BIOLOGICAL RESOURCES RECONNAISSANCE SURVEY REPORT

RED BOAT VINEYARD: 1373 SODA CANYON ROAD

NAPA COUNTY, CALIFORNIA

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EXECUTIVE SUMMARY

This report details the regulatory background, methods, results, and recommendations of a Biological Resources Reconnaissance Survey (BRRS) for the proposed development of three vineyard blocks comprising 7.0 net acres of vines within 9.0 acres of clearing limit (Project Area) located at the Red Boat Vineyard property at 1373 Soda Canyon Road, Napa County, California. WRA, Inc. performed field surveys on March 25, April 15, and June 23, 2021. The Project Area is composed of developed areas, non-native grassland, toyon chaparral, blue oak woodland, and coast live oak woodland.

Approximately 4.4 acres, of a total 9.4 acres of oak woodlands across the property (46.8 percent) are proposed to be converted to vineyard and associated infrastructure. Oak woodlands are considered sensitive under Napa County General Plan Conservation Element Policy CON-24 which requires a ratio of 2:1 preservation for any impacts to oak woodlands. The 2017 Atlas Fire burned a substantial portion of the property, resulting in significant mortality to oak trees, particularly blue oaks (*Quercus douglasii*). Living canopy cover retention post-project will be an estimated 78.2 percent.

A protocol-level rare plant survey resulted in the negative detections of special-status plants; therefore, the project will not incur impacts to such.

Three special-status birds, as well as non-status birds with baseline legal protections, have the potential to occur in the Project Area. Mitigation measures and best management practices have been developed and provided herein to avoid impacts to these resources. No potential bat habitat trees exist onsite and therefore no impacts are anticipated.

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DEFINITIONS

Study Area: The area throughout which the assessment was performed, the entirety of the parcel (APN: 039-380-037) the location of the proposed vineyard blocks and surrounding areas, totaling 16.4 acres

Project Area: The area encompassing the proposed project (vineyard blocks, grading limit); the area evaluated for potential impacts to sensitive biological resources, totaling 9.0 acres

Tree Survey Area: The area where a tree survey was conducted, which includes the proposed clearing limits plus an approximate 10- to 25-foot buffer, totaling 9.5 acres

LIST OF ABBREVIATIONS & ACRONYMS

BGEPA	Bald and Golden Eagle Protection Act
BIOS	Biogeographic Information and Observation System
BRRS	Biological Resources Reconnaissance Survey
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
County	County of Napa
Corps	U.S. Army Corps of Engineers
CRLF	California Red-legged Frog
CSRL	California Soils Resources Lab
CTS	California Tiger Salamander
CWA	Clean Water Act
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	(Federal) Endangered Species Act
MSFMA	Magnuson-Stevens Fishery Conservation & Management Act
MBTA	Migratory Bird Treaty Act
NCBDR	Napa County Baseline Data Report
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OHWM	Ordinary High Water Mark
Rank	California Rare Plant Ranks
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
SFP	State Fully Protected Species
SWRCB	State Water Resource Control Board
TOB	Top of Bank
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WRA	WRA, Inc.

1.0 INTRODUCTION

On March 25, April 15, and June 23, 2021, WRA, Inc. (WRA) performed an assessment of biological resources and several species-specific surveys at 1373 Soda Canyon Road, Napa County (hereafter Study Area) (Figure 1, Appendix A). The purpose of this study was to gather the information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA) to meet the guidelines outlined by Napa County in *Guidelines for Preparing Biological Resources Reconnaissance Surveys* (Napa County 2016a) and *Guidelines for Preparing Special-status Plant Studies* (Napa County 2016b).

A biological resources reconnaissance survey (BRRS) provides general information on the presence, or potential presence, of sensitive species and habitats. These survey(s) contain the results of a focused protocol-level survey for listed plant species in the Study Area; however, protocol-level surveys for wildlife may or may not be included as part of the survey. This survey is not a formal wetland delineation; in instances where such a delineation may be required for project approval by local, state, or federal agencies, results would be reported herein, but may be presented elsewhere in separate reports. This survey is based on information available at the time of the study and on-site conditions that were observed on the date(s) the site was visited.

This report describes the results of the site visits, which assessed the Project Area for (1) the presence of sensitive land cover types, (2) the potential for land cover types on the site to support special-status plant and wildlife species, and (3) the presence of any other sensitive natural resources protected by local, state, or federal laws and regulations. Special-status species observed during the site assessment were documented and their presence is discussed herein. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys or other studies be conducted; recommendations for additional studies are provided, if necessary.

The proposed project (Project) involves the installation of three vineyard blocks totaling approximately 7.0 net acres (9.0 gross acres). Associated with the installation of the grape vines will be vineyard avenues, fences, irrigation lines, etc. Site preparation (ripping, installation of erosion control measures, seeding cover crop, and installation of irrigation pipelines and trellis) will occur during the grading window of April 1 through October 15. By October 15, the site will be winterized with placement of straw wattles, seeding of vineyard avenues and planting areas, and straw mulch spread over disturbed areas as required by the ECP prepared for the Project.

2.0 REGULATORY BACKGROUND

This report is intended to facilitate conformance of the Project with the standards outlined in the Napa County Code and General Plan. In addition to the requirements of Napa County, the Project may also be subject to several federal and state regulations designed to protect sensitive natural resources. Full analysis of these requirements in the context of the Project is addressed herein.

2.1 Federal and State Regulatory Setting

2.1.1 Sensitive Land Cover Types

Land cover types are herein defined as those areas of a particular vegetation type, soil or bedrock formation, aquatic features, and/or other distinct phenomenon. Typically, land cover types have identifiable boundaries that can be delineated based on changes in plant assemblages, soil or rock types, soil surface or near-surface hydroperiod, anthropogenic or natural disturbance, topography, elevation, etc. Many land cover types are not considered sensitive or otherwise protected under the environmental regulations discussed here. However, these land cover types typically provide essential ecological and biological functions for plants and wildlife, including, frequently, special-status species. Those land cover types that are considered or protected under one or more environmental regulations are discussed below.

Waters of the United States: The United States Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the Corps Wetlands Delineation Manual (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the United States generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

Waters of the State: The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements. The San Francisco Bay RWQCB, which has jurisdiction over projects in the Napa River watershed, recently adopted the General Permit for Vineyard Properties in the Napa River and Sonoma Creek Watersheds to comply with the WDRs for sediment and nutrient discharge from vineyards.

Streams, Lakes, and Riparian Habitat: Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). "Riparian" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Sensitive Natural Communities: Sensitive natural communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFG 2010, CDFW 2018a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2018a). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2018) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). The Napa County Baseline Data Report (NCBDR) identifies sensitive Napa County natural communities, discussed further in Section 2.2 below (Napa County 2005).

2.1.2 Special-status Species

Plants: Special-status plants include taxa that have been listed as endangered or threatened, or are formal candidates for such listing, under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA). The California Native Plant Protection Act (CNPPA) lists 64 "rare" or "endangered" and prevents "take", with few exceptions, of these species. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under CEQA. Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. A description of the CNPS Ranks is provided below in Appendices B and C. Additionally, any plant species listed as sensitive within the Napa County General Plan or NCBDR are likewise considered sensitive.

Wildlife: As with plants, special-status wildlife includes species/taxa that have been listed or are formal candidates for such under ESA and/or CESA. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*)] that in some regards are similar to those provided by ESA. The CFGC designates some species as Fully Protected (SFP), which indicates that take of that species cannot be authorized through a state permit. Additionally, CDFW Species of Special Concern (species that face extirpation in California if current population and habitat trends continue) are given special consideration under CEQA, and are therefore considered special-status species. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA. Finally, wildlife species/taxa named as "locally rare" in the NCBDR (Napa County 2005) are also treated as special-status for purposes of this assessment.

Critical Habitat, Essential Fish Habitat, and Wildlife Corridors: Critical habitat is a term defined in the ESA as a specific and formally-designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. Note that designated critical habitat areas that are currently unoccupied by the species but which are deemed necessary for the species' recovery are also protected by the prohibition against adverse modification.

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) provides for conservation and management of fishery resources in the U.S. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g. eelgrass (*Zostera* spp.)), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA. Additionally, the NCBDR (Napa County 2005) outlines important corridor resources within the County and encourages protection of these resources via Policy CON-18 (see section 2.2 below).

2.2 Napa County Regulatory Setting

Napa County General Plan and Napa County Code: Natural resource use in Napa County is regulated by the Napa County General Plan (Napa County 2008). Below are relevant policies from the General Plan pertaining to wetlands and biological resources which may be applicable to the Project.

Napa County Baseline Data Report

Specific sensitive Land Cover Types are identified in the NCBDR (Napa County 2005). In addition to those Land Cover Types identified by CDFW, the NCBDR also identifies biotic communities of limited distribution that "encompass less than 500 acres of cover within the County and are considered by local biological experts to be worthy of conservation" (Napa County 2005).

Natural Resource Goals and Policies

Policy CON-13: The County shall require that all discretionary residential, commercial, industrial, recreation, agricultural, and water development projects consider and address impacts to wildlife habitat and avoid impacts to fisheries and habitat supporting special-status species to the extent feasible. Where impacts to wildlife and special-status species cannot be avoided, projects shall include effective mitigation measures and management plans including provisions to:

a) Maintain the following essentials for fish and wildlife resources:
    a. Sufficient dissolved oxygen in the water.
    b. Adequate amounts of proper food.
    c. Adequate amounts of feeding, escaping, and nesting habitat.
    d. Proper temperature through maintenance and enhancement of streamside vegetation volume flows, and velocity of water.
b) Employ supplemental planting and maintenance of grasses, shrubs and trees of like quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife and special-status species and maintain the watersheds, especially streams side areas, in good condition.
c) Provide protection for habitat supporting special-status species through buffering or other means.
d) Provide replacement habitat of like quantity and quality on- or off-site for special-status species to mitigate impacts to special-status species.
e) Enhance existing habitat values, particularly for special-status species, through restoration and replanting of native plant species as part of discretionary permit review and approval.
f) Require temporary or permanent buffers of adequate size (based on the requirements of the special-status species) to avoid nest abandonment of birds and raptors associated with construction and site development activities.
g) Demonstrate compliance with applicable provisions and regulations of recovery plans for listed species.

Policy CON-17: Preserve and protect native grasslands, serpentine grasslands, mixed serpentine chaparral, and other sensitive biotic communities and habitats of limited distribution. The County, in its discretion, shall require mitigation that results in the following standards:

a) Prevent removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species.
b) In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible.
c) Promote protection from overgrazing and other destructive activities.
d) Encourage scientific study and require monitoring and active management where biotic communities and habitats of limited distribution or sensitive natural plant communities are threatened by the spread of invasive non-native species.
e) Require no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Where avoidance, restoration, or replacement is not feasible, preserve like habitat at a 2:1 ratio or greater within Napa County to avoid significant cumulative loss of valuable habitats.

Policy CON-18: To reduce impacts on habitat conservation and connectivity:

a) In sensitive domestic water supply drainages where new development is required to retain between 40 and 60 percent of the existing (as of June 16, 1993) vegetation onsite, the vegetation selected for retention should be in areas designed to maximize habitat value and connectivity.
b) Outside of sensitive domestic water supply drainages, streamlined permitting procedures should be instituted for new vineyard projects that voluntarily retain valuable habitat and connectivity, including generous setbacks from streams and buffers around ecologically sensitive areas.
c) Preservation of habitat and connectivity of adequate size, quality and configuration to support special-status species should be required within the project area. The size of habitat and connectivity to be preserved shall be determined based on the specific needs of the species.
d) The County shall require discretionary projects to retain movement corridors of adequate size and habitat quality to allow for continued wildlife use based on the needs of the species occupying the habitat.
e) The County shall require new vineyard development to be designed to minimize the reduction of wildlife movement to the maximum extent feasible. In the event the County concludes that such development will have a significant impact on wildlife movement, the County may require the applicant to relocate or remove existing perimeter fencing installed on or after February 16, 2007 to offset the impact cause by the new vineyard development.

Policy CON-19: The County shall encourage the preservation of critical habitat areas and habitat connectivity through the use of conservation easements or other methods as well as through continued implementation of the Napa County Conservation Regulations associated with vegetation retention and setbacks from waterways.

Policy CON-24: Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through appropriate measures including one or more of the following:

a) Preserve, to the extent feasible, oak trees and other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agriculture projects.
b) Comply with the Oak Woodlands Preservation Act regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of the residential, commercial, and industrial approvals.
c) Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio [3:1 ratio; see below] when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible.
d) Support hardwood cutting criteria that require retention of adequate stands of oak trees sufficient for wildlife, slope stabilization, soil production be left standing.
e) Maintain, the extent feasible, a mixture of oak species which is needed to ensure acorn production. Black, canyon, live, and brewer oaks as well as blue, white, scrub and live oaks are common associations.

General Provisions – Stream and Wetland Setbacks

Napa County Code 18.108.025 requires stream setbacks for new land clearings for agricultural purposes. "Stream" is defined by Napa County (18.108.030) as: (1) a watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United State Geological Survey (USGS) maps most recently published, or any replacement to that symbol (i.e., USGS "blue-line"); (2) any watercourse which has a well-defined channel with a depth greater than four feet and banks steeper than 3:1 and contains hydrophilic vegetation, riparian vegetation or woody-vegetation including tree species greater than ten feet in height; or (3) those watercourses listed in Resolution No. 94-19. No clearing of land for new agricultural uses as defined by Section 18.08.040 shall take place within the following setbacks from streams:

Table 1. Napa County Stream Setbacks

Slope (Percent)	Required Setback
< 1	35 feet
1--5	45 feet
5--15	55 feet
15--30	65 feet
30--40	85 feet
40--50	105 feet
50--60	125 feet
60--70	150 feet

In 2020, Napa County added to Code Section 18.108.025 the requirement of a 35-foot setback for ephemeral or intermittent streams not meeting Napa County's criteria for a stream. Likewise, 18.108.026 was added to the Napa County Code to include the requirement of a 50-foot setback from the delineated edge of wetland boundaries. Ordinance No. 1438 adopted by the Board of Supervisors allowed for a one-time exemption from the Ordinance (and therefore the updated stream and wetland setbacks) for projects that are less than 15 percent slope and less than 5 acres.

Vegetation Preservation and Replacement

Napa County Code 18.108.100 requires the following conditions when granting a discretionary permit for activities within an erosion hazard area (slopes greater than 5 percent):

Existing vegetation shall be preserved to the maximum extent consistent with the project. Vegetation shall not be removed if it is identified as being necessary for erosion control in the approved erosion control plan or if necessary for the preservation of threatened or endangered plant or animal habitats as designated by state or federal agencies with jurisdiction and identified on the County's environmental sensitivity maps.

Existing trees six inches in diameter or larger, measured at diameter breast height (DBH), or tree stands of trees six inches DBH or larger located on a site for which either an administrative or discretionary permit is required shall not be removed until the required permits have been approved by the decision-making body and tree removal has been specifically authorized.

- Trees to be retained or designated for retention shall be protected through the use of barricades or other appropriated methods to be placed and maintained at their outboard drip line during the construction phase. Where appropriate, the director may require an applicant to install and maintain construction fencing around the trees to ensure their protection during earthmoving activities. Where removal of vegetation is necessitated or authorized, the director or designee may require the planting of replacement vegetation of an equivalent kind, quality and quantity.

Water Quality and Tree Protection Ordinance

In 2019, the Napa County Board of Supervisors adopted the Water Quality and Tree Protection Ordinance (WQTPO) modifying Chapter 18.108 Conservation Regulations to provide additional protections to trees and water quality. As noted above, additional setbacks were added for ephemeral and intermittent drainages and wetlands (Chapters 18.108.025 and 18.108.026). In addition, the tree retention required by Chapter 18.108.027 in sensitive domestic water supply drainages was increased from 60 percent to 70 percent retention based on vegetation that existed within the parcel in 1993. In addition, Chapter 18.108.020 subsections C and D were added to the Code that require a minimum of 70 percent retention of canopy cover based on the vegetation that existed within the parcel in 2016, and the preservation or mitigation of trees at a minimum 3:1 ratio. Ordinance No. 1438 allowed for a one-time exemption from the Ordinance (and therefore the updated stream setbacks, wetland setbacks, and vegetation retention requirements) for projects that are less than 15 percent slope and less than 5 acres.

3.0 ENVIRONMENTAL SETTING

The approximately 16.4-acre Study Area is set across the entirety of a single parcel (APN: 039-380-037; Appendix A). It is located in central Napa County, approximately five aerial miles north of downtown Napa, and five aerial miles southeast of Yountville. It is situated in the Atlas Mountains of Napa County on the western flank of such, leading into Napa Valley. Detailed descriptions of the local setting are below.

3.1 Topography and Soils

The overall topography of the Study Area gently- to moderately-sloped, ranging from approximately 140 to 240 feet above sea level. According to the *Soil Survey of Napa County* (USDA 1978), the Study Area is underlain by two soil mapping units: Hambright-Rock Outcrop complex, 30 to 75 percent slopes and Sobrante loam, 30 to 50 percent slopes. The parent soil series of all the Study Area's mapping units are summarized below.

Hambright series: This series consists of shallow, very stony loam soils formed from weathered basic igneous rock on plateaus, basalt flows, and hillslopes at elevations ranging from 400 to 2,500 feet elevation (CSRL 2021, USDA 1978). These soils are not considered hydric, and are well drained with moderate permeability and medium to rapid runoff (USDA 2014, USDA 1978). Native vegetation on this series typically includes annual grasses and forbs with a few blue oaks (*Quercus douglasii*) and shrubs, while predominant land use is grazing (USDA 1978).

Sobrante Series: This series consists of moderately deep to shallow fine loam soils formed from residuum weathered from igneous and metamorphic rock situated on upland hillslopes at elevations ranging from 125 to 3,500 feet (CSRL 2021, USDA 1972). This series is not considered hydric in Sonoma County, and well drained, with moderate permeability, and low to very high runoff (USDA 2014, USDA 1972). Native and naturalized vegetation is oak (*Quercus* spp.) savannah and woodland dominated by annual grasses and forbs, and predominant land uses are rangeland, irrigated hay and pasture, and dry land crops (USDA 1972).

3.2 Climate and Hydrology

The Study Area is located in the valley fog incursion zone of Napa County. The average monthly maximum temperature of Napa State Hospital is 82.8 degrees Fahrenheit, while the average monthly minimum temperature is 48.1 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with an annual average of 26.5 inches. Precipitation-bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March, with a combined average of 22.08 inches (USDA 2021).

The local watershed is Lower Napa Valley (HUC 12: 180500020205) and the regional watershed is Napa River (HUC 8: 18050002). The Study Area is situated in the Napa County Planning Watershed of Soda Creek. There is named (Soda Creek) dashed blue line stream at the southern edge of the Study Area on the Napa 7.5-minute quadrangle (USGS 2015). Likewise, this stream is mapped in the National Wetlands Inventory (NWI; USFWS 2021a) and the California Aquatic Resources Inventory (CARI; SFEI 2021). The primary hydrologic sources are direct precipitation and consequent surface sheet flow. Precipitation in the majority of the Study Area infiltrates quickly due to rocky loam soils.

3.3 Land Cover and Land Use

The Study Area is predominantly undeveloped woodlands and grasslands, with a single-family residence development. The development includes the residence, a garage, a pool, paved driveway, landscaping, and associated infrastructure. Detailed plant community descriptions are included in Section 5.1 below, and all observed plants are included in Appendix B. Regional land uses include rural residential, wineries, vineyards, and livestock grazing (Google Earth 2021). Historically, land uses in the region were open rangeland of larger ranches, rural residential, vineyards, and orchards. There is no history of intensive agriculture, quarrying, timbering, or mining, in the Study Area (Historic Aerials 2021); however, the property is grazed for fire protection.

4.0 ASSESSMENT METHODS

Prior to the site visit, WRA biologists reviewed the following literature and performed database searches to assess the potential for sensitive natural communities (e.g., wetlands) and special-status species (e.g., endangered plants):

- *Soil Survey of Napa County, California* (USDA 1978)
- Napa 7.5-minute quadrangle (USGS 2015)
- Contemporary aerial photographs (Google Earth 2021)
- Historical aerial photographs (Historical Aerials 2021)
- National Wetlands Inventory (USFWS 2021a)
- California Aquatic Resources Inventory (SFEI 2021)
- California Natural Diversity Database (CNDDB, CDFW 2021a)
- California Native Plant Society Electronic Inventory (CNPS 2021a)
- Consortium of California Herbaria (CCH 2021)
- USFWS List of Federal Endangered and Threatened Species (USFWS 2021b)
- *eBird* Online Database (eBird 2021)
- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- *Breeding Birds of Napa County, California* (Smith 2003)
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003)
- *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009)
- *A Manual of California Vegetation Online* (CNPS 2021b)
- *Preliminary Descriptions of the Terrestrial Natural Communities* (Holland 1986)
- Napa County Land Cover (NCLC) map (Thorne et al. 2004)
- *California Natural Community List* (CDFW 2018a)

Database searches (i.e., CNDDB, CNPS) focused on the Rutherford, Yountville, Capell Valley, Sonoma, Napa, Mt. George, Sears Point, Cuttings Wharf, and Cordelia USGS 7.5-minute quadrangles for special-status plants. The special-status wildlife evaluation was based on database searches for the entirety of

Napa County. Appendix A contains observations of special-status species documented within a five-mile radius of the Study Area.

Following the remote assessment, a botanist with 40-hour Corps wetland delineation and wildlife biologist training traversed the entire Study Area on foot to document: (1) land cover types (e.g., terrestrial communities, aquatic resources), (2) if and what type of aquatic natural communities (e.g., wetlands) are present, (3) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, and (4) if special-status species are present[1].

4.1 Land Cover Types

4.1.1 Terrestrial Land Cover Types

Terrestrial land cover types were mapped across the entire Subject Property, but they were only evaluated to determine if such areas have the potential to support special-status plants or wildlife within in the Study Area. In most instances, communities are delineated based on distinct shifts in plant assemblage (vegetation), and follow the *California Natural Community List* (CDFW 2018a), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *A Manual of California Vegetation, Online Edition* (CNPS 2021b). In some cases, it may be necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature; should an undescribed variant be used, it will be noted in the description.

Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled (S1/G1), imperiled (S2/G2), or vulnerable (S3/G3), were evaluated as sensitive as part of this evaluation.[2] Additionally, any sensitive natural communities as described in the Napa County Baseline Data Report (NCBDR; Napa County 2005) or General Plan (Napa County 2008) were considered.

4.1.2 Aquatic Resources

Aquatic resources include Waters of the U.S., Waters of the State, and Streams, Lakes, and Riparian Habitat as defined in the CWA, Porter-Cologne Act, and CFGC, respectively. Napa County mandates setbacks from these aquatic resources, and therefore requires mapping of the outward extent of such features.

This site assessment does not constitute a formal wetland delineation; however, the surveys looked for superficial indicators of wetlands such as hydrophytic vegetation (i.e., plant communities dominated by wetland species), evidence of inundation or flowing water, saturated soils and seepage, and topographic depressions/swales. If sample points were taken, WRA followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008).

[1] Due to the timing of the assessment, it may or may not constitute protocol-level species surveys; see Section 4.2 if the site assessment would constitute a formal or protocol-level species survey.

[2] Ranking of CDFW List of Vegetation Alliances is based on NatureServe Rankings (NatureServe 2018)

If streams potentially jurisdictional under the CWA and/or the CFGC are noted on a site, they are delineated using a mix of surveyed topography data, high resolution aerial photographs, and a sub-meter GPS unit. The ordinary high water mark would be used to determine the extent of potential Section 404 jurisdiction, while the top-of-bank would be used to determine the extent of CFGC Section 1602 and 401. Streams with associated woody vegetation were assessed to determine if these areas would be considered riparian habitat by the CDFW following *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994). Finally, all streams were assessed to determine if they meet the Napa County definition of "stream" pursuant to Napa County Code 18.108.030.

4.2 Special-status Species

4.2.1 General Assessment

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the greater vicinity through a literature and database review. Database searches for known occurrences of special-status species focused on the 7.5-minute USGS quadrangles mentioned above for special-status plants and the entirety of Napa County for special-status wildlife.

A preliminary site visit was made on March 25, 2021 to evaluate the presence of suitable habitat for special-status species. Suitable habitat conditions are based on physical and biological conditions of the site, as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site in the recent past.

If a more thorough assessment was warranted, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. Methods for the assessments are described below. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2.

4.2.2 Special-status Plants

To determine the presence or absence of special-status plant species, focused surveys were conducted within Study Area and portions of the Subject Property outside of the Study Area on March 25, April 15, and June 23, 2021. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. The field surveys were conducted by botanists familiar with the flora of Napa and surrounding counties. The surveys were performed in accordance with those outlined by Napa County (2016b), which follow those described by resource experts and agencies (CNPS 2001, CDFW 2018b, USFWS 1996). Plants were identified using *The Jepson Manual, 2nd Edition* (Baldwin et. al. 2012) and Jepson Flora Project (eFlora 2020), to the taxonomic level necessary to determine whether or not they were sensitive. Plant names follow those of Jepson Flora Project (eFlora 2020), unless otherwise noted.

4.2.3 Special-status Wildlife

A general wildlife assessment was performed on March 25, 2021. This assessment consisted of traversing the entirety of the Study Area as well as substantial portions of the Subject Property. Habitat elements required or associated with certain species (e.g., northern spotted owl) or species groups (e.g., bats, anadromous fish) were searched for and noted. Such habitat elements include, but are not limited to: plant assemblages and vegetation structure; stream depth, width, hydro-period, slope, and bed-and-bank structure; rock outcrops, caves, cliffs, overhangs, and substrate texture and rock content; history of site alteration and contemporary disturbances; etc.

A daytime roost survey was performed on March 25, 2021. The survey assessed all trees and substrates within the Project Area to determine if bat roosting habitat was present. This survey was completed by walking the entire Project Area, and surveying each tree scheduled for removal. During the survey the biologist noted conditions that may be favorable or unfavorable for bat use such as thermal conditions, frequency of disturbance, and evidence of potential predators. All trees were also investigated for fissures, cracks, or hollows that could provide roosting substrate for bats.

4.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2020b) and the NMFS Essential Fish Habitat Mapper (NMFS 2020) were queried to determine if critical habitat for any species or EFH, respectively, occurs within the Study Area. To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), habitat connectivity data available through the CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2020a), and the NCBDR (Napa County 2005). Additionally, aerial imagery (Google 2020) for the local area was referenced to assess if local core habitat areas were present within, or connected to the Study Area. This assessment was refined based on observations of on-site physical and/or biological conditions.

4.2.5 Native Trees

A tree survey was conducted within the preliminary vineyard layouts and clearing limits plus a buffer of 10 to 25 feet (Tree Survey Area). The Tree Survey Area was traversed on foot and all trees with a diameter at breast height (DBH) of six inches or greater were evaluated. The tree species, DBH, and mortality were

documented within a GPS unit. Additionally, as noted above, bat habitat was conducted concurrent with the tree survey.

5.0 ASSESSMENT RESULTS

5.1 Land Cover Types

WRA observed five land cover types within the Study Area: developed areas, non-native grassland, toyon chaparral, blue oak woodland, and coast live oak woodland (Figure A-3). The Project Area (vineyards and clearing limits) have been intentionally sited to reduce the impacts to oak woodlands (Figure A-5). The site burned in the 2017 Atlas Fire, which reduce the biomass of shrubs, killed many trees (Section 5.2.4), and likely increased the density and extent non-native grassland.

5.1.1 Terrestrial Land Cover Types

Developed Area (no vegetation alliance). CDFW Rank: None. Within the Study Area, developed portions are composed of a single-family residence, garage, pool, hardscaping, paved driveway, and landscaping. The vegetation is highly altered, consisting of overhanging native trees, landscape species, and disturbance tolerant herbs. Species include blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), burr chervil (*Anthriscus caucalis*), old-man-of-spring (*Senecio vulgaris*), hairy bittercress (*Cardamine hirsuta*), and scarlet pimpernel (*Lysimachia arvensis*). Developed areas total 1.0 acre in the Study Area, of which 0.1 acre is situated in the Project Area (10 percent of the total land cover type in the Study Area). This community is synonymous with the Urban/Built-up biotic community in the NCLC (Thorne et al. 2004). This community is not considered sensitive by Napa County, CDFW, or any other regulatory entity.

Non-native Annual Grassland – Wild Oat Grassland (*Avena barbata* Semi-Natural Herbaceous Stands). CDFW Rank: None. Non-native grasslands occur throughout cismontane California, particularly in the Sierra Foothills, Coast Range, Transverse Range, and Peninsular Ranges (Sawyer et al. 2009, CNPS 2021b). These grasslands are situated on a variety of landscapes including coastal terraces, valley bottoms, and foothills underlain by a variety of soil types. The Study Area contains 5.0 acres of which 4.3 acres is situated in the Project Area (86 percent of the total land cover type in the Study Area).

The dominant cover is the herbaceous layer, but there are scattered trees and shrubs including blue oak (*Quercus douglasii*), coyote brush (*Baccharis pilularis*), and whiteleaf manzanita (*Arctostaphylos manzanita* ssp. *manzanita*). The herbaceous layer is dominated by non-native grasses of wild oat (*Avena barbata*), big rattlesnake grass (*Briza maxima*), soft chess (*Bromus hordeaceus*), dogtail grass (*Cynosurus echinatus*), and Italian rye grass (*Festuca perennis*). Native wildflowers are infrequent, but include sky lupine (*Lupinus nanus*), California poppy (*Eschscholzia californica*), common soap plant (*Chlorogalum pomeridianum*), purple sanicle (*Sanicula bipinnatifida*), common yarrow (*Achillea millefolium*), and tomcat clover (*Trifolium willdenovii*).

This community is synonymous with the California Annual Grasslands Alliance biotic community in the NCLC (Thorne et al. 2004). These grasslands provide habitat for numerous common native plants and

wildlife, as well as have the potential to support several special-status species associated with grasslands. These grasslands are not considered sensitive by the CDFW or Napa County.

Toyon Chaparral (*Heteromeles arbutifolia* Shrubland Alliance). CDFW Rank: G4 S4. Toyon chaparral is known from the Interior Coast Range, Sierra Nevada Foothill, and Transverse Range (Sawyer et al. 2009, CNPS 2021b). These chaparrals are situated on steep slopes underlain by rocky loams from a variety of rock types. The Study Area contains 1.0 acre of toyon chaparral, of which 0.2 acre is situated in the Project Area (20 percent of the total land cover type in the Study Area).

The dominant cover is the shrub and small tree layer, particularly toyon (*Heteromeles arbutifolia*), California bay (*Umbellularia californica*), chamise (*Adenostoma fasciculatum*), coyote brush (*Baccharis pilularis*), and poison oak (*Toxicodendron diversilobum*). There is a substantial herbaceous layer due to the burned nature of the shrubs. Herbs are predominantly weedy non-natives, including Italian thistle (*Carduus pycnocephalus*), tocalote (*Centaurea melitensis*), yellow star thistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), wild oat (*Avena barbata*), rip-gut brome (*Bromus diandrus*), and brome fescue (*Festuca bromoides*).

This community is synonymous with the Scrub Interior Live Oak-Scrub Oak-(California Bay-California Ash-Birch Leaf Mountain Mahogany-Toyon-California Buckeye) Mesic East County NFD Super Alliance biotic community in the NCLC (Thorne et al. 2004). These chaparrals provide habitat for numerous common native plants and wildlife, as well as the potential to support several special-status plants. The CDFW does not consider toyon chaparral a sensitive natural community. Likewise, it is not considered sensitive by Napa County.

Blue Oak Woodland (*Quercus douglasii* Woodland Alliance). CDFW Rank: G4 S4. Blue oak woodland is known from the interior North Coast Range, South Coast Range, southern Cascade Range, and Sierra Nevada Foothills from Humboldt County south to Ventura County (Sawyer et al. 2009, CNPS 2020b). These woodlands are typically situated on valley bottoms, foothills, and rocky outcrops underlain by moderately to excessively drained shallow, rocky, low-fertility substrate (Sawyer et al. 2009). The Study Area contains 6.9 acres of blue oak woodland, of which 4.0 acres are situated in the Project Area (58 percent of this land cover type in the Study Area). This extent is based on the extent of standing live and dead oak trees surveyed in 2021 (see Section 5.2.4). Canopy cover of living trees was based on aerial photo interpretation conducted by PPI Engineering, Inc. utilizing both aerial photo and tree survey data from WRA.

The dominant tree is blue oak (*Quercus douglasii*), with scattered cover of coast live oak (*Q. agrifolia*), California bay (*Umbellularia californica*), and California buckeye (*Aesculus californica*). Predominant understory species include poison oak (*Toxicodendron diversilobum*), soap plant (*Chlorogalum pomeridianum*), hedge parsley (*Torilis arvensis*), Pacific sanicle (*Sanicula crassicaulis*), Pacific hound's-tongue (*Cynoglossum grande*), and numerous non-native annual grasses.

This community is synonymous with the Blue Oak Alliance biotic community in the NCLC (Thorne et al. 2004). These woodlands provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with woodlands. The CDFW does not consider blue oak woodland a sensitive natural community. Conversely, these woodlands are considered sensitive Napa County under the General Plan Conservation Element Policy CON-24 (oak woodland retention).

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance). CDFW Rank: G5 S4. Coast live oak woodlands occur in the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County (Sawyer et al. 2009, CNPS 2020b). These woodlands are typically situated on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). The Study Area contains 2.5 acres of coast live oak woodland, of which 0.4 acre in the Project Area (16 percent of the total land cover type in the Study Area). This extent is based on the extent of standing live and dead oak trees surveyed in 2021 (see Section 5.2.4). Canopy cover of living trees was based on aerial photo interpretation conducted by PPI Engineering, Inc. utilizing both aerial photo and tree survey data provided by WRA.

The dominant tree is coast live oak (*Quercus agrifolia*), with scattered cover of blue oak (*Q. douglasii*) and California bay (*Umbellularia californica*). The understory is dominated by poison oak (*Toxicodendron diversilobum*), rough hedgenettle (*Stachys rigida*), hedge parsley (*Torilis arvensis*), Italian thistle (*Carduus pycnocephalus*), rip-gut brome (*Bromus diandrus*), and dogtail grass (*Cynosurus echinatus*).

This community is synonymous with the Coast Live Oak Alliance biotic community in the NCLC (Thorne et al. 2004). These woodlands provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with woodlands. The CDFW does not consider coast live oak woodland a sensitive natural community. Conversely, these woodlands are considered sensitive Napa County under the General Plan Conservation Element Policy CON-24 (oak woodland retention).

5.1.2 Aquatic Resources

Although Soda Creek is adjacent to the southeastern edge of the Study Area, there are no aquatic resources within the Study Area.

5.2 Special-status Species

5.2.1 Special-status Plant Species

Based upon a review of the resource databases listed in Section 4.0, 74 special-status plant species have been documented in the vicinity of the Study Area (CDFW 2021a, CNPS 2021a). Ten of these plants have the potential to occur in the Study Area. The remaining 64 special-status plants documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the Study Area
- Edaphic (soil) conditions (e.g., volcanic tuff, serpentine) necessary to support the special-status plant species are not present in the Study Area
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Study Area
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Study Area
- Associated natural communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present in the Study Area

- The Study Area is geographically isolated (e.g. below elevation, coastal environ) from the documented range of the special-status plant species
- Land use history and contemporary management (e.g., absence of mowing or grazing) has degraded the localized habitat necessary to support the special-status plant species

WRA biologists conducted several site visits during a period sufficient to identify all 10 special-status plant species with the potential to occur within the Study Area. No special-status plants were observed during these surveys. All species with the potential to occur are listed below and described in Appendix C.

- Franciscan onion (*Allium peninsulare* var. *franciscanum*); CRPR 1B
- Bent-flowered fiddleneck (*Amsinckia lunaris*); CRPR 1B
- Streamside daisy (*Erigeron biolettii*); CRPR 3
- Greene's narrow-leaved daisy (*Erigeron greenei*); CRPR 1B
- Nodding harmonia (*Harmonia nutans*); CRPR 4
- Hayfield tarplant (*Hemizonia congesta* ssp. *congesta*); CRPR 1B
- Bristly leptosiphon (*Leptosiphon acicularis*); CRPR 4
- Mt. Diablo cottonweed (*Micropus amphibolus*); CRPR 3
- Showy Rancheria clover (*Trifolium amoenum*); FE, CRPR 1B
- Oval-leaved viburnum (*Viburnum ellipticum*); CRPR 2B

5.2.2 Special-status Wildlife Species

A total of 58 special-status wildlife species have been documented in Napa County (CDFW 2021a, Napa County 2005). Three of these species have a moderate to high potential to occur in the Study Area and Project Area. Special-status bats do not have the potential to occur in the Project Area based on results of the day roost site assessment conducted concurrent with the tree survey. The remaining 55 species are unlikely or have no potential to occur due to one or more of the following reasons:

- Aquatic habitats (e.g., rivers, estuaries) necessary to support the special-status wildlife species are not present in the Study Area
- Vegetation habitats (e.g., coast redwood forest, coastal prairie) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present in the Study Area
- Physical structures and vegetation (e.g., mines, old-growth coniferous trees) necessary to provide nesting, roosting, cover, and/or foraging habitat to support the special-status wildlife species are not present in the Study Area
- Host plants (e.g., dog violet, harlequin lotus) necessary to provide larval and nectar resources for the special-status wildlife species are not present in the Study Area
- The Study Area is outside (e.g., north of, west of) of the special-status wildlife species documented nesting range

Grasshopper sparrow (*Ammodramus savannarum*). CDFW Species of Special Concern. Moderate Potential (Presence Unknown). The grasshopper sparrow is a summer resident in California, wintering in Mexico and Central America. This species occurs in open grassland and prairie-like habitats with short- to moderate-height vegetation, and often scattered shrubs (Shuford and Gardali 2008). Both perennial and annual (non-native) grasslands are used. Nests are placed on the ground and well concealed, often

adjacent to grass clumps (Shuford and Gardali 2008). Grasshopper sparrows are secretive and generally detected by voice. Insects comprise the majority of the diet. The Study Area provides open grassland areas that are suitable for nesting, and this species has been recently observed in the vicinity (eBird 2021). This species was not observed; however, a bird survey was not performed during this assessment.

Long-eared owl (*Asio otus*). CDFW Species of Special Concern. Moderate Potential (Presence Unknown). This generally uncommon species is resident throughout much of California outside of the Central Valley. Long-eared owls breed in a variety of woodland and forest habitats, including coniferous, oak and riparian, as well as planted tree groves. Nearby open habitats with small mammal populations, such as grasslands, meadows and marshes, are also required for foraging. Breeding typically relies on the presence of old nests made by similar-sized birds including hawks and crows (Shuford and Gardali 2008). Communal roosting often occurs during the winter. This species was not observed; however, a bird survey was not performed during this assessment.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Moderate Potential (Presence Unknown). White-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. The Study Area provides suitable year-round habitat for white-tailed kites, including stands of oaks for nesting and open areas in close proximity for foraging. This species was not observed; however, a bird survey was not performed during this assessment.

5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Study Area does not contain any designated Critical Habitat (USFWS 2021b) or Essential Fish Habitat (NMFS 2021). Soda Creek, situated on the immediate southern edge of the Study Area, is Critical Habitat for Steelhead (USFWS 2021b); however, this stream is outside of the Study Area and 150 feet or greater from the Project Area. The Study Area is not within a designated wildlife corridor (CalTrans 2010, Napa County 2005). The site is located within a broader tract of oak woodland, shrubland, and grassland, and lightly-developed land within a semi-rural portion of Napa County. While common wildlife species presumably utilize the site to some degree for movement at a local scale, the Study Area itself does not provide corridor functions beyond connecting similar open woodland, chaparral, and grassland land parcels in surrounding areas.

5.2.4 Native Trees

There are 274 native trees with a DBH of six inches or greater within the Tree Survey Area but only 138 trees that appear to be alive (Figure A-4, Appendix E). There are 265 blue oaks (*Quercus douglasii*), eight coast live oak (*Quercus agrifolia*), and one California buckeye (*Aesculus californica*). Trees suffered high mortality from the 2017 Atlas Fire; 136 of the documented trees appear to be dead based observations of heavy fire scarring, extensive bark exfoliation, no living leaves, no living buds, and/or split trunks.

6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

6.1 Land Cover Types

6.1.1 Terrestrial Land Cover Types

Oak Woodlands

Blue oak and coast live oak woodlands are not considered sensitive by CDFW or included as sensitive in the NCBDR; however, the Napa County General Plan Conservation Element Policy CON-24 requires that oak woodland be maintained and/or improved to the extent feasible to provide for oak woodland and wildlife habitat, slope stabilization, soil protection, and species diversity. Policy CON-24c specifically calls for the preservation of oak woodland (on an acreage basis) at a 2:1 ratio. Code Section 18.108.020(C) requires that 70 percent of canopy cover be retained based on the on-site canopy present on June 16, 2016. Code Section 18.108.020(D) requires that the removal of tree canopy on an acreage basis be mitigated at a 3:1 ratio (which is equivalent to 75 percent retention) where the areas to be preserved must generally occur on slopes less than 50 percent and outside of stream and wetland setbacks. Since the parcel burned in the 2017 Atlas Fire, it is subject to Code Section 8.80.130(A) which requires that the vegetation canopy cover be based on that existing on the parcel on June 19, 2018. Living canopy cover mapped based on living trees and a 2018 aerial photograph results in 3.2 acres of oak canopy cover throughout the entire Study Area, of which 0.7 acre is situated within the Project Area (21.8 percent of total in the Study Area) (Figure A-4). Therefore, the proposed vineyard ECP is in compliance with the County Code vegetation canopy cover retention requirements and no further recommendations are necessary.

6.1.2 Aquatic Resources

The Study Area and Project Area do not support aquatic resources. No further actions are recommended for aquatic resources.

6.2 Special-status Species

6.2.1 Special-status Plants

The Study Area and Project Area do not support special-status plants. No further actions are recommended for special-status plants.

6.2.2 Special-status Wildlife

The Project Area has the potential to support three special-status wildlife species (three birds), as well as non-status birds protected under the MBTA. There is no potential bat habitat within the Project Area. The following measures are recommended to avoid or otherwise minimize potential impacts to these species.

All Bird Species (including non-special-status): In addition to the three special-status bird species discussed above (grasshopper sparrow, long-eared owl, white-tailed kite), a variety of non-status bird species with baseline protections under the MBTA and CFGC may use vegetation within the Project Areas for nesting. Pre-construction surveys are recommended to ensure that the implementation of the Proposed Project would not impact any nesting birds.

> Recommendation 1: WRA recommends that tree/vegetation removal and initial ground disturbance occur from August 16 to January 31, outside of the general bird nesting season. If tree/vegetation removal during this time is not feasible, a pre-construction nesting bird survey should be performed by a qualified biologist no more than 14 days prior to the initiation of tree removal or ground disturbance is recommended. The survey should cover the Project Area (including tree removal areas) and surrounding areas within 500 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer should be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer.

6.2.3 Wildlife Movement

The Study Area and Project Area do not support Critical Habitat, Essential Wildlife Habitat, or critical wildlife corridors. The proposed deer fence has been intentionally sited away from Soda Creek to preserve wildlife movement along the riparian corridor. No further actions are recommended for wildlife movement.

6.2.4 Native Trees

Mapping the canopy cover of living trees from the native tree survey and a 2018 aerial photograph, results in an estimated 78.2 percent retention of living canopy following the project. No further actions are recommended for native trees.

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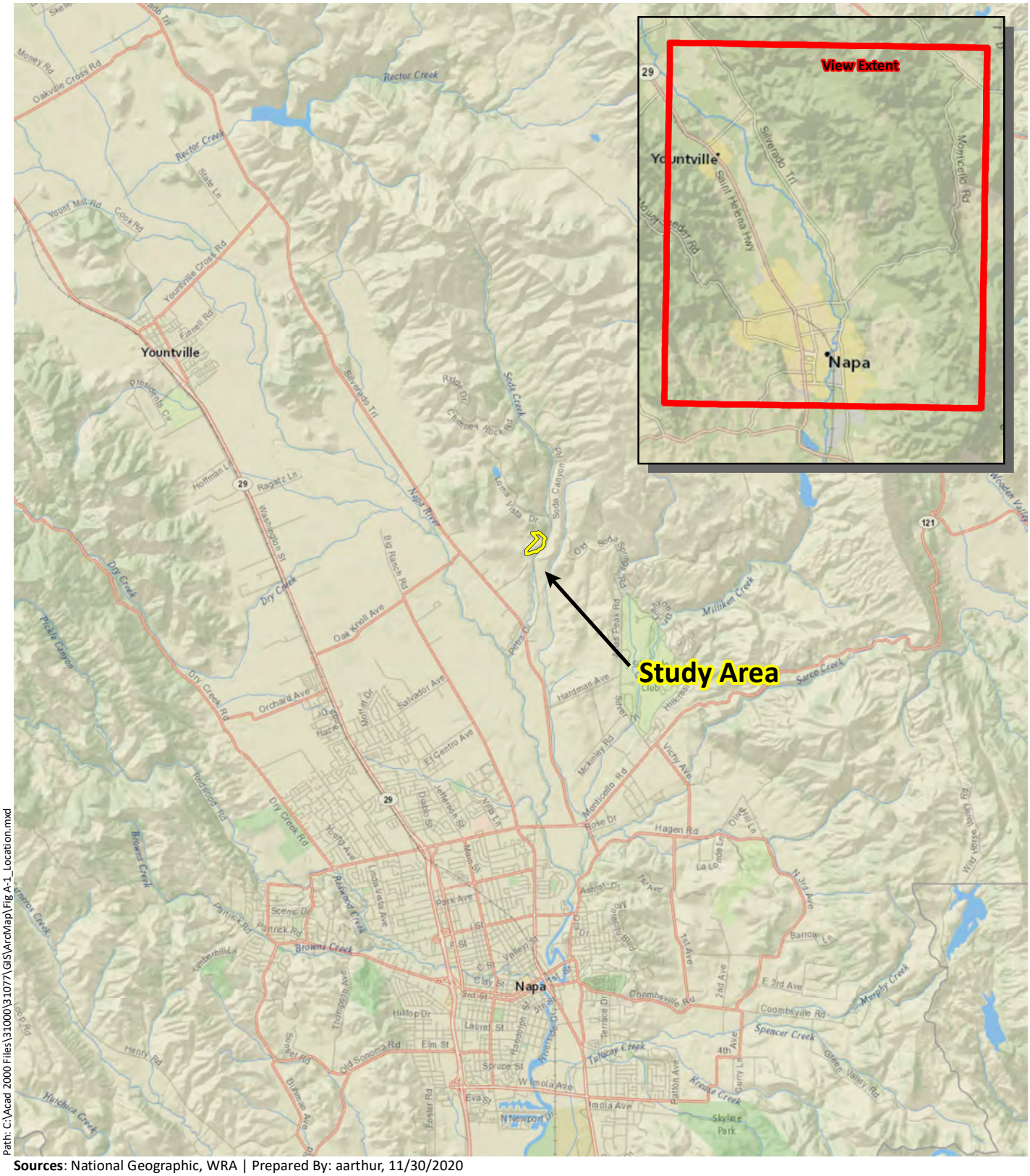
Appendix A

Figures



Path: C:\Acad 2000 Files\31000\31077\GIS\ArcMap\Fig A-1_Location.mxd

Sources: National Geographic, WRA | Prepared By: aarthur, 11/30/2020

Figure A-1. Study Area Location

1373 Soda Canyon Road
Napa County, CA

0 0.75 1.5 Miles

N

wra
ENVIRONMENTAL CONSULTANTS

Path: C:\Acad 2000 Files\31000\31077\GIS\ArcMap\Fig A-2_Soils.mxd

Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 9/8/2021

Figure A-2. Soil Mapping Units

1373 Soda Canyon Road
Napa County, CA

0 200 400 Feet

wra
ENVIRONMENTAL CONSULTANTS

Path: C:\Acad 2000 Files\31000\31077\GIS\ArcMap\Fig A-3_Land Cover.mxd

Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 9/8/2021

Figure A-3. Land Cover

1373 Soda Canyon Road
Napa County, CA

0 200 400 Feet

wra
ENVIRONMENTAL CONSULTANTS

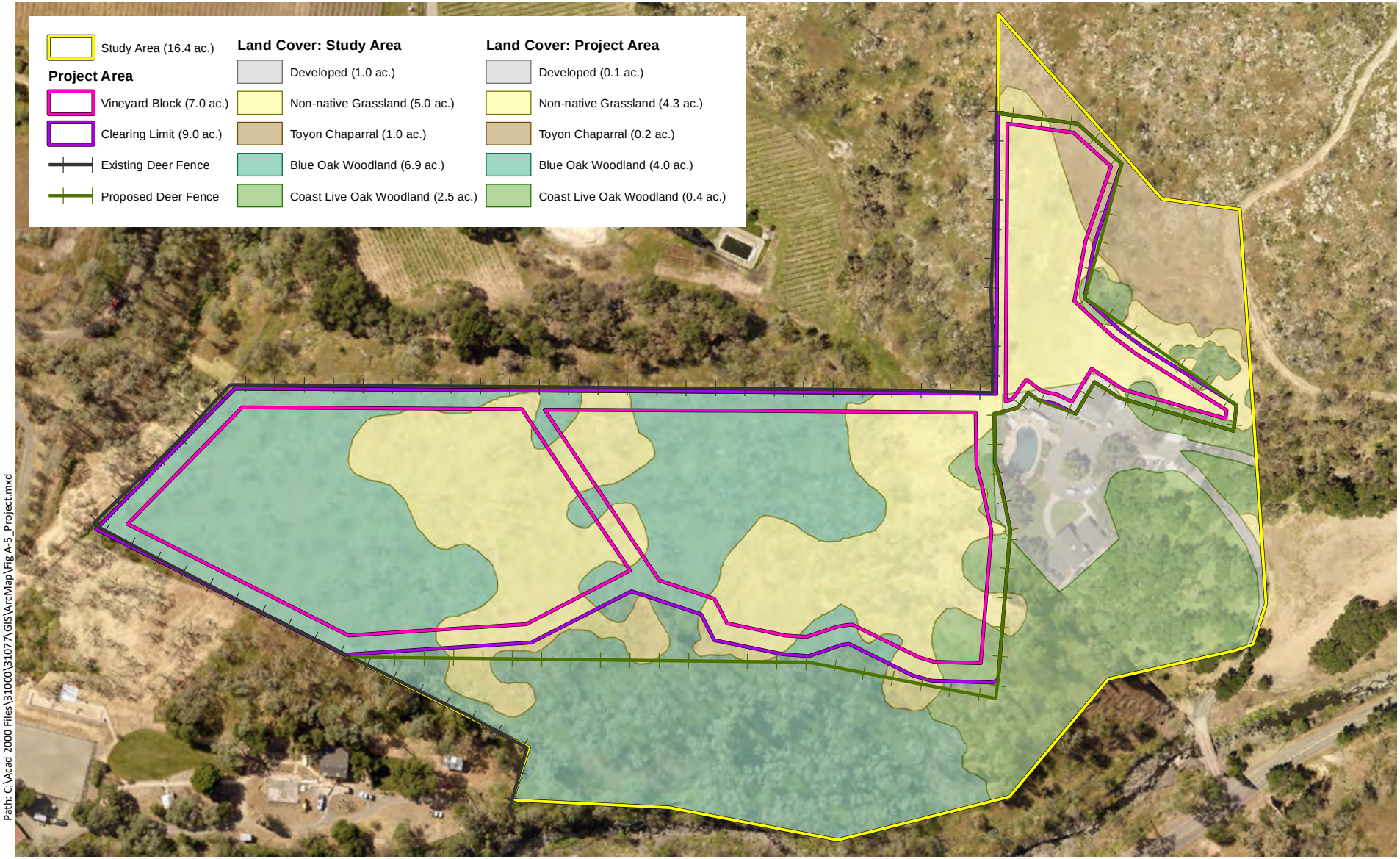
Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 9/8/2021

Figure A-4. Tree Survey

1373 Soda Canyon Road
Napa County, CA

0 200 400 Feet

wra
ENVIRONMENTAL CONSULTANTS



Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 9/8/2021

Figure A-5. Project Area & Land Cover

1373 Soda Canyon Road
Napa County, CA

0 200 400 Feet

ENVIRONMENTAL CONSULTANTS

Appendix B

Species Observed in the Study Area

Table B-1. Plant species observed in the Study Area, March 25, April 15, and June 23, 2021

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Agavaceae	*Chlorogalum pomeridianum* var. *pomeridianum*	common soap plant	perennial forb	native	--	--	NL
Anacardiaceae	*Toxicodendron diversilobum*	poison oak	deciduous shrub	native	--	--	FACU
Apiaceae	*Anthriscus caucalis*	burr chervil	annual forb	non-native	--	--	NL
Apiaceae	*Foeniculum vulgare*	fennel	perennial forb	non-native	--	high	NL
Apiaceae	*Sanicula bipinnatifida*	purple sanicle	perennial forb	native	--	--	NL
Apiaceae	*Sanicula crassicaulis*	Pacific sanicle	perennial forb	native	--	--	NL
Apiaceae	*Torilis arvensis*	hedge parsley	annual forb	non-native	--	moderate	NL
Asteraceae	*Achillea millefolium*	common yarrow	perennial forb	native	--	--	FACU
Asteraceae	*Artemisia douglasiana*	mugwort	perennial forb	native	--	--	FAC
Asteraceae	*Baccharis pilularis* ssp. *consanguinea*	coyote brush	evergreen shrub	native	--	--	NL
Asteraceae	*Carduus pycnocephalus*	Italian thistle	annual forb	non-native	--	moderate	NL
Asteraceae	*Carduus tenuiflorus*	slender flowered thistle	annual forb	non-native	--	limited	NL
Asteraceae	*Centaurea melitensis*	tocalote	annual forb	non-native	--	moderate	NL
Asteraceae	*Centaurea solstitialis*	yellow star thistle	annual forb	non-native	--	high	NL
Asteraceae	*Dittrichia graveolens*	stinkwort	annual forb	non-native	--	moderate	NL
Asteraceae	*Hypochaeris glabra*	smooth cat's-ear	annual forb	non-native	--	limited	NL
Asteraceae	*Hypochaeris radicata*	rough cat's-ear	perennial forb	non-native	--	moderate	FACU
Asteraceae	*Lactuca serriola*	prickly lettuce	annual forb	non-native	--	assessed	FACU
Asteraceae	*Pseudognaphalium luteoalbum*	Jersey cudweed	annual forb	non-native	--	--	FAC
Asteraceae	*Senecio vulgaris*	old-man-of-spring	annual forb	non-native	--	--	FACU
Asteraceae	*Soliva sessilis*	field burweed	annual forb	non-native	--	--	FACU
Asteraceae	*Sonchus asper*	prickly sow thistle	annual forb	non-native	--	assessed	FAC
Asteraceae	*Sonchus oleraceus*	common sow thistle	annual forb	non-native	--	--	NL
Boraginaceae	*Amsinckia intermedia*	common fiddleneck	annual forb	native	--	--	NL
Boraginaceae	*Cynoglossum grande*	Pacific hound's tongue	perennial forb	native	--	--	NL
Boraginaceae	*Phacelia distans*	distant phacelia	annual forb	native	--	--	OBL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Brassicaceae	*Brassica nigra*	black mustard	annual forb	non-native	--	moderate	NL
Brassicaceae	*Capsella bursa-pastoris*	shepherd's purse	annual forb	non-native	--	--	FACU
Brassicaceae	*Cardamine hirsuta*	hairy bittercress	annual forb	non-native	--	--	NL
Brassicaceae	*Raphanus sativus*	wild radish	perennial forb	non-native	--	limited	NL
Brassicaceae	*Thysanocarpus curvipes*	fringe pod	annual forb	native	--	--	NL
Caryophyllaceae	*Scleranthus annuus*	knawel	annual forb	non-native	--	--	FACU
Caryophyllaceae	*Spergularia rubra*	red sandspurry	perennial forb	non-native	--	--	FAC
Crassulaceae	*Crassula connata*	sand pygmyweed	annual forb	native	--	--	FAC
Cucurbitaceae	*Marah fabacea*	California manroot	perennial vine	native	--	--	NL
Ericaceae	*Arctostaphylos manzanita* ssp. *manzanita*	common manzanita	evergreen shrub	native	--	--	NL
Euphorbiaceae	*Euphorbia peplus*	petty spurge	annual forb	non-native	--	--	NL
Fabaceae	*Acmispon glaber*	deer vetch	evergreen shrub	native	--	--	NL
Fabaceae	*Acmispon parviflorus*	small flowered lotus	annual forb	native	--	--	NL
Fabaceae	*Cytisus scoparius*	Scotch broom	evergreen shrub	non-native	--	high	NL
Fabaceae	*Hoita macrostachya*	large leather root	perennial forb	native	--	--	OBL
Fabaceae	*Lathyrus vestitus* var. *vestitus*	common Pacific pea	perennial forb	native	--	--	NL
Fabaceae	*Lupinus bicolor*	miniature lupine	annual forb	native	--	--	NL
Fabaceae	*Lupinus nanus*	sky lupine	annual forb	native	--	--	NL
Fabaceae	*Medicago polymorpha*	bur medic	annual forb	non-native	--	limited	FACU
Fabaceae	*Trifolium dubium*	shamrock clover	annual forb	non-native	--	--	UPL
Fabaceae	*Trifolium hirtum*	rose clover	annual forb	non-native	--	moderate	NL
Fabaceae	*Trifolium subterraneum*	subterranean clover	annual forb	non-native	--	--	NL
Fabaceae	*Trifolium willdenovii*	tomcat clover	annual forb	native	--	--	FACW
Fabaceae	*Vicia sativa ssp. sativa*	common vetch	annual forb	non-native	--	--	FACU
Fagaceae	*Quercus agrifolia*	coast live oak	evergreen tree	native	--	--	NL
Fagaceae	*Quercus douglasii*	blue oak	deciduous tree	native	--	--	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Geraniaceae	*Erodium botrys*	longbeak stork's bill	annual forb	non-native	--	assessed	FACU
Geraniaceae	*Erodium brachycarpum*	foothill filaree	annual forb	non-native	--	limited	NL
Geraniaceae	*Erodium cicutarium*	redstem stork's bill	annual forb	non-native	--	limited	NL
Geraniaceae	*Geranium dissectum*	cutleaf geranium	annual forb	non-native	--	moderate	NL
Hamamelidaceae	*Liquidambar styraciflua*	sweetgum	deciduous tree	non-native	--	--	NL
Iridaceae	*Iris macrosiphon*	long-tube iris	perennial forb	native	--	--	NL
Lamiaceae	*Lamium amplexicaule*	henbit deadnettle	annual forb	non-native	--	--	NL
Lamiaceae	*Marrubium vulgare*	horehound	perennial forb	non-native	--	limited	FACU
Lamiaceae	*Stachys rigida* var. *quercetorum*	rough hedgenettle	perennial forb	native	--	--	FACW
Lauraceae	*Umbellularia californica*	California bay	evergreen tree	native	--	--	FAC
Malvaceae	*Malva nicaeensis*	bull mallow	annual forb	non-native	--	--	NL
Montiaceae	*Claytonia parviflora*	streambank springbeauty	annual forb	native	--	--	FACU
Myrsinaceae	*Lysimachia arvensis*	scarlet pimpernel	annual forb	non-native	--	--	NL
Orobanchaceae	*Triphysaria pusilla*	dwarf owl's clover	annual forb	native	--	--	NL
Papaveraceae	*Eschscholzia californica*	California poppy	perennial forb	native	--	--	NL
Phrymaceae	*Diplacus aurantiacus*	sticky monkey	evergreen shrub	native	--	--	NL
Phrymaceae	*Erythranthe guttata*	common monkeyflower	annual forb	native	--	--	NL
Poaceae	*Avena barbata*	wild oat	annual graminoid	non-native	--	moderate	NL
Poaceae	*Avena fatua*	wild oat	annual graminoid	non-native	--	moderate	NL
Poaceae	*Brachypodium distachyon*	false brome	perennial graminoid	non-native	--	moderate	NL
Poaceae	*Briza maxima*	big rattlesnake grass	annual graminoid	non-native	--	limited	NL
Poaceae	*Briza minor*	little rattlesnake grass	annual graminoid	non-native	--	--	FAC
Poaceae	*Bromus diandrus*	rip-gut brome	annual graminoid	non-native	--	moderate	NL
Poaceae	*Bromus hordeaceus*	soft chess	annual graminoid	non-native	--	limited	FACU
Poaceae	*Bromus madritensis*	Madrid brome	annual graminoid	non-native	--	high	NL
Poaceae	*Bromus racemosus*	smooth brome	perennial graminoid	non-native	--	--	NL
Poaceae	*Cynosurus echinatus*	dogtail grass	annual graminoid	non-native	--	moderate	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Poaceae	*Elymus glaucus*	blue wildrye	perennial graminoid	native	--	--	FACU
Poaceae	*Festuca bromoides*	brome fescue	perennial graminoid	non-native	--	--	FACU
Poaceae	*Festuca microstachys*	Pacific fescue	annual graminoid	native	--	--	NL
Poaceae	*Festuca perennis*	Italian rye grass	annual graminoid	non-native	--	moderate	FAC
Poaceae	*Melica torreyana*	Torrey's onion grass	perennial graminoid	native	--	--	NL
Poaceae	*Poa annua*	annual bluegrass	annual graminoid	non-native	--	--	FAC
Poaceae	*Stipa pulchra*	purple needlegrass	perennial graminoid	native	--	--	NL
Polemoniaceae	*Leptosiphon bicolor*	true babystars	annual forb	native	--	--	UPL
Polygalaceae	*Polygala californica*	California milkwort	perennial forb	native	--	--	NL
Ranunculaceae	*Ranunculus californicus*	California buttercup	perennial forb	native	--	--	FACU
Ranunculaceae	*Ranunculus muricatus*	spiny buttercup	perennial forb	non-native	--	--	FACW
Rosaceae	*Adenostoma fasciculatum*	chamise	evergreen shrub	native	--	--	NL
Rosaceae	*Heteromeles arbutifolia*	toyon	evergreen shrub	native	--	--	NL
Rubiaceae	*Galium aparine*	common bedstraw	annual forb	native	--	--	FACU
Rubiaceae	*Galium porrigens*	climbing bedstraw	perennial forb	native	--	--	NL
Salicaceae	*Salix lasiolepis*	arroyo willow	deciduous tree	native	--	--	FACW
Sapindaceae	*Aesculus californica*	California buckeye	deciduous tree	native	--	--	NL
Scrophulariaceae	*Scrophularia californica*	bee plant	perennial forb	native	--	--	FAC
Solanaceae	*Solanum xanti*	purple nightshade	perennial forb	native	--	--	NL
Themidaceae	*Dichelostemma capitatum*	blue dicks	perennial forb	native	--	--	FACU
Violaceae	*Viola pedunculata*	Johnny jump-up	perennial forb	native	--	--	NL

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2012), *The Jepson Flora Project* (eFlora 2021), and *A Flora of Napa County* (Ruygt 2020); nomenclature follows *The Jepson Flora Project* (eFlora 2021) unless otherwise noted

Sp.: “species”, intended to indicate that the observer was confident in the identity of the genus but uncertain which species
Cf.: “*confer*” or “compared with”, intended to indicate a species appeared to the observer to be specific, but was not identified based on diagnostic characters

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2021a)

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare
CRPR 1A:	Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B:	Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A:	Plants presumed extirpated in California, but more common elsewhere
CRPR 2B:	Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 3:	Plants about which we need more information – a review list
CRPR 4:	Plants of limited distribution – a watch list

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2006)

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

[3]Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Corps 2018)

OBL:	Almost always a hydrophyte, rarely in uplands
FACW:	Usually a hydrophyte, but occasionally found in uplands
FAC:	Commonly either a hydrophyte or non-hydrophyte
FACU:	Occasionally a hydrophyte, but usually found in uplands
UPL:	Rarely a hydrophyte, almost always in uplands
NL:	Rarely a hydrophyte, almost always in uplands
NI:	No information; not factored during wetland delineation

Table B-2. Wildlife species observed in and around the Study Area

Scientific Name	Common Name
Mammals	
Canus latrans	coyote
Lepus californicus	black-tailed jackrabbit
Odocoileus hemionus columbianus	black-tailed deer
Sciurus griseus	western gray squirrel
Birds	
Accipiter cooperii	Cooper's hawk
Agelaius phoeniceus	red-winged blackbird
Aphelocoma californica	western scrub jay
Baeolophus inornatus	oak titmouse
Buteo jamaicensis	red-tailed hawk
Callipepla californica	California quail
Cathartes aura	turkey vulture
Colaptes auratus	northern flicker
Dendroica coronata	yellow-rumped warbler
Meleagris gallopavo	wild turkey
Melozone crissalis	California towhee
Mimus polyglottos	northern mockingbird
Zenaida macroura	mourning dove
Reptiles and Amphibians	
Sceloporus occidentalis	western fence lizard

Appendix C

Potential for Special-status Species to Occur in the Study Area

Table C. Potential for Special-status Species to Occur in the Study Area. List compiled from the Napa County Baseline Data Report (NCBDR; Napa County 2005), CDFW BIOS database (CDFW 2021a), USFWS IPaC Report (USFWS 2021), and CNPS Electronic Inventory (CNPS 2021a) searches. For plants, the Rutherford, Yountville, Capell Valley, Sonoma, Napa, Mt. George, Sears Point, Cuttings Wharf, and Cordelia USGS 7.5' quadrangles were included in the search. For wildlife, the entirety of Napa County was considered.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
PLANTS				
Agrostis hendersonii Henderson's bentgrass	CRPR 3	Valley and foothill grassland, vernal pools; situated in mesic grasslands; wetland indicator: FACW/FACW. Elevation range: 225 – 995 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Allium peninsulare var. *franciscanum* Franciscan onion	CRPR 1B	Cismontane woodland, valley and foothill grassland; on clay substrate, often derived from volcanics or serpentine; serpentine indicator: WI. Elevation range 170 – 985 feet. Blooms: May – June.	**Moderate Potential.** The Study Area contains volcanic rocky grassland and woodland that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.
Amorpha californica var. *napensis* Napa false indigo	CRPR 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July.	**Unlikely.** Although the Study Area contains woodland, this species is not associated with blue oak or xeric coast live oak woodlands.	**Presumed Absent.** No further actions are recommended for this species.
Amsinckia lunaris bent-flowered fiddleneck	CRPR 1B	Cismontane woodland, valley and foothill grassland, coastal bluff scrub; situated on rocky soils. Elevation range: 10 – 1625 feet. Blooms: March – June.	**Moderate Potential.** The Study Area contains volcanic rocky grassland and woodland that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.
Antirrhinum virga twig-like snapdragon	CRPR 4	Chaparral, lower montane coniferous forest; located on rocky openings often derived from serpentine; serpentine indicator: SI. Elevation range: 325 – 6550 feet. Blooms: June – July.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Arabis modesta modest rockcress	CRPR 4	Chaparral, lower montane coniferous forest; located on steep slopes, cliffs, and shaded canyons underlain by deep soils. Elevation range: 390 – 2600 feet. Blooms: March – July.	**No Potential.** The Study Area does not contain chaparral or forest habitat, nor is situated in a steep canyon.	**Not Present.** No further actions are recommended for this species.
Arctostaphylos stanfordiana ssp. decumbens Rincon manzanita	CRPR 1B	Chaparral, cismontane woodland; highly restricted to red rhyolite soils. Elevation range: 245 – 1215 feet. Blooms: February – April.	**No Potential.** The Study Area does not contain chaparral or rhyolitic substrate to support this species.	**Not Present.** No further actions are recommended for this species.
Astragalus claranus Clara Hunt's milk-vetch	FE; ST; CRPR 1B	Cismontane woodland, valley and foothill grassland, chaparral; on open grassy hillsides, especially exposed shoulders with thin, volcanic or serpentine clay soils; serpentine indicator: SI. Elevation range: 245 – 900 feet. Blooms: March – May.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Astragalus clevelandii Cleveland's milk-vetch	CRPR 4	Chaparral, cismontane woodland, riparian forest; located on serpentine seeps; serpentine indicator: SE. Elevation range: 650 – 4875 feet. Blooms: June – September.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Astragalus tener var. *tener* alkali milk-vetch	CRPR 1B	Playas, vernal pools, valley and foothill grassland; located in vernal pools and similar wetlands/mesic areas on alkaline substrate. Elevation range: 0 – 195 feet. Blooms: March – June.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Balsamorhiza macrolepis big-scale balsamroot	CRPR 1B	Valley and foothill grassland, cismontane woodland; situated on rocky substrates, typically derived from metavolcanics, sometimes on serpentine substrate; serpentine indicator: SI. Elevation range: 295 – 3100 feet. Blooms: March – June.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Blennosperma bakeri Sonoma sunshine	FE, SE, CRPR 1B	Vernal pools, vernal swales, and mesic areas in valley grassland; highly restricted to the Santa Rosa Plain and Valley of the Moon. Elevation range: 35 – 360 feet. Blooms: March – April.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Brodiaea leptandra narrow-anthered brodiaea	CRPR 1B	Broadleaf upland forest, chaparral, lower montane coniferous forest; situated on gravelly soils derived from volcanics, particularly rhyolitic tuff, sometimes serpentine; serpentine indicator: WI. Elevation range: 360 – 3000 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain chaparral or forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Calandrinia breweri Brewer's Calandrinia	CRPR 4	Chaparral, coastal scrub; located on sandy or loamy substrate in areas often recently disturbed or burned. Elevation range: 30 – 3965 feet. Blooms: March – June.	**No Potential.** The Study Area does not contain chaparral or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.
Carex lyngbyei Lyngbye's sedge	CRPR 2B	Marshes and swamps; located in brackish or freshwater. Elevation range: 0 - 30 feet. Blooms April - August	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Castilleja affinis ssp. *neglecta* Tiburon paintbrush	FE; ST; CRPR 1B	Valley and foothill grassland; located in grassy, open areas and rock outcrops underlain by serpentine substrate; serpentine indicator: SE. Elevation range: 195 – 1300 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Castilleja ambigua ssp. *ambigua* Johnny-nip	CRPR 4	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pool margins. Elevation range: 0 – 1415 feet. Blooms: March – August.	**No Potential.** The Study Area does contain coastal scrub, prairie, or wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Castilleja ambigua var. *meadii* mead's owl's-clover	CRPR 1B	Meadows and seeps, vernal pools; located in mesic areas or wetlands underlain by gravelly clay soils derived from volcanics. Elevation range: 1460 – 1545 feet. Blooms: April – May.	**No Potential.** The Study Area does not contain mesic grassland, meadow, or vernal pool habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Ceanothus confusus Rincon Ridge ceanothus	CRPR 1B	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically situated on dry shrubby slopes; serpentine indicator: WI/IN. Elevation range: 245 – 3495 feet. Blooms: February – April.	**No Potential.** The Study Area does not contain chaparral or forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Ceanothus divergens Calistoga ceanothus	CRPR 1B	Chaparral, cismontane woodland; on rocky, serpentine sites; serpentine indicator: WI. Elevation range: 560 – 3115 feet. Blooms: February – March.	**Unlikely.** The Study Area does not contain chaparral or dense, shrubby woodland to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Ceanothus purpureus holly-leaved ceanothus	CRPR 1B	Chaparral, cismontane woodland; located on rocky, volcanic slopes. Elevation range: 395 – 3000 feet. Blooms: February – June.	**Unlikely.** The Study Area does not contain chaparral or dense, shrubby woodland to support this species.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Ceanothus sonomensis Sonoma ceanothus	CRPR 1B	Chaparral; located on sandy serpentine or volcanic substrates; serpentine indicator: WI/IN. Elevation range: 705 – 2625 feet. Blooms: February – April.	**No Potential.** The Study Area does not contain chaparral habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Centromadia parryi ssp. *parryi* pappose tarplant	CRPR 1B	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland; in vernally mesic sites, often with alkali substrate. Elevation range: 5 – 1380 feet. Blooms: May – November.	**Unlikely.** The Study Area does not contain alkali grassland or similar habitat to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Centromadia parryi ssp. *rudis* Parry's rough tarplant	CRPR 4	Valley and foothill grassland, vernal pools; situated on vernally mesic sites underlain by alkaline soils, frequently seeps, swales, and roadsides. Elevation range: 0 – 330 feet. Blooms: May – October.	**Unlikely.** The Study Area does not contain alkali grassland or similar habitat to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Chloropyron molle ssp. *molle* soft bird's-beak	FE, SR, CRPR 1B	Coastal brackish or salt marshes; located in low-growing saltgrass and picklweed mats. Elevation range: 0 – 10 feet. Blooms: June – November.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Clarkia breweri Brewer's clarkia	CRPR 4	Chaparral, cismontane woodland, coastal scrub; frequently on serpentine substrate; serpentine indicator: BE/SI. Elevation range: 695 – 3625 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Clarkia gracilis ssp. *tracyi* Tracy's clarkia	CRPR 4	Chaparral; located in openings and situated on substrates often derived from serpentine; serpentine indicator: BE. Elevation range: 210 – 2115 feet. Blooms: April – July.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Collomia diversifolia serpentine collomia	CRPR 4	Chaparral, cismontane woodland; situated on rocky to gravelly serpentine substrates; serpentine indicator: SE. Elevation range: 975 – 1950 feet. Blooms: May – June.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Downingia pusilla dwarf downingia	CRPR 2B	Valley and foothill grassland, vernal pools; located in mesic grassy sites, pool and lake margins. Elevation range: 3 – 1450 feet. Blooms: March – May.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Eleocharis parvula small spikerush	CRPR 4	Marshes and swamps. Elevation range: 5 – 9815 feet. Blooms: sometimes April, June – August, sometimes September.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Erigeron biolettii Streamside daisy	CRPR 3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest; on rocky, mesic. Elevation range: 95 – 3610 feet. Blooms: June – October.	**Moderate Potential.** The Study Area contains rocky woodland habitat that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.
Erigeron greenei Greene's narrow-leaved daisy	CRPR 1B	Chaparral, valley and foothill grassland; located on volcanic or serpentine substrate. Elevation range: 260 – 3270 feet. Blooms: May – September.	**Moderate Potential.** The Study Area contains rocky grassland that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.
Eryngium jepsonii Jepson's coyote thistle	CRPR 1B	Valley and foothill grassland, vernal pools; situated on clay substrate that is vernally saturated. Elevation range: 10 – 975 feet. Blooms: April – August.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Erythronium helenae St. Helena fawn lily	CRPR 4	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; located on volcanic or serpentine substrate; serpentine indicator: BE. Elevation range: 1135 – 3965 feet. Blooms: March – May.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Extriplex joaquiniana San Joaquin spearscale	CRPR 1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; located on alkaline substrate. Elevation range: 0 – 2715 feet. Blooms: April – October.	**Unlikely.** The Study Area does not contain alkali grassland or similar habitat to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Harmonia nutans nodding harmonia	CRPR 4	Chaparral, cismontane woodland; located on rocky to gravelly substrates derived from volcanics. Elevation range: 240 – 3170 feet. Blooms: March – May.	**Moderate Potential.** The Study Area contains rocky woodland that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.
Helianthella castanea Diablo helianthella	CRPR 1B	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation range: 180 – 3900 feet. Blooms: March - June	**Unlikely.** Although the Study Area contains grassland and woodland, there are not documented occurrences from Napa County.	**Presumed Absent.** No further actions are recommended for this species.
Helianthus exilis serpentine sunflower	CRPR 4	Chaparral, cismontane woodland; located along serpentine seeps; serpentine indicator: SE. Elevation range: 485 – 4960 feet. Blooms: June – November.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Hemizonia congesta ssp. congesta Hayfield tarplant	CRPR 1B	Coastal scrub, valley and foothill grassland; serpentine indicator: WI/IN. Elevation range: 65 – 1840 feet. Blooms: April – October.	**Moderate Potential.** The Study Area contains grassland habitat that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.
Hesperolinon bicarpellatum Two-carpellate western flax	CRPR 1B	Chaparral; located on serpentine substrate; serpentine indicator: SE. Elevation range: 195 – 3270 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Hesperolinon breweri Brewer's western flax	CRPR 1B	Chaparral, cismontane woodland, valley and foothill grassland; typically located in serpentine grassland and serpentine chaparral underlain by rocky substrates; serpentine indicator: SI. Elevation range: 95 – 2925 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Hesperolinon sharsmithiae Sharsmith's western flax	CRPR 1B	Chaparral; located on serpentine substrate; serpentine indicator: ?. Elevation range: 875 – 975 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Horkelia tenuiloba thin-lobed horkelia	CRPR 1B	Broadleaf upland forest, coastal scrub, valley and foothill grassland, chaparral; in mesic openings, on sandy substrate. Elevation range: 165 – 1640 feet. Blooms: May – July.	**Unlikely.** The Study Area does not contain sandy soils to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Iris longipetala coast iris	CRPR 4	Coastal prairie, lower montane coniferous forest, meadows and seeps; located on mesic sites. Elevation range: 0 – 1950 feet. Blooms: March – May.	**No Potential.** The Study Area does not contain prairie, meadow, or forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Isocoma arguta Carquinez goldenbush	CRPR 1B	Valley and foothill grassland; located on alkaline soils. Elevation range: 0 – 60 feet. Blooms: August – December.	**No Potential.** The Study Area does not contain alkali habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Lasthenia conjugens Contra Costa goldfields	FE; CRPR 1B	Valley and foothill grassland, vernal pools, cismontane woodland; located in pools, swales, and depressions in mesic grassy sites underlain by alkaline substrate. Elevation range: 0 – 1530 feet. Blooms: March – June.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Lathyrus jepsonii var. *jepsonii* Delta tule pea	CRPR 1B	Freshwater and brackish marshes; typically located near or on slough margins, closely associated with cattail, tules, bulrushes, Baltic rush, California rose, and Suisun Marsh aster; known widely throughout Suisun Bay and Delta regions. Elevation range: 0 – 15 feet. Blooms: May – July, sometimes September.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Legenere limosa legenere	CRPR 1B	Vernal pools; typically located in the deepest portions of pools. Elevation range: 3 – 2860 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Leptosiphon acicularis bristly leptosiphon	CRPR 4, LR	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; often located on shallow, rocky substrate in foothill positions. Elevation range: 175 – 4875 feet. Blooms: April – July.	**Moderate Potential.** The Study Area contains rocky woodland and grassland habitat that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Leptosiphon jepsonii Jepson's leptosiphon	CRPR 1B	Chaparral, cismontane woodland; on open to partially shaded grassy slopes on volcanic or the periphery of serpentine substrate. Elevation range: 330 – 1640 feet. Blooms: April – May.	**Unlikely.** Although the Study Area contains volcanic soils, it lacks serpentine substrates to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Leptosiphon latisectus broad-lobed leptosiphon	CRPR 4	Broadleaf upland forest, cismontane woodland; frequently situated on serpentine substrate; serpentine indicator: WI. Elevation range: 550 – 4875 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Lessingia hololeuca woolly-headed lessingia	CRPR 3, LR	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; typically on clay, serpentine substrate; serpentine indicator: SI. Elevation range: 3 – 2885 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Lilaeopsis masonii Mason's Lilaeopsis	SR, CRPR 1B	Freshwater and brackish coastal marshes, riparian scrub; located on channel banks in the splash zone on bare mud substrate. Elevation range: 0 – 35 feet. Blooms: April – November.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Lilium rubescens redwood lily	CRPR 4, LR	Broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, North Coast coniferous forest; often located on serpentine substrates, and along roadcuts; serpentine indicator: WI. Elevation range: 95 – 6210 feet. Blooms: April – September.	**No Potential.** The Study Area does not contain forest or chaparral habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Limnanthes vinculans Sebastopol meadowfoam	FE, SE, CRPR 1B	Mesic meadows, valley and foothill grassland, vernal pools; located in swales, wet meadows, depressions, and pools in the oak savanna of the Santa Rosa Plain on heavy adobe clay substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Lomatium repostum Napa Lomatium	CRPR 4	Chaparral, cismontane woodland; located on serpentine or volcanic substrates; serpentine indicator: SI. Elevation range: 290 – 2700 feet. Blooms: March – June.	**Unlikely.** The Study Area does not contain chaparral or serpentine substrate to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Lupinus sericatus Cobb Mountain lupine	CRPR 1B	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest; typically located in stands of knobcone pine-oak woodland, on open wooded slopes in gravelly substrate typically derived from volcanics, sometimes serpentine. Elevation range: 890 – 4960 feet. Blooms: March – June.	**No Potential.** The Study Area does not contain forest, chaparral, or knobcone pine-oak woodland to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Micropus amphibolus Mt. Diablo cottonweed	CRPR 3	Broadleaf upland forest, chaparral, cismontane woodland, valley and foothill grassland; typically on thin, rocky soils; serpentine indicator: WI. Elevation range: 145 – 2710 feet. Blooms: March – May.	**Moderate Potential.** The Study Area contains a few pockets of thin, rocky soils that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Monardella viridis green monardella	CRPR 4	Broadleaf upland forest, chaparral, cismontane woodland; situated on serpentine or volcanic soils; serpentine indicator: BE/SI. Elevation range: 325 – 3285 feet. Blooms: June – September.	**Unlikely.** Although the Study Area contains woodland, this species is closely associated with dense, brushy sites.	**Presumed Absent.** No further actions are recommended for this species.
Navarretia leucocephala ssp. *pauciflora* few-flowered navarretia	FE; ST; CRPR 1B	Vernal pools; located on volcanic ash flow and volcanic substrate pools. Elevation range: 1300 – 2780 feet. Blooms: May – June.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Penstemon newberryi var. *sonomensis* Sonoma beardtongue	CRPR 1B	Chaparral; crevices in rock outcrops and talus slopes on ridgelines and mountain peaks. Elevation range: 2295 – 4495 feet. Blooms: April – August.	**No Potential.** The Study Area does not contain chaparral or large rock outcrops to support this species.	**Not Present.** No further actions are recommended for this species.
Polygonum marinense Marin knotweed	CRPR 3	Salt and brackish coastal marshes. Elevation range: 0 – 35 feet. Blooms: sometimes April, May – August, sometimes October.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Ranunculus lobbii Lobb's buttercup	CRPR 4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; located in mesic, vernally wet areas. Elevation range: 45 – 1530 feet. Blooms: February – May.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Rhynchospora californica California beaked-rush	CRPR 1B	Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps. Elevation range: 145 – 3315 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Sagittaria sanfordii Sanford's arrowhead	CRPR 1B	Marshes and swamps; located in assorted shallow freshwater habitats including canals and perennial drainage ditches. Elevation range: 0 – 2115 feet. Blooms: May – October, sometimes November.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Sidalcea hickmanii ssp. *napensis* Napa checkerbloom	CRPR 1B	Chaparral; located on rhyolitic substrates. Elevation range: 1345 – 1985 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain chaparral or rhyolitic substrate to support this species.	**Not Present.** No further actions are recommended for this species.
Sidalcea keckii Keck's checkerbloom	FE; CRPR 1B	Cismontane woodland, valley and foothill grassland; located in grassy areas in blue oak woodland underlain by serpentine substrate; serpentine indicator: SI. Elevation range: 240 – 2115 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Streptanthus hesperidis green jewelflower	CRPR 1B	Chaparral, cismontane woodland; located in openings in brushy/wooded sites on rocky serpentine substrate; serpentine indicator: SE. Elevation range: 420 – 2470 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain serpentine habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Symphyotrichum lentum Suisun Marsh aster	CRPR 1B	Freshwater and brackish marshes and swamps; typically located on slough margins and edges, closely associated with cattail, tules, bulrushes, California rose, and Delta Tule pea. Elevation range: 0 – 10 feet. Blooms: May – November.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Trichostema ruygtii Napa bluecurls	CRPR 1B, LR	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools, lower montane coniferous forest; located in open, sunny locations, and dried vernal pools. Elevation range: 95 – 2210 feet. Blooms: June – October.	**Unlikely.** Although the Study Area contain woodland and grassland, volcanic ash and thin volcanic rock supporting vernal inundation is lacking.	**Presumed Absent.** No further actions are recommended for this species.
Trifolium amoenum showy rancheria clover	FE, CRPR 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine; serpentine indicator: WI/IN. Elevation range: 15 – 1365 feet. Blooms: April – June.	**Moderate Potential.** The Study Area contains grassland habitat that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.
Trifolium hydrophilum saline clover	CRPR 1B	Marshes and swamps, mesic portions of alkali vernal pools; mesic, alkali valley and foothill grassland. Elevation range: 0 – 985 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain wetland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Triteleia lugens dark-mouthed triteleia	CRPR 4, LR	Broadleaf upland forest, chaparral, lower montane coniferous forest, coastal scrub. Elevation range: 325 – 3250 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain chaparral or forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Viburnum ellipticum oval-leaved viburnum	CRPR 2B	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation range: 705 – 4595 feet. Blooms: May – June.	**Moderate Potential.** The Study Area contains woodland that may support this species.	**Not Observed.** This species was not observed during protocol-level rare plant surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
WILDLIFE				
Mammals				
Antrozous pallidus pallid bat	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**No Potential.** Although the Study Area contains oak woodlands, a tree survey and concurrent bat habitat assessment determined the specific maternity roosting conditions are not present.	**Not Present.** No further actions are recommended for this species.
Bassariscus astutus ringtail (ringtail cat)	SFP	Widely distributed throughout much of California. Found in a variety of habitats including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 4,600 ft. elevation. Typically uses cliffs or large trees for shelter.	**Unlikely.** The Study Area lacks cliffs and large tree cavities/hollows typical of dens for this species.	**Presumed Absent.** No further actions are recommended for this species.
Corynorhinus townsendii townsendii Townsend's western big-eared bat	SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance	**Unlikely.** The Study Area does not contain caves, mines, or buildings suitable for roosting. CNDDB occurrences in Napa County are all located in the northern portion of the County (CDFW 2021a).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Eumops perotis californicus western mastiff bat	SSC, WBWG High	Found in a wide variety of open, arid and semi-arid habitats. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**Unlikely.** The Study Area lacks large rock structures that are suitable for roosting. There are no CNDDB occurrences of this species in Napa County.	**Presumed Absent.** No further actions are recommended for this species.
Lasiurus blossevillii western red bat	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	**Unlikely.** The Study Area lacks large, broadleaved trees of the type typically used for roosting (maples, sycamores, etc.).	**Presumed Absent.** No further actions are recommended for this species.
Myotis thysanodes fringed myotis	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Building, mines, and large trees and snags are important day and night roosts.	**No Potential.** Although the Study Area contains oak woodlands, a tree survey and concurrent bat habitat assessment determined the specific maternity roosting conditions are not present.	**Not Present.** No further actions are recommended for this species.
Myotis volans long-legged myotis	WBWG High	Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices, buildings, mines, and caves are important day roosts.	**Unlikely.** The Study Area lacks caves, buildings or similar refugia and does not contain coniferous forest.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Reithrodontomys raviventris salt marsh harvest mouse	FE, SE, SFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for dryland refugia during high tides.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	**Not Present.** No further actions are recommended for this species.
Sorex ornatus sinuosus Suisun shrew	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Require dense low-lying vegetation cover, driftwood, and other litter above the mean high tide line for nesting and foraging.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	**Not Present.** No further actions are recommended for this species.
Taxidea taxus American badger	SSC	Most abundant in drier open stages of most shrub, woodland, and herbaceous vegetation types. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Unlikely.** The Study Area provides grassland and woodland with some suitable habitat elements, but there are no occurrences within the eastern portion of Napa County (CDFW 2021a).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Birds				
Agelaius tricolor tricolored blackbird	SC (E), SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**No Potential.** The Study Area does not provide vegetated ponds or emergent marsh suitable for nesting.	**Not Present.** No further actions are recommended for this species.
Ammodramus savannarum grasshopper sparrow	SSC, LR	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	**Moderate Potential.** The Study Area contains grasslands that may provide nesting habitat for this species.	**Presence Unknown.** Tree removal and initial ground disturbance should occur outside of nesting season, or conduct pre-construction surveys and avoid any active nests. See Section 6.0 for details.
Aquila chrysaetos golden eagle	BGEPA, SFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**No Potential.** The Study Area does not provide large cliffs or typical large trees for nesting; may forage in the vicinity.	**Not Present.** No further actions are recommended for this species.
Ardea alba great egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Ardea herodias great blue heron	LR (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequested terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further actions are recommended for this species.
Asio flammeus short-eared owl	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	**Unlikely.** Known distribution (wintering) is restricted to the Napa baylands; breeding in the County has never been documented (Smith 2003).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Asio otus long-eared owl	SSC	Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding.	**Moderate Potential.** The oak woodlands may provide nesting habitat for this species.	**Presence Unknown.** Tree removal and initial ground disturbance should occur outside of nesting season, or conduct pre-construction surveys and avoid any active nests. See Section 6.0 for details.
Athene cunicularia burrowing owl	SSC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Unlikely.** Breeding and wintering distribution within Napa County are restricted to the vicinity of Lake Berryessa and southern baylands (Smith 2003, CDFW 2021a).	**Presumed Absent.** No further actions are recommended for this species.
Buteo swainsoni Swainson's hawk	ST	Summer resident in Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**Unlikely.** Napa County's very small breeding population is restricted to the Napa Valley floor in association with the Napa River and baylands (CDFW 2021a).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Charadrius alexandrines nivosus western snowy plover	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**No Potential.** The Study Area does not contain beaches or other suitable barren habitat near water.	**Not Present.** No further actions are recommended for this species.
Circus cyaneus northern harrier	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Unlikely.** Open grassland areas within the Study Area are generally arid and rocky; this species is not known to nest in this portion of Napa County as per Smith (2003). May forage or pass through the area during the non-breeding season.	**Presumed Absent.** No further actions are recommended for this species.
Contopus cooperi olive-sided flycatcher	SSC	Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.	**Unlikely.** The Study Area does not contain forest or woodland stands of the type typically used by this species.	**Presumed Absent.** No further actions are recommended for this species.
Coturnicops noveboracensis yellow rail	SSC	Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.	**No Potential.** The Study Area does not contain wetland habitat to support this species. Does not breed in Napa County.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Cypseloides niger black swift	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas. No modern nesting records in Napa County.	**No Potential.** The Study Area does not contain waterfalls; there are no modern breeding records for Napa County (Smith 2003, Shuford and Gardali 2008).	**Not Present.** No further actions are recommended for this species.
Egretta thula snowy egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees, at times in sequestered beds of dense emergent vegetation (e.g., tules). Rookery sites usually situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further actions are recommended for this species.
Elanus leucurus white-tailed kite	SFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Moderate Potential.** Woodland within the Study Area provides suitable nesting trees, and open areas for foraging.	**Presence Unknown.** Tree removal and initial ground disturbance should occur outside of nesting season, or conduct pre-construction surveys and avoid any active nests. See Section 6.0 for details.
Falco peregrinus anatum American peregrine falcon	SE, SFP	Year-round resident and winter visitor. Occurs near water, including coastal areas, wetlands, lakes and rivers. Usually nests on sheltered cliffs or tall man-made structures. Preys primarily on waterbirds.	**Unlikely.** The Study Area does not contain large cliffs or suitable man-made structures for nesting.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Geothlypis trichas sinuosa San Francisco (saltmarsh) common yellowthroat	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**No Potential.** No marsh vegetation is present within the Study Area.	**Not Present.** No further actions are recommended for this species.
Haliaeetus leucocephalus bald eagle	BGEPA, SE, SFP	Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Unlikely.** Larger water bodies are not within or in close proximity to the Study Area. As per Smith (2003) and CDFW (2021a), nesting within Napa County is known only from the immediate vicinity of Lake Berryessa.	**Presumed Absent.** No further actions are recommended for this species.
Icteria virens yellow-breasted chat	SSC, LR	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow (*Salix* ssp.), blackberry (*Rubus* spp.), and wild grape (*Vitis californicus*).	**No Potential.** The Study Area does not contain stands of dense riparian understory favored by this species for nesting. There are no recent observations in the vicinity (eBird 2021).	**Not Present.** No further actions are recommended for this species.
Lanius ludovicianus loggerhead shrike	SSC, LR	Year-round resident in open woodland, grasslands, savannah, and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	**Unlikely.** The Study Area provides some suitable habitat elements, but this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2021).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Laterallus jamaicensis coturniculus California black rail	ST, SFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	**No Potential.** The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	**Not Present.** No further actions are recommended for this species.
Melospiza melodia samuelis San Pablo song sparrow	SSC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed, with gumplant and other shrubs present in the upper zone for nesting. May forage in areas adjacent to marshes.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' limited Napa County range.	**Not Present.** No further actions are recommended for this species.
Nycticorax nycticorax black-crowned night heron	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	**No Potential.** The Study Area and adjacent lands lack aquatic foraging habitat.	**Not Present.** No further actions are recommended for this species.
Passerculus sandwichensis alaudinus Bryant's savannah sparrow	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas, including grasslands. Also uses drier, more upland coastal grasslands. Nests near the ground in taller vegetation, including along levees and canals.	**Unlikely.** Grassland cover within the Study Area is relatively arid, and this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2021).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Progne subis purple martin	SSC, LR	Summer resident. Inhabits woodlands and low-elevation coniferous forests. Nests in old woodpecker cavities and man-made structures (bridges, utility towers). Nest is often located in tall, isolated tree or snag.	**No Potential.** Typical mixed or coniferous forest habitat is not present, and this species' Napa County range is restricted to the forested, northwestern portion of the County (Smith 2003, CDFW 2021).	**Not Present.** No further actions are recommended for this species.
Rallus obsoletus obsoletus California Ridgway's (clapper) rail	FE, SE, SFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on mollusks and crustaceans.	**No Potential.** The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	**Not Present.** No further actions are recommended for this species.
Riparia riparia bank swallow	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**No Potential.** The Study Area does not contain cliffs or cuts with fine-textured soils or any other potentially suitable nesting substrate. Not known to nest in Napa County as per Smith (2003).	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Setophaga petechia brewsteri (Brewster's) yellow warbler	SSC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting is variable, but dense willow growth is typical. Occurs widely on migration.	**No Potential.** The Study Area does not contain riparian habitat with dense, mature thickets of willows.	**Not Present.** No further actions are recommended for this species.
Spizella atrogularis black-chinned sparrow	LR	Summer resident. Typically occurs on arid, rocky slopes with brushy vegetation, e.g. mixed chaparral, and sagebrush.	**Unlikely.** The Study Area does not contain chaparral or similar habitats with dense, mature brush.	**Presumed Absent.** No further actions are recommended for this species.
Strix occidentalis caurina northern spotted owl	FT,ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with stands of mature conifers. In Napa County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	**No Potential.** The Study Area does not contain conifer or mixed broadleaf-conifer forest nor is any present in the immediate vicinity.	**Not Present.** No further actions are recommended for this species.
Xanthocephalus xanthocephalus yellow-headed blackbird	SSC, LR	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	**No Potential.** The Study Area does not provide vegetated ponds or emergent marsh suitable for nesting.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Reptiles and Amphibians				
Dicamptodon ensatus California giant salamander	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**No Potential.** Although there is a perennial stream (Soda Creek) on the edge of the Study Area, there is no forest or dense, mesic woodland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Emys marmorata western pond turtle	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	**Unlikely.** Although Soda Creek is adjacent to the Study Area, it is greater than 200 feet from the Project Area; intervening area is xeric.	**Presumed Absent.** No further actions are recommended for this species.
Rana boylii foothill yellow-legged frog	SSC	Found in or near rocky streams in a variety of habitats; highly aquatic. Prefers partially-sunlit, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on invertebrates (aquatic and terrestrial).	**Unlikely.** Although Soda Creek is adjacent to the Study Area, it is greater than 200 feet from the Project Area; intervening area is xeric.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Rana draytonii California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, marshes, and stream pools. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	**Unlikely.** Although Soda Creek is adjacent to the Study Area, it is greater than 200 feet from the Project Area; intervening area is xeric.	**Presumed Absent.** No further actions are recommended for this species.
Taricha rivularis red-bellied newt	SSC	Inhabits coastal forests from southern Sonoma County northward, with an isolated population in Santa Clara County. Redwood forest provides typical habitat, though other forest types (e.g., hardwood) are also occupied. Adults are terrestrial and fossorial. Breeding occurs in streams, usually with relatively strong flows.	**No Potential.** The Study Area does not contain mesic forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Fishes				
Acipenser medirostris green sturgeon	FT, SSC	Spawns in the Sacramento River and Klamath Rivers, at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further actions are recommended for this species.
Eucyclogobius newberryi tidewater goby	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches. Requires fairly still but not stagnant water and high oxygen levels.	**No Potential.** The Study Area does not contain brackish or estuarine waters.	**Not Present.** No further actions are recommended for this species.
Hypomesus transpacificus Delta smelt	FT, ST	Endemic to the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt; most often at salinities < 2 ppt.	**No Potential.** The Study Area does not contain estuarine waters.	**Not Present.** No further actions are recommended for this species.
Lampetra ayresi river lamprey	SSC	Lower Sacramento River, San Joaquin River and Russian River. May occur in coastal streams north of San Francisco Bay. Adults need clean, gravelly riffles, Ammocoetes need sandy backwaters or stream edges, good water quality and temps < 25 degrees C.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Mylopharodon conocephalus hardhead	SSC	Known from mid-elevation streams in the Sacramento, San Joaquin, Napa River, and Russian River drainages. Prefer clear, deep pools with sand-gravel-boulder bottoms and slow water velocity.	**No Potential.** The Study Area does not contain perennial riverine habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Oncorhynchus mykiss irideus steelhead - central CA coast DPS	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further actions are recommended for this species.
Oncorhynchus tshawytscha Chinook salmon - California coastal ESU	FT	This ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further actions are recommended for this species.
Pogonichthys macrolepidotus Sacramento splittail	SSC	Formerly endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young. A freshwater species, but tolerant of moderate salinity (10-18 parts per thousand).	**No Potential.** The Study Area does not contain riverine or estuarine waters.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Spirinchus thaleichthys longfin smelt	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**No Potential.** The Study Area does not contain riverine or estuarine waters.	**Not Present.** No further actions are recommended for this species.
Invertebrates				
Branchinecta lynchi vernal pool fairy shrimps	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**No Potential.** The Study Area does not contain vernal pools or other suitable seasonal aquatic features (e.g., swales deep and ponded enough to support this species).	**Not Present.** No further actions are recommended for this species.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT	Known from the Central Valley and adjacent foothills, in riparian and oak savannah where elderberry (*Sambucus* sp.), the host plant, is present.	**Unlikely.** Although elderberry was observed during the site visit, all CNDDB occurrences are restricted to its southeastern-most portion of Napa County, in Wooden Valley (CDFW 2021a).	**Presumed Absent.** No further actions are recommended for this species.
Speyeria callippe callippe Callippe silverspot butterfly	FE	Two populations are recognized, on San Bruno Mountain and the Cordelia Hills. Host plant is Johnny jump-up (*Viola pedunculata*), which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	**Unlikely.** Although *Viola* was observed within the Study Area during the site visit, this species' known range with Napa County is restricted to the immediate vicinity of the Cordelia Hills (CDFW 2021a).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Syncaris pacifica California freshwater shrimp	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	**No Potential.** The Study Area does not contain perennial stream or riverine habitat to support this species.	**Not Present.** No further actions are recommended for this species.

***Key to status codes:**

FC	Federal Candidate for Listing
FE	Federal Endangered
BGEPA	Bald and Golden Eagle Protection Act Species
FT	Federal Threatened
LR	Locally Rare as per Napa County Baseline Report
SC (E/T)	State Candidate for Listing (Endangered/Threatened)
SE	State Endangered
SFP	State Fully Protected Animal
SR	State Rare
SSC	State Species of Special Concern
ST	State Threatened
CRPR 1A	CNPS CRPR 1A: Plants presumed extinct in California
CRPR 1B	CNPS CRPR 1B: Plants rare, threatened or endangered in California and elsewhere
CRPR 2A	CNPS CRPR 2A: Plants presumed extirpated in California, but more common elsewhere
CRPR 2B	CNPS CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 3	CNPS CRPR 3: Plants about which CNPS needs more information (a review list)
CRPR 4	CNPS CRPR 4: Plants of limited distribution (a watch list)
WBWG	Western Bat Working Group High or Medium-high Priority Species

Potential to Occur:

No Potential: Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Results and Recommendations:

Present: Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

Assumed Present: Species is assumed to be present on-site based on the presence of key habitat components.

Assumed Present without Impact: Species assumed present; however, project activities will not have an impact on the species.

Presumed Absent: Species is presumed to not be present due to a lack of key habitat components.

Not Present: Species is considered not present due to a clear lack of any suitable habitat and/or local range limitations.

Not Observed: Species was not observed during dedicated/formal surveys.

Presence Unknown: Species has the potential to be present, but no dedicated surveys to determine absence/presence were performed.

Appendix D

Representative Photographs

Non-native grassland in foreground, toyon chaparral in background, situated in the northeast portion of the Study Area

Blue oak woodland in the central portion of the Study Area; note: fire scarring of several trees

Non-native grassland in foreground, blue oak woodland in the background, situated in the central portion of the Study Area

Fire-survived California buckeye (*Aesculus californica*) in the central portion of the Study Area

Appendix E

Native Trees

Table E. Native Trees within the Tree Survey Area (Figure A-4)

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Coast live oak	*Quercus agrifolia*	9.6	4.2			1	Living
Blue oak	*Quercus douglasii*	10.2				2	Living
Blue oak	*Quercus douglasii*	16.0	16.2			3	Living
Blue oak	*Quercus douglasii*	8.0				4	Living
Blue oak	*Quercus douglasii*	13.7	7.4			5	Living
Blue oak	*Quercus douglasii*	8.2				6	Living
Blue oak	*Quercus douglasii*	7.6	6.5			7	Living
Blue oak	*Quercus douglasii*	7.2				8	Dead
Blue oak	*Quercus douglasii*	8.0				9	Dead
Blue oak	*Quercus douglasii*	10.8				10	Dead
Blue oak	*Quercus douglasii*	11.2				11	Dead
Blue oak	*Quercus douglasii*	8.5	5.5			12	Dead
Blue oak	*Quercus douglasii*	13.9				13	Living
Blue oak	*Quercus douglasii*	13.7				14	Dead
Blue oak	*Quercus douglasii*	9.5				15	Dead
Blue oak	*Quercus douglasii*	16.4				16	Living
Blue oak	*Quercus douglasii*	12.8	8.2			17	Living
Blue oak	*Quercus douglasii*	6.7	6.4	4.7		18	Living
Blue oak	*Quercus douglasii*	7.1	5.2			19	Dead
Blue oak	*Quercus douglasii*	9.5				20	Dead
Blue oak	*Quercus douglasii*	10.2				21	Living
Blue oak	*Quercus douglasii*	8.4				22	Dead
Blue oak	*Quercus douglasii*	13.3	8.9			23	Dead
Blue oak	*Quercus douglasii*	10.0	9.4			24	Living
Blue oak	*Quercus douglasii*	4.7				25	Dead
Blue oak	*Quercus douglasii*	9.4	8.2			26	Living
Blue oak	*Quercus douglasii*	10.4	9.4			27	Dead
Blue oak	*Quercus douglasii*	11.0	8.0	9.4		28	Dead
Blue oak	*Quercus douglasii*	12.9				29	Living
Blue oak	*Quercus douglasii*	10.2	9.0	7.5		30	Dead
Blue oak	*Quercus douglasii*	10.7				31	Dead
Blue oak	*Quercus douglasii*	16.0				32	Living
Blue oak	*Quercus douglasii*	10.0	9.7			33	Living

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	13.2				34	Dead
Blue oak	*Quercus douglasii*	12.0				35	Dead
Blue oak	*Quercus douglasii*	10.0	7.3			36	Dead
Blue oak	*Quercus douglasii*	11.7				37	Living
Blue oak	*Quercus douglasii*	13.0				38	Living
Blue oak	*Quercus douglasii*	10.5	10.5			39	Living
Blue oak	*Quercus douglasii*	18.9				40	Living
Blue oak	*Quercus douglasii*	11.8	7.2			41	Dead
Blue oak	*Quercus douglasii*	14.8				42	Living
Blue oak	*Quercus douglasii*	16.4				43	Living
Blue oak	*Quercus douglasii*	13.7				44	Living
Blue oak	*Quercus douglasii*	18.3				45	Dead
Blue oak	*Quercus douglasii*	10.9	9.8			46	Dead
Blue oak	*Quercus douglasii*	11.9				47	Living
Blue oak	*Quercus douglasii*	16.5	6.5			48	Living
Blue oak	*Quercus douglasii*	9.4	9.4			49	Dead
Blue oak	*Quercus douglasii*	10.2	9.5	6.9		50	Dead
Blue oak	*Quercus douglasii*	7.4				51	Dead
Blue oak	*Quercus douglasii*	11.0	9.0			52	Dead
Blue oak	*Quercus douglasii*	9.0				53	Dead
Blue oak	*Quercus douglasii*	15.9	7.0			54	Dead
Blue oak	*Quercus douglasii*	11.5				55	Dead
Blue oak	*Quercus douglasii*	9.2				56	Dead
Blue oak	*Quercus douglasii*	8.0	6.2			57	Dead
Blue oak	*Quercus douglasii*	6.9				58	Dead
Blue oak	*Quercus douglasii*	7.1				59	Dead
Blue oak	*Quercus douglasii*	5.5				60	Dead
Blue oak	*Quercus douglasii*	9.0	7.0			61	Dead
Blue oak	*Quercus douglasii*	11.2				62	Dead
Blue oak	*Quercus douglasii*	11.3	10.5			63	Dead
Blue oak	*Quercus douglasii*	8.5				64	Dead
Blue oak	*Quercus douglasii*	14.0				65	Dead
Blue oak	*Quercus douglasii*	7.6				66	Living

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	9.5				67	Dead
Blue oak	*Quercus douglasii*	8.8	5.5			68	Living
Blue oak	*Quercus douglasii*	12.5				69	Dead
Blue oak	*Quercus douglasii*	7.5				70	Living
Blue oak	*Quercus douglasii*	4.5				71	Dead
Blue oak	*Quercus douglasii*	5.5	4.8			72	Living
Blue oak	*Quercus douglasii*	9.3				73	Living
Blue oak	*Quercus douglasii*	11.0				74	Dead
Blue oak	*Quercus douglasii*	7.7				75	Dead
Blue oak	*Quercus douglasii*	10.5				76	Dead
Blue oak	*Quercus douglasii*	6.2				77	Dead
Blue oak	*Quercus douglasii*	6.7	4.0			78	Living
Blue oak	*Quercus douglasii*	8.1	7.2	6.6		79	Living
Blue oak	*Quercus douglasii*	8.9	7.4			80	Living
Blue oak	*Quercus douglasii*	9.0				81	Dead
Blue oak	*Quercus douglasii*	12.5				82	Living
Blue oak	*Quercus douglasii*	12.3				83	Living
Blue oak	*Quercus douglasii*	9.1				84	Dead
Blue oak	*Quercus douglasii*	12.3				85	Dead
Blue oak	*Quercus douglasii*	9.0				86	Living
Blue oak	*Quercus douglasii*	14.2				87	Dead
Blue oak	*Quercus douglasii*	5.4				88	Dead
Blue oak	*Quercus douglasii*	10.5	9.4			89	Living
Coast live oak	*Quercus agrifolia*	16.2	12.3	11.2		90	Living
Blue oak	*Quercus douglasii*	10.2				91	Living
Blue oak	*Quercus douglasii*	9.4	7.6			92	Dead
Blue oak	*Quercus douglasii*	12.5				93	Dead
Blue oak	*Quercus douglasii*	8.5				94	Dead
Blue oak	*Quercus douglasii*	11.5				95	Dead
Blue oak	*Quercus douglasii*	11.5				96	Dead
Blue oak	*Quercus douglasii*	9.3				97	Dead
Blue oak	*Quercus douglasii*	14.0				98	Dead
Blue oak	*Quercus douglasii*	10.1				99	Dead

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	9.5				100	Dead
Blue oak	*Quercus douglasii*	10.5				101	Living
Blue oak	*Quercus douglasii*	12.5				102	Dead
Blue oak	*Quercus douglasii*	10.0				103	Dead
Blue oak	*Quercus douglasii*	8.0	7.1			104	Dead
Blue oak	*Quercus douglasii*	7.0	5.5			105	Dead
Blue oak	*Quercus douglasii*	13.2	5.5			106	Dead
Blue oak	*Quercus douglasii*	13.2				107	Living
Blue oak	*Quercus douglasii*	9.4				108	Living
Blue oak	*Quercus douglasii*	13.0				109	Dead
Blue oak	*Quercus douglasii*	7.4				110	Living
Blue oak	*Quercus douglasii*	14.0	7.0			111	Dead
Blue oak	*Quercus douglasii*	8.2				112	Dead
Blue oak	*Quercus douglasii*	8.4				113	Dead
Blue oak	*Quercus douglasii*	6.7				114	Dead
Blue oak	*Quercus douglasii*	12.2				115	Living
Blue oak	*Quercus douglasii*	8.0	5.5			116	Living
Blue oak	*Quercus douglasii*	8.3				117	Living
Blue oak	*Quercus douglasii*	11.5				118	Living
Blue oak	*Quercus douglasii*	11.0				119	Living
Blue oak	*Quercus douglasii*	6.6				120	Living
Blue oak	*Quercus douglasii*	4.4				121	Dead
Blue oak	*Quercus douglasii*	15.0				122	Living
Blue oak	*Quercus douglasii*	11.3				123	Living
Blue oak	*Quercus douglasii*	11.7				124	Dead
Blue oak	*Quercus douglasii*	12.6				125	Living
Blue oak	*Quercus douglasii*	9.5				126	Dead
Blue oak	*Quercus douglasii*	9.0				127	Living
Blue oak	*Quercus douglasii*	6.8				128	Dead
Blue oak	*Quercus douglasii*	5.8				129	Dead
Coast live oak	*Quercus agrifolia*	8.0	8.0	7.5		130	Living
Coast live oak	*Quercus agrifolia*	9.5				131	Living
Coast live oak	*Quercus agrifolia*	19.3				132	Living

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	13.5	11.5			133	Living
Blue oak	*Quercus douglasii*	20.3				134	Living
Blue oak	*Quercus douglasii*	13.2	11.8			135	Living
Blue oak	*Quercus douglasii*	7.8				136	Dead
Blue oak	*Quercus douglasii*	7.2				137	Dead
Blue oak	*Quercus douglasii*	6.6				138	Dead
Blue oak	*Quercus douglasii*	8.9				139	Dead
Blue oak	*Quercus douglasii*	5.0				140	Living
Blue oak	*Quercus douglasii*	5.0				141	Living
Blue oak	*Quercus douglasii*	7.2	7.0			142	Living
Blue oak	*Quercus douglasii*	6.2	7.0			143	Living
Blue oak	*Quercus douglasii*	8.0	7.0			144	Living
Blue oak	*Quercus douglasii*	8.5				145	Living
Blue oak	*Quercus douglasii*	8.5				146	Living
Blue oak	*Quercus douglasii*	11.8				147	Dead
Blue oak	*Quercus douglasii*	11.0	9.9			148	Dead
Blue oak	*Quercus douglasii*	9.5				149	Dead
Blue oak	*Quercus douglasii*	13.8	11.6	8.8		150	Living
Blue oak	*Quercus douglasii*	7.2	7.0			151	Dead
Blue oak	*Quercus douglasii*	7.1				152	Dead
Blue oak	*Quercus douglasii*	10.0	9.0	7.2		153	Dead
Blue oak	*Quercus douglasii*	6.0				154	Dead
Blue oak	*Quercus douglasii*	5.5				155	Dead
Blue oak	*Quercus douglasii*	13.2				156	Dead
Blue oak	*Quercus douglasii*	9.7	8.4			157	Dead
Blue oak	*Quercus douglasii*	8.5				158	Living
Blue oak	*Quercus douglasii*	14.0				159	Living
Blue oak	*Quercus douglasii*	12.3				160	Living
Blue oak	*Quercus douglasii*	4.6				161	Living
Blue oak	*Quercus douglasii*	9.2				162	Living
Blue oak	*Quercus douglasii*	8.2				163	Living
Blue oak	*Quercus douglasii*	10.0	8.3	7.5		164	Dead
Blue oak	*Quercus douglasii*	9.2	7.5			165	Dead

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	8.5				166	Dead
Blue oak	*Quercus douglasii*	8.9				167	Dead
Blue oak	*Quercus douglasii*	10.2				168	Dead
Blue oak	*Quercus douglasii*	9.4				169	Dead
Blue oak	*Quercus douglasii*	8.0				170	Dead
Blue oak	*Quercus douglasii*	10.9	10.2			171	Living
Blue oak	*Quercus douglasii*	8.5				172	Dead
Blue oak	*Quercus douglasii*	13.7				173	Dead
Blue oak	*Quercus douglasii*	9.2				174	Dead
Blue oak	*Quercus douglasii*	8.3	8.0	6.6		175	Dead
Blue oak	*Quercus douglasii*	14.9				176	Dead
Blue oak	*Quercus douglasii*	10.9				177	Dead
Blue oak	*Quercus douglasii*	13.9				178	Living
Blue oak	*Quercus douglasii*	10.1				179	Living
Blue oak	*Quercus douglasii*	10.4				180	Living
Blue oak	*Quercus douglasii*	14.3	7.5			181	Living
Blue oak	*Quercus douglasii*	12.2				182	Living
Blue oak	*Quercus douglasii*	18.4	13.7			183	Living
Blue oak	*Quercus douglasii*	13.2	9.1			184	Dead
Blue oak	*Quercus douglasii*	13.4				185	Dead
Blue oak	*Quercus douglasii*	12.0				186	Dead
Blue oak	*Quercus douglasii*	9.4				187	Dead
Blue oak	*Quercus douglasii*	10.4				188	Living
Blue oak	*Quercus douglasii*	9.7				189	Living
Blue oak	*Quercus douglasii*	13.0				190	Living
Blue oak	*Quercus douglasii*	10.0	7.5			191	Dead
Blue oak	*Quercus douglasii*	9.4				192	Dead
Blue oak	*Quercus douglasii*	10.7	6.8			193	Dead
Blue oak	*Quercus douglasii*	7.2				194	Dead
Blue oak	*Quercus douglasii*	5.5	5.5			195	Dead
Blue oak	*Quercus douglasii*	9.1				196	Dead
Blue oak	*Quercus douglasii*	6.1	5.9			197	Dead
Blue oak	*Quercus douglasii*	7.1	7.0			198	Dead

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	9.4	8.9	8.0		199	Dead
Blue oak	*Quercus douglasii*	16.0				200	Living
Blue oak	*Quercus douglasii*	8.4				201	Living
Blue oak	*Quercus douglasii*	11.7	9.1	8.6	7.6	202	Living
Blue oak	*Quercus douglasii*	13.6				203	Living
Blue oak	*Quercus douglasii*	13.5				204	Dead
Blue oak	*Quercus douglasii*	10.2				205	Living
Blue oak	*Quercus douglasii*	15.7				206	Living
Blue oak	*Quercus douglasii*	10.5				207	Dead
Blue oak	*Quercus douglasii*	17.1				208	Dead
Blue oak	*Quercus douglasii*	8.5	8.3			209	Dead
Blue oak	*Quercus douglasii*	13.2				210	Dead
Blue oak	*Quercus douglasii*	12.3				211	Dead
Blue oak	*Quercus douglasii*	11.7				212	Dead
Blue oak	*Quercus douglasii*	13.1				213	Dead
Blue oak	*Quercus douglasii*	12.2				214	Dead
Blue oak	*Quercus douglasii*	11.4				215	Dead
Blue oak	*Quercus douglasii*	10.6				216	Dead
Blue oak	*Quercus douglasii*	9.7				217	Dead
Blue oak	*Quercus douglasii*	5.3				218	Dead
Blue oak	*Quercus douglasii*	8.8	6.9			219	Dead
Blue oak	*Quercus douglasii*	7.8				220	Dead
California buckeye	*Aesculus californica*	11.0				221	Living
Blue oak	*Quercus douglasii*	10.2	8.7	8.5		222	Living
Blue oak	*Quercus douglasii*	12.7				223	Living
Blue oak	*Quercus douglasii*	11.9				224	Living
Blue oak	*Quercus douglasii*	11.9				225	Living
Blue oak	*Quercus douglasii*	13.5				226	Living
Blue oak	*Quercus douglasii*	9.2				227	Dead
Blue oak	*Quercus douglasii*	11.7				228	Living
Blue oak	*Quercus douglasii*	8.7				229	Living
Blue oak	*Quercus douglasii*	6.2	5.0			230	Dead
Blue oak	*Quercus douglasii*	7.5				231	Living

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	8.6				232	Living
Blue oak	*Quercus douglasii*	10.1				233	Living
Blue oak	*Quercus douglasii*	10.5	7.0			234	Living
Blue oak	*Quercus douglasii*	13.8				235	Living
Blue oak	*Quercus douglasii*	7.8				236	Living
Blue oak	*Quercus douglasii*	10.1				237	Living
Blue oak	*Quercus douglasii*	16.0				238	Living
Blue oak	*Quercus douglasii*	12.3	11.8			239	Living
Blue oak	*Quercus douglasii*	14.1				240	Living
Blue oak	*Quercus douglasii*	19.2	11.0			241	Living
Blue oak	*Quercus douglasii*	12.8	11.0			242	Living
Blue oak	*Quercus douglasii*	10.5	11.0			243	Living
Blue oak	*Quercus douglasii*	7.8	11.0			244	Living
Blue oak	*Quercus douglasii*	8.9				245	Living
Blue oak	*Quercus douglasii*	9.1				246	Living
Blue oak	*Quercus douglasii*	9.3				247	Living
Blue oak	*Quercus douglasii*	10.3	9.3			248	Dead
Blue oak	*Quercus douglasii*	8.5				249	Living
Blue oak	*Quercus douglasii*	9.3				250	Living
Blue oak	*Quercus douglasii*	9.1				251	Dead
Blue oak	*Quercus douglasii*	8.4				252	Dead
Blue oak	*Quercus douglasii*	8.4				253	Living
Blue oak	*Quercus douglasii*	9.3	9.2	7.8		254	Living
Blue oak	*Quercus douglasii*	8.2				255	Living
Coast live oak	*Quercus agrifolia*	20.6				256	Living
Coast live oak	*Quercus agrifolia*	21.7	16.3			257	Living
Blue oak	*Quercus douglasii*	8.0				258	Living
Blue oak	*Quercus douglasii*	7.3				259	Living
Blue oak	*Quercus douglasii*	6.1				260	Living
Blue oak	*Quercus douglasii*	7.2				261	Dead
Blue oak	*Quercus douglasii*	7.9				262	Living
Blue oak	*Quercus douglasii*	8.4				263	Living
Blue oak	*Quercus douglasii*	7.9				264	Living

SCIENTIFIC NAME	COMMON NAME	DBH 1 (in.)	DBH 2 (in.)	DBH 3 (in.)	DBH 4 (in.)	ID #	MORTALITY
Blue oak	*Quercus douglasii*	7.9				265	Living
Coast live oak	*Quercus agrifolia*	9.8	8.8			266	Living
Blue oak	*Quercus douglasii*	9.1				267	Living
Blue oak	*Quercus douglasii*	8.3	6.2			268	Living
Blue oak	*Quercus douglasii*	7.2	6.2			269	Living
Blue oak	*Quercus douglasii*	8.2				270	Living
Blue oak	*Quercus douglasii*	9.7	9.1			271	Living
Blue oak	*Quercus douglasii*	9.5				272	Living
Blue oak	*Quercus douglasii*	8.3				273	Living
Blue oak	*Quercus douglasii*	7.0				274	Living

Appendix F

Statement of Qualifications

STATEMENT OF QUALIFICATIONS

WRA is an environmental consulting firm with over 30 years of experience conducting biological resources assessments, wetland delineations, protocol-level rare plant surveys, special-status wildlife assessments and species-specific surveys, as well as preparing applications with state and federal natural resource agencies for avoiding, minimizing, and mitigating impacts to sensitive natural resources. Other services and products with which WRA has expertise include preparation of CEQA/NEPA documents, habitat mitigation and monitoring plans, natural resource management plans, mitigation and conservation bank enabling instruments, grazing management plans, and wetland and other natural resources restoration plans.

Matt Richmond, BS, Principal with WRA, has over fifteen years performing botanical assessments, rare plant surveys, environmentally sensitive habitat area surveys, wetland delineations, and vegetation mapping. He also has experience performing protocol-level surveys for California red-legged frog, Ridgeway's rail, marbled murrelet, northern spotted owl, Point Arena mountain beaver, and Behren's silverspot butterfly. His project focus is in conservation and mitigation banking, coastal development projects, vineyard development, and timber resources. Mr. Richmond regularly manages large-scale mitigation banking projects, as well as coastal development permits, coastal restoration projects, vineyard grading permits with a focus in Mendocino, Napa, Lake, and Sonoma counties. Mr. Richmond's technical training includes the flora of Northern California, plant ecology, and forest ecology. Additionally, he has completed the 40-hour Corps wetland delineation training. Mr. Richmond received his Bachelor of Science in Biology from Humboldt State University.

Aaron Arthur, MS, Associate Plant Biologist with WRA, has nearly fifteen years performing vegetation & habitat mapping, rare plant surveys, botanical assessments, vegetation change analysis, and wetland delineations. His project focus is in vineyard development, timber resources, coastal development permits, habitat mitigation and monitoring plans, conservation and mitigation banking, and long-term management plans in Sonoma, Marin, Napa, and Mendocino counties. Mr. Arthur's technical training includes the flora of Northern California, the flora of the Pacific Northwest, agrostology, aquatic botany, plant ecology, forest ecology, and soil science. Additionally he has completed the 40-hour Corps wetland delineation course, holds 2081(a) Plant Voucher Permit, and is Certified California Consulting Botanist #0016 from the California Native Plant Society. Mr. Arthur received his Bachelor of Arts in Geography and received his Master of Science in Physical Geography from Oregon State University, where his research focused on forest floristics and vegetation change.

Jason Yakich, MS, Associate Wildlife Biologist with WRA, has nearly fifteen years of experience performing wildlife habitat assessments, biological monitoring for special-status wildlife species, breeding bird and other avian surveys, and protocol-level surveys for several special-status wildlife species. He prepares and oversees a variety of biological assessments and technical reports, and assures permit compliance for a wide array of public and private projects. Mr. Yakich has respective permit authorizations from the USFWS and CDFW to conduct active (call-playback) surveys for California clapper rail and California black rail. Mr. Yakich received his Bachelor of Arts in Biology from U.C. Santa Cruz, and received his Master of Science in Biology from San Francisco State University with a focus in marine biology.