

Biological Resources Technical Memorandum for the City of Redding General Plan Update

Prepared For:

The City of Redding

Prepared By:



2525 Warren Drive
Rocklin, California 95677

May 12, 2023

TABLE OF CONTENTS

1.0 INTRODUCTION 1

 1.1 Project Location 1

 1.2 Purpose 1

2.0 REGULATORY SETTING 3

 2.1 Federal Regulations 3

 2.1.1 Federal Endangered Species Act 3

 2.1.2 Migratory Bird Treaty Act 4

 2.1.3 Essential Fish Habitat 4

 2.1.4 Federal Clean Water Act 5

 2.2 State Regulations 5

 2.2.1 California Endangered Species Act 5

 2.2.2 Fully Protected Species 6

 2.2.3 Native Plant Protection Act 6

 2.2.4 California Fish and Game Code Special Protections for Birds 6

 2.2.5 California Streambed Alteration Notification/Agreement 7

 2.2.6 California Environmental Quality Act 7

 2.2.7 Porter-Cologne Water Quality Act 10

 2.3 Local Plans and Ordinances 11

 2.3.1 City of Redding Zoning Ordinance 11

3.0 METHODS 11

 3.1 Literature Review 11

 3.2 Special-Status Species Considered for the Project Area 12

4.0 RESULTS 12

 4.1 Site Characteristics and Land Use 12

 4.2 Soils 13

 4.3 California Aquatic Resource Inventory 17

 4.4 Special-Status Species 19

 4.4.1 Plants 19

 4.4.2 Invertebrates 21

 4.4.3 Fish 22

 4.4.4 Amphibians 22

 4.4.5 Reptiles 23

 4.4.6 Birds 23

 4.4.7 Mammals 24

4.5 Critical Habitat and Essential Fish Habitat..... 25

4.6 Sensitive Natural Communities and Wildlife Corridors 25

5.0 SUMMARY 27

6.0 REFERENCES..... 28

LIST OF FIGURES

Figure 1. Project Location and Vicinity 2

Figure 2. CalVeg – Land Cover 14

Figure 3. Natural Resources Conservation Service Soil Types..... 15

Figure 4. California Aquatic Resources Inventory..... 18

Figure 5. Sensitive Natural Communities..... 26

LIST OF TABLES

Table 1. CalVeg Land Cover Types and Acreage within Redding Sphere of Influence..... 13

Table 2. List of NRCS Soil Types within the Project Area..... 16

LIST OF ATTACHMENTS

- Attachment A - Data Base Query Results
- Attachment B - Special-Status Species Evaluation

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
BA	Biological Assessment
BCC	Birds of Conservation Concern
BO	Biological Opinion
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
DPS	Distinct Population Segment
Element	Natural Resources Element
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
HCP	Habitat Conservation Plan

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
Project	City of Redding's General Plan Update
SSC	Species of Special Concern
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

On behalf of the City of Redding, ECORP Consulting, Inc. conducted a biological resources review for the City of Redding's General Plan Update (Project). The City is located in the extreme northern end of California's Central Valley. The purpose of the review was to collect and evaluate information on sensitive biological resources potentially present within the planning area, including special-status species, natural communities, and aquatic resources.

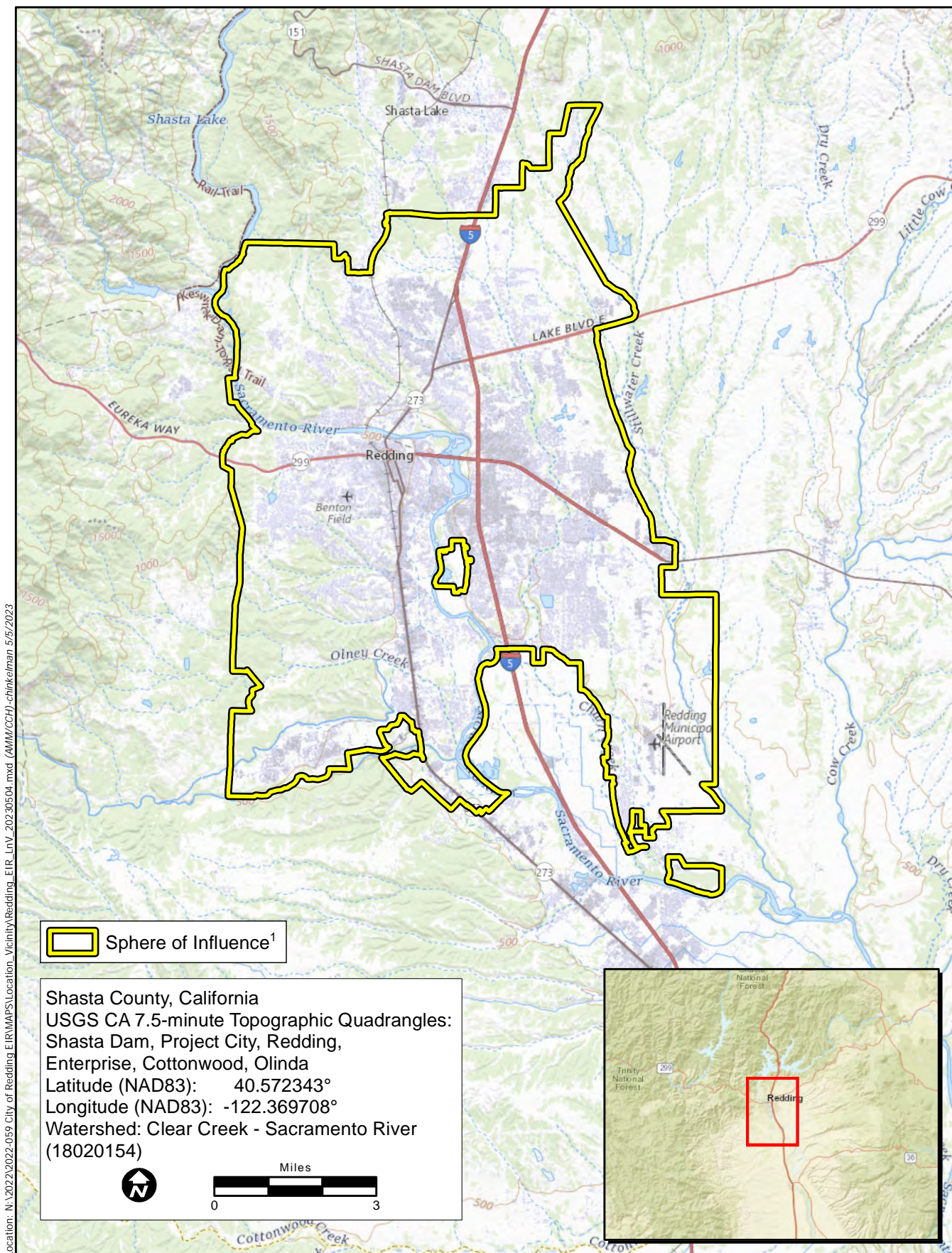
1.1 Project Location

The Project Area includes the entire Redding Sphere of Influence and includes portions of the "Shasta Dam, California," "Project City, California," Redding, California," "Enterprise, California," "Olinda, California," and "Cottonwood, California" USGS 7.5-minute quadrangles (U.S. Geological Survey [USGS], 1957a, 1957b, 1957c, 1964, 1965, 1998) (Figure 1). The approximate center of the site is located at 40.587190° North and -122.408782° West within the Clear Creek – Sacramento River watershed (Hydrologic Unit Code # 18020154) (USGS 2020).

1.2 Purpose

Per the requirements outlined in the City of Redding's Environmental Impact Report, this report aims to identify sensitive biological resources or special-status species and their habitats that occur or have potential to occur within the Redding Sphere of Influence. For the purposes of this assessment, special-status species are defined as plants or animals that:

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



Location: N:\2022\2022-059 City of Redding EIR\MAPS\Location_Vicinity\Redding_EIR_LnV_20230504.mxd (AMM/CCH-chinkelman 5/5/2023)

Figure 1. Project Location and Vicinity 2022-059 City of Redding EIR

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

Only species that fall into one of the above-listed groups were considered for this assessment. Other species without special status that are sometimes found in database or literature searches were not included in this analysis.

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by the USFWS and the National Marine Fisheries Service (NMFS). Section 9 of the ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of the ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed for listing) species (including plants) or its Critical Habitat. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a Habitat Conservation Plan (HCP) is developed.

2.1.1.1 Section 7

Section 7 of the ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that their actions do not jeopardize the continued existence of a listed species or adversely modify Critical Habitat for listed species. If adverse effects to a species or its Critical Habitat are likely, the applicant must conduct a biological assessment (BA) for the purpose of analyzing the potential effects of the project on listed species and Critical Habitat to establish and justify an "effect determination." The USFWS or NMFS reviews the BA; if it concludes that the project may adversely affect a listed species or its habitat, it

prepares a biological opinion (BO). Through consultation and the issuance of a BO, the USFWS and NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. The BO may recommend "reasonable and prudent alternatives" to the project to avoid jeopardizing or adversely modifying habitat. The BO will also evaluate whether direct and/or indirect effects will occur to Critical Habitat that would appreciably diminish the value of Critical Habitat for both the survival and recovery of a species.

2.1.1.2 Section 10

When no discretionary action is being taken by a federal agency but a project may result in the take of listed species, an incidental take permit (ITP) under Section 10 of the ESA is necessary. The purpose of the ITP is to authorize the take of federally listed species that may result from an otherwise lawful activity, not to authorize the activities themselves. In order to obtain an ITP under Section 10, an application must be submitted that includes an HCP. In some instances, applicants, USFWS, and/or NMFS may determine that an HCP is necessary or prudent, even if a discretionary federal action will occur. The purpose of the HCP planning process associated with the permit application is to ensure that adequate minimization and mitigation for impacts to listed species and/or their habitat will occur.

2.1.2 Migratory Bird Treaty Act

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

2.1.3 Essential Fish Habitat

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

the species' life cycle. EFH includes all types of aquatic habitat, such as wetlands, coral reefs, sand, seagrasses, and rivers.

2.1.4 Federal Clean Water Act

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

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

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

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

2.2 State Regulations

2.2.1 California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California ESA allows for take incidental to otherwise lawful projects under permits issued by CDFW. State lead agencies are required to consult with the CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened or candidate species or result in destruction or adverse modification of essential habitat. For projects with no discretionary state approvals, Section 2081 allows CDFW to authorize incidental take permits if certain conditions are met. Permittees must implement species-specific minimization and avoidance measures, and fully mitigate the impacts of the project.

2.2.2 Fully Protected Species

The State of California first began to designate species as “fully protected” prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing incidental take permits for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

2.2.3 Native Plant Protection Act

The NPPA of 1977 (California Fish and Game Code §§ 1900-1913) was established with the intent to “preserve, protect and enhance rare and endangered plants in this state.” The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as “endangered” or “rare.” The NPPA prohibits the take of plants listed under the NPPA, though the NPPA contains exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under the NPPA. Plants listed as rare under the NPPA are not protected under the California ESA but are still protected under the provisions of the NPPA. The Fish and Game Commission no longer lists plants under the NPPA, reserving all listings to the California ESA.

2.2.4 California Fish and Game Code Special Protections for Birds

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a several sections that specifically protect certain birds:

- Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.
- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.

- Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests.
- Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic nonnative species, or any part of these birds.
- Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

2.2.5 California Streambed Alteration Notification/Agreement

Section 1602 of the California Fish and Game Code requires that a Streambed Alteration Agreement (SAA) be obtained from CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions and, if necessary, submits proposed measures to protect affected fish and wildlife resources to the applicant. The SAA is the final proposal mutually agreed upon by CDFW and the applicant. Projects that require an SAA often also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the SAA overlap.

2.2.6 California Environmental Quality Act

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

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected Waters of the U.S., including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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

In accordance with CEQA Guidelines § 15380, a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria parallel the definitions used in the ESA, California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under the ESA, California ESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as SSC by CDFW, birds identified as BCC by USFWS, and plants identified by the CNPS as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

2.2.6.1 Species of Special Concern

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

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

Depending on the policy of the lead agency, projects that result in substantial impacts to SSC may be considered significant under CEQA.

2.2.6.2 U.S. Fish and Wildlife Birds of Conservation Concern

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

2.2.6.3 Sensitive Natural Communities

The CDFW maintains the California Natural Community List, which provides a list of vegetation alliances, associations, and special stands as defined in *A Manual of California Vegetation* (Sawyer et al. 2009), along with their respective state and global rarity ranks. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

2.2.6.4 California Rare Plant Ranks

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

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

- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

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

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2022).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

2.2.7 Porter-Cologne Water Quality Act

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

2.3 Local Plans and Ordinances

2.3.1 City of Redding Zoning Ordinance

Chapter 18.45 of the Redding Zoning Ordinance, titled "Tree Management," discusses the benefits and functions of trees while outlining maintenance, tree removal provisions, tree protection guidelines, and other provisions concerning trees and their management. The City's intent is to protect and enhance the community's aesthetic provided by native and non-native trees while preserving the City's natural features. It also requires the replacement of removed trees, establishes a tree planting program for new development, and requires a tree removal permit for removal of trees on vacant or undeveloped land (City of Redding Municipal Code, Title 18, § 45).

3.0 METHODS

3.1 Literature Review

The following resources were reviewed to identify sensitive biological resources or special-status species that have been documented within or in the vicinity of the Project Area. The results of these searches are included as Attachment A.

- CDFW CNDDDB data for the "Shasta Dam, California," "Project City, California," "Redding, California," "Enterprise, California," "Olinda, California," and "Cottonwood, California," 7.5-minute USGS quadrangles (CDFW 2022a).
- USFWS Information, Planning, and Consultation (IPaC) System Resource Report List for the Project Area (Redding Sphere of Influence) (USFWS 2022).
- CNPS' electronic Inventory of Rare and Endangered Plants of California for the "Shasta Dam, California," "Project City, California," "Redding, California," "Enterprise, California," "Olinda, California," and "Cottonwood, California," 7.5-minute USGS quadrangles (CNPS 2022).
- NMFS Resources data for the "Shasta Dam, California," "Project City, California," "Redding, California," "Enterprise, California," "Olinda, California," and "Cottonwood, California," 7.5-minute USGS quadrangles (National Oceanic and Atmospheric Administration [NOAA] 2022a).

Aerial imagery and site or species-specific background information, as cited throughout this document, were reviewed to determine the potential for occurrence of sensitive biological resources within or in the vicinity of the Project Area. Modeled habitat, species range data, final critical habitat data, and other datasets in CDFW's Biogeographic Information and Observation System was also used to make determinations of a species' potential to occur (CDFW 2022b). A site visit was not conducted due to the large area of the Project. Detailed maps of soils, vegetation, and aquatic resources were created to make the most accurate determinations of species presence as possible. Vegetation land cover types were mapped using Classification and Assessment with Landsat of Visible Ecological Groupings (CalVeg). A map

of aquatic resources was created used the California Aquatic Resources Inventory (CARI). Finally, a soils map was created using soil data from the Natural Resources Conservation Service (NRCS). These data were used in conjunction with aerial imagery to assess the potential for special-status species to occur and to identify other sensitive biological resources in the Project area including aquatic resources and sensitive vegetation communities.

3.2 Special-Status Species Considered for the Project Area

A list of special-status species was generated from the database queries described in Section 3.1 (Attachment B). Each of the species was evaluated for its potential to occur within the Project Area based on the literature review, mapped habitat, and soils and vegetation data. The species were categorized based on the following criteria:

- **Documented Occurrence** - Species is known to occur within the Project Area based on documented occurrences in the CNDDDB or other literature.
- **Potential to Occur** - Habitat (including soils and elevation requirements) for the species occurs within the Project Area.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occurs and/or the species is not known to occur within the vicinity of the Project Area based on CNDDDB records and other available documentation.
- **Absent** - No suitable habitat (including soils and elevation requirements) and the species is not known to occur within the vicinity of the Project Area based on CNDDDB records and other documentation.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The Project Area is characterized by a mixture of urban, riparian, and woodland land cover types bordered on the north and west by low mountains and foothills of the Klamath and Inner Coast Ranges and on the south and east by low-density residential areas and agriculture. It is located within the Inner North Coast Ranges and Cascade Range Foothills geographic subdivisions, with a very small portion on the western side that is located within the Klamath Ranges (Baldwin et al. 2012). The average winter low temperature in the vicinity of the Project Area is 38.1° Fahrenheit, while the average summer high temperature is 93° Fahrenheit (NOAA 2022b).

Land use in the Project Area includes commercial, industrial, residential, and recreational uses. The central portion of the Project Area includes the City of Redding and is classified as urban. The surrounding landscape consists of agriculture, low- and medium-density residential areas, and undeveloped open

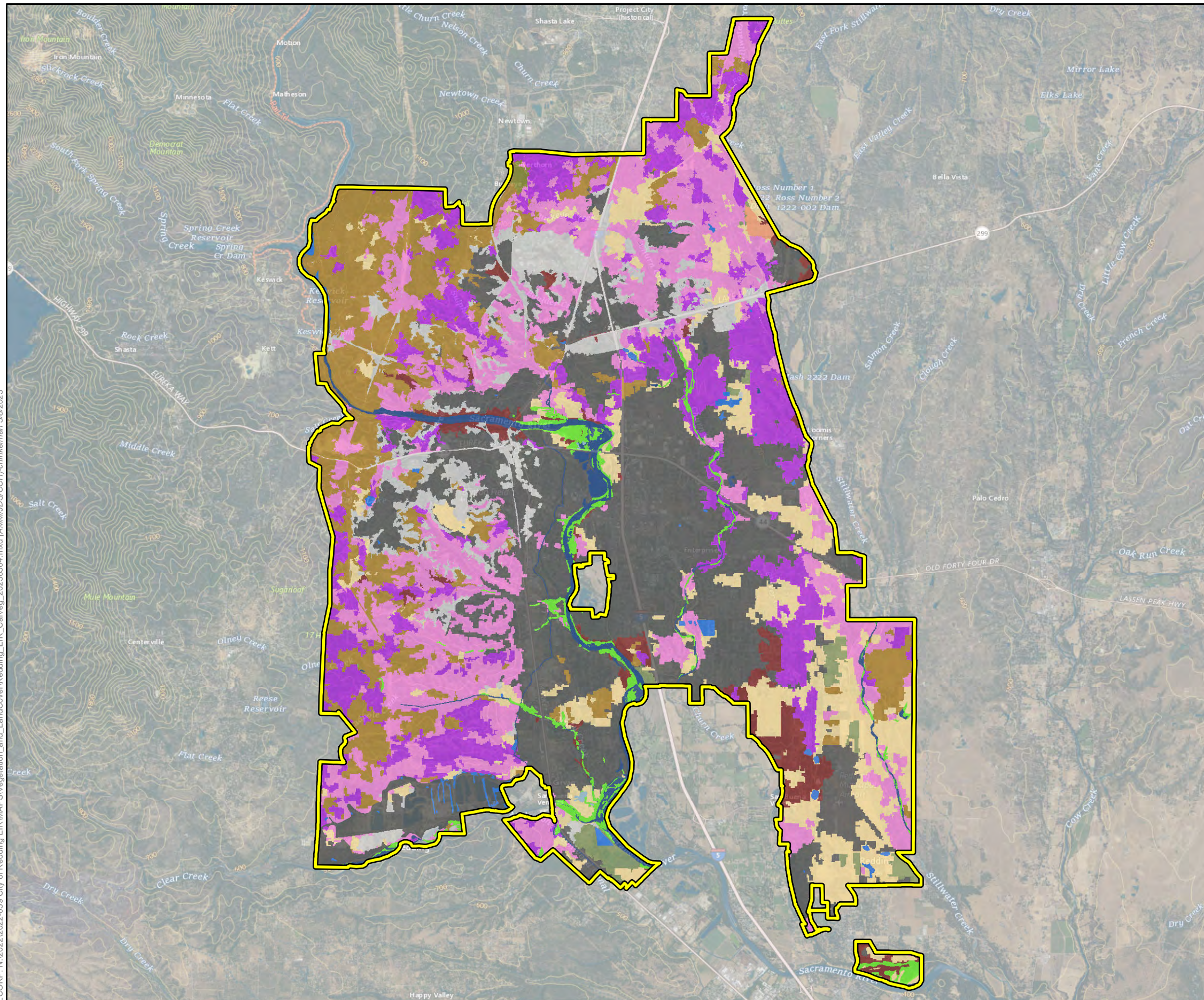
space. The majority of the Project Area’s land cover is classified as urban (15,199 acres). Blue Oak Woodland (8,814 acres), Blue Oak-Foothill Pine (6,275 acres), Mixed Chaparral (6,567 acres), and Annual Grassland (5,371 acres) land cover types also cover large portions of the Project Area (Table 1). Please see Figure 2 for a map of CalVeg land cover types.

Table 1. CalVeg Land Cover Types and Acreage within Redding Sphere of Influence	
Land Cover Type (CalVeg)	Acres
Annual Grassland	5,371.07
Barren	3,165.60
Blue Oak Woodland	8,813.63
Blue Oak-Foothill Pine	6,274.90
Cropland	566.39
Fresh Emergent Wetland	13.88
Lacustrine	261.55
Mixed Chaparral	6,566.67
Montane Hardwood	54.18
Pasture	86.22
Riverine	989.40
Urban	15,198.96
Valley Foothill Riparian	730.09
Valley Oak Woodland	1,323.67
Grand Total:	49,416.21

4.2 Soils

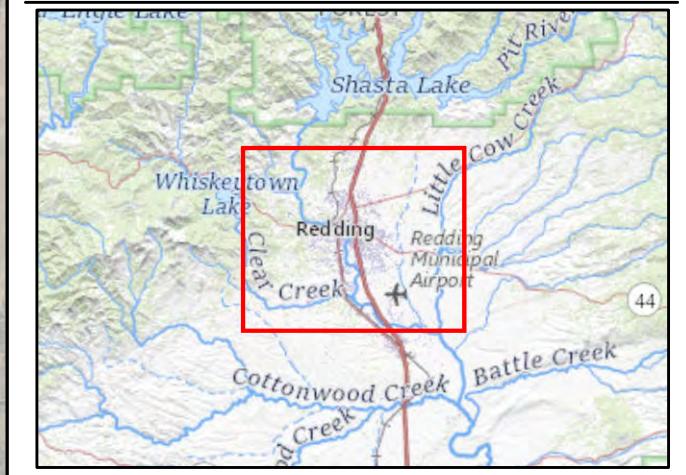
There are 71 soil types that fall within the Project Area (Figure 3) (NRCS 2022a). Of these 71 soil types, 25 contain hydric components. Hydric soils are defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils and their associated component landforms are associated with soils found within basin floors, basin rims, alluvial fans, fan aprons, or sloughs. These soil types are identified in Table 2 below (NRCS 2022b).

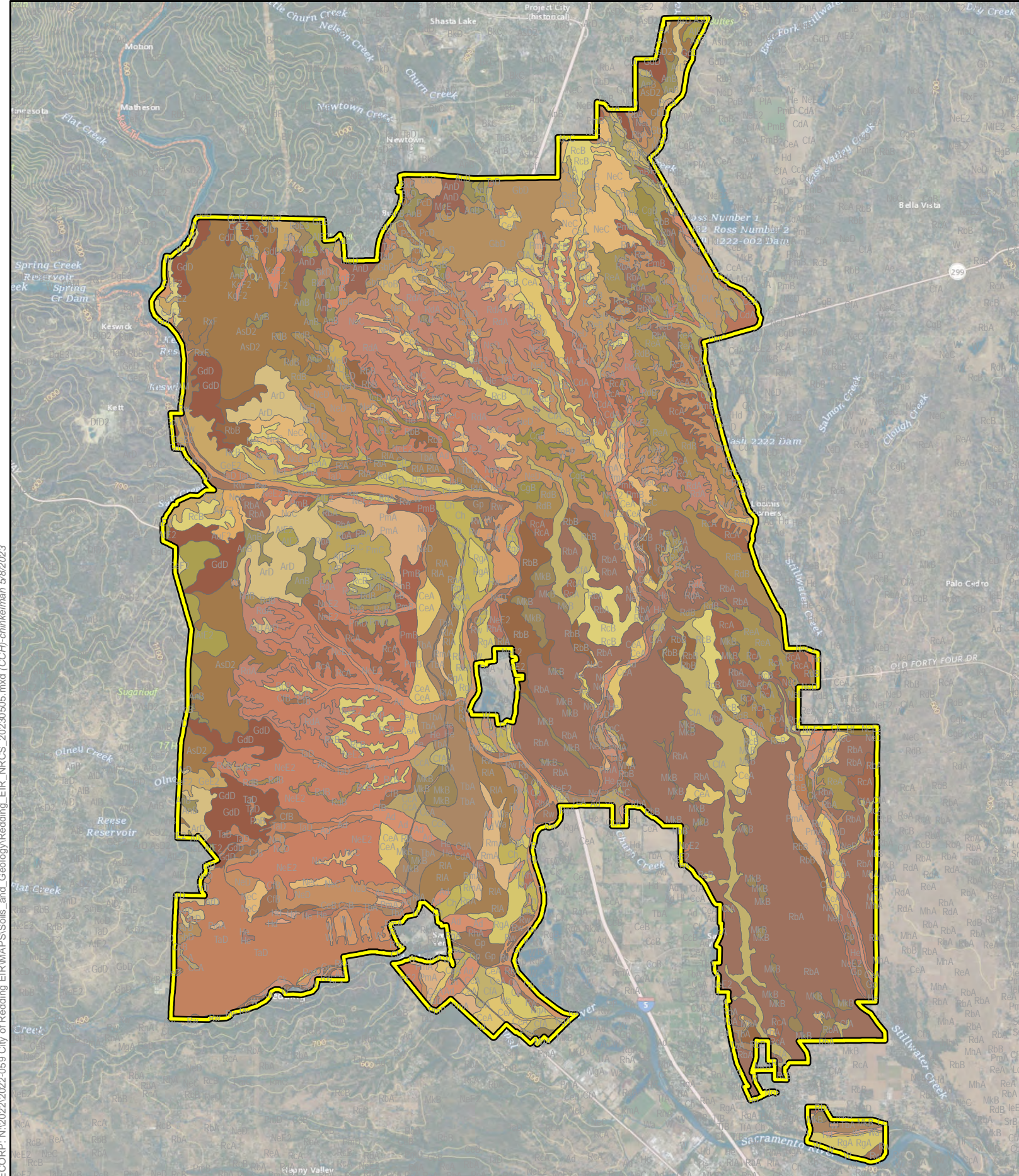
ECORP: N:\2022\2022-059 City of Redding EIR\MAPS\Vegetation_and_LandCover\Redding_EIR_CalVeg_20230504.mxd (AMM\JDS\CCH)-chinkelman_5/8/2023



- Map Features**
- Sphere of Influence
- USFS Calveg**
- Land Cover Type**
- Annual Grassland
 - Barren
 - Blue Oak Woodland
 - Blue Oak-Foothill Pine
 - Cropland
 - Fresh Emergent Wetland
 - Lacustrine
 - Mixed Chaparral
 - Montane Hardwood
 - Pasture
 - Riverine
 - Urban
 - Valley Foothill Riparian
 - Valley Oak Woodland

Sources: ESRI, USGS, CDFW, USFS, Placeworks





ECORP: N:\2022\2022-059 City of Redding EIR\MAPS\Soils and Geology\Redding_EIR_NRCS_20230505.mxd (CCHJ:chinkelman 5/8/2023)

Map Features

Sphere of Influence

Series Designation - Series Description

- Ad - Anderson gravelly sandy
- Ae - Anderson gravelly sandy loam, moderately
- AnB - Auburn loam, 0 to 8 percent
- AnD - Auburn loam, 8 to 30 percent
- ArD - Auburn very stony loam, 8 to 30 percent
- ASD2 - Auburn clay loam, 8 to 30 percent slopes,
- AIE2 - Auburn very stony clay loam, 30 to 50 percent slopes,
- AuF2 - Auburn very rocky clay loam, 50 to 70 percent slopes,
- BkC - Boomer gravelly loam, 0 to 15 percent slopes
- BkD - Boomer gravelly loam, 15 to 30 percent slopes
- BoE3 - Boomer very stony clay loam, 30 to 50 percent slopes, severely eroded
- CcA - Churn loam, 0 to 3 percent
- CcB - Churn loam, 3 to 8 percent slopes
- CdA - Churn loam, slightly wet, 0 to 3 percent slopes
- CeA - Churn gravelly loam, 0 to 3 percent slopes
- CeB - Churn gravelly loam, 3 to 8 percent slopes
- CfA - Churn gravelly loam, deep, 0 to 3 percent slopes
- CfB - Churn gravelly loam, deep, 3 to 8 percent slopes
- CgB - Clough gravelly loam, 3 to 8 percent slopes
- Ch - Cobbly alluvial land
- Ck - Cobbly alluvial land, frequently flooded
- DAM - Dams
- GbD - Gaviota very rocky sandy loam, 0 to 30 percent slopes
- GdD - Goulding very stony loam, 10 to 30 percent slopes
- GeE2 - Goulding very rocky loam, 30 to 50 percent slopes, eroded
- GeF2 - Goulding very rocky loam, 50 to 70 percent slopes, eroded
- Gp - Gravel pits
- Hd - Honcut loam
- He - Honcut gravelly loam
- Hf - Honcut gravelly loam, deep
- HhA - Honn gravelly sandy loam, 0 to 3 percent slopes
- KgF2 - Kidd very rocky loam, 10 to 60 percent slopes, eroded
- MeD - Millsholm gravelly loam, 3 to 30 percent slopes
- MeE - Millsholm gravelly loam, 30 to 50 percent slopes, MLRA 15
- MgA - Moda loam, 0 to 3 percent slopes, MLRA 17
- MhA - Moda loam, seeped, 0 to 3 percent slopes
- MkB - Moda loam, shallow, 0 to 5 percent slopes
- NeC - Newtown gravelly loam, 8 to 15 percent slopes
- NeD - Newtown gravelly loam, 15 to 30 percent slopes
- NeE2 - Newtown gravelly loam, 30 to 50 percent slopes, eroded
- PcD - Parrish loam, 8 to 30 percent slopes
- PcE - Parrish loam, 30 to 50 percent slopes
- PIA - Perkins loam, moist, 0 to 3 percent slopes, MLRA 17
- PmA - Perkins gravelly loam, gravelly clay loam substratum, 0 to 3 percent slopes, MLRA 17
- PmB - Perkins gravelly loam, 3 to 8 percent slopes
- PmC - Perkins gravelly loam, 8 to 15 percent slopes
- PmD - Perkins gravelly loam, gravelly clay loam substratum, 8 to 30 percent slopes, MLRA 17
- PoA - Perkins gravelly loam, moderately deep, 0 to 3 percent slopes
- PoB - Perkins gravelly loam, moderately deep, 3 to 8 percent slopes
- RbA - Red Bluff loam, 0 to 3 percent slopes, MLRA 17, moist
- RbB - Red Bluff loam, 3 to 8 percent slopes
- RcA - Red Bluff gravelly loam, moderately deep, 0 to 3 percent slopes
- RcB - Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes
- RdA - Redding gravelly loam, 0 to 5 percent slopes, moist, MLRA 17
- RdB - Redding gravelly loam, 0 to 15 percent slopes, moist, MLRA 17
- ReA - Redding-Red Bluff gravelly loams, 0 to 3 percent slopes
- ReB - Redding-Red Bluff gravelly loams, 3 to 8 percent slopes
- RgA - Reiff fine sandy loam, 0 to 3 percent slopes
- RhA - Reiff fine sandy loam, deep, 0 to 3 percent slopes
- RkA - Reiff gravelly fine sandy loam, deep, 0 to 3 percent slopes
- RIA - Reiff loam, 0 to 3 percent slopes
- RmA - Reiff loam, seeped, 0 to 3 percent slopes
- RnA - Reiff gravelly loam, 0 to 3 percent slopes
- Rw - Riverwash
- RxF - Rockland
- TaD - Tailings and placer diggings
- TbA - Tehama loam, 0 to 3 percent slopes, MLRA 17
- TeD - Toomes very stony loam, 0 to 30 percent
- TfA - Tujungua loamy sand, 0 to 3 percent slopes
- W - Water
- Wa - Wet alluvial land

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (gSSURGO) Database for Shasta County, CA

Figure 3. Natural Resources Conservation Service Soil Types

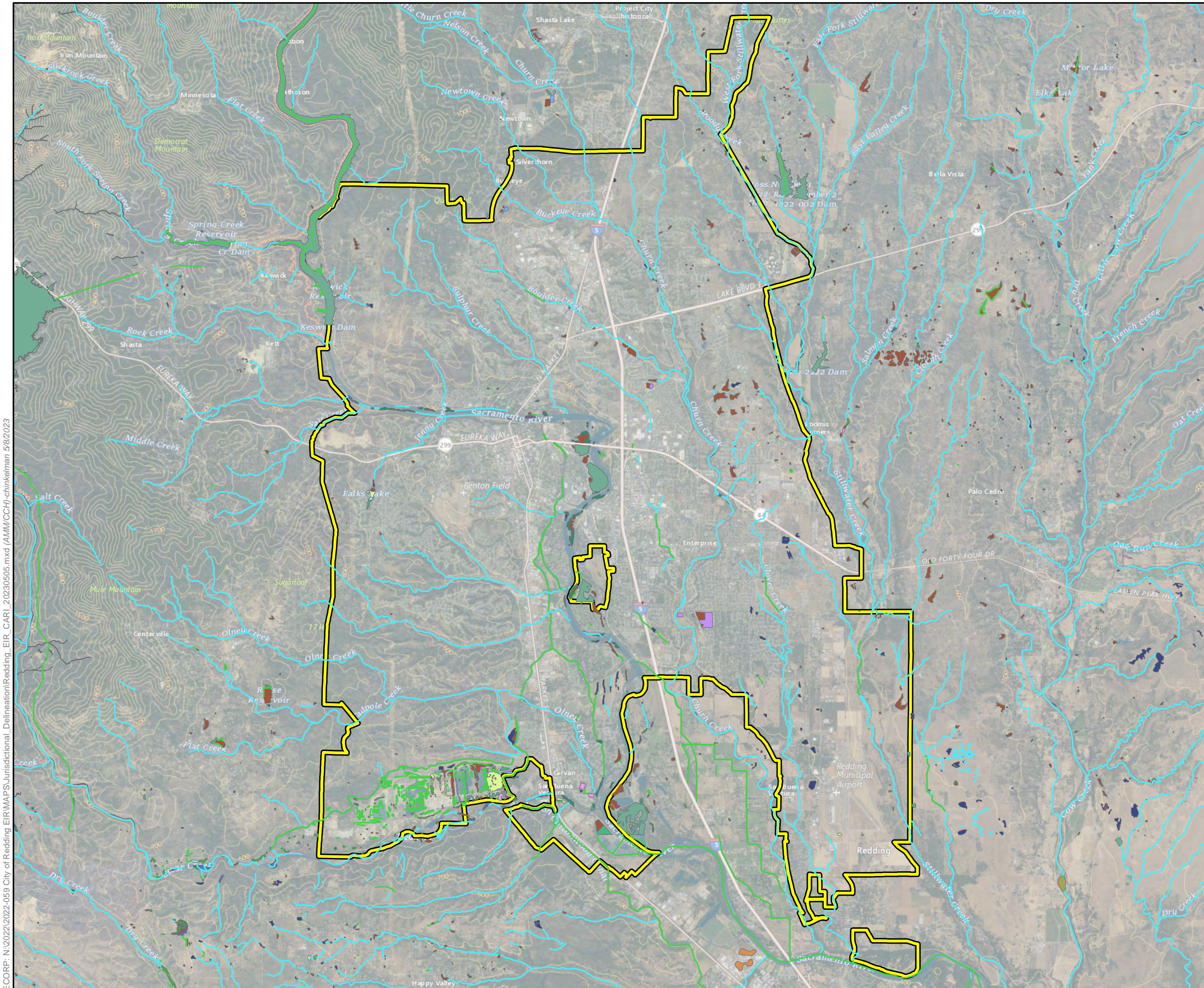
Table 2. List of NRCS Soil Types within the Project Area	
Soil Type	Landform
Ad – Anderson gravelly sandy loam	Channels
Ae - Anderson gravelly sandy loam, moderately deep	Channels
CcB - Churn loam, 3 to 8 percent slopes	Channels
CdA - Churn loam, slightly wet, 0 to 3 percent slopes	Channels
CeA - Churn gravelly loam, 0 to 3 percent slopes	Channels
CeB - Churn gravelly loam, 3 to 8 percent slopes	Channels
CfA - Churn gravelly loam, deep, 0 to 3 percent slopes	Channels
CfB - Churn gravelly loam, deep, 3 to 8 percent slopes	Channels
Ch - Cobbly alluvial land	Channels
Ck - Cobbly alluvial land, frequently flooded	Floodplains
HhA - Honn gravelly sandy loam, 0 to 3 percent slopes	Floodplains, Channels
MhA - Moda loam, seeped, 0 to 3 percent slopes	Drainageways, Fan remnants, Stream terraces
MkB - Moda loam, shallow, 0 to 5 percent slopes	Fan remnants, Stream terraces
PmA - Perkins gravelly loam, gravelly clay loam substratum, 0 to 3 percent slopes, MLRA 17	Drainageways, Stream terraces
RbA - Red Bluff loam, 0 to 3 percent slopes, MLRA 17, moist	Fan remnants
RcA - Red Bluff gravelly loam, moderately deep, 0 to 3 percent slopes	Fan remnants
RcB - Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes	Fan remnants
RdA - Redding gravelly loam, 0 to 5 percent slopes, moist, MLRA 17	Fan remnants
ReA - Redding-Red Bluff gravelly loams, 0 to 3 percent slopes	Fan remnants
ReB - Redding-Red Bluff gravelly loams, 3 to 8 percent slopes	Fan remnants
RmA - Reiff loam, seeped, 0 to 3 percent slopes	Floodplains
Rw - Riverwash	Channels
TaD - Tailings and placer diggings	Floodplains
TfA - Tujunga loamy sand, 0 to 3 percent slopes	Floodplains, Channels
Wa - Wet alluvial land	Floodplains

4.3 California Aquatic Resource Inventory

The California Aquatic Resource Inventory (CARI; San Francisco Estuary Institute [SFEI] 2017) is a statewide map of surface waters and related habitats combining multiple national and regional datasets, including the National Wetlands Inventory and the National Hydrography Dataset. CARI includes aquatic resource features mapped using a variety of remote sensing and modeling techniques. As such, these aquatic features may or may not exist as represented. In addition, CARI data varies in detail, accuracy, and age, and is meant to be used as a tool to assist with an aquatic resource delineation but not as the only source of information (SFEI 2017). Therefore, it is recommended that ground-level surveys be conducted to determine the presence of aquatic resources subject to the jurisdiction of state and federal agencies prior to making site-specific land use decisions.

According to CARI (SFEI 2017, California Wetlands Monitoring Workgroup 2022), 18 aquatic feature types have been mapped within the EIR Study Area (Figure 4):

- Fluvial Natural
- Fluvial Unnatural
- Depressional Perennial Natural Emergent
- Depressional Perennial Natural Non-vegetated
- Depressional Perennial Non-vegetated
- Depressional Perennial Unnatural Emergent
- Depressional Perennial Unnatural Non-vegetated
- Depressional Perennial Unnatural Vegetated
- Depressional Seasonal
- Depressional Seasonal Natural Emergent
- Depressional Seasonal Natural Forested
- Depressional Seasonal Natural Shrub-Scrub
- Depressional Seasonal Unnatural Emergent
- Depressional Seasonal Unnatural Forested



Map Features

Sphere of Influence

CARI Data Version 0.3 (December 2017)

Streams

Fluvial Natural

Fluvial Unnatural

Wetlands

Depressional Perennial Natural Emergent

Depressional Perennial Natural Non-vegetated

Depressional Perennial Non-vegetated

Depressional Perennial Unnatural Emergent

Depressional Perennial Unnatural Non-vegetated

Depressional Perennial Unnatural Vegetated

Depressional Seasonal

Depressional Seasonal Natural Emergent

Depressional Seasonal Natural Forested

Depressional Seasonal Natural Shrub-Scrub

Depressional Seasonal Unnatural Emergent

Depressional Seasonal Unnatural Forested

Depressional Seasonal Unnatural Non-vegetated

Depressional Seasonal Unnatural Shrub-Scrub

Depressional Unnatural Non-vegetated

Lacustrine Unnatural Non-vegetated

Sources: NAIP 2020, CARI 2017, Placeworks, ECORP Consulting Inc.



ECORP: N:\2022\2022-059 City of Redding EIR\MAPS\Jurisdictional_Delineation\Redding_EIR_CARI_20230505.mxd (AMMCOH)-chirakelman 5/8/2023

Map Date: 5/8/2023



Figure 4. California Aquatic Resources Inventory
2022-059 City of Redding EIR

- Depressional Seasonal Unnatural Non-vegetated
- Depressional Seasonal Unnatural Shrub-Scrub
- Depressional Unnatural Non-vegetated
- Lacustrine Unnatural Non-vegetated

Fluvial systems are dominated by rivers and streams. The fluvial unnatural aquatic feature type corresponds to irrigation canals and drainage ditches. Fluvial natural corresponds to portions of the Sacramento River and its tributaries in the surrounding area, such as Olney Creek, Tadpole Creek, and Clear Creek.

Depressional perennial or seasonal features consist of both natural and unnatural wetlands. Unnatural wetland features include manufactured lakes and ponds, agricultural ponds, and manufacturing and construction-related ponds (e.g., Shasta Redi-Mix ponds). Natural wetland features include natural floodplain features, riparian forests, and depressional wetlands found throughout the Project Area.

Lacustrine unnatural non-vegetated features include manufactured ponds and lakes and can be found along the Sacramento River south of the terminus of Gravel Plant Road, north of Riverview Country Club, and on the west side of the river, south of the Highway 44 crossing.

4.4 Special-Status Species

The results of the database queries are included in Attachment A. A total of 96 special status plants and animals were returned, including 39 plants; 7 invertebrates; 15 fish; 4 amphibians; 1 reptile; 20 birds; and 10 mammals. Of these, 4 plants, 1 invertebrate, 1 fish, 1 amphibian, and 5 birds were determined to be absent from the Project Area upon further investigation. No further discussion of those species is provided in this assessment. A total of 84 special-status species were determined to be either present or have potential to occur within the Project Area.

4.4.1 Plants

A total of 35 special-status plant species have potential or low potential to occur within the Project Area as presented below. A large portion of the rare plants can be found in cismontane woodland, lower coniferous forest, chaparral, and valley and foothill grassland. Several species are also commonly associated with wetlands and vernal pool habitat types. Please see Attachment B for more details on each species and its habitat requirements.

- Shasta maidenhair fern (*Adiantum shastense*)
- Shasta ageratina (*Ageratina shastensis*)

- Henderson's bent grass (*Agrostis hendersonii*)
- Sanborn's onion (*Allium sanbornii* var. *sanbornii*)
- Slender silver moss (*Anomobryum julaceum*)
- Shasta County arnica (*Arnica venosa*)
- Depauperate milk-vetch (*Astragalus pauperculus*)
- Big-scale balsamroot (*Balsamorhiza macrolepis*)
- Watershield (*Brasenia schreberi*)
- Sulphur Creek brodiaea (*Brodiaea matsonii*)
- Thread-leaved beakseed (*Bulbostylis capillaris*)
- Northern clarkia (*Clarkia borealis* ssp. *borealis*)
- Silky cryptantha (*Cryptantha crinita*)
- Tripod buckwheat (*Eriogonum tripodum*)
- Shield-bracted monkeyflower (*Erythranthe glaucescens*)
- Shasta limestone monkeyflower (*Erythranthe taylorii*)
- Shasta fawn lily (*Erythronium shastense*)
- Boggs Lake hedge-hyssop (*Gratiola heterosepala*)
- Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*)
- Dubious pea (*Lathyrus sulphureus* var. *argillaceus*)
- Legenere (*Legenere limosa*)
- Broad-lobed leptosiphon (*Leptosiphon latisectus*)
- Bellinger's meadowfoam (*Limnanthes floccosa* ssp. *bellingermana*)
- Woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*)

- Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)
- Shasta snow wreath (*Neviusia cliftonii*)
- Slender Orcutt grass (*Orcuttia tenuis*)
- Ahart's paronychia (*Paronychia ahartii*)
- Nuttall's ribbon-leaved pondweed (*Potamogeton epihydrus*)
- Sanford's arrowhead (*Sagittaria sanfordii*)
- Redding checkerbloom (*Sidalcea celata*)
- Maverick clover (*Trifolium piorkowskii*)
- Shasta huckleberry (*Vaccinium shastense* ssp. *shastense*)
- Oval-leaved viburnum (*Viburnum ellipticum*)
- Brazilian watermeal (*Wolffia brasiliensis*)

4.4.2 Invertebrates

A total of 6 special-status invertebrate species have documented occurrences or have potential to occur within the Project Area as presented below. Of the invertebrate species listed, the fairy shrimp, linderiella, and tadpole shrimp species are restricted to vernal pools and wetlands. Valley elderberry longhorn beetles are restricted to their host plant, species of the genus *Sambucus*. Monarch butterflies are not restricted to any particular habitat, but the caterpillars feed on milkweed (*Asclepias* sp.) while adults typically roost in Monterey Pine, Monterey Cypress, and *Eucalyptus* species. Please see Attachment B for more details on each species.

- Conservancy fairy shrimp (*Branchinecta conservatio*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- California linderiella (*Linderiella occidentalis*)
- Vernal pool tadpole shrimp (*Lepidurus packardii*)
- Valley elderberry longhorn beetle (*Desmocerus californicus* ssp. *dimorphus*)
- Monarch butterfly (*Danaus plexippus*)

4.4.3 Fish

A total of 14 special-status fish species have documented occurrences or have the potential to occur within the Project Area as presented below. The majority of these fish are anadromous and require, clean, unrestricted flows to complete their life cycle. The mainstem of the Sacramento River provides habitat for many of these species, but floodplains and tributaries to the Sacramento River within the Project Area may also provide habitat for special-status fish species. Please see Attachment A for more details on each species.

- Pacific Lamprey (*Entosphenus tridentatus*)
- River Lamprey (*Lampetra ayresi*)
- Western brook lamprey (*Lampetra richardsoni*)
- Green sturgeon (Southern distinct population segment [DPS]) (*Acipenser medirostris*)
- White sturgeon (*Acipenser transmontanus*)
- Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss irideus*)
- Chinook salmon (Central Valley spring-run evolutionary significant unit [ESU]) (*Oncorhynchus tshawytscha*)
- Chinook Salmon (Central Valley fall/late-fall-run ESU) (*Oncorhynchus tshawytscha*)
- Chinook salmon (Sacramento River winter-run ESU) (*Oncorhynchus tshawytscha*)
- Central California Roach (*Hesperoleucus symmetricus* ssp. *symmetricus*)
- Sacramento Hitch (*Lavinia exilicauda* ssp. *exilicauda*)
- Hardhead (*Mylopharodon conocephalus*)
- Sacramento splittail (*Pogonichthys macrolepidotus*)
- Riffle Sculpin (*Cottus gulosus*)

4.4.4 Amphibians

A total of 3 special-status amphibian species have documented occurrences or have the potential to occur within the Project Area as presented below. Habitats within the project area that could support special-status amphibians include limestone outcrops within mixed-conifer and hardwood forests, wetlands, vernal pools, grasslands, and riverine habitats. Please see Attachment B for more details on each species.

- Shasta Salamander Complex (*Hydromantes* sp.)
- Western spadefoot (*Spea hammondi*)
- Foothill yellow-legged frog (Northwest/North Coast Clade) (*Rana boylei*)

4.4.5 Reptiles

A total of 1 special-status reptile species, the western pond turtle (*Actinemys marmorata*), was identified as having the potential to occur in the Project Area or vicinity (Attachment B). Slow moving portions of the Sacramento River with ample vegetation and basking sites provide habitat for this species. Additionally, lacustrine habitats such as ponds, wetlands, irrigation ditches, and detention basins may provide suitable habitat. Please see Attachment B for more details on this species.

4.4.6 Birds

A total of 15 special-status bird species have documented occurrences or have the potential to occur within the Project Area as presented below. Habitats likely to support special-status birds include riverine habitats along the Sacramento River both with and without emergent vegetation, riparian, oak woodland, chaparral, and urban habitats. Please see Attachment B for more details on each species.

- Clark's grebe (*Aechmophorus clarkii*)
- Great egret (*Ardea alba*)
- Osprey (*Pandion haliaetus*)
- Golden eagle (*Aquila chrysaetos*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Long-eared owl (*Asio otus*)
- Nuttall's woodpecker (*Dryobates nuttallii*)
- Olive-sided flycatcher (*Contopus cooperi*)
- Yellow-billed magpie (*Pica nuttallii*)
- Oak titmouse (*Baeolophus inornatus*)
- Bank swallow (*Riparia riparia*)
- Wrentit (*Chamaea fasciata*)

- California thrasher (*Toxostoma redivivum*)
- Lawrence's goldfinch (*Spinus lawrencei*)
- Tricolored blackbird (*Agelaius tricolor*)

4.4.6.1 Other Protected Birds

In addition to the above-listed special-status birds, all native or naturally occurring birds and their occupied nests/eggs are protected under the California Fish and Game Code and the MBTA. The Project Area supports potential nesting habitat for a variety of common birds protected under these regulations.

4.4.7 Mammals

A total of 10 special-status mammal species have documented occurrences or have the potential to occur within the Project Area as presented below. Many of the special-status bat species can be found in valley riparian forest, oak woodland, or other habitats with large trees for roosting. Habitats with rocky outcrops and urban habitats may also support special-status bat species. Higher elevation habitats such as montane hardwood may support porcupine and fisher. Please see Attachment B for more details on each species.

- Pallid bat (*Antrozous pallidus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- North American Porcupine (*Erethizon dorsatum*)
- Spotted bat (*Euderma maculatum*)
- Silver-haired bat (*Lasionycteris noctivagans*)
- Western red bat (*Lasiurus blossevillii*)
- Hoary bat (*Lasiurus cinereus*)
- Long-eared myotis (*Myotis evotis*)
- Yuma myotis (*Myotis yumanensis*)
- Fisher (Northern California/Southern Oregon DPS) (*Pekania pennanti*)

4.5 Critical Habitat and Essential Fish Habitat

There is Critical Habitat mapped within the Project Area for slender Orcutt grass, vernal pool fairy shrimp, and vernal pool tadpole shrimp (USFWS 2022). The Project Area also includes Critical Habitat for green sturgeon, Sacramento River winter-run ESU Chinook salmon, Central Valley spring-run ESU Chinook salmon, and California Central Valley DPS steelhead; and Essential Fish Habitat for Chinook salmon (Figure 5) (NOAA 2022c, d). Critical habitat components for each species are listed below.

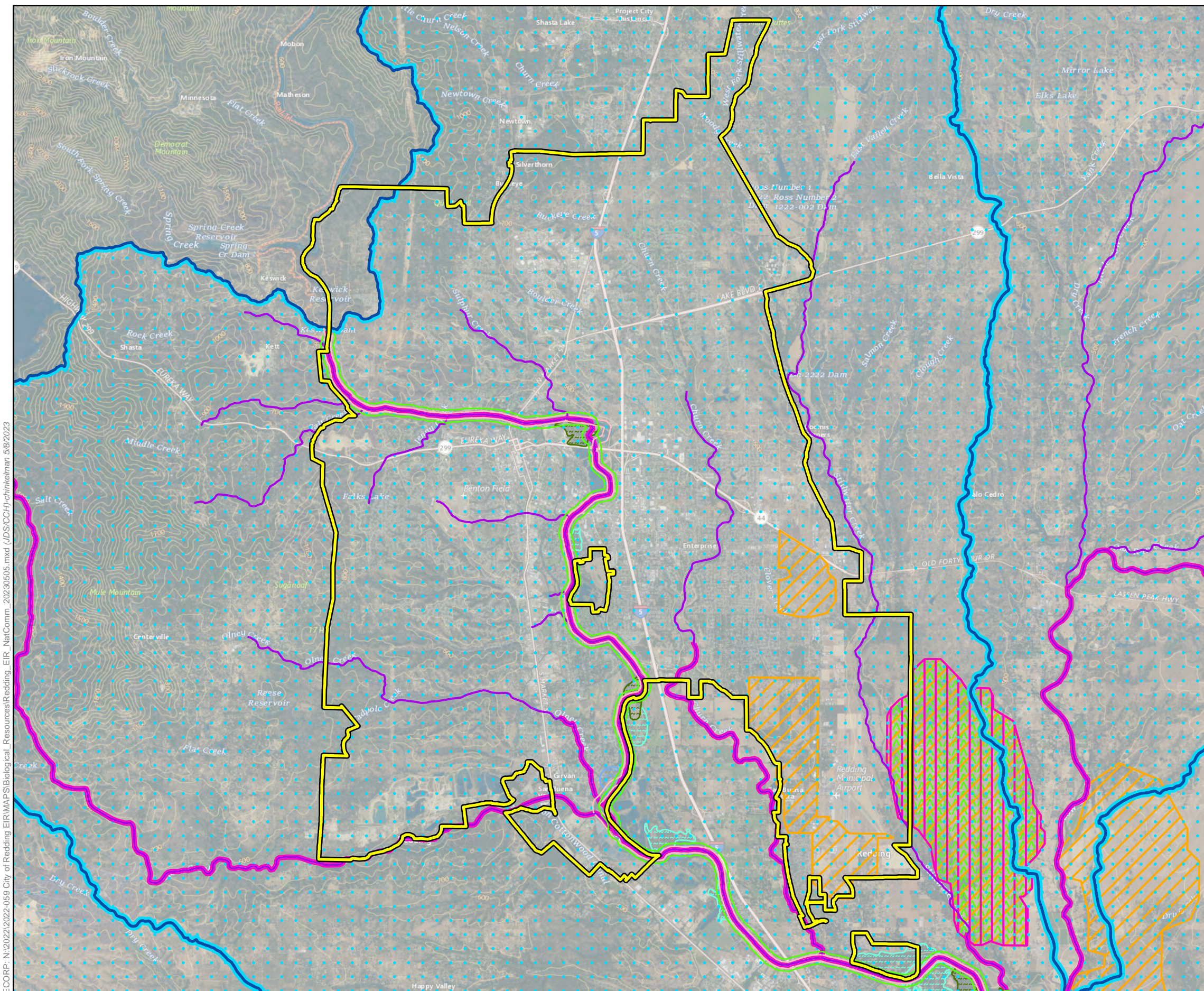
- Slender Orcutt Grass, Vernal Pool Fairy Shrimp, and Vernal Pool Tadpole Shrimp – vernal pools, seasonal wetlands, and swales
- Green Sturgeon – Sacramento River
- Chinook Salmon (Sacramento River winter-run ESU) – Sacramento River
- Chinook Salmon (Central Valley spring-run ESU) – Churn Creek, Clear Creek, Olney Creek, Sacramento River
- Steelhead (California Central Valley DPS) – Calaboose Creek, Canyon Creek, Churn Creek, Clear Creek, Jenny Creek, Middle Creek, Olney Creek, Rock Creek, Salt Creek, Stillwater Creek, Sulphur Creek, Oregon Gulch,

4.6 Sensitive Natural Communities and Wildlife Corridors

Three sensitive natural communities were identified during the literature review: Great Valley Cottonwood Riparian Forest, Great Valley Valley Oak Riparian Forest, and Great Valley Willow Scrub. These communities are restricted to areas immediately adjacent to the Sacramento River. Figure 5 depicts these sensitive natural communities.

A review of aerial imagery reveals that the three sensitive natural communities found in the Project Area are connected by narrow strips of habitat on the banks of the Sacramento River. Large portions of the Project Area are urban, which effectively fragments the riparian habitat corridor from upland habitats in the surrounding area. Preservation of the remaining riparian areas along the Sacramento River corridor will help preserve these sensitive natural communities and maintain connectivity with natural habitat areas outside the Project Area.

The Sacramento River and associated riparian corridor represents a significant migratory fish and wildlife corridor through the Project Area. Based on CDFW habitat connectivity mapping, the Sacramento River, Churn Creek, and Stillwater Creek are all identified as riparian corridors providing north-south habitat connectivity through the Project Area. Undeveloped open space areas surrounding the city provide terrestrial connectivity.



Map Features

- Sphere of Influence

Essential Fish Habitat (EFH)

- Chinook Salmon

Critical Habitat

- Slender Orcutt Grass
- Vernal Pool Fairy Shrimp
- Vernal Pool Tadpole Shrimp
- Steelhead (California Central Valley DPS)
- Chinook Salmon (Central Valley spring-run ESU)
- Chinook Salmon (Sacramento River winter-run ESU)
- Green Sturgeon (Southern DPS)

Sensitive Natural Communities

- Great Valley Cottonwood Riparian Forest
- Great Valley Valley Oak Riparian Forest
- Great Valley Willow Scrub

CNDDDB version June 2022. Please Note: The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDDB about a species or an area can never be used as proof that no special status species occur in an area.

Sources: ESRI, USGS, NOAA, USFWS, NMFS, CDFW, Placeworks



ECORP: N:\2022\2022-059 City of Redding EIR\MAPS\Biological_Resources\Reading_EIR_NatComm_20230505.mxd (JDS/CCH)-chirkelman_5/8/2023

Map Date: 5/8/2023

Figure 5. Sensitive Natural Communities

5.0 SUMMARY

The Project Area supports 84 special-status species and/or their habitat, including 35 plants, 6 invertebrates, 14 fish, three amphibians, one reptile, 15 birds and 10 mammals. Of those 84 species, 17 are federal or state-listed species (including those proposed or candidates for listing), including three plants, five invertebrates, four fish, one amphibian, and four birds. While not considered special-status as defined in this analysis, many commonly occurring birds that are protected under the MBTA could potentially nest onsite. Finally, Critical Habitat for seven federal or state-listed species occurs within the Project Area, as well as three sensitive natural communities.

Within the Project Area, riparian habitats along the Sacramento River are of special concern due to the presence of three sensitive natural communities, the habitat they provide for special-status species, and the ecosystem services they provide (e.g., flood protection and improvement of water quality). These areas may support greater than 30 of the special-status species with potential to occur in the Project Area. In addition, aquatic and riparian habitats associated with the river and creeks in the Project Area serve as important wildlife corridors between larger blocks of habitat (Soman et al. 2007). Foothill grasslands and woodlands are also areas of particular concern because they may support several rare plant species, in addition to providing nesting habitat for many bird species and providing roosting locations for bats. Vernal pools and seasonal wetlands, which may support special-status invertebrate species, are also often associated with foothill grassland.

6.0 REFERENCES

- California Native Plant Society (CNPS). 2022. Inventory of Rare and Endangered Plants in California (online edition, v8-03 0.39). California Native Plant Society. Sacramento, CA. Accessed March 2022.
- California Department of Fish and Wildlife (CDFW). 2022a. Rarefind 5. Online Version, commercial version dated January 30, 2022. California Natural Diversity Database. The Resources Agency, Sacramento.
- _____. 2022b. Biogeographic Information and Observation System (BIOS). Available <https://wildlife.ca.gov/data/BIOS>. Accessed March 2022.
- California Wetlands Monitoring Workgroup 2022. EcoAtlas. <https://www.EcoAtlas.org>.
- National Oceanic and Atmospheric Administration (NOAA). 2022a. NOAA Fisheries West Coast Region California Species List Tools. Available online: https://archive.fisheries.noaa.gov/wcr/maps_data/california_species_list_tools.html. Accessed April 2022.
- _____. 2022b. National Climatic Data Center 2010 Climate Normals for Redding, California. <https://www.ncdc.noaa.gov/cdoweb/datatools/normal>. Accessed June 2022.
- _____. 2022c. NOAA Fisheries Service. National Marine Fisheries Service Endangered Species Act Critical Habitat Geodatabase. National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS [producer] Accessed 16 June 2022.
- _____. 2022d. Essential Fish Habitat Mapper, Pacific Council. Available online: https://www.habitat.noaa.gov/apps/efhmapper/?page=page_4.
- Natural Resources Conservation Service (NRCS). 2022a. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/>. Accessed April 2022.
- _____. 2022b. Soil Data Access Hydric Soils List. <https://www.nrcs.usda.gov/wps/portal/nrcs/mail/soils/use/hydric/>. Accessed June 2022.
- San Francisco Estuary Institute (SFEI). 2017. California Aquatic Resource Inventory (CARI) Version 0.3. 2017. <http://www.sfei.org/data/california-aquatic-resource-inventory-cari-version-03-gisdata#sthash.0SjnIwFO.dpbs>.
- Sawyer, J.O., T. Keeler-Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, California.
- Soman, S., Beyeler, S., Kraft, S.E., Thomas, D. and Winstanley, D., 2007. Ecosystem services from riparian areas: a brief summary of the literature. Prepared for the Scientific Advisory Committee of the Illinois River Coordinator Council.
- U.S. Fish and Wildlife Service (USFWS). 2021. Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia.

Available online: <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>.

_____. 2022. USFWS Resource Report List. Information for Planning and Conservation. Available <https://ecos.fws.gov/ipac>. Accessed April 2022.

U.S. Geological Survey (USGS). 1957a photorevised 1969. "Project City, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

_____. 1957b photorevised 1969. "Redding, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

_____. 1957c photorevised 1969. "Enterprise, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

_____. 1964 Photoinspected 1976. "Olinda, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

_____. 1965. "Cottonwood, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

_____. 1998. "Shasta Dam, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

_____. 2020. Available online: [Science in Your Watershed: Locate Your Watershed By HUC - Mapping Interface \(usgs.gov\): https://water.usgs.gov/wsc/map_index.html](https://water.usgs.gov/wsc/map_index.html). Page Last Modified: Tuesday, 25-Aug-2020.

LIST OF ATTACHMENTS

Attachment A - Data Base Query Results

Attachment B - Special-Status Species Evaluation

ATTACHMENT A

Data Base Query Results

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE RareFind

Query Summary:

Quad IS (Shasta Dam (4012264) OR Project City (4012263) OR Redding (4012254) OR Enterprise (4012253) OR Olinda (4012244) OR Cottonwood (4012243))

Print

Close

CNDDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Acipenser medirostris pop. 1	green sturgeon - southern DPS	Fish	AFCAA01031	3	1	Threatened	None	G3T1	S1	null	AFS_VU-Vulnerable, IUCN_NT-Near Threatened	Aquatic, Estuary, Marine bay, Sacramento/San Joaquin flowing waters
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	955	7	None	Threatened	G1G2	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Agrostis hendersonii	Henderson's bent grass	Monocots	PMPOA040K0	26	5	None	None	G2Q	S2	3.2	null	Valley & foothill grassland, Vernal pool, Wetland
Anthicus antiochensis	Antioch Dunes anthicid beetle	Insects	IICOL49020	6	1	None	None	G1	S3	null	null	Interior dunes
Anthicus sacramento	Sacramento anthicid beetle	Insects	IICOL49010	13	1	None	None	G1	S1	null	IUCN_EN-Endangered	Interior dunes
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	1	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Ardea alba	great egret	Birds	ABNGA04040	43	1	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	795	8	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
Brodiaea matsonii	Sulphur Creek brodiaea	Monocots	PMLIL0C0H0	2	2	None	None	G1	S1	1B.1	BLM_S-Sensitive, SB_BerrySB-Berry Seed Bank	Cismontane woodland, Meadow & seep
Castilleja rubicundula var. rubicundula	pink creamsacs	Dicots	PDSCR0D482	42	1	None	None	G5T2	S2	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland, Meadow & seep, Ultramafic, Valley & foothill grassland
Clarkia borealis ssp. borealis	northern clarkia	Dicots	PDONA05062	131	2	None	None	G4T4	S4	4.3	BLM_S-Sensitive, SB_UCSC-UC Santa Cruz, USFS_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	1	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special	Broadleaved upland forest, Chaparral,

												Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Cryptantha crinita	silky cryptantha	Dicots	PDBOR0A0Q0	57	13	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland, Valley & foothill grassland	
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	4	Threatened	None	G3T2T3	S3	null	null	Riparian scrub	
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1404	7	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland	
Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	Riparian	CTT61410CA	56	3	None	None	G2	S2.1	null	null	Riparian forest	
Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	Riparian	CTT61430CA	33	6	None	None	G1	S1.1	null	null	Riparian forest	
Great Valley Willow Scrub	Great Valley Willow Scrub	Riparian	CTT63410CA	18	2	None	None	G3	S3.2	null	null	Riparian scrub	
Haliaeetus leucocephalus	bald eagle	Birds	ABNKC10010	329	12	Delisted	Endangered	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Lower montane coniferous forest, Oldgrowth	
Helminthoglypta hertleini	Oregon shoulderband	Mollusks	IMGASC2280	16	2	None	None	G3Q	S1S2	null	null	Riparian forest, Talus slope	
Hydromantes shastae	Shasta salamander	Amphibians	AAAAD09030	75	12	None	Threatened	G3	S3	null	BLM_S-Sensitive, IUCN_VU-Vulnerable, USFS_S-Sensitive	Cismontane woodland, Limestone	
Juncus leiospermus var. leiospermus	Red Bluff dwarf rush	Monocots	PMJUN011L2	62	22	None	None	G2T2	S2	1B.1	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland	
Lanx	kneecap lanx	Mollusks	IMGASL7030	55	1	None	None	G2?	S2	null	USFS_S-Sensitive	Aquatic,	

patelloides													Sacramento/San Joaquin flowing waters
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	2	None	None	G3G4	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Lower montane coniferous forest, Oldgrowth, Riparian forest	
Lasiurus blossevillii	western red bat	Mammals	AMACC05060	128	1	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland	
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	238	1	None	None	G3G4	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest	
Lathyrus sulphureus var. argillaceus	dubious pea	Dicots	PDFAB25101	7	1	None	None	G5T1T2Q	S1S2	3	null	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	
Legenere limosa	legenere	Dicots	PDCAM0C010	83	6	None	None	G2	S2	1B.1	BLM_S-Sensitive, SB_UCBG-UC Botanical Garden at Berkeley	Vernal pool, Wetland	
Lepidurus packardii	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	329	18	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland	
Limnanthes floccosa ssp. floccosa	woolly meadowfoam	Dicots	PDLIM02043	54	1	None	None	G4T4	S3	4.2	SB_UCBG-UC Botanical Garden at Berkeley	Chaparral, Cismontane woodland, Valley & foothill grassland, Vernal pool, Wetland	
Linderiella occidentalis	California linderiella	Crustaceans	ICBRA06010	508	14	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool	
Margaritifera falcata	western pearlshell	Mollusks	IMBIV27020	78	1	None	None	G4G5	S1S2	null	null	Aquatic	
Monadenia troglodytes wintu	Wintu sideband	Mollusks	IMGASC7092	10	3	None	None	G1G2T1T2	S1S2	null	IUCN_DD-Data Deficient, USFS_S-Sensitive	null	
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	265	1	None	None	G5	S4	null	BLM_S-Sensitive, IUCN_LC-Least Concern, WBWG_LM-Low-Medium Priority	Lower montane coniferous forest, Riparian forest, Riparian woodland, Upper montane coniferous forest	
Neviusia cliftonii	Shasta snow-wreath	Dicots	PDR0S14020	26	2	None	Candidate Endangered	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Cismontane woodland, Limestone, Lower montane coniferous forest, Riparian woodland	
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	3	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters	
Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU	Fish	AFCHA0205L	13	2	Threatened	Threatened	G5T1T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters	
Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	Fish	AFCHA0205B	2	1	Endangered	Endangered	G5T1Q	S1	null	AFS_EN-Endangered	Aquatic, Sacramento/San Joaquin flowing waters	
Orcuttia tenuis	slender Orcutt grass	Monocots	PMPOA4G050	100	8	Threatened	Endangered	G2	S2	1B.1	SB_UCBG-UC Botanical Garden at Berkeley	Vernal pool, Wetland	
Pandion haliaetus	osprey	Birds	ABNKC01010	504	3	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch	Riparian forest	

												List, IUCN_LC- Least Concern	
Pekania pennanti	Fisher	Mammals	AMAJF01020	555	4	None	None	G5	S2S3	null		BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	North coast coniferous forest, Oldgrowth, Riparian forest
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	2478	10	None	Endangered	G3	S3	null		BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters
Riparia riparia	bank swallow	Birds	ABPAU08010	298	2	None	Threatened	G5	S2	null		BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Sagittaria sanfordii	Sanford's arrowhead	Monocots	PMALI040Q0	143	1	None	None	G3	S3	1B.2		BLM_S-Sensitive	Marsh & swamp, Wetland
Spea hammondii	western spadefoot	Amphibians	AAABF02020	1422	3	None	None	G2G3	S3	null		BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Trifolium piorkowskii	maverick clover	Dicots	PDFAB40410	5	1	None	None	G2	S2	1B.2		null	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley & foothill grassland, Vernal pool
Trilobopsis roperi	Shasta chaparral	Mollusks	IMGASA2030	40	6	None	None	G2	S1	null		USFS_S-Sensitive	null
Vaccinium shastense ssp. shastense	Shasta huckleberry	Dicots	PDERI181Z1	21	6	None	None	G4T3	S3	1B.3		BLM_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian forest, Subalpine coniferous forest
Vespericola shasta	Shasta hesperian	Mollusks	IMGASA4070	8	1	None	None	G1	S3	null		USFS_S-Sensitive	Riparian forest

IPaC resource list

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

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

Project information

NAME

Redding GPU

LOCATION

Shasta County, California




DESCRIPTION

None

Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

 (916) 414-6713

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

NOT FOR CONSULTATION

Endangered species

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

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

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

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

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

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

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

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

Birds

NAME	STATUS
------	--------

Northern Spotted Owl *Strix occidentalis caurina* Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/1123>

Amphibians

NAME

STATUS

California Red-legged Frog *Rana draytonii* Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/2891>

Fishes

NAME

STATUS

Delta Smelt *Hypomesus transpacificus* Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/321>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus* Candidate

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Valley Elderberry Longhorn Beetle *Desmocerus californicus* Threatened

dimorphus

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/7850>

Crustaceans

NAME

STATUS

Conservancy Fairy Shrimp *Branchinecta conservatio* Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/8246>

Shasta Crayfish *Pacifastacus fortis* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8284>

Vernal Pool Fairy Shrimp *Branchinecta lynchi* Threatened

Wherever found

There is **final** critical habitat for this species. Your location overlaps the critical habitat.

<https://ecos.fws.gov/ecp/species/498>

Vernal Pool Tadpole Shrimp *Lepidurus packardii* Endangered

Wherever found

There is **final** critical habitat for this species. Your location overlaps the critical habitat.

<https://ecos.fws.gov/ecp/species/2246>

Flowering Plants

NAME

STATUS

Slender Orcutt Grass *Orcuttia tenuis* Threatened

Wherever found

There is **final** critical habitat for this species. Your location overlaps the critical habitat.

<https://ecos.fws.gov/ecp/species/1063>

Critical habitats

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

This location overlaps the critical habitat for the following species:

NAME

TYPE

Slender Orcutt Grass *Orcuttia tenuis* Final

<https://ecos.fws.gov/ecp/species/1063#crithab>

Vernal Pool Fairy Shrimp *Branchinecta lynchi* Final

<https://ecos.fws.gov/ecp/species/498#crithab>

Vernal Pool Tadpole Shrimp *Lepidurus packardii*

Final

<https://ecos.fws.gov/ecp/species/2246#crithab>

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

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

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

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

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

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

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE

BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

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

<https://ecos.fws.gov/ecp/species/1626>

Breeds Jan 1 to Aug 31

Black Swift *Cypseloides niger*

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

<https://ecos.fws.gov/ecp/species/8878>

Breeds Jun 15 to Sep 10

California Thrasher *Toxostoma redivivum*

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

Breeds Jan 1 to Jul 31

Clark's Grebe *Aechmophorus clarkii*

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

Breeds Jun 1 to Aug 31

Common Yellowthroat *Geothlypis trichas sinuosa*

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

<https://ecos.fws.gov/ecp/species/2084>

Breeds May 20 to Jul 31

Golden Eagle *Aquila chrysaetos*

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

<https://ecos.fws.gov/ecp/species/1680>

Breeds Jan 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

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

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

<p>Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631</p>	Breeds Mar 1 to Jul 15
<p>Nuttall's Woodpecker <i>Picoides nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410</p>	Breeds Apr 1 to Jul 20
<p>Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656</p>	Breeds Mar 15 to Jul 15
<p>Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914</p>	Breeds May 20 to Aug 31
<p>Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480</p>	Breeds elsewhere
<p>Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910</p>	Breeds Mar 15 to Aug 10
<p>Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 15 to Aug 10
<p>Yellow-billed Magpie <i>Pica nuttalli</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726</p>	Breeds Apr 1 to Jul 31

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

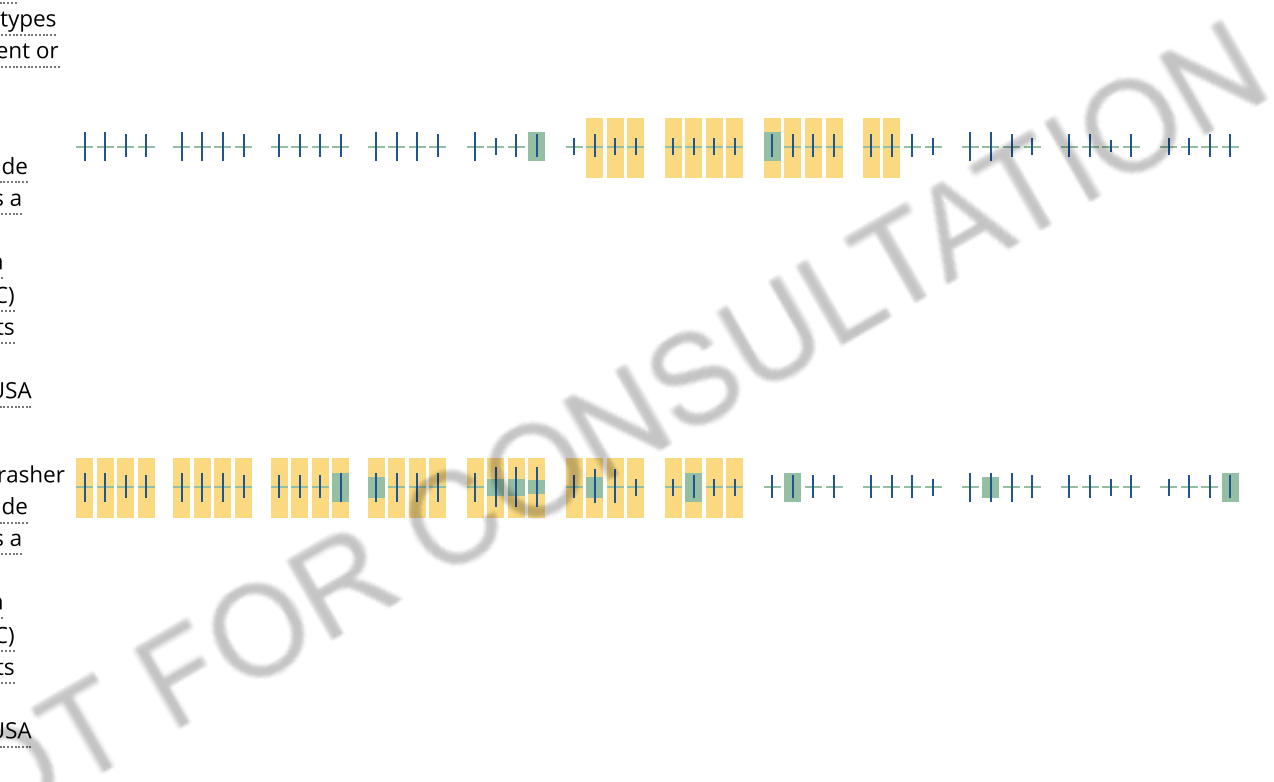
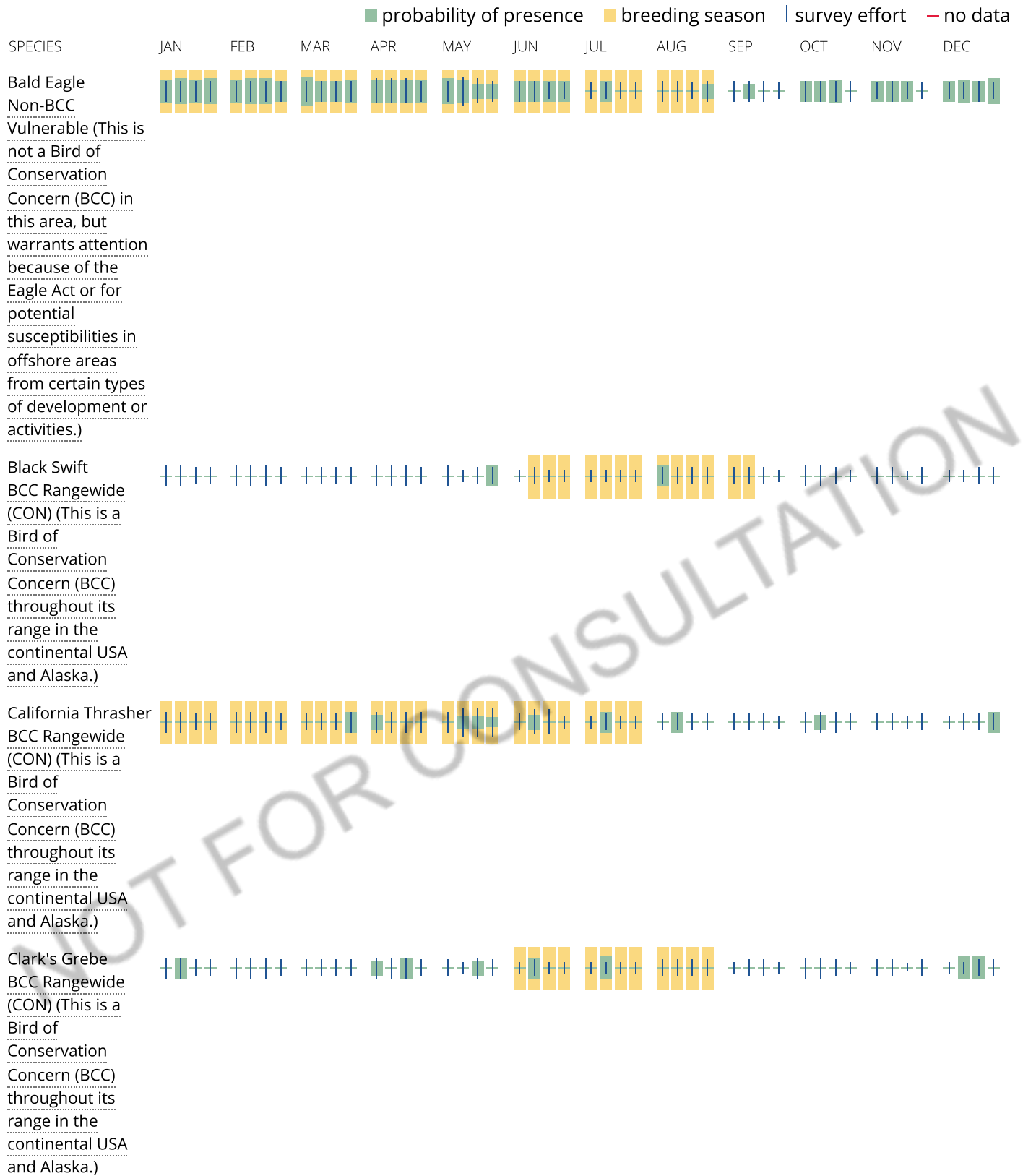
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

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

Survey Timeframe

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





NOT FOR CONSULTATION



SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Nuttall's Woodpecker												
Oak Titmouse												
Olive-sided Flycatcher	++++	++++	++++	++++					++++	++++	++++	++++
Short-billed Dowitcher	++++	++++	++++	++++		++++	++++	++++	++++	++++	++++	++++
Tricolored Blackbird									++++	++++	++++	++++

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



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



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



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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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








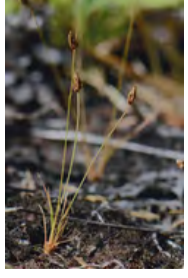
CNPS Rare Plant Inventory





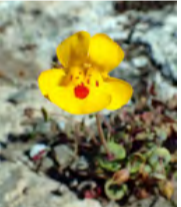




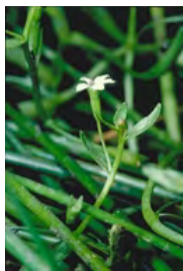




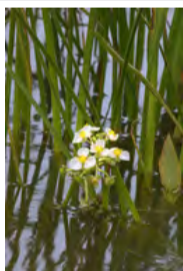

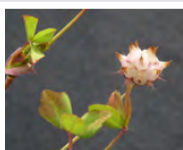
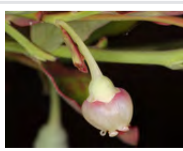
Search Results

26 matches found. Click on scientific name for details

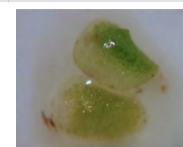
Search Criteria: Quad is one of [4012264:4012263:4012254:4012253:4012244:4012243]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
<u><i>Adiantum shastense</i></u>	Shasta maidenhair fern	Pteridaceae	perennial herb	Apr-Aug	None	None	G3	S3	4.3	 ©2015 Julie Kierstead
<u><i>Agrostis hendersonii</i></u>	Henderson's bent grass	Poaceae	annual herb	Apr-Jun	None	None	G2Q	S2	3.2	 ©2005 Steve Matson
<u><i>Allium sanbornii</i></u> <u>var. <i>sanbornii</i></u>	Sanborn's onion	Alliaceae	perennial bulbiferous herb	May-Sep	None	None	G4T3T4	S3S4	4.2	 ©2018 Steven Perry
<u><i>Arctostaphylos malloryi</i></u>	Mallory's manzanita	Ericaceae	perennial evergreen shrub	Apr-Jul	None	None	G3	S3	4.3	 ©2009 Timothy D. Ives
<u><i>Arnica venosa</i></u>	Shasta County arnica	Asteraceae	perennial rhizomatous herb	May-Jul(Sep)	None	None	G3	S3	4.2	 ©2005 Dean Wm. Taylor
<u><i>Astragalus pauperculus</i></u>	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G4	S4	4.3	 ©2012 Tim Kellison
<u><i>Brodiaea matsonii</i></u>	Sulphur Creek brodiaea	Themidaceae	perennial bulbiferous herb	May-Jun	None	None	G1	S1	1B.1	 ©2016 Len Lindstrand III
<u><i>Bulbostylis capillaris</i></u>	thread-leaved beakseed	Cyperaceae	annual herb	Jun-Aug	None	None	G5	S3	4.2	 ©2016 Ryan Batten

<u>Castilleja rubicundula var. rubicundula</u>	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	Apr-Jun	None	None	G5T2	S2	1B.2		©2010 Vernon Smith
<u>Clarkia borealis ssp. borealis</u>	northern clarkia	Onagraceae	annual	Jun-Sep	None	None	G4T4	S4	4.3		©2018 Sierra Pacific Industries
<u>Cryptantha crinita</u>	silky cryptantha	Boraginaceae	annual herb	Apr-May	None	None	G2	S2	1B.2		©2009 Sierra Pacific Industries
<u>Eriogonum tripodum</u>	tripod buckwheat	Polygonaceae	perennial deciduous shrub	May-Jul	None	None	G4	S4	4.2		©2008 Steven Perry
<u>Erythranthe glaucescens</u>	shield-bracted monkeyflower	Phrymaceae	annual herb	Feb- Aug(Sep)	None	None	G3G4	S3S4	4.3		Neal Kramer 2020
<u>Iris bracteata</u>	Siskiyou iris	Iridaceae	perennial rhizomatous herb	May-Jun	None	None	G4G5	S3	3.3		©2012 Aaron Schusteff
<u>Juncus leiospermus var. leiospermus</u>	Red Bluff dwarf rush	Juncaceae	annual herb	Mar-Jun	None	None	G2T2	S2	1B.1		©2016 Dylan Neubauer
<u>Lathyrus sulphureus var. argillaceus</u>	dubious pea	Fabaceae	perennial herb	Apr-May	None	None	G5T1T2Q	S1S2	3		No Photo Available

<u>Legenere limosa</u>	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1		©2000 John Game
<u>Leptosiphon latisectus</u>	broad-lobed leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3		© 2015 Steve Matson
<u>Limnanthes floccosa</u> ssp. <u>floccosa</u>	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	None	None	G4T4	S3	4.2		© 2021 Scot Loring
<u>Neviusia cliftonii</u>	Shasta snow-wreath	Rosaceae	perennial deciduous shrub	Apr-Jun	None	CC	G2	S2	1B.2		©2008 Steve Matson
<u>Orcuttia tenuis</u>	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	FT	CE	G2	S2	1B.1		© 2013 Justy Leppert
<u>Sagittaria sanfordii</u>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2		©2013 Debra L. Cook
<u>Sidalcea celata</u>	Redding checkerbloom	Malvaceae	perennial herb	Apr-Aug	None	None	G2G3	S2S3	3		©2014 Lawrence Janeway
<u>Trifolium piorkowskii</u>	maverick clover	Fabaceae	annual herb	Apr-May	None	None	G2	S2	1B.2		©2018 Al Keuter
<u>Vaccinium shastense</u> ssp. <u>shastense</u>	Shasta huckleberry	Ericaceae	perennial deciduous shrub	(Jun-Sep)Dec-May	None	None	G4T3	S3	1B.3		© 2016 Steve Matson

<u>Wolffia brasiliensis</u>	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr-Dec	None	None	G5	S2	2B.3
---	------------------------	---------	-----------------------------	---------	------	------	----	----	------



© 2021 Scot

Loring

Showing 1 to 26 of 26 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website <https://www.rareplants.cnps.org> [accessed 6 April 2022].

CONTACT US

Send questions and comments to rareplants@cnps.org.



Developed by
Rincon Consultants, Inc.

ABOUT THIS WEBSITE

[About the Inventory](#)
[Release Notes](#)
[Advanced Search](#)
[Glossary](#)

ABOUT CNPS

[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](#)

Copyright © 2010-2022 [California Native Plant Society](#). All rights reserved.

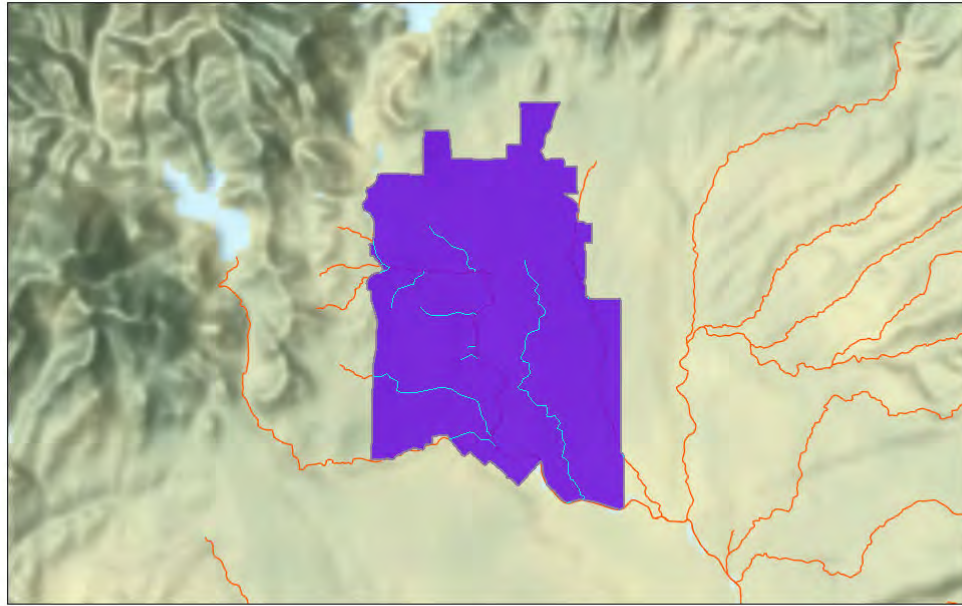


Critical Habitat Report - Redding SOI

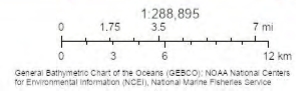
Area of Interest (AOI) Information

Area : 247.81 km²

Jun 16 2022 15:03:39 Pacific Daylight Time



— All_critical_habitat_line_20220404



Summary

Name	Count	Area(km ²)	Length(m)
All Critical Habitat Polyline	36	N/A	172,224.04
All Critical Habitat Polygon	0	0	N/A

All Critical Habitat Polyline

#	Listed Entity	Common Name	Scientific Name	Length(m)
1	Sturgeon, green [Southern DPS]	Sturgeon, green	Acipenser medirostris	23,613.16
2	Salmon, Chinook [Sacramento River winter-run ESU]	Salmon, Chinook	Oncorhynchus tshawytscha	23,882.51
3	Salmon, Chinook [Central Valley spring-run ESU]	Salmon, Chinook	Oncorhynchus tshawytscha	40,819.68
4	Steelhead [California Central Valley DPS]	Steelhead	Oncorhynchus mykiss	83,908.68

ATTACHMENT B

Special-Status Species Evaluation

Attachment B

Special-Status Species Evaluation

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Plants						
Shasta maidenhair fern <i>(Adiantum shastense)</i>	-	-	4.3	Known only from the Eastern Klamath Range surrounding Shasta Lake, and grows in mesic hardwood-coniferous forests on the forest floor, on limestone and metasedimentary rock outcrops, and rocky road cuts (Huiet et al 2015) (1,085'-5,035')	April-August	Low potential to occur. There are known occurrences in the Shasta Dam quadrangle (CNPS 2022). While the species occurs in higher elevations near Shasta Lake, foothills in the northern portion of the Project may provide marginal potential habitat for this species.
Shasta ageratina <i>(Ageratina shastensis)</i>	-	-	1B.2	Rocky and often carbonate soils in chaparral and lower montane coniferous forest (1,310'-5,905').	June- October	Low potential to occur. While the species occurs in higher elevations near Shasta Lake, foothills in the northern portion of the Project may provide marginal potential habitat for this species.
Henderson's bent grass <i>(Agrostis hendersonii)</i>	-	-	3.2	Vernal pools and mesic areas in valley and foothill grasslands (230'-1,000').	April-June	Documented Occurrence. There are three CNDDDB occurrences within the Project area and three within five miles of the Project area.
Sanborn's onion <i>(Allium sanbornii</i> var. <i>sanbornii)</i>	-	-	4.2	Chaparral, cismontane woodland, and lower montane coniferous forest, usually with gravelly, serpentinite soils (855'-4,955').	May- September	Low Potential to occur. This species is a strong serpentine indicator (Safford and Miller 2020), and there are no serpentine soils within or near the Project (Jennings 1977; Horton 2017) However, other

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
						soils in the Project provide marginal potential habitat for this species.
Slender silver moss (<i>Anomobryum julaceum</i>)	-	-	4.2	Damp rock and soil on outcrops, usually on road cuts in broadleaf upland forest, lower montane coniferous forest, and North Coast coniferous forest (330'-3,280').	Any Season	Potential to occur. There is one CNDDDB occurrence within 5 miles of the Project. Rock outcrops in oak woodlands and coniferous forests within the Project provide suitable potential habitat for this species.
Mallory's manzanita (<i>Arctostaphylos malloryi</i>)	-	-	4.3	Volcanic substrates in chaparral and lower montane coniferous forest (2,510'-4,200')	April-July	Absent. Project is significantly outside of the known elevational range for this species.
Shasta County arnica (<i>Arnica venosa</i>)	-	-	4.2	In disturbed areas and roadcuts in cismontane woodland and lower montane coniferous forest (1,100'-4,890').	May-July	Low potential to occur. Known to occur in the Shasta Dam quadrangle (CNPS 2022). While the Project is lower in elevation than suitable habitat, it may provide marginal potential habitat for this species.
Depauperate milk-vetch (<i>Astragalus pauperculus</i>)	-	-	4.3	Occurs within vernal mesic and volcanic soils in chaparral, cismontane woodland, and valley and foothill grasslands (195'-3,985')	March-June	Potential to occur. Volcanic and vernal mesic soils in the Project provide potential habitat.
Big-scale balsamroot (<i>Balsamorhiza macrolepis</i>)	-	-	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentinite soils (150'-5,100').	March-June	Low potential to occur. There are no occurrences in the vicinity; however, Project chaparral, woodlands, and grasslands may provide potential habitat for this species.
Watershield (<i>Brasenia schreberi</i>)	-	-	2B.3	Freshwater marshes and swamps (100'-7,220').	June-September	Potential to occur. There is one CNDDDB occurrence within 5 miles of the Project. Ponds and slow streams in the

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
						Project may provide potential habitat for this species.
Sulphur Creek brodiaea (<i>Brodiaea matsonii</i>)	-	-	1B.1	Occurs within rocky, metamorphic amphibolite schist within cismontane woodland streambanks, and meadows and seeps (640'-722')	May-June	Documented Occurrence. There are two CNDDB occurrences within the Project area.
Thread-leaved beakseed (<i>Bulbostylis capillaris</i>)	-	-	4.2	Lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest (1,295'-6,810').	June-August	Low potential to occur. There are known occurrences in the Project area quadrangles (CNPS 2022). Coniferous forests in the northern portion of the Project are lower in elevation than known habitat, but provide marginal potential habitat for this species.
Pink creamsacs (<i>Castilleja rubicundula</i> var. <i>rubicundula</i>)	-	-	1B.2	Serpentinite substrates in chaparral openings, cismontane woodland, meadows and seeps, and valley and foothill grassland (65'-2,985').	April-June	Absent. This species is a strict serpentine endemic (Safford and Miller 2020), and there are no serpentine soils within or near the Project (Jennings 1977; Horton 2017).
Northern clarkia (<i>Clarkia borealis</i> ssp. <i>borealis</i>)	-	-	1B.3	Chaparral, cismontane, and lower montane coniferous forest, often in road cuts. (1,310'-5,135')	June-September	Low potential to occur. There is one CNDDB occurrence within five miles of the Project area. While the Project is lower in elevation than known habitat, it may provide marginal potential habitat for this species.
Silky cryptantha (<i>Cryptantha crinita</i>)	-	-	1B.2	Gravelly streambeds of cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodland, and valley and foothill	April-May	Documented Occurrence. There are two CNDDB occurrences within the Project area and twelve within five miles of the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				grassland habitats (200'–3,985').		
Tripod buckwheat <i>(Eriogonum tripodum)</i>	–	–	4.2	Often serpentinite soils of chaparral and cismontane woodland (655'–5,250').	May–July	Low potential to occur. While this species is a broad serpentine endemic (Safford and Miller 2020), there are known occurrences on non-serpentine soils in the Project area quadrangles (CNPS 2022). The Project provides marginal potential habitat for this species.
Shield-bracted monkeyflower <i>(Erythranthe glaucescens)</i>	–	–	4.3	Serpentine seeps and sometimes streambanks of chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland (195'–4,070').	February– August	Low potential to occur. The Project is outside of the known range for this species but may provide marginal potential habitat.
Shasta limestone monkeyflower <i>(Erythranthe taylorii)</i>	–	–	1B.1	Carbonate crevices and rocky outcrops in cismontane woodland and lower montane coniferous forest (1,165'–3,215').	April–May	Low potential to occur. While the species occurs in higher elevations near Shasta Lake, foothills in the northern portion of the Project may provide marginal potential habitat for this species.
Shasta fawn lily <i>(Erythronium shastense)</i>	–	–	1B.2	Rocky, usually carbonate soils in cismontane woodland and lower montane coniferous forest (1,150'–3,345').	March–April	Low potential to occur. While the species occurs in higher elevations near Shasta Lake, foothills in the northern portion of the Project may provide marginal potential habitat for this species.
Boggs Lake hedge- hyssop <i>(Gratiola heterosepala)</i>	–	CE	1B.2	Marshes, swamps, lake margins, and vernal pools (35'–7,790').	April– August	Potential to occur. There is one CNDDDB occurrence within 5 miles of the Project. Aquatic features may provide potential habitat for this species.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Siskiyou Iris <i>(Iris bracteata)</i>	-	-	3.3	Serpentinite substrates in broadleaved upland forest and lower montane coniferous forest. (590'-3,510').	May-June	Absent. This species is a strict serpentine endemic (Safford and Miller 2020), and there are no serpentine soils within or near the Project (Jennings 1977; Horton 2017)
Red Bluff dwarf rush <i>(Juncus leiospermus var. leiospermus)</i>	-	-	1B.1	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools (115'-4,100').	March-June	Documented Occurrence. There are fourteen CNDDDB occurrences within the Project area and eight within five miles of the Project area.
Dubious pea <i>(Lathyrus sulphureus var. argillaceus)</i>	-	-	3	Cismontane woodland, lower montane coniferous forest and upper montane coniferous forest (490'-3,050').	April-May	Documented Occurrence. There is one CNDDDB occurrence within the Project area.
Legenere <i>(Legenere limosa)</i>	-	-	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005) (5'-2,885').	April-June	Documented Occurrence. There are three CNDDDB occurrences within the Project area and three within five miles of the Project area.
Broad-lobed leptosiphon <i>(Leptosiphon latisectus)</i>	-	-	4.3	Broadleaved upland forest and cismontane woodland (560'-4,920').	April-June	Potential to occur. There are known occurrences in the Redding and Shasta Dam quadrangles (CNPS 2022). The Project provides suitable habitat for this species.
Bellinger's meadowfoam <i>(Limnanthes floccosa ssp. bellingeriana)</i>	-	-	1B.2	Mesic areas in cismontane woodland and meadows and seeps (950'-3,610').	April-June	Low potential to occur. There are no occurrences in the vicinity; however, mesic areas in Project woodlands may provide potential habitat for this species.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Woolly meadowfoam <i>(Limnanthes floccosa</i> <i>ssp. floccosa)</i>	–	–	4.2	Vernally mesic chaparral, cismontane woodland, valley and foothill grassland, and vernal pools (195'–4,380').	March–May	Potential to occur. There are two CNDDDB occurrences within five miles of the Project area. Vernallly mesic areas in the Project may provide potential habitat for this species.
Baker's navarretia <i>(Navarretia leucocephala</i> <i>ssp. bakeri)</i>	–	–	1B.1	Vernal pools and mesic areas within cismontane woodlands, lower montane coniferous forest, meadows and seeps, and valley and foothill grasslands (15'–5,710').	April–July	Low potential to occur. There are no occurrences in the vicinity; however, mesic areas in Project woodlands, coniferous forests, and grasslands may provide potential habitat for this species.
Shasta snow wreath <i>(Neviusia cliftonii)</i>	-	CC	1B.2	Volcanic, sometimes carbonate, and often streambanks of cismontane woodland, lower montane coniferous forest, and riparian woodland. (985' – 1,935')	April–June	Potential to occur. There are two CNDDDB occurrences within five miles of the Project area.
Slender Orcutt grass <i>(Orcuttia tenuis)</i>	FT	CE	1B.1	Vernal pools, often gravelly (115'–5,774').	May– September	Documented Occurrence. There are five CNDDDB occurrences within the Project area and six within five miles of the Project area. There is also critical habitat for this species in the Project (USFWS 2022).
Ahart's paronychia <i>(Paronychia ahartii)</i>	–	–	1B.1	Well-drained rocky outcrops, often vernal pool edges, and volcanic upland (Hartman and Rabeler 2012) of cismontane woodland, valley and foothill grassland, and vernal pools (100'–1,675').	February– June	Low potential to occur. There are three CNDDDB occurrences within 5 miles of the Project. Rocky areas and vernal pool edges in the Project may provide potential habitat for this species.
Nuttall's ribbon-leaved pondweed <i>(Potamogeton epihydrus)</i>	–	–	2B.2	Assorted shallow freshwater marshes and swamps (1,210'–7,125').	July– September	Low potential to occur. There is one CNDDDB occurrence within 5 miles of the Project. Aquatic

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
						resources within the Project may provide potential habitat for this species.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	-	-	1B.2	Shallow marshes and freshwater swamps (0'-2,135').	May-October	Potential to occur. There is one. CNDDDB occurrence within five miles of the Project area.
Canyon Creek stonecrop (<i>Sedum paradisum</i> ssp. <i>paradisum</i>)	-	-	1B.3	Granitic, rocky substrates in broadleaved upland forest, chaparral, lower montane coniferous forest, and subalpine coniferous forest (985'-6,235').	May-June	Absent. There are two CNDDDB occurrences within 5 miles of the Project. However, there are no granitic substrates within the Project (Horton 2017).
Redding checkerbloom (<i>Sidalcea celata</i>)	-	-	3	Cismontane woodland, sometimes on serpentine substrates (442'-5,004').	April-August	Potential to occur. Cismontane woodland within the Project provides potential habitat for this species.
Maverick clover (<i>Trifolium piorkowskii</i>)	-	-	1B.2	Volcanic clay, openings, and often streambanks of chaparral, cismontane woodland, lower montane coniferous forest, mesic valley and foothill grasslands, and vernal pools (525'-2,230').	April-May	Documented Occurrence. There is one CNDDDB occurrence within the Project area.
Shasta huckleberry <i>Vaccinium shastense</i> ssp. <i>shastense</i>	-	-	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest, riparian forest, and subalpine coniferous forest.	December - May	Potential to occur. There are two CNDDDB occurrences within five miles of the Project area.
Oval-leaved viburnum (<i>Viburnum ellipticum</i>)	-	-	2B.3	Chaparral, cismontane woodland, and lower montane coniferous forest communities (705'-4,595').	May-June	Potential to occur. There are no occurrences in the vicinity; however, Project chaparral, woodlands, and coniferous forests may provide potential habitat for this species.
Brazilian watermeal (<i>Wolffia brasiliensis</i>)	-	-	2B.3	Assorted shallow freshwater marshes	April-December	Potential to occur. Suitable habitat present in freshwaters.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				and swamps (66'–328').		
Invertebrates						
Conservancy fairy shrimp <i>(Branchinecta conservatio)</i>	FE	-	-	Vernal pools/wetlands.	November-April	Potential to occur. Occurrences are known from the general Project region.
Vernal pool fairy shrimp <i>(Branchinecta lynchi)</i>	FT	-	-	Vernal pools/wetlands.	November-April	Documented Occurrence. Critical habitat for this species is present within the Project area. There are four CNDDDB occurrences within the Project area and six within 5 miles of the Project area.
California linderiella <i>(Linderiella occidentalis)</i>	-	-	CNDDDB	Vernal pools/wetlands.	November-April	Documented Occurrence. There are thirteen CNDDDB occurrences within the Project area and one occurrence within five miles of the Project area.
Vernal pool tadpole shrimp <i>(Lepidurus packardii)</i>	FE	-	-	Vernal pools/wetlands.	November-April	Documented Occurrence. Critical habitat for this species is present within the Project area. There are 14 CNDDDB occurrences within the Project area and 8 within 5 miles of the Project area.
Shasta Crayfish <i>(Pacifastacus fortis)</i>	FE	CE		Prefers rocky, gravelly bottoms, usually volcanic rubble. Cool, clear, spring-fed lakes, rivers and streams, usually at or near a spring inflow source, where water temperatures remain stable. Known from Pit River and Hat Creek and Fall River Watersheds.		Absent. Outside of known geographic range.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	-	-	Elderberry shrubs.	Any season	Documented Occurrence. There are two CNDDDB occurrences within the Project area and two within 5 miles of the Project area.
Monarch butterfly (<i>Danaus plexippus</i>)	FC	-	-	Adult monarchs west of the Rocky Mountains typically overwinter in sheltered wooded groves of Monterey pine, Monterey cypress, and gum eucalyptus along coastal California, then disperse in spring throughout California, Nevada, Arizona, and parts of Oregon and Washington. Adults require milkweed and additional nectar sources during the breeding season. Larval caterpillars feed exclusively on milkweed.	Any season	Potential to occur. The Project area is near a migration route for the species.
Fish						
Pacific lamprey (<i>Entosphenus tridentatus</i>)	-	-	CDFW SSC	Anadromous; undammed streams rivers, streams, and creeks with gravel spawning substrates.		Potential to occur. Suitable habitat occurs within the Sacramento River.
River lamprey (<i>Lampetra ayresi</i>)			CDFW SSC	Clean, gravelly riffles in permanent streams for spawning, while ammocoetes require sandy to silty backwaters or stream edges in which to bury themselves, where water quality is continuously high and temperatures do not exceed 25°C (Moyle et al. 2015).		Potential to occur. Suitable habitat occurs within the Sacramento River.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Western brook lamprey (<i>Lampetra richardsoni</i>)	-	-	CDFW SSC	Clear, cold, water in little disturbed watersheds, as well as clean gravel near cover (boulders, riparian vegetation, logs, etc.) for spawning. Additional habitat requirements include areas with low flow velocities and fine sediments for rearing that are not excessively scoured under high flows (Moyle et al. 2015).		Potential to occur. Suitable habitat occurs within the Sacramento River.
Green sturgeon Southern DPS (<i>Acipenser medirostris</i>)	FT	--	CDFW SSC	Anadromous; undammed cold-water rivers having relatively deep pools with large substrates.	N/A	Documented Occurrence. Suitable habitat occurs within the Sacramento River. There is one CNDDDB occurrence within the Project area.
White sturgeon (<i>Acipenser transmontanus</i>)	-	-	CDFW SSC	Estuaries of large rivers; moves far up inland to spawn (Page and Burr 2011).		Documented Occurrence. Suitable habitat occurs within the Sacramento River and individuals are documented in the Sacramento River almost every year (CDFW 2022a).
Steelhead (CA Central Valley DPS) (<i>Oncorhynchus mykiss irideus</i>)	FT	-	-	Fast-flowing, well-oxygenated rivers and streams	N/A	Documented Occurrence. Suitable habitat occurs within the Sacramento River. There are two mapped CNDDDB occurrences within the Project area and two within five miles of the Project area.
Chinook salmon (Central Valley spring-run ESU) (<i>Oncorhynchus tshawytscha</i>)	FT	CT	-	Undammed rivers, streams, creeks.	N/A	Documented Occurrence. Suitable habitat occurs within the Sacramento River. There are two CNDDDB occurrences with the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Chinook salmon (Central Valley fall/late-fall-run ESU) (<i>Oncorhynchus tshawytscha</i>)	-	-	CDFW SSC	Undammed rivers, streams, creeks.	N/A	Potential to occur. Suitable habitat occurs within the Sacramento River.
Chinook salmon (Sacramento River winter-run ESU) (<i>Oncorhynchus tshawytscha</i>)	FE	CE	-	Undammed rivers, streams, creeks.	N/A	Documented Occurrence. Suitable habitat occurs within the Sacramento River. There is one CNDDDB occurrence within the Project area.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT	CE	-	Sacramento-San Joaquin delta.	N/A	Absent. Out of range.
Central California roach (<i>Hesperoleucus symmetricus symmetricus</i>)	-	-	CDFW SSC	Small streams, intermittent watercourses; mid-elevation streams in the Sierra Nevada foothills and in lower reaches of some San Francisco Bay streams but they may also be found in the main channels of some rivers (Moyle et al. 2015).		Potential to occur. Suitable habitat occurs within the Sacramento River.
Sacramento hitch (<i>Lavinia exilicauda exilicauda</i>)	-	-	CDFW SSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes and reservoirs. In streams they are generally found in pools or runs among aquatic vegetation, although small individuals will also use riffles. Sacramento hitch prefer shallow (< 1 m deep) stream habitats with smaller gravel to mud substrates.		Low potential to occur. Suitable habitat occurs within the Sacramento River.
Hardhead	-	-	CDFW SSC	Relatively undisturbed streams at low to mid		Potential to occur. Suitable habitat occurs

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
(<i>Mylopharodon conocephalus</i>)				elevations in the Sacramento-San Joaquin and Russian River drainages. In the San Joaquin River, scattered populations found in tributary streams, but only rarely in the valley reaches of the San Joaquin River.		within the Sacramento River.
Sacramento splittail (<i>Pogonichthys macrolepidotus</i>)	-	-	CDFW SSC	San Francisco bay estuary. Spawns in upstream floodplains and backwater sloughs.		Potential to occur. Suitable habitat occurs within the Sacramento River.
Riffle sculpin (<i>Cottus gulosus</i>)	-	-	CDFW SSC	Permanent, cool, headwater streams where riffles and rocky substrates predominate (Moyle et al. 2015).		Potential to occur. Suitable habitat occurs within the Sacramento River.
Amphibians						
Shasta salamander Complex (<i>Hydromantes sp.</i>)	--	CT		Found in moist caves, rock cracks, cliff faces, and vertical cavern walls associated with limestone outcrops in mixed Douglas fir (<i>Pseudotsuga menziesii</i>), pine (<i>Pinus</i>), and oak (<i>Quercus</i>) forests.	Spring	Low potential to occur onsite. Suitable habitat occurs within the Project Area. There are eleven CNDDDB occurrences within 5 miles of the Project area.
Western spadefoot (<i>Spea hammondi</i>)	-	-	CDFW SSC	California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.	March-May	Potential to occur. Suitable habitat occurs within the Project Area. There are five CNDDDB occurrences within five miles of the Project area.
Foothill yellow-legged frog Northwest/North Coast Clade (<i>Rana boylei</i>)	-	--	CDFW SSC	Foothill yellow-legged frogs can be active all year in warmer locations but may become inactive or hibernate in colder climates. At lower elevations, foothill	May – October	Documented Occurrence. Suitable habitat occurs within the Project Area. There are two CNDDDB occurrences within the Project area and eleven records

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed. Colusa, Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Napa, Shasta, Solano, Sonoma, Tehama, Trinity, and Yolo counties. Portions of Butte, Lassen, Modoc, and Siskiyou counties. Applegate, Big-Chico Creek-Sacramento, Lower Klamath, Lower Pit, McCloud, Sacramento Headwaters, Salmon, Scott, Shasta, and Upper Klamath watershed sub-basins.		within five miles of the Project area.
California red-legged frog (<i>Rana draytonii</i>)	FT	-	CDFW SSC	Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.	May 1- November 1	Absent. Outside of known range for species.
Reptiles						
Northwestern pond turtle (<i>Actinemys marmorata</i>)	-	-	CDFW SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April- September	Documented Occurrence. Suitable habitat occurs within the Project Area. There are two CNDDDB records within the Project Area and eight within five miles of the Project area.
Birds						
Clark's grebe (<i>Aechmophorus clarkii</i>)	-	-	BCC	Winters on salt or brackish bays, estuaries, sheltered	June-August (breeding)	Potential to occur. Suitable foraging habitat (slower areas of the

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				seacoasts, freshwater lakes, and rivers. Breeds on freshwater to brackish marshes, lakes, reservoirs and ponds, with a preference for large stretches of open water fringed with emergent vegetation.		Sacramento River) occurs in the Project area. However, there is limited, if any, breeding habitat within the Project area.
Black swift <i>(Cypseloides niger)</i>	-	-	BCC, SSC	In California, nests from Cascade-Sierra Nevada region south to Tulare and Mono counties; coastal ranges (Santa Cruz south to San Luis Obispo counties), San Gabriel, San Bernardino, and San Jacinto Mountains. Nests on ledges or shallow caves on steep rock faces, usually behind waterfalls. Winter range, unknown, but thought to be northern and western South America, and West Indies.	May- September	Absent. There is no suitable nesting habitat in the Project area.
Short-billed dowitcher <i>(Limnodromus griseus)</i>	-	-	BCC	Nests in Canada, southern Alaska; winters in coastal California south to South America; wintering habitat includes coastal mudflats and brackish lagoons	Wintering/ migrant period: late- August-May	Absent. This species does not nest or overwinter in the vicinity of the Project area.
Willet <i>(Tringa semipalmata)</i>	-	-	BCC	Breeds locally in interior of western North America. In California, breeding range includes the Klamath Basin and Modoc Plateau and portions of Mono and	April-August	Absent. This species does not nest or overwinter in the vicinity of the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				possibly Inyo counties. Breeding habitat includes prairies, wetlands and grasslands on semiarid plains, and uplands near brackish or saline wetlands; prefers temporary, seasonal, and alkali wetlands over semipermanent and permanent wetlands.		
Great egret (<i>Ardea alba</i>)	-	-	CNDDDB	Colonial nester; nests in woody vegetation, shrubs and trees usually near lakes, ponds, marshes, estuaries, human-made impoundments, or natural and human-made islands.	March-July	Documented Occurrence. There is one CNDDDB occurrence within the Project area. Suitable nesting and foraging habitat occurs within the Project area.
Osprey (<i>Pandion haliaetus</i>)	-	-	CDFW WL	Nesting habitat requires close proximity to accessible fish, open nest site free of mammalian predators, and extended ice-free season. Nests in large trees, snags, cliffs, transmission/communication towers, artificial nest platforms, channel markers/buoys.	April- September	Documented Occurrence. There is one CNDDDB occurrence within the Project area and four within five miles of the Project area. Suitable nesting and foraging habitat occurs within the Project area.
Golden eagle (<i>Aquila chrysaetos</i>)	-	-	BCC, CFP	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff ledges, riverbanks, trees, and human-made structures (e.g.,	February- August (nesting); October- February (wintering in Central Valley)	Potential to occur. Suitable nesting and foraging habitat occurs within the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during winter.		
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Delisted	CE	CFP	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands.	February – September (nesting); October-March (wintering)	Documented Occurrence. There are 3 CNDDDB occurrences within the Project area and six within five miles of the Project area (CDFW 2022b).
Northern spotted owl (<i>Strix occidentalis caurina</i>)	FT	CT	-	Found from Marin County through coastal ranges north to British Columbia; breeds in old growth mature forest. They use forests with greater complexity and structure.	March-June	Absent. There is no suitable habitat in the Project area.
Long-eared owl (<i>Asio otus</i>)	-	-	BCC, SSC	Nests in open forests, riparian woodland, conifer forests, dense vegetation adjacent to grasslands, shrublands or other open communities.	March-August (breeding); November-March (wintering in Central Valley)	Potential to occur. Suitable nesting habitat occurs in the Project area.
Nuttall's woodpecker (<i>Dryobates nuttallii</i>)	-	-	BCC	Resident from northern California south to Baja California. Nests in	April-July	Potential to occur. Suitable nesting habitat occurs within the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				tree cavities in oak woodlands and riparian woodlands.		
Olive-sided flycatcher (<i>Contopus cooperi</i>)	-	-	BCC, SSC	Nests in montane and northern coniferous forests, in forest openings, forest edges, semiopen forest stands. In California, nests in coastal forests, Cascade and Sierra Nevada region. Winters in Central to South America.	May-August	Potential to occur. Suitable nesting habitat occurs within the Project area.
Yellow-billed magpie (<i>Pica nuttalli</i>)	-	-	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large expanses of open ground; also found in urban parklike settings.	April-June	Potential to occur. Suitable nesting habitat occurs within the Project area.
Oak titmouse (<i>Baeolophus inornatus</i>)			BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree).	March-July	Potential to occur. Suitable nesting habitat occurs within the Project area.
Bank swallow (<i>Riparia riparia</i>)	-	CT	-	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes	May-July	Documented Occurrence. There is one CNDDDB occurrence within the Project area and two within five miles of the Project area (CDFW 2022).

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				northern and central California.		
Wrentit <i>(Chamaea fasciata)</i>	-	-	BCC	Coastal sage scrub, northern coastal scrub, chaparral, dense understory of riparian woodlands, riparian scrub, coyote brush and blackberry thickets, and dense thickets in suburban parks and gardens.	March-August	Potential to occur. Suitable nesting habitat occurs within the Project area.
California thrasher <i>(Toxostoma redivivum)</i>	-	-	BCC	Resident and endemic to coastal and Sierra Nevada-Cascade foothill areas of California. Nests are usually well hidden in dense shrubs, including scrub oak, California lilac, and chamise.	February-July	Potential to occur. Suitable nesting habitat occurs within the Project area.
Lawrence's goldfinch <i>(Spinus lawrencei)</i>	-	-	BCC	Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, and tall annual weed fields, with a water source (e.g., small stream, pond, lake); to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches	March-September	Potential to occur. Suitable nesting habitat occurs within the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				or rural residences near weedy fields and water.		
Tricolored blackbird (<i>Agelaius tricolor</i>)	-	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta Counties south to San Bernardino, Riverside and San Diego Counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen Counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	March-August	Documented Occurrence. There are two CNDDB occurrences within the Project Area and seven within five miles of the Project area (CDFW 2022).
Saltmarsh common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	-	-	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County.	March-July	Absent. This species breeds in coastal habitats and does not occur in the vicinity of the Project area.
Mammals						
Pallid bat (<i>Antrozous pallidus</i>)	-	-	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns,	April-September	Potential to occur. Suitable habitat occurs within the Project area. There are two CNDDB occurrences within five miles of the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				porches, bat boxes, and human-occupied as well as vacant buildings (WBWG 2020).		
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	-	-	CDFW SSC	Caves, mines, buildings, rock crevices, trees.	April- September	Low potential to occur. Suitable habitat occurs within the Project area. There are two CNDDDB occurrences within five miles of the Project area.
North American porcupine (<i>Erethizon dorsatum</i>)	-	-	-	Deciduous and coniferous forest, occasionally brushy areas or stands of acacia along washes in desert (Reid 2006). Most common in montane conifer and wet meadow habitats (CDFW 2022).	Any season	Low potential to occur. There is one CNDDDB occurrence within five miles of the Project area.
Spotted bat (<i>Euderma maculatum</i>)	-	-	CDFW SSC	Roost in cracks, crevices, and caves, usually high in fractured rock cliffs. Found in desert, sub-alpine meadows, desert-scrub, pinyon-juniper woodland, ponderosa pine, mixed conifer forest, canyon bottoms, rims of cliffs, riparian areas, fields, and open pastures (WBWG 2020).	April- September	Low potential to occur. There is one CNDDDB occurrence within five miles of the Project area.
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	-	-	WBWG - M	Maternity roosts occur in natural hollows and bird-excavated cavities or under loose bark of larger snags. May hibernate in trees, rock crevices, sloughing bark, or in wood piles, mines, caves, or buildings. Prefers forest, north temperate zone	April- September	Documented Occurrence. There is one CNDDDB occurrence within the Project area and three within five miles of the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				conifer and mixed conifer/hardwood forests, but may occur in more xeric habitats in winter and during migration (WBWG 2020).		
Western red bat (<i>Lasiurus blossevillii</i>)	-	-	CDFW SSC	Roosts in foliage of trees or shrubs; day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2020).	April- September	Potential to occur. Suitable habitat occurs within the Project area. There are three CNDDDB occurrences within five miles of the Project area.
Hoary bat (<i>Lasiurus cinerus</i>)	-	-	CDFW SSC	Dense foliage of medium to large trees; roost primarily in foliage of both coniferous and deciduous trees. Roosts are usually at the edge of a clearing. Some unusual roosting situations have been reported in caves, beneath a rock ledge, in a woodpecker hole, in a grey squirrel nest, under a driftwood plank, and clinging to the side of a building (WBWG 2020).	April- September	Potential to occur. Suitable habitat occurs within the Project area. There is one CNDDDB occurrence within five miles of the Project area.
Long-eared myotis (<i>Myotis evotis</i>)	-	-	-	Occurs in semiarid shrublands, sage, chaparral, and agricultural areas, but is usually associated with coniferous forests. Roosts under	April- September	Potential to occur. Suitable habitat occurs within the Project area. There is one CNDDDB occurrence within five miles of the Project area.

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
				exfoliating tree bark, in hollow trees, caves, mines, cliff crevices, sinkholes, and rocky outcrops on the ground; sometimes roost in buildings and under bridges (WBWG 2020).		
Yuma myotis <i>(Myotis yumanensis)</i>	-	-	-	Usually associated with permanent sources of water, typically rivers and streams; occurs in riparian, arid scrublands and deserts, and forests; roosts in bridges, buildings, cliff crevices, caves, mines, and trees (WBWG 2020).	April-September	Potential to occur. Suitable habitat occurs within the Project area. There are three CNDDDB occurrences within five miles of the Project area.
Fisher - Northern California/Southern Oregon DPS <i>(Pekania pennanti)</i>	-	-	CDFW SSC	Coastal northern California and includes reintroduced populations in the northern Sierra Nevada and southern Oregon Cascades.	Any season	Very low potential to occur. Suitable habitat occurs in the extreme northwestern portion of the Project area. There are five CNDDDB occurrences within five miles of the Project area.

Status Codes:

- FESA Federal Endangered Species Act
- CESA California Endangered Species Act
- FE FESA listed, Endangered
- FT FESA listed, Threatened
- FC Candidate for FESA listing as Threatened or Endangered
- BCC USFWS Bird of Conservation Concern (USFWS 2021)
- CT CESA- or NPPA-listed, Threatened
- CC Candidate for CESA listing as Endangered or Threatened
- CE CESA or NPPA listed, Endangered
- CFP California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5 050-reptiles/amphibians)
- CDFW WL CDFW Watch List
- NPPA California Native Plant Protection Act
- SSC CDFW Species of Special Concern (CDFW 2021)
- CNDDDB Species that is tracked by CDFW's CNDDDB but does not have any of the above special-status designations otherwise
- 1B CRPR/Rare or Endangered in California and elsewhere

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
2B						Plants rare, threatened, or endangered in California but more common elsewhere
3						CRPR/Plants About Which More Information is Needed – A Review List
4						CRPR/Plants of Limited Distribution – A Watch List
0.1						Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2						Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3						Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted						Formally Delisted (delisted species are monitored for 5 years)

REFERENCES

- California Department of Fish and Wildlife (CDFW). 2022a. Adult Sturgeon Spawning in the Upper Sacramento River 2015-2016 (Upper Sacramento River, Shasta, Tehama and Glenn counties). Available: <https://wildlife.ca.gov/Drought/Projects/Upper-Sacramento-River-Adult-Sturgeon#:~:text=Sturgeons%20typically%20enter%20Sacramento%20River,a%20specialized%20GPS%20tracking%20system>. Accessed July 2022.
- _____. 2022b. Rarefind 5. Online Version, commercial version. California Natural Diversity Database. The Resources Agency, Sacramento. Accessed March and April 2022.
- Hartman, Ronald L., & Rabeler, Richard K. 2012. *Paronychia ahartii*, in Jepson Flora Project (eds.) *Jepson eFlora*. Available https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=36286. Accessed January 04, 2021.
- Conterminous United States: U.S. Geological Survey data release DOI: 10.5066/F7WH2N65, U.S. Geological Survey, Denver, CO. Available <https://doi.org/10.5066/F7WH2N65>
- Huiet, Layne & Lenz, Martin & Nelson, Julie & Pryer, Kathleen & Smith, Alan. 2015. Adiantum shastense, a new species of maidenhair fern from California. *PhytoKeys*. 53. 73-81. 10.3897/phytokeys.53.5151.
- Jennings, C. W., R. G. Strand, and T. H. Rogers. 1977. Geologic map of California: California Division of Mines and Geology, scale 1:750,000. Available <https://mrdata.usgs.gov/geology/state/sgmc-lith.php?code=5.14#California>. Accessed December 2020.
- Moyle, P.B., R. M. Quiñones, J. V. Katz and J. Weaver. 2015. Fish Species of Special Concern in California. Sacramento: California Department of Fish and Wildlife.
- Page, Lawrence M., and Burr, Brooks M. 2011. Peterson Field Guide to Freshwater Fishes, Second Edition.
- Western Bat Working Group (WBWG). 2020. Western Bat Species Accounts. <http://wbwg.org/western-bat-species/>.