to consider when analyzing the effects of a project. Under Appendix G, a project's effects on biological resources are deemed significant where the project would do any of the following:

- e) 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 CDFW or USFWS;
- f) 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 CDFW or USFWS;
- g) 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;
- h) 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;
- i) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- j) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These criteria were used to determine whether the potential effects of the Project on biological resources qualify as significant.

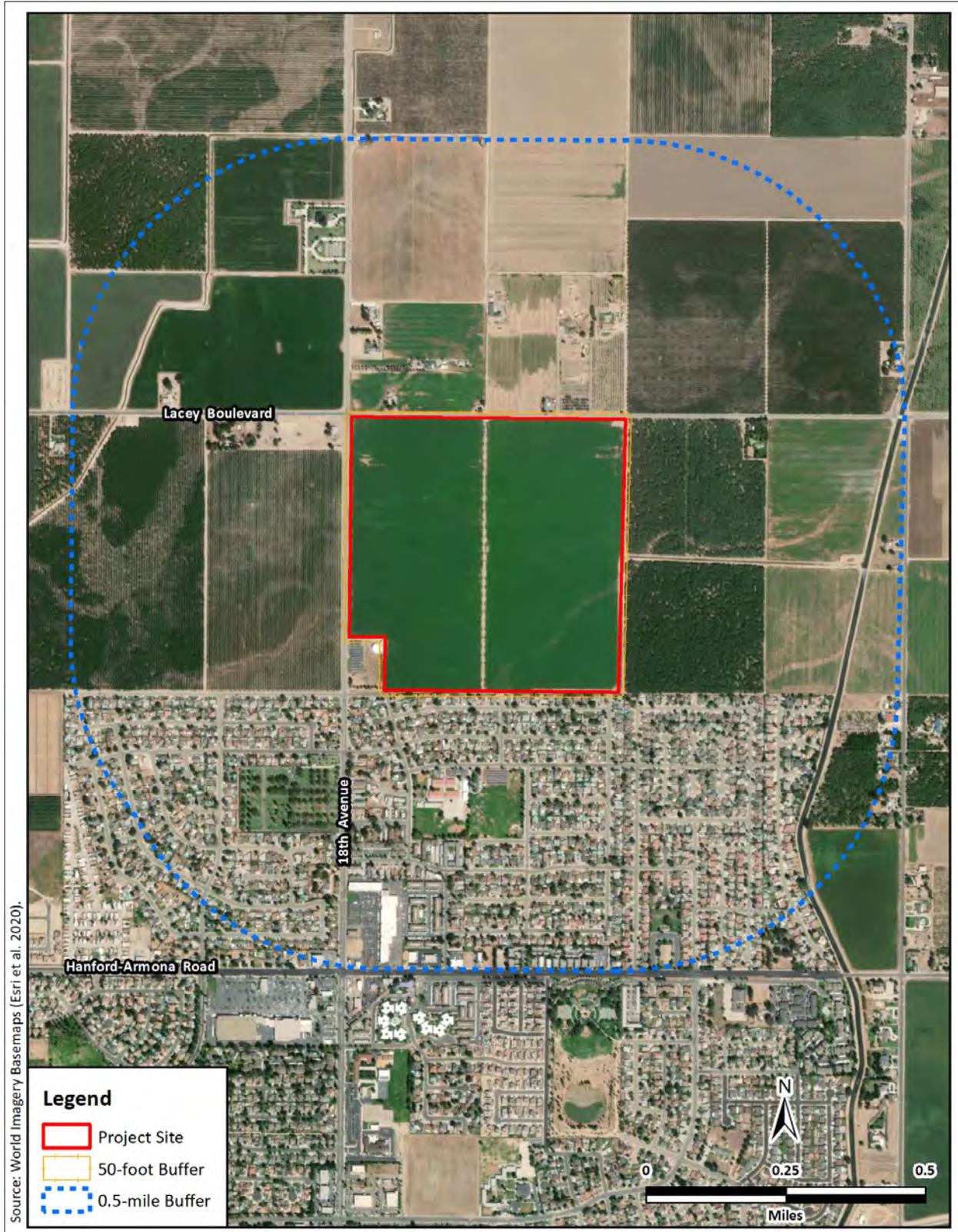


Figure 3. Reconnaissance survey area map.

3.0 Results

3.1 Desktop Review

The USFWS species list for the Project included nine species listed as threatened or endangered under the FESA (USFWS 2020, Table 1, Appendix A). None of those species could occur on or near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, or (3) the presence of development that would otherwise preclude occurrence (Table 1). As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2020, Appendix A).

Searching the CNDDDB for records of special-status species from the Lemoore 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 78 records of 24 species (Table 1, Appendix B). Of those 24 species, four were not considered further because state or federal regulatory agencies or public interest groups do not recognize them through special designation (Appendix B). Of the remaining 20 species, four are known from within 5 miles of the Project site (Table 1, Figure 4). Of those four species, three are not expected to occur near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, (3) their absence during the reconnaissance survey, or (4) a combination thereof. The remaining species, the state listed as threatened Swainson's hawk (*Buteo swainsoni*), is known to nest within 5 miles of the Project site and use alfalfa fields similar to those on the Project site as foraging habitat (Battistone et al. 2019). Therefore, the potential for this species to occur on or near the Project site is high.

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded five taxa (CNPS 2020, Appendix C), four of which have a CRPR of 1B and one of which has a CRPR of 2B (Table 1). None of those species are expected to occur on or near the Project site due to the lack of habitat (Table 1).

The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam (NCRS 2020). It occupies flat and level terrain (0–1% slopes) at an elevation of 212–220 feet above mean sea level (Google 2020).

Table 1. Special-status species, their listing status, habitats, and potential to occur on or near the Project site.

Species	Status	Habitat	Potential to Occur
Federally and State Listed Endangered or Threatened Species			
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	Elderberry (<i>Sambucus</i> sp.) plants with stems > 1-inch diameter at ground level.	None. Habitat lacking; the Project site is outside the currently recognized range of this species.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Vernal pools; some artificial depressions, ditches, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	Vernal pools, clay flats, alkaline pools, and ephemeral stock tanks.	None. Habitat lacking; no vernal pools, alkaline pools, or ephemeral stock tanks were found in the survey area.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, SE	Estuarine habitat in Sacramento-San Joaquin River delta.	None. Habitat lacking; no connectivity to the aquatic habitat this species requires.
California red-legged frog (<i>Rana draytonii</i>)	FT, SSSC	Creeks, ponds, and marshes for breeding; small mammal burrows for upland cover.	None. Habitat lacking; the Project site is outside the current known range of this species.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	FE, SE, FP	Upland scrub and sparsely vegetated grassland with small mammal burrows at 100–2400 feet elevation.	None. Habitat lacking; the Project site consists of agricultural land cover.

Species	Status	Habitat	Potential to Occur
Giant gartersnake (<i>Thamnophis gigas</i>)	FT, ST	Marshes, sloughs, ponds, or other permanent sources of water with emergent vegetation, and grassy banks or open areas during active season; uplands with underground refuges or crevices during inactive season.	None. Habitat lacking; no suitable aquatic resources in the survey area.
Swainson's hawk ³ (<i>Buteo swainsoni</i>)	ST	Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging.	High. Foraging habitat on the Project site and elsewhere in the survey area; potential nest trees within 0.5 miles.
Tricolored blackbird (<i>Agelaius tricolor</i>)	ST, SSSC	Large swaths of prickly, thorny, or emergent vegetation for nesting, with a nearby water source and grassland, pasture, or cattle feedlots for foraging.	None. Habitat lacking; no suitable upland or aquatic land cover in the survey area.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT, SSSC	Sandy beaches, salt pond levees, and shores of large alkali lakes.	None. Habitat lacking; no sandy beaches, salt pond levees, or alkali lakes in the survey area.
Fresno kangaroo rat (<i>Dipodomys nitratooides exilis</i>)	FE, SE	Sandy, alkaline, saline, and clay-based soils in upland scrub and grassland.	None. Habitat lacking; no upland scrub or grassland in the survey area.

Species	Status	Habitat	Potential to Occur
San Joaquin kit fox ³ (<i>Vulpes macrotis mutica</i>)	FE, ST	Grassland and upland scrub with a small mammal prey base.	None. Habitat lacking; no grassland or upland scrub in the survey area.
Tipton kangaroo rat ³ (<i>Dipodomys nitratooides nitratooides</i>)	FE, SE	Grassland and upland scrub with sparse to moderate shrub cover and saline soils; also fallowed agricultural fields.	None. Habitat lacking; no grassland, upland scrub, or fallowed agricultural fields in the survey area.
State Species of Special Concern			
Western spadefoot (<i>Spea hammondi</i>)	SSSC	Rain pools for breeding and small mammal burrows or other suitable refugia for nonbreeding upland cover.	None. Habitat lacking; no rain pools or other ephemeral water bodies were found in the survey area.
California glossy snake (<i>Arizona elegans occidentalis</i>)	SSSC	Arid scrub, rocky washes, grasslands, chapparal.	None. Habitat lacking; the Project site is outside the current known range of this species.
Northwestern pond turtle (<i>Actinemys marmorata</i>)	SSSC	Permanent or intermittent ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation and woody debris for basking and adjacent natural upland areas for egg laying.	None. Habitat lacking; no suitable permanent or intermittent water bodies in the survey area; the irrigation ditch bordering the southeast corner of the Project site is evidently routinely cleaned for weed abatement and lacks water for most of the year.

Species	Status	Habitat	Potential to Occur
Burrowing owl (<i>Athene cunicularia</i>)	SSSC	Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows.	None. Habitat lacking; no suitable ground squirrel burrows in or near the survey area.
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	SSSC	Freshwater marsh with emergent vegetation.	None. Habitat lacking; no freshwater marshes with emergent vegetation in the survey area.
California Rare Plants			
California alkali grass ³ (<i>Puccinellia simplex</i>)	1B.2	Scrub, meadows, seeps, grassland, vernal pools, saline flats, and mineral springs below 3000 feet elevation.	None. Habitat lacking; the Project site consisted of agricultural land cover.
Alkali-sink goldfields (<i>Lasthenia chrysantha</i>)	1B.1	Vernal pools and wet saline flats below 320 feet elevation.	None. Habitat lacking; no vernal pools or other ephemeral aquatic habitats in the survey area.
Brittlescale (<i>Atriplex depressa</i>)	1B.2	Alkaline or clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools below 1000 feet elevation.	None. Habitat lacking; no suitable soils or vernal pools in the survey area.
Mud nama (<i>Nama stenocarpa</i>)	2B.2	Intermittently wet areas below 2700 feet elevation.	None. Habitat lacking; the Project site consisted of agricultural land cover.

Species	Status	Habitat	Potential to Occur
Panoche pepper-grass (<i>Lepidium jaredii</i> ssp. <i>album</i>)	1B.2	Alkaline soils in grassland, bottom lands, slopes, washes, and dry hillsides at 1640–2300 feet elevation.	None. Habitat lacking; the Project site is outside the known elevational range of this species.
Recurved larkspur (<i>Delphinium recurvatum</i>)	1B.2	Poorly drained, fine, alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland at 10–2800 feet elevation.	None. Habitat lacking; the Project site consisted of agricultural land cover.

CDFW (2020), CNPS (2020), USFWS (2020).

Status ¹	Potential to Occur ²
FE = Federally listed Endangered	None: Species or sign not observed; conditions unsuitable for occurrence.
FT = Federally listed Threatened	Low: Neither species nor sign observed; conditions marginal for occurrence.
FP = State Fully Protected	Moderate: Neither species nor sign observed; conditions suitable for occurrence.
SE = State listed Endangered	High: Neither species nor sign observed; conditions highly suitable for occurrence.
ST = State listed Threatened	Present: Species or sign observed; conditions suitable for occurrence.
SSSC = State Species of Special Concern	

CNPS California Rare Plant Rank ¹ :	Threat Ranks ¹ :
1B – plants rare, threatened, or endangered in California and elsewhere.	0.1 – seriously threatened in California (> 80% of occurrences).
2B – plants rare, threatened, or endangered in California but more common elsewhere.	0.2 – moderately threatened in California (20-80% of occurrences).
3 – plants about which more information is needed.	0.3 – not very threatened in California (<20% of occurrences).
4 – plants have limited distribution in California.	

³Record from within 5 miles of the Project site.

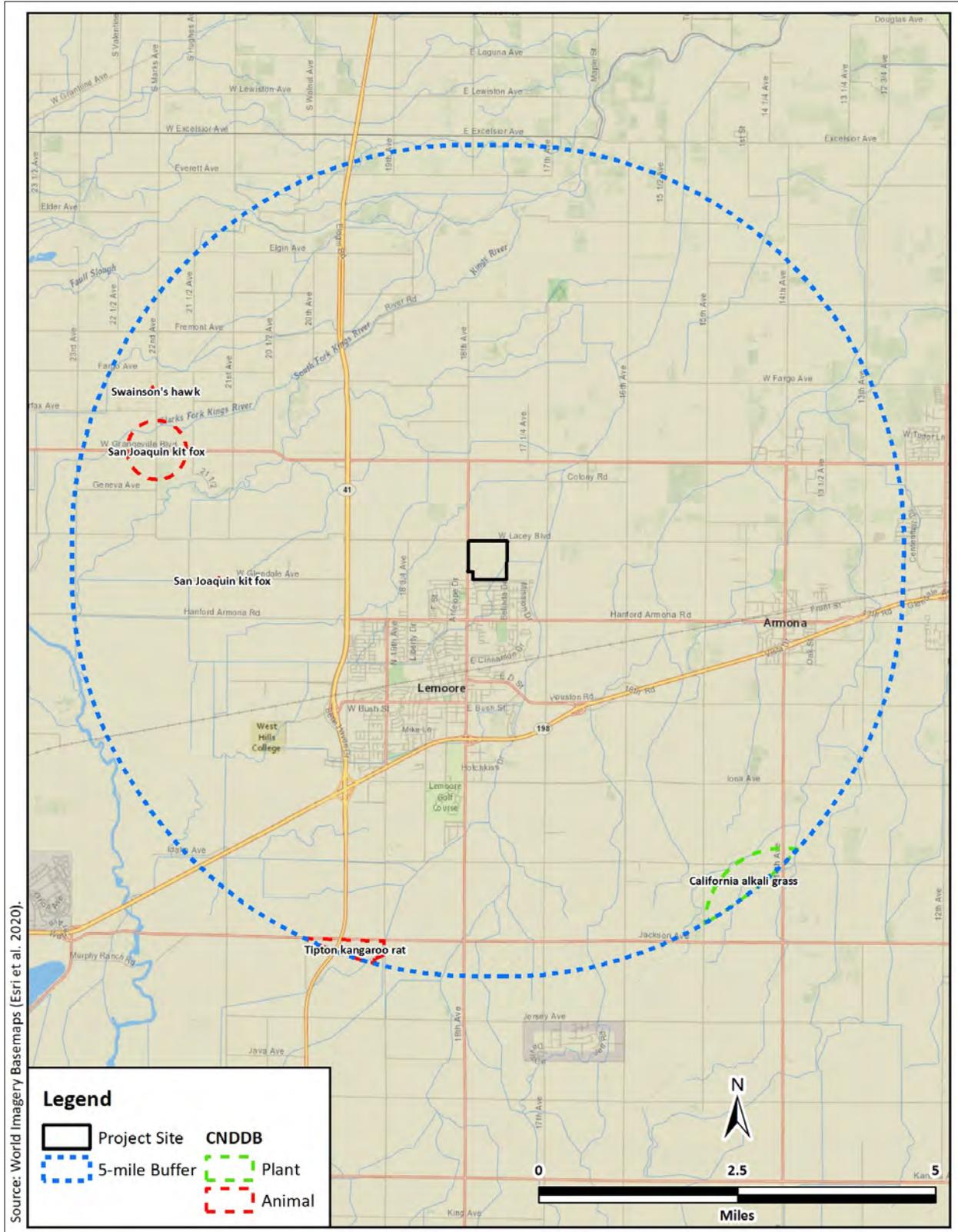


Figure 4. CNDDB occurrence map.

3.2 Reconnaissance Survey

3.2.1 Land Use and Habitats

The Project site supported a maintained alfalfa field (Figures 5 and 6). It was bordered by a walnut orchard to the east, mixed agricultural fields to the north and west (Figure 2), and a suburban development to the south (Figures 2 and 7). An unnamed irrigation ditch, which was dry at the time of the survey, bordered the southeast corner of the Project site (Figure 8). A slightly elevated dirt road running north-south bisected the Project site (Figure 9).



Figure 5. Photograph of the Project site, looking south along the west side of the Project site.



Figure 6. Photograph of the Project site, looking northeast from the southwest corner.



Figure 7. Photograph of the south side of the Project site, looking west, showing the adjacent residential area (left).



Figure 8. Photograph of the southeast corner of the Project site, looking east toward an adjacent irrigation ditch (right).



Figure 9. Photograph of the Project site, looking south from the northern border, showing a dirt road that bisects the Project site.

3.2.2 Plant and Animal Species Observed

A total of 26 plant species (5 native and 21 nonnative), 20 bird species, and two mammal species were observed during the survey (Table 2).

Table 2. Plant and animal species observed during the reconnaissance survey.

Common Name	Scientific Name	Status
Plants		
Family Asteraceae		
Canada horseweed	<i>Erigeron canadensis</i>	Native
Common groundsel	<i>Senecio vulgaris</i>	Nonnative
Common sow thistle	<i>Sonchus oleraceus</i>	Nonnative
Flax-leaved horseweed	<i>Erigeron bonariensis</i>	Nonnative
Prickly lettuce	<i>Lactuca serriola</i>	Nonnative
Telegraph poleweed	<i>Heterotheca grandiflora</i>	Native
Family Brassicaceae		
Black mustard	<i>Brassica nigra</i>	Nonnative
Lesser swine cress	<i>Lepidium didymum</i>	Nonnative
London rocket	<i>Sisymbrium irio</i>	Nonnative
Peppergrass	<i>Lepidium nitidum</i>	Native
Shepherd's purse	<i>Capsella bursa-pastoris</i>	Nonnative
Family Caryophyllaceae		
Chickweed	<i>Stellaria media</i>	Nonnative
Family Chenopodiaceae		
Nettle leaf goosefoot	<i>Chenopodium murale</i>	Nonnative
Russian thistle	<i>Salsola tragus</i>	Nonnative
Family Convolvulaceae		
Field bindweed	<i>Convolvulus arvensis</i>	Nonnative
Family Cucurbitaceae		
Dudaim melon	<i>Cucumis melo</i>	Nonnative
Family Euphorbiaceae		
Turkey-mullein	<i>Croton setiger</i>	Native
Family Fabaceae		
Alfalfa	<i>Medicago sativa</i>	Nonnative
Family Malvaceae		
Cheeseweed	<i>Malva parviflora</i>	Nonnative
Family Poaceae		
Bulbous bluegrass	<i>Poa bulbosa</i>	Nonnative
Johnsongrass	<i>Sorghum halepense</i>	Nonnative
Salt grass	<i>Distichlis spicata</i>	Native
Family Polygonaceae		

Common Name	Scientific Name	Status
Sorrel	<i>Rumex</i> sp.	Nonnative
Family Solanaceae		
Nightshade	<i>Solanum</i> sp.	Nonnative
Family Urticaceae		
Dwarf nettle	<i>Urtica urens</i>	Nonnative
Family Zygophyllaceae		
Puncture vine	<i>Tribulus terrestris</i>	Nonnative
Birds		
Family Accipitridae		
Northern harrier	<i>Circus hudsonius</i>	MBTA, CFGC
Red-tailed hawk	<i>Buteo jamaicensis</i>	MBTA, CFGC
Family Cathartidae		
Turkey vulture	<i>Cathartes aura</i>	MBTA, CFGC
Family Charadriidae		
Killdeer	<i>Charadrius vociferus</i>	MBTA, CFGC
Family Columbidae		
Mourning dove	<i>Zenaida macroura</i>	MBTA, CFGC
Eurasian collared-dove	<i>Streptopelia decaocto</i>	None
Family Corvidae		
American crow	<i>Corvus brachyrhynchos</i>	MBTA, CFGC
California scrub-jay	<i>Aphelocoma californica</i>	MBTA, CFGC
Common raven	<i>Corvus corax</i>	MBTA, CFGC
Family Fringillidae		
House finch	<i>Haemorhous mexicanus</i>	MBTA, CFGC
Family Icteridae		
Western meadowlark	<i>Sturnella neglecta</i>	MBTA, CFGC
Family Mimidae		
Northern mockingbird	<i>Mimus polyglottos</i>	MBTA, CFGC
Family Parulidae		
Yellow-rumped warbler	<i>Setophaga coronata</i>	MBTA, CFGC
Family Passerellidae		
Savannah sparrow	<i>Passerculus sandwichensis</i>	MBTA, CFGC
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	MBTA, CFGC
Family Regulidae		
Ruby-crowned kinglet	<i>Regulus calendula</i>	MBTA, CFGC
Family Sturnidae		
European starling	<i>Sturnus vulgaris</i>	None
Family Trochilidae		
Anna's hummingbird	<i>Calypte anna</i>	MBTA, CFGC
Family Tyrannidae		

Common Name	Scientific Name	Status
Black phoebe	<i>Sayornis nigricans</i>	MBTA, CFGC
Say's phoebe	<i>Sayornis saya</i>	MBTA, CFGC
Mammals		
Family Canidae		
Coyote	<i>Canis latrans</i>	Native
Family Geomyidae		
Botta's pocket gopher	<i>Thomomys bottae</i>	Native

MBTA = Protected under the Migratory Bird Treaty Act (16 USC § 703 et seq.); CFGC = Protected under the California Fish and Game Code (FGC §§ 3503 and 3513)

3.2.3 Nesting Birds

Migratory birds could nest on or near the Project site. Such species include, but are not limited to, mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and California scrub-jay (*Aphelocoma californica*).

3.2.4 Regulated Habitats

An unnamed irrigation ditch was within 50 feet of the southeastern corner of the Project site. This feature is likely under the regulatory jurisdiction of the SWRCB and the CDFW. The irrigation ditch is distributional from the Lemoore Canal to the east, which distributes water from the Kings River to the north. No wetlands or riparian habitats were found in the survey area.

3.3 Special-Status Species

3.3.1 Swainson's hawk (*Buteo swainsoni*) (ST)

Swainson's hawk is a state listed as threatened raptor in the family Accipitridae. Swainson's hawk is a gregarious, migratory, breeding resident of Central California where it uses open areas including grassland, sparse shrubland, pasture, open woodland, and annual agricultural fields such as grain and alfalfa to forage on small mammals, birds, and reptiles. After breeding, it eats mainly insects, especially grasshoppers (Bechard et al. 2020). Swainson's hawks build small to medium-sized nests in medium to large trees near foraging habitat. The nesting season begins in March or April in Central California when this species returns to its breeding grounds from wintering areas in Mexico and Central and South America. Nest building commences within one to two weeks of arrival to the breeding area and lasts about one week (Bechard et al. 2020). One to four eggs are laid and incubated for about 35 days. Young typically fledge in about 38–46 days and tend to leave the nest territory within 10 days of fledging (Bechard et al. 2020). Swainson's hawks depart for the non-breeding grounds between August and September.

One CNDDDB record for Swainson's hawk from 2016 is known from within 5 miles of the Project site (CDFW 2020). No Swainson's hawks were observed during the reconnaissance survey.

However, Swainson's hawks may occur on the Project site as they are known to use alfalfa fields as foraging habitat, and trees suitable for nesting were within the 0.5-mile survey area around the Project site. Therefore, this species is considered to have a high potential to occur on the Project site.

4.0 Environmental Impacts

4.1 Significance Determinations

This Project, which will result in temporary and permanent impacts to agricultural land cover, will not: (1) substantially reduce the habitat of a fish or wildlife species (criterion a) as no such habitat is present on the Project site; (2) cause a fish or wildlife population to drop below self-sustaining levels (criterion b) as no such potentially vulnerable population is known from the area; (3) threaten to eliminate a plant or animal community (criterion c) as no such potentially vulnerable communities are known from the area; (4) substantially reduce the number or restrict the range of a rare or endangered plant or animal (criterion d) as no such potentially vulnerable species are known from the area; (5) 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 CDFW or USFWS (criterion f) as no riparian habitat or other sensitive natural community was present in the survey area; (6) 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 (criterion g) as no impacts to wetlands will occur; (7) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (criterion i) as no trees or biologically sensitive areas will be impacted; or (8) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan (criterion j) as no such plan has been adopted. Thus, these significance criteria are not analyzed further.

The remaining statutorily defined criteria provided the framework for Criterion BIO1 and Criterion BIO2 below. These criteria are used to assess the impacts to biological resources stemming from the Project and provide the basis for determinations of significance:

- Criterion BIO1: 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 CDFW or USFWS (significance criterion e).
- Criterion BIO2: 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 (significance criterion h).

4.1.1 Direct and Indirect Impacts

4.1.1.1 Potential Impact: Have a substantial Effect on any Special-Status Species (Criterion BIO1)

The Project could adversely affect, either directly or through habitat modifications, one special-status animal that occurs or may occur on or near the Project site. Construction activities such as excavating, trenching, or using other heavy equipment that disturbs or harms a special-status species or substantially modifies its habitat could constitute a significant impact. We recommend that Mitigation Measures BIO1 and BIO2 (below) be included in the conditions of approval to reduce the potential impact to a less-than-significant level.

Mitigation Measure BIO1. Protect nesting Swainson's hawks.

1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August.
2. If it is not possible to schedule construction between September and February, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix D). These methods require six surveys, three in each of the two survey periods, prior to project initiation. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site. However, the survey radius shall be extended up to 10 miles from the Project site to identify the nearest nest, which will determine the habitat mitigation ratio (see Mitigation Measure BIO2 below). CDFW shall be consulted if an active nest is found within 0.5 miles of the Project site.

Mitigation Measure BIO2. Compensate for loss of Swainson's hawk foraging habitat.

Compensate for loss of Swainson's hawk foraging habitat in accordance with the CDFW *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California* (CDFG 1994, Appendix E). The CDFW requires that projects adversely affecting Swainson's hawk foraging habitat provide Habitat Management (HM) Lands to the department. Projects within 1 mile of an active nest shall provide one acre of HM lands for each acre of development authorized (1:1 ratio). Projects within 5 miles of an active nest but greater than 1 mile from the nest shall provide 0.75 acres of HM lands for each acre of urban development authorized (0.75:1 ratio). And projects within 10 miles of an active nest but greater than 5 miles from an active nest shall provide 0.5 acres of HM lands for each acre of urban development authorized (0.5:1 ratio).

4.1.1.2 Potential Impact: Interfere Substantially with Native Wildlife Movements, Corridors, or Nursery Sites (Criterion BIO2)

The Project could impede the use of nursery sites for native birds protected under the MBTA and CFGC. Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort can be considered take under the MBTA and CFGC. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, could constitute a significant effect if the species is particularly rare in the region. Construction activities such as excavating, trenching, and grading that disturb a nesting bird on the Project site or immediately adjacent to the construction zone could constitute a significant impact. We recommend that Mitigation Measure BIO3 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measure BIO2. Protect nesting birds.

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August.
2. If it is not possible to schedule construction between September and January, a pre-construction clearance survey for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during Project construction. A pre-construction clearance survey shall be conducted no more than 14 days prior to the start of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas, including within 250 feet in the case of raptor nests and within 100 feet for nests of all other birds. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has failed for non-construction related reasons.

4.1.2 Cumulative Effects

The Project will involve constructing a 156-acre residential development. Although all land within and adjacent to the Project site is disturbed by agricultural or residential development, the Project site still provides potential foraging and nesting habitat for migratory birds and foraging habitat for the state listed as threatened Swainson's hawk. However, implementing Mitigation

Measures BIO1 and BIO2 would reduce any contribution to cumulative impacts on biological resources to a less-than-significant level.

4.1.3 Unavoidable Significant Adverse Effects

No unavoidable significant adverse effects on biological resources would occur from implementing the Project.

5.0 Literature Cited

- Battistone, C. L., B. J. Furnas, R. L. Anderson, J. L. Dinsdale, K. M. Cripe, J. A. Estep, C. S. Y. Chun, and S. G. Torres. 2019. Population and distribution of Swainson's Hawks (*Buteo swainsoni*) in California's great valley: a framework for long-term monitoring. *Journal of Raptor Research* 53 (3):253–265.
- Bechard, M. J., C. S. Houston, J. H. Saransola, and A. S. England. 2020. Swainson's Hawk (*Buteo swainsoni*), version 1.0. In *Birds of the World* (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.swahaw.01>
- California Department of Fish and Game (CDFG). 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (*Buteo swainsoni*) in the Central Valley of California. California Nongame Bird and Mammal Section Report #94.18.
- California Department of Fish and Wildlife (CDFW). 2020. State and Federally Listed Endangered, Threatened, and Rare Plants of California. Biogeographic data branch, California Natural Diversity Data Base. <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed 2 December 2020.
- California Native Plant Society, Rare Plant Program (CNPS). 2020. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). California Native Plant Society, Sacramento, CA. <http://www.rareplants.cnps.org>. Accessed 2 December 2020.
- Google. 2020. Google Earth Pro. Version 7.3.2.5776 (<https://www.google.com/earth/download/gep/agree.html>). Accessed 2 December 2020.
- Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture. 2020. Web Soil Survey, National Cooperative Soil Survey: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed 4 December 2020.
- Swainson's Hawk Technical Advisory Committee (SWTAC). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. 5 pages.
- United States Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Wetland Research Program Technical Report Y-87-1.
- _____. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). ERDC/EL TR-08-28. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046489.pdf. Accessed 4 December 2020.

United States Fish and Wildlife Service (USFWS). 2018. Migratory Bird Permit Memorandum: Destruction and Relocation of Migratory Bird Nest Contents. FWS/DMBM/AMB/068029, 4 pages.

_____. 2020. IPaC: Information for Planning and Conservation. <https://ecos.fws.gov/ipac/>. Accessed 02 December 2020.

Appendix A. USFWS list of threatened and endangered species.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:

December 02, 2020

Consultation Code: 08ESMF00-2021-SLI-0462

Event Code: 08ESMF00-2021-E-01239

Project Name: Residential development project in Lemoore

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2021-SLI-0462

Event Code: 08ESMF00-2021-E-01239

Project Name: Residential development project in Lemoore

Project Type: DEVELOPMENT

Project Description: rezoning 156-acres from agricultural to 900 unit residential

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.32442652772303N119.77629398496958W>



Counties: Kings, CA

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [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.

Mammals

NAME	STATUS
Fresno Kangaroo Rat <i>Dipodomys nitratooides exilis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5150 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat <i>Dipodomys nitratooides nitratooides</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf	Endangered

Reptiles

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

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix B. CNDDDB occurrence records.



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Burrel (3611948) OR Riverdale (3611947) OR Laton (3611946) OR Vanguard (3611938) OR Lemoore (3611937) OR Hanford (3611936) OR Westhaven (3611928) OR Stratford (3611927) OR Guernsey (3611926))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Agelaius tricolor</i> tricolored blackbird	G2G3 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	216 225	955 S:3	0	0	0	0	0	3	2	1	3	0	0
<i>Arizona elegans occidentalis</i> California glossy snake	G5T2 S2	None None	CDFW_SSC-Species of Special Concern	250 250	260 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Athene cunicularia</i> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	212 235	2011 S:12	0	6	3	0	0	3	5	7	12	0	0
<i>Atriplex depressa</i> brittlescale	G2 S2	None None	Rare Plant Rank - 1B.2		60 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Buteo swainsoni</i> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	200 230	2535 S:10	1	1	2	0	0	6	2	8	10	0	0
<i>Charadrius alexandrinus nivosus</i> western snowy plover	G3T3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	210 210	138 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Cicindela tranquebarica joaquinensis</i> San Joaquin tiger beetle	G5T1 S1	None None		215 215	2 S:1	0	0	0	0	0	1	0	1	1	0	0



Summary Table Report

California Department of Fish and Wildlife California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Delphinium recurvatum</i> recurved larkspur	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden		119 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	G3T2 S3	Threatened None		245 245	271 S:1	0	0	0	1	0	0	1	0	1	0	0
<i>Dipodomys nitratoideus exilis</i> Fresno kangaroo rat	G3TH SH	Endangered Endangered	IUCN_VU-Vulnerable	220 220	12 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Dipodomys nitratoideus nitratoideus</i> Tipton kangaroo rat	G3T1T2 S1S2	Endangered Endangered	IUCN_VU-Vulnerable	215 215	79 S:3	0	1	0	0	0	2	2	1	3	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	200 215	1398 S:3	0	0	1	0	0	2	3	0	3	0	0
<i>Gambelia sila</i> blunt-nosed leopard lizard	G1 S1	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	215 215	389 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Gonidea angulata</i> western ridged mussel	G3 S1S2	None None		202 202	157 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lasiurus cinereus</i> hoary bat	G5 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority		238 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lasthenia chrysantha</i> alkali-sink goldfields	G2 S2	None None	Rare Plant Rank - 1B.1	255 255	55 S:2	0	0	0	0	2	0	2	0	0	2	0
<i>Lepidium jaredii ssp. album</i> Panoche pepper-grass	G2G3T2T3 S2S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	220 220	60 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Nama stenocarpa</i> mud nama	G4G5 S1S2	None None	Rare Plant Rank - 2B.2	215 215	22 S:1	0	0	1	0	0	0	1	0	1	0	0
<i>Nycticorax nycticorax</i> black-crowned night heron	G5 S4	None None	IUCN_LC-Least Concern	192 192	37 S:1	0	0	1	0	0	0	0	1	1	0	0



Summary Table Report

California Department of Fish and Wildlife California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Puccinellia simplex</i> California alkali grass	G3 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	200 230	80 S:3	0	0	0	0	1	2	2	1	2	1	0
<i>Spea hammondi</i> western spadefoot	G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	211 217	1409 S:6	0	0	6	0	0	0	6	0	6	0	0
<i>Thamnophis gigas</i> giant gartersnake	G2 S2	Threatened Threatened	IUCN_VU-Vulnerable	195 210	366 S:2	0	0	0	0	2	0	2	0	0	2	0
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	G4T2 S2	Endangered Threatened		200 260	1018 S:20	0	0	2	0	0	18	18	2	20	0	0
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	207 207	13 S:1	0	1	0	0	0	0	0	1	1	0	0

Appendix C. CNPS plant list.



*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

Plant List

5 matches found. [Click on scientific name for details](#)

Search Criteria

California Rare Plant Rank is one of [1B, 2B], Found in Quads 3611948, 3611947, 3611946, 3611938, 3611937, 3611936, 3611928 3611927 and 3611926;

[Modify Search Criteria](#)
[Export to Excel](#)
[Modify Columns](#)
[Modify Sort](#)
[Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Lepidium jaredii ssp. album	Panoche pepper-grass	Brassicaceae	annual herb	Feb-Jun	1B.2	S2S3	G2G3T2T3
Nama stenocarpa	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 07 December 2020].

Search the Inventory

[Simple Search](#)
[Advanced Search](#)
[Glossary](#)

Information

[About the Inventory](#)
[About the Rare Plant Program](#)
[CNPS Home Page](#)
[About CNPS](#)
[Join CNPS](#)

Contributors

[The Calflora Database](#)
[The California Lichen Society](#)
[California Natural Diversity Database](#)
[The Jepson Flora Project](#)
[The Consortium of California Herbaria](#)
[CalPhotos](#)

Questions and Comments

rareplants@cnps.org

© Copyright 2010-2018 California Native Plant Society. All rights reserved.

Appendix D. Recommended timing and methodology for Swainson’s hawk nesting surveys in California’s Central Valley.

RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY

**Swainson's Hawk Technical Advisory Committee
May 31, 2000**

This set of survey recommendations was developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reducing the potential for nest failures as a result of project activities/disturbances. The combination of appropriate surveys, risk analysis, and monitoring has been determined to be very effective in reducing the potential for project-induced nest failures. As with most species, when the surveyor is in the right place at the right time, Swainson's hawks may be easy to observe; but some nest sites may be very difficult to locate, and even the most experienced surveyors have missed nests, nesting pairs, mis-identified a hawk in a nest, or believed incorrectly that a nest had failed. There is no substitute for specific Swainson's hawk survey experience and acquiring the correct search image.

METHODOLOGY

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's (CDFG) recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a ½ mile radius around all project activities, and if active nesting is identified within the ½ mile radius, consultation is required. In general, the TAC recommends this approach as well.

Minimum Equipment

Minimum survey equipment includes a high-quality pair of binoculars and a high quality spotting scope. Surveying even the smallest project area will take hours, and poor optics often result in eye-strain and difficulty distinguishing details in vegetation and subject birds. Other equipment includes good maps, GPS units, flagging, and notebooks.

Walking vs Driving

Driving (car or boat) or "windshield surveys" are usually preferred to walking if an adequate roadway is available through or around the project site. While driving, the observer can typically approach much closer to a hawk without causing it to fly. Although it might appear that a flying bird is more visible, they often fly away from the observer using trees as screens; and it is difficult to determine from where a flying bird came. Walking surveys are useful in locating a nest after a nest territory is identified, or when driving is not an option.

Angle and Distance to the Tree

Surveying subject trees from multiple angles will greatly increase the observer's chance of detecting a nest or hawk, especially after trees are fully leafed and when surveying multiple trees

in close proximity. When surveying from an access road, survey in both directions. Maintaining a distance of 50 meters to 200 meters from subject trees is optimal for observing perched and flying hawks without greatly reducing the chance of detecting a nest/young: Once a nesting territory is identified, a closer inspection may be required to locate the nest.

Speed

Travel at a speed that allows for a thorough inspection of a potential nest site. Survey speeds should not exceed 5 miles per hour to the greatest extent possible. If the surveyor must travel faster than 5 miles per hour, stop frequently to scan subject trees.

Visual and Aural Ques

Surveys will be focused on both observations and vocalizations. Observations of nests, perched adults, displaying adults, and chicks during the nesting season are all indicators of nesting Swainson's hawks. In addition, vocalizations are extremely helpful in locating nesting territories. Vocal communication between hawks is frequent during territorial displays; during courtship and mating; through the nesting period as mates notify each other that food is available or that a threat exists; and as older chicks and fledglings beg for food.

Distractions

Minimize distractions while surveying. Although two pairs of eyes may be better than one pair at times, conversation may limit focus. Radios should be off, not only are they distracting, they may cover a hawk's call.

Notes and Species Observed

Take thorough field notes. Detailed notes and maps of the location of observed Swainson's hawk nests are essential for filling gaps in the Natural Diversity Data Base; please report all observed nest sites. Also document the occurrence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species. These species will infrequently nest within 100 yards of each other, so the presence of one species will not necessarily exclude another.

TIMING

To meet **the minimum level** of protection for the species, surveys should be completed for **at least** the two survey periods immediately prior to a project's initiation. For example, if a project is scheduled to begin on June 20, you should complete 3 surveys in Period III and 3 surveys in Period V. However, it is always recommended that surveys be completed in Periods II, III and V. **Surveys should not be conducted in Period IV.**

The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawks from San Joaquin County to Northern Yolo County. Dates should be adjusted in consideration of early and late nesting seasons, and geographic differences (northern nesters tend to nest slightly later, etc). If you are not sure, contact a TAC member or CDFG biologist.

Survey dates Justification and search image	Survey time	Number of Surveys
--	-------------	-------------------

I. <i>January-March 20 (recommended optional)</i>	<i>All day</i>	<i>1</i>
---	----------------	----------

Prior to Swainson’s hawks returning, it may be helpful to survey the project site to determine potential nest locations. Most nests are easily observed from relatively long distances, giving the surveyor the opportunity to identify potential nest sites, as well as becoming familiar with the project area. It also gives the surveyor the opportunity to locate and map competing species nest sites such as great homed owls from February on, and red-tailed hawks from March on. After March 1, surveyors are likely to observe Swainson’s hawks staging in traditional nest territories.

II. <i>March 20 to April 5</i>	<i>Sunrise to 1000 1600 to sunset</i>	<i>3</i>
--------------------------------	---	----------

Most Central Valley Swainson’s hawks return by April 1, and immediately begin occupying their traditional nest territories. For those few that do not return by April 1, there are often hawks (“floaters”) that act as place-holders in traditional nest sites; they are birds that do not have mates, but temporarily attach themselves to traditional territories and/or one of the site’s “owners.” Floaters are usually displaced by the territories’ owner(s) if the owner returns.

Most trees are leafless and are relatively transparent; it is easy to observe old nests, staging birds, and competing species. The hawks are usually in their territories during the survey hours, but typically soaring and foraging in the mid-day hours. Swainson’s hawks may often be observed involved in territorial and courtship displays, and circling the nest territory. Potential nest sites identified by the observation of staging Swainson’s hawks will usually be active territories during that season, although the pair may not successfully nest/reproduce that year.

III. <i>April 5 to April 20</i>	<i>Sunrise to 1200 1630 to Sunset</i>	<i>3</i>
---------------------------------	---	----------

Although trees are much less transparent at this time, ‘activity at the nest site increases significantly. Both males and females are actively nest building, visiting their selected site frequently. Territorial and courtship displays are increased, as is copulation. The birds tend to vocalize often, and nest locations are most easily identified. This period may require a great deal of “sit and watch” surveying.

IV. <i>April 21 to June 10</i>	<i>Monitoring known nest sites only Initiating Surveys is not recommended</i>	
--------------------------------	---	--

Nests are extremely difficult to locate this time of year, and even the most experienced surveyor will miss them, especially if the previous surveys have not been done. During this phase of nesting, the female Swainson’s hawk is in brood position, very low in the nest, laying eggs, incubating, or protecting the newly hatched and vulnerable chicks; her head may or may not be visible. Nests are often well-hidden, built into heavily vegetated sections of trees or in clumps of mistletoe, making them all but invisible. Trees are usually not viewable from all angles, which may make nest observation impossible.

Following the male to the nest may be the only method to locate it, and the male will spend hours away from the nest foraging, soaring, and will generally avoid drawing attention to the nest site. Even if the observer is fortunate enough to see a male returning with food for the female, if the female determines it is not safe she will not call the male in, and he will not approach the nest; this may happen if the observer, or others, are too close to the nest or if other threats, such as rival hawks, are apparent to the female or male.

V. June 10 to July 30 (post-fledging)

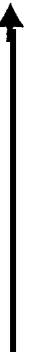
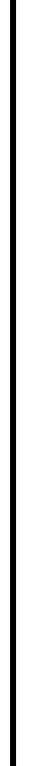
Sunrise to 1200

3

1600 to sunset

Young are active and visible, and relatively safe without parental protection. Both adults make numerous trips to the nest and are often soaring above, or perched near or on the nest tree. The location and construction of the nest may still limit visibility of the nest, young, and adults.

DETERMINING A PROJECT'S POTENTIAL FOR IMPACTING SWAINSON'S HAWKS

LEVEL OF RISK	REPRODUCTIVE SUCCESS (Individuals)	LONGTERM SURVIVABILITY (Population)	NORMAL SITE CHARACTERISTICS (Daily Average)	NEST MONITORING
<p style="text-align: center;">HIGH</p>   <p style="text-align: center;">LOW</p>	<p>Direct physical contact with the nest tree while the birds are on eggs or protecting young. (Helicopters in close proximity)</p> <p>Loss of nest tree after nest building is begun prior to laying eggs.</p> <p>Personnel within 50 yards of nest tree (out of vehicles) for extended periods while birds are on eggs or protecting young that are < 10 days old.</p> <p>Initiating construction activities (machinery and personnel) within 200 yards of the nest after eggs are laid and before young are > 10 days old.</p> <p>Heavy machinery only working within 50 yards of nest.</p> <p>Initiating construction activities within 200 yards of nest before nest building begins or after young > 10 days old.</p> <p>All project activities (personnel and machinery) greater than 200 yards from nest.</p>	<p>Loss of available foraging area.</p> <p>Loss of nest trees.</p> <p>Loss of potential nest trees.</p> <p>Cumulative: Multi-year, multi-site projects with substantial noise/personnel disturbance.</p> <p>Cumulative: Single-season projects with substantial noise/personnel disturbance that is greater than or significantly different from the daily norm.</p> <p>Cumulative: Single-season projects with activities that “blend” well with site’s “normal” activities.</p>	<p>Little human-created noise, little human use: nest is well away from dwellings, equipment yards, human access areas, etc. <i>Do not include general cultivation practices in evaluation.</i></p> <p>Substantial human-created noise and occurrence: nest is near roadways, well-used waterways, active airstrips, areas that have high human use. <i>Do not include general cultivation practices in evaluation.</i></p>	<p style="text-align: center;">MORE</p>   <p style="text-align: center;">LESS</p>

Appendix E. Staff report regarding mitigation for impacts to Swainson's hawk (*Buteo swainsoni*) in the Central Valley of California.

Memorandum

To : Div. Chiefs - IFD, BDD, NHD, WMD
Reg. Mgrs. - Regions 1, 2, 3, 4

Date : November 8, 1994

From : Department of Fish and Game

Subject: Staff Report Regarding Mitigation for Impacts to Swainson's Hawks
(*Buteo swainsoni*) in the Central Valley of California

I am hereby transmitting the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California for your use in reviewing projects (California Environmental Quality Act [CEQA] and others) and in developing 2081 Management Authorizations and 2090 Biological Opinions which may affect Swainson's hawk habitat in the Central Valley. The staff report has been developed during the last 18 months by the Environmental Services Division (ESD) in cooperation with the Wildlife Management Division (WMD) and Regions 1, 2, and 4. It has been sent out for public review on several occasions and redrafted as appropriate.

Either the mitigation measures in the staff report may be used or project specific measures may be developed. Alternative project specific mitigation measures proposed by the Department Divisions/Regions or by project sponsors will also be considered. However, such mitigation measures must be submitted to ESD for review. The review process will focus on the consistency of the proposed measure with Department, Fish and Game Commission, and legislative policy and with laws regarding raptors and listed species. ESD will coordinate project specific mitigation measure review with WMD.

If you have any questions regarding the report, please contact Mr. Ron Rempel, Program Supervisor, Habitat Conservation Planning and Endangered Species Permitting, Environmental Services Division at (916) 654-9980.

COPY Original signed by
A. Petrovich, Jr.

For
Boyd Gibbons
Direction

Enclosure

cc: Mr. Ron Rempel
Department of Fish and Game
Sacramento

file; d, exfile, esd, chron
Vouchilas/seh/pdl SRPBUTEO.DS1

**Staff Report regarding Mitigation
for Impacts to Swainson's Hawks (*Buteo swainsoni*)
in the Central Valley of California**

INTRODUCTION

The Legislature and the Fish and Game Commission have developed the policies, standards and regulatory mandates which, if implemented, are intended to help stabilize and reverse dramatic population declines of threatened and endangered species. In order to determine how the Department of Fish and Game (Department) could judge the adequacy of mitigation measures designed to offset impacts to Swainson's hawks in the Central Valley, Staff (WMD, ESD and Regions) has prepared this report. To ensure compliance with legislative and Commission policy, mitigation requirements which are consistent with this report should be incorporated into: (1) Department comments to Lead Agencies and project sponsors pursuant to the California Environmental Quality Act (CEQA); (2) Fish and Game Code Section 2081 Management Authorizations (Management Authorizations); and (3) Fish and Game Code Section 2090 Consultations with State CEQA Lead Agencies.

The report is designed to provide the Department (including regional offices and divisions), CEQA Lead Agencies and project proponents the context in which the Environmental Services Division (ESD) will review proposed project specific mitigation measures. This report also includes "model" mitigation measures which have been judged to be consistent with policies, standards and legal mandates of the Legislature and Fish and Game Commission. Alternative mitigation measures, tailored to specific projects, may be developed if consistent with this report. Implementation of mitigation measures consistent with this report are intended to help achieve the conservation goals for the Swainson's hawk and should complement multi-species habitat conservation planning efforts currently underway.

The Department is preparing a recovery plan for the species and it is anticipated that this report will be revised to incorporate recovery plan goals. It is anticipated that the recovery plan will be completed by the end of 1995. The Swainson's hawk recovery plan will establish criteria for species recovery through preservation of existing habitat, population expansion into former habitat, recruitment of young into the population, and other specific recovery efforts.

During project review the Department should consider whether a proposed project will adversely affect suitable foraging habitat within a ten (10) mile radius of an active (used during one or more of the last 5 years) Swainson's hawk nest(s). Suitable Swainson's hawk foraging habitat will be those habitats and crops identified in Bechard (1983), Bloom (1980), and Estep (1989). The following vegetation types/agricultural crops are considered small mammal and insect foraging habitat for Swainson's hawks:

- alfalfa
- fallow fields
- beet, tomato, and other low-growing row or field crops
- dry-land and irrigated pasture

- rice land (when not flooded)
- cereal grain crops (including corn after harvest)

The ten mile radius standard is the flight distance between active (and successful) nest sites and suitable foraging habitats, as documented in telemetry studies (Estep 1989, Babcock 1993). Based on the ten mile radius, new development projects which adversely modify nesting and/or foraging habitat should mitigate the project's impacts to the species. The ten mile foraging radius recognizes a need to strike a balance between the biological needs of reproducing pairs (including eggs and nestlings) and the economic benefit of developments) consistent with Fish and Game Code Section 2053.

Since over 95% of Swainson's hawk nests occur on private land, the Department's mitigation program should include incentives that preserve agricultural lands used for the production of crops, which are compatible with Swainson's hawk foraging needs, while providing an opportunity for urban development and other changes in land use adjacent to existing urban areas.

LEGAL STATUS

Federal

The Swainson's hawk is a migratory bird species protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations (C.F.R.) Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 C.F.R. 21).

State

The Swainson's hawk has been listed as a threatened species by the California Fish and Game Commission pursuant to the California Endangered Species Act (CESA), see Title 14, California Code of Regulations, Section 670.5(b)(5)(A).

LEGISLATIVE AND COMMISSION POLICIES, LEGAL MANDATES AND STANDARDS

The FGC policy for threatened species is, in part, to: "Protect and preserve all native species ... and their habitats...." This policy also directs the Department to work with all interested persons to protect and preserve sensitive resources and their habitats. Consistent with this policy and direction, the Department is enjoined to implement measures that assure protection for the Swainson's hawk.

The California State Legislature, when enacting the provisions of CESA, made the following findings and declarations in Fish and Game Code Section 2051:

- a) "Certain species of fish, wildlife, and plants have been rendered extinct as a consequence of man's activities, untempered by adequate concern and conservation";
- b) "Other species of fish, wildlife, and plants are in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment because of overexploitation, disease, predation, or other factors (emphasis added)";and
- c) "These species of fish, wildlife, and plants are of ecological, educational, historical, recreational, esthetic, economic, and scientific value to the people of this state, and the conservation, protection, and enhancement of these species and their habitat is of statewide concern" (emphasis added).

The Legislature also proclaimed that it "is the policy of the state to conserve, protect, restore, and enhance any endangered or threatened species and its habitat and that it is the intent of the Legislature, consistent with conserving the species, to acquire lands for habitat for these species" (emphasis added).

Section 2053 of the Fish and Game Code states, in part, "it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species and or its habitat which would prevent jeopardy" (emphasis added).

Section 2054 states "The Legislature further finds and declares that, in the event specific economic, social, and or other conditions make infeasible such alternatives, individual projects may be approved if appropriate mitigation and enhancement measures are provided" (emphasis added).

Loss or alteration of foraging habitat or nest site disturbance which results in:

(1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be, a violation of Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (DFG v. ACID, 8 CA App.4, 41554). The essence of the decision emphasized that the intent and purpose of CESA applies to all activities that take or kill endangered or threatened species, even when the taking is incidental to otherwise legal activities. To avoid potential violations of Fish and Game Code Section 2080, the Department recommends and encourages project sponsors to obtain 2081 Management Authorizations for their projects.

Although this report has been prepared to assist the Department in working with the development community, the prohibition against take (Fish and Game Code Section 2080) applies to all persons, including those engaged in agricultural activities and routine maintenance of facilities. In addition, sections 3503, 3503.5, and 3800 of the Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

To avoid potential violation of Fish and Game Code Section 2080 (i.e. killing of a listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1 - September 15 annually). Delineation of specific activities which could cause nest abandonment (take) of Swainson's hawk during the nesting period should be done on a case-by-case basis.

CEQA requires a mandatory findings of significance if a project's impacts to threatened or endangered species are likely to occur (Sections 21001 (c), 21083, Guidelines Sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports findings of Overriding Consideration. The CEQA Lead Agency's Findings of Overriding Consideration does not eliminate the project sponsor's obligation to comply with Fish and Game Code Section 2080.

NATURAL HISTORY

The Swainson's hawk (*Buteo swainsoni*) is a large, broad winged buteo which frequents open country. They are about the same size as a red-tailed hawk (*Buteo jamaicensis*), but trimmer, weighing approximately 800-1100 grams (1.75 - 2 lbs). They have about a 125 cm. (4-foot) wingspan. The basic body plumage may be highly variable and is characterized by several color morphs - light, dark, and rufous. In dark phase birds, the entire body of the bird may be sooty black. Adult birds generally have dark backs. The ventral or underneath sections may be light with a characteristic dark, wide "bib" from the lower throat down to the upper breast, light colored wing linings and pointed wing tips. The tail is gray ventrally with a subterminal dusky band, and narrow, less conspicuous barring proximally. The sexes are similar in appearance; females however, are slightly larger and heavier than males, as is the case in most sexually dimorphic raptors. There are no recognized subspecies (Palmer 1988).

The Swainson's hawk is a long distance migrator. The nesting grounds occur in northwestern Canada, the western U.S., and Mexico and most populations migrate to wintering grounds in the open pampas and agricultural areas of South America (Argentina, Uruguay, southern Brazil). The species is included among the group of birds known as "neotropical migrants". Some individuals or small groups (20-30 birds) may winter in the U.S., including California (Delta Islands). This round trip journey may exceed 14,000 miles. The birds return to the nesting grounds and establish nesting territories in early March.

Swainson's hawks are monogamous and remain so until the loss of a mate (Palmer 1988). Nest construction and courtship continues through April. The clutch (commonly 3-4 eggs) is generally laid in early April to early May, but may occur later. Incubation lasts 34-35 days, with both parents participating in the brooding of eggs and young. The young fledge (leave the nest) approximately 42-44 days after hatching and remain with their parents until they depart in the fall. Large groups (up to 100+ birds) may congregate in holding areas in the fall and may exhibit a delayed migration depending upon forage availability. The specific purpose of these congregation areas is as yet unknown, but is likely related to: increasing energy reserves for migration; the timing of migration; aggregation into larger migratory groups (including assisting the young in learning migration routes); and providing a pairing and courtship opportunity for unattached adults.

Foraging Requirements

Swainson's hawk nests in the Central Valley of California are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. These open fields and pastures are the primary foraging areas. Major prey items for Central Valley birds include: California voles (*Microtus californicus*), valley pocket gophers (*Thomomys bottae*), deer mice (*Peromyscus maniculatus*), California ground squirrels (*Spermophilus beecheyi*), mourning doves (*Zenaidura macroura*), ring-necked pheasants (*Phasianus colchicus*), meadowlarks (*Sturnella neglecta*), other passerines, grasshoppers (*Conocephalinae sp.*), crickets (*Gryllidae sp.*), and beetles (Estep 1989). Swainson's hawks generally search for prey by soaring in open country and agricultural fields similar to northern harriers (*Circus cyaneus*) and ferruginous hawks (*Buteo regalis*). Often several hawks may be seen foraging together following tractors or other farm equipment capturing prey escaping from farming operations. During the breeding season, Swainson's hawks eat mainly vertebrates (small rodents and reptiles), whereas during migration vast numbers of insects are consumed (Palmer 1988).

Department funded research has documented the importance of suitable foraging habitats (e.g., annual grasslands, pasture lands, alfalfa and other hay crops, and combinations of hay, grain and row crops) within an energetically efficient flight distance from active Swainson's hawk nests (Estep pers. comm.). Recent telemetry studies to determine foraging requirements have shown that birds may use in excess of 15,000 acres of habitat or range up to 18.0 miles from the nest in search of prey (Estep 1989, Babcock 1993). The prey base (availability and abundance) for the species is highly variable from year to year, with major prey population (small mammals and insects) fluctuations occurring based on rainfall patterns, natural cycles and agricultural cropping and harvesting patterns. Based on these variables, significant acreages of potential foraging habitat (primarily agricultural lands) should be preserved per nesting pair (or aggregation of

nesting pairs) to avoid jeopardizing existing populations. Preserved foraging areas should be adequate to allow additional Swainson's hawk nesting pairs to successfully breed and use the foraging habitat during good prey production years.

Suitable foraging habitat is necessary to provide an adequate energy source for breeding adults, including support of nestlings and fledglings. Adults must achieve an energy balance between the needs of themselves and the demands of nestlings and fledglings, or the health and survival of both may be jeopardized. If prey resources are not sufficient, or if adults must hunt long distances from the nest site, the energetics of the foraging effort may result in reduced nestling vigor with an increased likelihood of disease and/or starvation. In more extreme cases, the breeding pair, in an effort to assure their own existence, may even abandon the nest and young (Woodbridge 1985).

Prey abundance and availability is determined by land and farming patterns including crop types, agricultural practices and harvesting regimes. Estep (1989) found that 73.4% of observed prey captures were in fields being harvested, disced, mowed, or irrigated. Preferred foraging habitats for Swainson's hawks include:

- alfalfa;
- fallow fields;
- beet, tomato, and other low-growing row or field crops;
- dry-land and irrigated pasture;
- rice land (during the non-flooded period); and
- cereal grain crops (including corn after harvest).

Unsuitable foraging habitat types include crops where prey species (even if present) are not available due to vegetation characteristics (e.g. vineyards, mature orchards, and cotton fields, dense vegetation).

Nesting Requirements

Although the Swainson's hawk's current nesting habitat is fragmented and unevenly distributed, Swainson's hawks nest throughout most of the Central Valley floor. More than 85% of the known nests in the Central Valley are within riparian systems in Sacramento, Sutter, Yolo, and San Joaquin counties. Much of the potential nesting habitat remaining in this area is in riparian forests, although isolated and roadside trees are also used. Nest sites are generally adjacent to or within easy flying distance to alfalfa or hay fields or other habitats or agricultural crops which provide an abundant and available prey source. Department research has shown that valley oaks (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*), willows (*Salix* spp.), sycamores (*Platanus* spp.), and walnuts (*Juglans* spp.) are the preferred nest trees for Swainson's hawks (Bloom 1980, Schlorff and Bloom 1983, Estep 1989).

Fall and Winter Migration Habitats

During their annual fall and winter migration periods, Swainson's hawks may congregate in large groups (up to 100+ birds). Some of these sites may be used during delayed migration periods lasting up to three months. Such sites have been identified in Yolo, Tulare, Kern and San Joaquin counties and protection is needed for these critical foraging areas which support birds during their long migration.

Historical and Current Population Status

The Swainson's hawk was historically regarded as one of the most common and numerous raptor species in the state, so much so that they were often not given special mention in field notes. The breeding population has declined by an estimated 91% in California since the turn of the century (Bloom 1980). The historical Swainson's hawk population estimates are based on current densities and extrapolated based on the historical amount of available habitat. The historical population estimate is 4,284-17,136 pairs (Bloom 1980). In 1979, approximately 375 (± 50) breeding pairs of Swainson's hawks were estimated in California, and 280 (75%) of those pairs were estimated to be in the Central Valley (Bloom 1980). In 1988, 241 active breeding pairs were found in the Central Valley, with an additional 78 active pairs known in northeastern California. The 1989 population estimate was 430 pairs for the Central Valley and 550 pairs statewide (Estep, 1989). This difference in population estimates is probably a result of increased survey effort rather than an actual population increase.

Reasons for decline

The dramatic Swainson's hawk population decline has been attributed to loss of native nesting and foraging habitat, and more recently to the loss of suitable nesting trees and the conversion of agricultural lands. Agricultural lands have been converted to urban land uses and incompatible crops. In addition, pesticides, shooting, disturbance at the nest site, and impacts on wintering areas may have contributed to their decline. Although losses on the wintering areas in South America may occur, they are not considered significant since breeding populations outside of California are stable. The loss of nesting habitat within riparian areas has been accelerated by flood control practices and bank stabilization programs. Smith (1977) estimated that in 1850

over 770,000 acres of riparian habitat were present in the Sacramento Valley. By the mid-1980s, Warner and Hendrix (1984) estimated that there was only 120,000 acres of riparian habitat remaining in the Central Valley (Sacramento and San Joaquin Valleys combined). Based on Warner and Hendrix's estimates approximately 93% of the San Joaquin Valley and 73% of the Sacramento Valley riparian habitat has been eliminated since 1850.

MANAGEMENT STRATEGIES

Management and mitigation strategies for the Central Valley population of the Swainson's hawk should ensure that:

- suitable nesting habitat continues to be available (this can be accomplished by protecting existing nesting habitat from destruction or disturbance and by increasing the number of suitable nest trees); and
- foraging habitat is available during the period of the year when Swainson's hawks are present in the Central Valley (this should be accomplished by maintaining or creating adequate and suitable foraging habitat in areas of existing and potential nest sites and along migratory routes within the state).

A key to the ultimate success in meeting the Legislature's goal of maintaining habitat sufficient to preserve this species is the implementation of these management strategies in cooperation with project sponsors and local, state and federal agencies.

DEPARTMENT'S ROLES AND RESPONSIBILITIES IN PROJECT CONSULTATION AND ADMINISTRATION OF CEQA AND THE FISH AND GAME CODE

The Department, through its administration of the Fish and Game Code and its trust responsibilities, should continue its efforts to minimize further habitat destruction and should seek mitigation to offset unavoidable losses by (1) including the mitigation measures in this document in CEQA comment letters and/or as management conditions in Department issued Management Authorizations or (2) by developing project specific mitigation measures (consistent with the Commission's and the Legislature's mandates) and including them in CEQA comment letters and/or as management conditions in Fish and Game Code Section 2081 Management Authorizations issued by the Department and/or in Fish and Game Code Section 2090 Biological Opinions.

The Department should submit comments to CEQA Lead Agencies on all projects which adversely affect Swainson's hawks. CEQA requires a mandatory findings of significance if a project's impacts to threatened or endangered species are likely to occur (Sections 21001 fc), 21083. Guidelines 15380, 15064, 15065). Impacts must be: (1) avoided; or (2) appropriate mitigation must be provided to reduce impacts to less than significant levels; or (3) the lead agency must make and support findings of overriding consideration. If the CEQA Lead Agency makes a Finding of Overriding Consideration, it does not eliminate the project sponsor's obligation to comply with the take prohibitions of Fish and Game Code Section 2080. Activities

which result in (1) nest abandonment; (2) starvation of young; and/or (3) reduced health and vigor of eggs and nestlings may result in the take (killing) of Swainson's hawks incidental to otherwise lawful activities (urban development, recreational activities, agricultural practices, levee maintenance and similar activities. The taking of Swainson's hawk in this manner may be a violation of Section 2080 of the Fish and Game Code. To avoid potential violations of Fish and Game Code Section 2080, the Department should recommend and encourage project sponsors to obtain 2081 Management Authorizations.

In aggregate, the mitigation measures incorporated into CEQA comment letters and/or 2081 Management Authorizations for a project should be consistent with Section 2053 and 2054 of the Fish and Game Code. Section 2053 states, in part, "it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species and or its habitat which would prevent jeopardy" - Section 2054 states: "The Legislature further finds and declares that, in the event specific economic, social, and or other conditions make infeasible such alternatives, individual projects may be approved if appropriate mitigation and enhancement measures are provided."

State lead agencies are required to consult with the Department pursuant to Fish and Game Code Section 2090 to ensure that any action authorized, funded, or carried out by that state agency will not jeopardize the continued existence of any threatened or endangered species. Comment letters to State Lead Agencies should also include a reminder that the State Lead Agency has the responsibility to consult with the Department pursuant to Fish and Game Code Section 2090 and obtain a written findings (Biological Opinion). Mitigation measures included in Biological Opinions issued to State Lead Agencies must be consistent with Fish and Game Code Sections 2051-2054 and 2091-2092.

NEST SITE AND HABITAT LOCATION INFORMATION SOURCES

The Department's Natural Diversity Data Base (NDDDB) is a continually updated, computerized inventory of location information on the State's rarest plants, animals, and natural communities. Department personnel should encourage project proponents and CEQA Lead Agencies, either directly or through CEQA comment letters, to purchase NDDDB products for information on the locations of Swainson's hawk nesting areas as well as other sensitive species. The Department's Nongame Bird and Mammal Program also maintains information on Swainson's hawk nesting areas and may be contacted for additional information on the species.

Project applicants and CEQA Lead Agencies may also need to conduct site specific surveys (conducted by qualified biologists at the appropriate time of the year using approved protocols) to determine the status (location of nest sites, foraging areas, etc.) of listed species as part of the CEQA and 2081 Management Authorization process. Since these studies may require multiple years to complete, the Department shall identify any needed studies at the earliest possible time in the project review process. To facilitate project review and reduce the potential for costly

project delays, the Department should make it a standard practice to advise developers or others planning projects that may impact one or more Swainson's hawk nesting or foraging areas to initiate communication with the Department as early as possible .

MANAGEMENT CONDITIONS

Staff believes the following mitigation measures (nos. 1-4) are adequate to meet the Commission's and Legislature's policy regarding listed species and are considered as preapproved for incorporation into any Management Authorizations for the Swainson's hawk issued by the Department. The incorporation of measures 1-4 into a CEQA document should reduce a project's impact to a Swainson's hawk(s) to less than significant levels. Since these measures are Staff recommendations, a project sponsor or CEQA Lead agency may choose to negotiate project specific mitigation measures which differ. In such cases, the negotiated Management Conditions must be consistent with Commission and Legislative policy and be submitted to the ESD for review and approval prior to reaching agreement with the project sponsor or CEQA Lead Agency.

Staff recommended Management Conditions are:

1. No intensive new disturbances (e.g. heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project related activities which may cause nest abandonment or forced fledging, should be initiated within 1/4 mile (buffer zone) of an active nest between March 1 - September 15 or until August 15 if a Management Authorization or Biological Opinion is obtained for the project. The buffer zone should be increased to 1/2 mile in nesting areas away from urban development (i.e. in areas where disturbance [e.g. heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities] is not a normal occurrence during the nesting season). Nest trees should not be removed unless there is no feasible way of avoiding it. If a nest tree must be removed, a Management Authorization (including conditions to off-set the loss of the nest tree) must be obtained with the tree removal period specified in the Management Authorization, generally between October 1- February 1. If construction or other project related activities which may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the project sponsor) by a qualified biologist (to determine if the nest is abandoned) should be required . If it is abandoned and if the nestlings are still alive, the project sponsor shall fund the recovery and hacking (controlled release of captive reared young) of the nestling(s). Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 1/4 mile of an active nest should not be prohibited.
2. Hacking as a substitute for avoidance of impacts during the nesting period may be used in unusual circumstances after review and approval of a hacking plan by ESD and WMD. Proponents who propose using hacking will be required to fund the full costs of the effort, including any telemetry work specified by the

Department.

3. To mitigate for the loss of foraging habitat (as specified in this document), the Management Authorization holder/project sponsor shall provide Habitat Management (HM) lands to the Department based on the following ratios:

(a) Projects within 1 mile of an active nest tree shall provide:

one acre of HM land (at least 10% of the HM land requirements shall be met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90% of the HM lands protected by a conservation easement [acceptable to the Department] on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk) for each acre of development authorized (1:1 ratio); or

One-half acre of HM land (all of the HM land requirements shall be met by fee title acquisition or a conservation easement [acceptable to the Department] which allows for the active management of the habitat for prey production on-the HM lands) for each acre of development authorized (0.5:1 ratio).

(b) Projects within 5 miles of an active nest tree but greater than 1 mile from the nest tree shall provide 0.75 acres of HM land for each acre of urban development authorized (0.75:1 ratio). All HM lands protected under this requirement may be protected through fee title acquisition or conservation easement (acceptable to the Department) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk.

(c) Projects within 10 miles of an active nest tree but greater than 5 miles from an active nest tree shall provide 0.5 acres of HM land for each acre of urban development authorized (0.5:1 ratio). All HM lands- protected under this requirement may be protected through fee title acquisition or a conservation easement (acceptable to the Department) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk.

4. Management Authorization holders/project sponsors shall provide for the long-term management of the HM lands by funding a management endowment (the interest on which shall be used for managing the HM lands) at the rate of \$400 per HM land acre (adjusted annually for inflation and varying interest rates).

Some project sponsors may desire to provide funds to the Department for HM land protection. This option is acceptable to the extent the proposal is consistent with Department policy regarding acceptance of funds for land acquisition. All HM lands should be located in areas which are consistent with a multi-species habitat conservation focus. Management

Authorization holders/project sponsors who are willing to establish a significant mitigation bank (> 900 acres) should be given special consideration such as 1.1 acres of mitigation credit for each acre preserved.

PROJECT SPECIFIC MITIGATION MEASURES

Although this report includes recommended Management Measures, the Department should encourage project proponents to propose alternative mitigation strategies that provide equal or greater protection of the species and which also expedite project environmental review or issuance of a CESA Management Authorization. The Department and sponsor may choose to conduct cooperative, multi-year field studies to assess the site's habitat value and determine its use by nesting and foraging Swainson's hawk. Study plans should include clearly defined criteria for judging the project's impacts on Swainson's hawks and the methodologies (days of monitoring, foraging effort/efficiency, etc.) that will be used.

The study plans should be submitted to the Wildlife Management Division and ESD for review. Mitigation measures developed as a result of the study must be reviewed by ESD (for consistency with the policies of the Legislature and Fish and Game Commission) and approved by the Director.

EXCEPTIONS

Cities, counties and project sponsors should be encouraged to focus development on open lands within already urbanized areas. Since small disjunct parcels of habitat seldom provide foraging habitat needed to sustain the reproductive effort of a Swainson's hawk pair, Staff does not recommend requiring mitigation pursuant to CEQA nor a Management Authorization by the Department for infill (within an already urbanized area) projects in areas which have less than 5 acres of foraging habitat and are surrounded by existing urban development, unless the project area is within 1/4 mile of an active nest tree.

REVIEW

Staff should revise this report at least annually to determine if the proposed mitigation strategies should be retained, modified or if additional mitigation strategies should be included as a result of new scientific information.

LITERATURE CITED

- Babcock, K.W. 1993. Home range and habitat analysis of Swainson's hawks in West Sacramento. Michael Brandman Associates report prepared for the Southport Property Owner's Group, City of West Sacramento, CA. 21pp.
- Bechard, M.J. 1983. Food supply and the occurrence of brood reduction in Swainson's Hawk. *Wilson Bull.* 95(2):233-242.
- Bloom, P.H. 1980. The status of the Swainson's Hawk in California, 1979. Federal Aid in Wildlife Restoration, Project W-54-R-12, Nongame Wildl. Invest. job Final Report 11-8-0. 24p + appendix.
- Estep, J.A. 1989. Biology, movements, and habitat relationships of the Swainson's Hawk in the Central Valley of California, 1986-87. Calif. Dept. Fish and Game, Nongame Bird and Mammal Section Report, 53pp.
- Palmer, R.S. 1988a. Handbook of North American birds. Vol. 4: diurnal raptors (part 1). Yale Univ. Press, New Haven, CT.
- Palmer, R.S. 1988b. Handbook of North American birds. Vol. 5: diurnal raptors (part 2). Yale Univ. Press, New Haven, CT.
- Schlorff, R.W. and P.H. Bloom. 1983. Importance of riparian systems to nesting Swainson's Hawks in the Central Valley of California. pp 612-618. In: R.E Warner and K.M. Hendrix, (Eds.). 1984. California Riparian Systems. University of California Press, Berkeley.
- Smith, F. 1977. Short review of the status of riparian forests in California. In: Stet, A. (Ed.). Riparian forests in California: Their ecology and conservation. Inst. of Ecology Pubi. 15. Univ. of Calif., Davis.
- Warner, R.E. and K. M. Hendrix, Eds. 1984. California riparian systems; ecology, conservation, and productive management. University of California Press, Berkeley.
- Woodbridge, B. 1985. Biology and management of Swainson's Hawk in Butte Valley, California. U.S. Forest Service Report, 19pp.