

# EXHIBIT B-1

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## Biological Resources Reconnaissance Survey Report

Hess Persson Property, Atlas Peak Road  
Napa County, California (APN: 039-080-042)

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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 four vineyard blocks comprising 16.0 net acres of vines within 20.6 gross acres (Project Area) located at the Persson Property on Atlas Peak Road in unincorporated Napa County, California. WRA, Inc. performed field surveys on April 25 and June 8, 2018. The Project Area is comprised of oak woodland and non-native grasslands.

Approximately 10.7 acres, of a total 23.94 acres of oak woodlands across the property (44.7 percent) are proposed to be converted to vineyard. 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. A combination of avoidance and preservation is recommended to ensure consistency with this policy. The remainder of the vineyard blocks are situated in the non-sensitive biological community of non-native grassland.

The Project Area is intentionally sited to avoid on-site seasonal wetlands, with the exception of three proposed rock water crossings which will be permitted separately with the U.S. Army Corps of Engineers and Regional Water Quality Control Board.

A protocol-level rare plant survey resulted in the detection of two special-status plants: Greene's daisy (*Erigeron greenei*, CRPR 1B) and nodding harmonia (*Harmonia nutans*, CRPR 4). Both populations of plants will be permanently impacted by the Project, but recommendations are provided herein to minimize these impacts.

Two special-status bats and one special-status bird, 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.

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## DEFINITIONS

Study Area: The area throughout which the assessment and survey effort was performed, inclusive of the entire parcel of the Persson Ranch, which includes the entire Project Area

Project Area: The area within which the proposed vineyard(s) will be installed; area evaluated for potential impacts to sensitive biological resource

## LIST OF 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
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of Napa
Corps	U.S. Army Corps of Engineers
CSRL	California Soils Resources Lab
CWA	Clean Water Act
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species 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
CRPR	California Rare Plant Ranks
RWQCB	Regional Water Quality Control Board
SFP	State Fully Protected Species
SSC	Species of Special Concern
SWRCB	State Water Resource Control Board
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group

## **1.0 INTRODUCTION**

### **1.1 Purpose of Assessment**

On April 25 and June 8, 2018, WRA, Inc. (WRA) performed an assessment of biological resources at a private residence located on Atlas Peak Road, unincorporated Napa County (APN: 039-080-042; 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 previously document 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 visit, which assessed the Project Area for (1) the presence of sensitive biological communities, (2) the potential for biological communities 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.

Figures are included in Appendix A. A list of plants and wildlife observed during the site visits is included as Appendix B. An assessment of all of the special-status species documented from the general vicinity and their potential to occur in the Project Areas is included as Appendix C. Representative photographs of the Study Area are included as Appendix D. The qualifications of the biologists who prepared this report are included as Appendix E.

### **1.2 Project Summary**

The proposed project (Project) involves the installation of four vineyard blocks totaling approximately 16.0 acres net (20.6 gross acres) in the central and southern portions of the 40-acre property. 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 Erosion Control Plan (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 Biological Communities*

Herein, biological communities are understood to be those areas of a particular vegetation type, soil or bedrock formation, aquatic features, and/or other distinct phenomenon. Typically, biological communities have distinct boundaries that can be delineated based on changes in plant assemblages, soil types, and/or changes in surface/near-surface hydroperiod. The several regulations defining and protecting sensitive biological communities 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 (CFGF). 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 2018b) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2018). 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 species/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). 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 Table 1. Additionally, any plant species listed as sensitive within the Napa County General Plan or NCBDR are likewise considered sensitive.

Table 1. CNPS Ranks and Threat Codes

<b>California Rare Plant Ranks (formerly known as CNPS Lists)</b>	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
<b>Threat Ranks</b>	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Wildlife: As with plants, special-status wildlife include 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 guided by the Napa County General Plan (Napa County 2008) and regulated by Napa County Code Section 18.108. 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 biological communities are identified in the NCBDR (Napa County 2005). In addition to those biological communities 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 caused 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 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, to 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.

#### *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.

### **3.0 ENVIRONMENTAL SETTING**

The Project Area is set in a single parcel of approximately 40 acres, located in southern Napa County, approximately six miles southeast of the Yountville and six miles north of Napa. It is situated in the Howell Mountains, south of Atlas Peak. Detailed descriptions of the local setting are below.

#### **3.1 Topography and Soils**

The overall topography of the Study Area is gently to steeply sloped with a predominantly southern-facing aspect, and elevations ranging from approximately 500 to 650 feet above sea level. According to the *Soil Survey of Napa County* (USDA 1978), the Project Area is underlain by three soil mapping units: Boomer-Forward-Felta Complex, 30 to 50 percent slope, Hambright-Rock Outcrop Complex, 2 to 30 percent slope, and Hambright-Rock Outcrop Complex, 30 to 75 percent slope. The parent soil series of these mapping units are summarized below.

Forward series: This series consists of moderately deep sandy loam that formed from weathered rhyolitic tuff situated on mountains and slopes ranging from 400 to 4,500 feet. These soils are not hydric and are well drained with medium runoff and moderately rapid permeability, above the tuff. Native vegetation includes ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), and manzanita (*Arctostaphylos* spp.) (USDA 1978, CSRL 2018).

Boomer Series: This series consist of deep and very deep gravelly loam formed from metavolcanic and basic igneous rock on foothills and mountains at elevations ranging from 500 to 5,000 feet. These soils are not hydric, are well-drained with slow to very rapid runoff and moderately slow permeability. Native vegetation typically includes ponderosa pine, Douglas fir, California black oak (*Quercus kelloggii*), and manzanita (USDA 1978, CSRL 2018).

Felta Series: This series consist of well-drained soils formed from gravelly alluvium from mixed igneous rock on dissected terraces at elevations of 100 to 2,000 feet. These soils are not hydric, have medium to rapid runoff with moderate permeability. Native vegetation typically includes white oak (*Quercus garryana*), manzanita, and annual grasses and forbs (USDA 1978, CSRL 2018).

Hambricht 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. These soils are not considered hydric, and are well drained with moderate permeability and medium to rapid runoff. Native vegetation on this series typically includes annual grasses and forbs with a few blue oaks (*Quercus douglasii*) and shrubs (USDA 1978).

Rock outcrop: Rock outcrop consists of ridges of igneous bedrock and of outcrops of sandstone and shale. These areas are more than 90 percent rock with soil less than 6 inches deep. Runoff is very rapid. Native vegetation typically includes small shrubs and few stunted trees in rock fissures. (USDA 1978).

### **3.2 Climate and Hydrology**

The Study Area is located above of the coastal fog belt of the Bay Area, but annual rainfall is substantial in winter through early spring. 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 2018).

The local watershed is Milliken Creek (HUC 12: 180500020204) and the regional watershed is San Pablo Bay Estuaries (HUC 8: 18050002). The parcel is located within the Milliken Creek – Main Fork drainage, below the Milliken Reservoir. There are no mapped blue-line streams within the Project Area (USGS 1968) or wetlands in the California Aquatic Resources Inventory (CARI 2018); however there is a forked intermittent stream (R4SBA) located in the southern portion of the Study Area on the National Wetlands Inventory (NWI 2018). The primary hydrologic sources are direct precipitation and consequent sheetflow. Precipitation infiltrates quickly with excessive events resulting in short-lived sheetflows that either exit the site or collect in two narrow swales (see Section 5.1).

### **3.3 Biota and Land Use**

The majority of the Study Area was burned in the Atlas Fire of October 2017; however, the residence was spared. The fire intensity was at a level which charred trees and large shrubs, and cleared the herbaceous layer. The Study Area is composed of developed/landscaped within coast live oak woodland and non-native grasslands. Detailed plant community descriptions are included in Section 5.1 below and all observed plant species are included in Appendix B.

Currently the Study Area supports a single-family residence, spared from the fire, and associated infrastructure (roads, gardens), a small (less than 1 acre) existing vineyard block, but is otherwise undeveloped. Regional land-uses include rural residential and vineyards (Google Earth 2018). Historically, the region was open rangeland of larger ranches and vineyards. There is nothing in the historical record that suggests the Study Area was dense chaparral, forest, or extensive wetland, and there is no history of intensive agriculture, quarrying, mining, or timbering (Historic Aerials 2018).

#### 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)
- Yountville 7.5-minute quadrangle (USGS 1993)
- Aerial photographs (Google Earth 2018)
- Historical Aerial photographs (Historical Aerials 2018)
- National Wetlands Inventory (USFWS 2018a)
- California Natural Diversity Database (CNDDDB, CDFW 2018a)
- California Native Plant Society Electronic Inventory (CNPS 2018a)
- Consortium of California Herbaria (CCH 2018)
- California Aquatic Resource Inventory (SFEI 2018)
- USFWS List of Federal Endangered and Threatened Species (USFWS 2018b)
- *eBird* Online Database (eBird 2018)
- 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, 2<sup>nd</sup> Edition* (Sawyer et al. 2009)
- *A Manual of California Vegetation Online* (CNPS 2018b)
- *Preliminary Descriptions of the Terrestrial Natural Communities* (Holland 1986)
- Napa County Land Cover (NCLC) map (Thorne et al. 2004)
- *California Natural Community List* (CDFW 2018b)

Database searches (i.e., CNDDDB, CNPS) focused on the St. Helena, Chiles Valley, Lake Berryessa, Capell Valley, Yountville, Rutherford, Sonoma, Napa, and Mt. George 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 Project Area.

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

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<sup>1</sup> 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.



## 4.1 Biological Communities

### 4.1.1 Terrestrial Biological Communities

The Study Area's terrestrial natural communities were evaluated to determine if such areas have the potential to support special-status plants or wildlife. In most instances, communities are delineated based on distinct shifts in plant assemblage (vegetation), and follow the *California Natural Community List* (CDFW 2018b), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *A Manual of California Vegetation, Online Edition* (CNPS 2018b). 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.<sup>2</sup> Additionally, any sensitive natural communities as described in the Napa County Baseline Report (Napa County 2005) or General Plan (Napa County 2008) were considered.

### 4.1.2 Aquatic Natural Resources

Aquatic natural 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, 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 were noted. In these areas WRA biologists performed sample points following 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).

When present, streams potentially jurisdictional under the CWA and/or the CFGC were delineated using a mix of surveyed topography data, high resolution aerial photographs, and a sub-meter GPS unit. The ordinary high water mark was used to determine the extent of potential Section 404 jurisdiction, while the top-of-bank was 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).

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<sup>2</sup> Ranking of CDFW List of Vegetation Alliances is based on NatureServe Rankings (NatureServe 2018)

## 4.2 Special-status Species

### 4.2.1 General Assessment

Potential occurrence of special-status species in the Project Area was evaluated by first determining which special-status species occur in the vicinity of the Project Area 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 site visit was made on April 25 and June 8, 2018 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. CNDDDB, other reports) on the site in the recent past.

If a more thorough assessment was deemed necessary, 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, protocol-level surveys were conducted within the Study Area in both April and June. 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 2018c, USFWS 1996). Plants were identified using *The Jepson Manual, 2<sup>nd</sup> Edition* (Baldwin et. al. 2012) and Jepson Flora Project (eFlora 2018), to the taxonomic level necessary to determine whether or not they were sensitive. Plant names follow those of Jepson Flora Project (eFlora 2018), unless otherwise noted.

#### 4.2.3 *Special-status Wildlife*

The general assessment for special-status wildlife determined that a few species have the potential to occur in the Study Area. Targeted assessments (e.g., in-depth evaluation of ponds for aquatic organisms) and protocol-level surveys were deemed inapplicable at the time of the site visit, due to inappropriate timing between such a survey and Project initiation.

#### 4.2.4 *Critical Habitat, Essential Fish Habitat, and Wildlife Corridors*

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2018b) and the NMFS Essential Fish Habitat Mapper (NMFS 2018) 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 2018a), and the NCBDR (Napa County 2005). Additionally, aerial imagery (Google 2018) 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.

## 5.0 ASSESSMENT RESULTS

### 5.1 Biological Communities

WRA observed four biological communities within the Study Area: developed, non-native grassland, coast live oak woodland, and seasonal wetland. Biological communities within the Study Area are illustrated in Figure 2 (Appendix A). The non-sensitive biological communities in the Study Area and Project Area include non-native grasslands and developed areas. Sensitive biological communities within the Study Area are both the oak woodland and seasonal wetland.

#### 5.1.1 *Terrestrial Biological Communities*

##### Non-sensitive

Developed Area (no vegetation alliance). Rank: None. The property contains a single-family residence with approximately 2.68 acres of developed and landscaped areas, none of which is within the Project Area. In addition to the residence and associated landscaping, there is a paved access road, a barn, and small (less than 1 acre) vineyard. Where there is an overstory, it is composed of coast live oak (*Quercus agrifolia*), Pacific madrone (*Arbutus menziesii*), and California bay (*Umbellularia californica*). The majority of the understory is composed of landscape plants, common garden weeds, and naturalized exotic herbs. The developed area is synonymous with the Urban/Built-up NCLC type (Thorne et al. 2004).

Non-native Annual Grassland – Wild Oat Grassland (*Avena barbata* Semi-Natural Herbaceous Stands). CDFW Rank: none: The property contains 12.64 acres of non-native grassland, of which approximately 9.89 acres (78.2 percent of the total community type on the property) are located within the Project Area. These grasslands are dominated by non-native grasses including wild oat (*Avena barbata*), soft chess (*Bromus hordeaceus*), dogtail grass (*Cynosurus echinatus*), and brome fescue (*Festuca bromoides*). Native wildflowers provide a characteristic component of these grasslands with such species as sky lupine (*Lupinus nanus*), baby blue eyes (*Nemophila menziesii* var. *atomaria*), blue-eyed grass (*Sisyrinchium bellum*), needle goldfields (*Lasthenia gracilis*), and dense owl's clover (*Castilleja densiflora*). This community is synonymous with the California Annual Grasslands biotic community in the NCLC (Thorne et al. 2004). This community is not considered sensitive by Napa County, CDFW, or any other regulatory entity.

### Sensitive

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, 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 property contains 23.94 acres of coast live oak woodland, which 10.7 acres is situated in the Project Area (44.7 percent of the total community type on the property).

The dominant tree is coast live oak (*Quercus agrifolia*), with substantial cover of blue oak (*Q. douglasii*), and scattered Pacific madrones (*Arbutus menziesii*). In areas where the canopy is dense and nearly closed, sunlight is suppressed, limiting species richness and density. Understory species include poison oak (*Toxicodendron diversilobum*), hedge parsley (*Torilis arvensis*), Pacific sanicle (*Sanicula crassicaulis*), dogtail grass (*Cynosurus echinatus*), and Italian thistle (*Carduus pycnocephalus*). In open canopied areas, the understory contains a higher diversity and density of herbaceous species, similar in composition to the non-native grasslands.

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. Likewise, they are sensitive to Napa County under the General Plan Conservation Element Policy CON-24 (oak woodland retention).

### 5.1.2 Aquatic Natural Resources

Seasonal Wetland – Common Monkey Flower Swale (*Mimulus guttatus* Herbaceous Alliance). Rank: None: Seasonal wetlands are known from a variety of topographic positions and soil types where surface waters collect and flows are reduced, or subsurface waters approach the soil surface as a rising water table or seep. In the Study Area, two seasonal wetlands occupy 0.87 acre as seep-swale complexes.

The vegetation is variable throughout the swales, with patches dominated by a suite of hydrophytes. Overall, common monkey flower (*Mimulus guttatus*) is the dominant species, with subdominant to significant cover of Italian rye grass (*Festuca perennis*), tomcat clover (*Trifolium*

*willdenovii*), variegated clover (*T. variegatum*), and tall flatsedge (*Cyperus eragrostis*). Secondary species include common toad rush (*Juncus bufonius*), common rush (*J. patens*), waxy mannagrass (*Glyceria declinata*), Mediterranean barley (*Hordeum marinum*), and cursed buttercup (*Ranunculus muricatus*).

Indicators of wetland hydrology include flow patterns, sediment deposition, and algal mats (in micro-depressions). The soils were saturated, and in deeper portions of the swale inundated, during the April 25 visit and are assumed hydric given the presence of strong vegetation and wetland hydrology indicators.

## **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, 85 special-status plant species have been documented in the vicinity of the Project Area. Thirty-one of these species have the potential to occur in the Study Area. The remaining species documented from the greater vicinity of the Study Area 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;
- The historical landscape and/or habitat(s) of the Study Area were not suitable habitat prior to land/type conversion (e.g., reclaimed shoreline) to support the special-status plant species;
- Land use history and contemporary management (e.g., grading, intensive grazing) has degraded the localized habitat necessary to support the special-status plant species.

WRA biologists conducted the protocol-level surveys during a period sufficient to identify all thirty-one special-status plant species with the potential to occur. Two special-status plants were located in the Study Area during protocol-level surveys: Greene's narrow-leaved daisy (*Erigeron greenei*, CRPR 1B) and nodding harmonia (*Harmonia nutans*, CRPR 4), both of which are summarized below. All species with the potential to occur are listed below and summarized in Appendix C.

### Special-status Plants Present in the Study Area

Greene's narrow-leaved daisy (*Erigeron greenei*). CRPR 1B. Moderate Potential. Greene's narrow-leaved daisy is a perennial forb in the sunflower family (Asteraceae) that blooms from May to September. It typically occurs on rocky substrate derived from volcanics or serpentine within shrubby vegetation in chaparral habitat at elevations ranging from 260 to 3,270 feet (CDFW 2018a, CNPS 2018a). This species has a serpentine affinity rank of strict endemic (5.7) (Safford et al. 2005); however, this species has been documented from soils derived from volcanics as well as those from ultramafics. Associated species include chamise (*Adenostoma fasciculatum*), musk brush (*Ceanothus jepsonii*), leather oak (*Quercus durata* var. *durata*), Baker's manzanita (*Arctostaphylos bakeri* ssp. *bakeri*), serpentine monardella (*Monardella purpurea*), whickerstem buckwheat (*Eriogonum vimineum*), yellow hayfield tarweed (*Hemizonia congesta* ssp. *lutescens*), vinegar weed (*Trichostema laxum*) (CDFW 2018a, personal observation 2014, 2015, 2016).

There are 31 herbaria records (CCH 2018), 20 CNDDDB records (CDFW 2018a), and 48 Calflora records (2018) throughout California, with the bulk of the records from Napa and Sonoma counties. Seven individuals are located in the Study Area, all located within the Project Area. They are situated on thin, rocky soils in open woodland and grassland (Appendix A).

Nodding harmonia (*Harmonia nutans*). CRPR 4. Moderate Potential. Nodding harmonia is an annual forb in the sunflower family (Asteraceae) that blooms from March through May. It typically occurs on rocky or gravelly substrates derived from volcanic rock within chaparral and cismontane woodland habitat at elevations ranging from 240 to 3,170 feet (CNPS 2018a). Associated species include ponderosa pine (*Pinus ponderosa*), California black oak (*Quercus kelloggii*), Pacific madrone (*Arbutus menziesii*), toyon (*Heteromeles arbutifolia*) Cobb Mountain lupine (*Lupinus sericatus*), rough cat's-ear (*Hypochaeris radicata*), and small fescue (*Festuca microstachys*) (personal observation 2012, 2017, 2018).

There are 71 herbaria records (CCH 2018), 0 CNDDDB records (CDFW 2018a)<sup>3</sup>, and 121 Calflora records (2018) throughout California, with the bulk of the records from Napa County. Approximately two thousand seven hundred fifty (2,750) individuals in two subpopulations are located in the Study Area, covering approximately 2.8 acres. Of this total, approximately 2.3 acres (82.1 percent) falls within the Project Areas. They are situated on thin, rocky soils in open woodland and grassland (Appendix A).

### Special-status Plants Not Observed in the Study Area

The following special-status plants have the potential to occur within the Study Area based on database searches discussed above, but were not observed during focused surveys conducted during the appropriate bloom season for the species:

- Henderson's bentgrass (*Agrostis hendersonii*); CRPR 3
- Napa false indigo (*Amorpha californica* var. *napensis*); CRPR 1B
- Bent-flowered fiddleneck (*Amsinckia lunaris*); CRPR 1B
- Modest rockcress (*Arabis modesta*); CRPR 4

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<sup>3</sup> CRPR 3 and CRPR 4 plants are rarely included in the CNDDDB; therefore a lack of records for nodding harmonia in the CNDDDB does not suggest absence from Napa County or elsewhere

- Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*); CRPR 1B
- Brewer's milk-vetch (*Astragalus breweri*); CRPR 4
- Clara Hunt's milk-vetch (*A. claranus*); FE, ST, CRPR 1B
- Narrow-anthered Brodiaea (*Brodiaea leptandra*); CRPR 1B
- Brewer's Calandrinia (*Calandrinia breweri*); CRPR 4
- Small-flowered Calycadenia (*Calycadenia micrantha*); CRPR 1B
- Mead's owl's-clover (*Castilleja ambigua* var. *meadii*); CRPR 1B
- Holly-leaved ceanothus (*Ceanothus purpureus*); CRPR 1B
- Streamside daisy (*Erigeron biolettii*); CRPR 3
- Bristly leptosiphon (*Leptosiphon acicularis*); CRPR 4
- Jepson's leptosiphon (*L. jepsonii*); CRPR 1B
- Broad-lobed leptosiphon (*L. latisectus*); CRPR 4
- Redwood lily (*Lilium rubescens*); CRPR 4
- Cobb Mountain lupine (*Lupinus sericatus*); CRPR 1B
- Mt. Diablo cottonweed (*Micropus amphibolus*); CRPR 3
- Green Monardella (*Monardella viridis*); CRPR 4
- Tehama navarretia (*Navarretia heterandra*); CRPR 4
- Sonoma beardtongue (*Penstemon newberryi* var. *sonomensis*); CRPR 1B
- Napa checkerbloom (*Sidalcea hickmanii* ssp. *napensis*); CRPR 1B
- Marin checkerbloom (*S. hickmanii* ssp. *viridis*); CRPR 1B
- Napa blue curls (*Trichostema ruygtii*); CRPR 1B
- Showy Rancheria clover (*Trifolium amoenum*); FE, CRPR 1B
- Dark-mouthed Tritelia (*Triteleia lugens*); CRPR 4

### 5.2.2 Special-status Wildlife Species

A total of 58 special-status wildlife species have been documented in Napa County (CDFW 2018a, Napa County 2005). Three of these species have a moderate to high potential to occur in the Study Area and Project Area. 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, 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.

The following special-status wildlife with the potential to occur in the Study Area.

### Special-status Wildlife that Occur in the Study Area

No special-status wildlife species were observed in the Study Area; however, without targeted assessments or protocol-level surveys, their presence cannot be ruled out. Those with the potential to occur, but their presence is unknown are discussed below.

### Special-status Wildlife with the Potential to Occur, but Presence Unknown

Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential. Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented within snags and basal hollows of conifers, and within bole cavities in oak trees. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2018). Trees within the Project Area may contain cavities or snags suitable for roosting, and it has a moderate potential to occur given documented occurrences in the vicinity (CDFW 2018a). A targeted bat habitat assessment was not performed under this biological assessment.

Fringed myotis (*Myotis thysanodes*). WBWG High Priority. Moderate Potential. The fringed myotis ranges through much of western North America from southern British Columbia, Canada, south to Chiapas, Mexico and from Santa Cruz Island in California, east to the Black Hills of South Dakota. This species is found in desert scrubland, grassland, sage-grass steppe, old-growth forest, and subalpine coniferous and mixed deciduous forest. Oak and pinyon-juniper woodlands are most commonly used. The fringed myotis roosts in colonies from 10 to 2,000 individuals, although large colonies are rare. Caves, buildings, underground mines, rock crevices in cliff faces, and bridges are used for maternity and night roosts, while hibernation has only been documented in buildings and underground mines. Tree-roosting has also been documented in Oregon, New Mexico, and California (WBWG 2018). The trees within the Project Area may contain cavities or exfoliating bark suitable for roosting for fringed myotis. A targeted bat habitat assessment was not performed under this biological assessment.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Moderate Potential. The 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. This species has a moderate potential to occur within the Study Area (including the Project Area) due to the presence of trees suitable for nesting, as well as grassland and open woodland for foraging.



### **5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors**

The Study Area does not contain any designated critical habitat (USFWS 2018b) or Essential Fish Habitat (NMFS 2018). There are no streams within the Study Area and as such, no potential for anadromous fishes (e.g., special-status salmonids) to occur in the Study Area.

As per CDFW and Caltrans (2010) the Study Area is located within a mapped Essential Connectivity Area, specifically a large, north-south oriented tract of land east of Napa Valley that is approximately 3.5 miles wide in the vicinity of the Study Area. At the scale of landscape linkages, this tract provides connectivity between baylands of San Pablo Bay and areas from northern Napa County northward. At a more local scale, the Study Area provides connectivity between a patchwork of undeveloped lands (primarily woodland and grassland) and low-density residential and agricultural developments. While the proposed project (vineyard blocks) will result in portions of the site having reduced potential for on-site wildlife movement, the preservation/avoidance of wetland swales within the Study Area, as well as the condition of surrounding lands, will continue to allow for movement through the vicinity. At a highly local scale, the preservation of stands of oak woodland will provide movement and shelter habitat for a variety of common wildlife species.

## **6.0 PROJECT ANALYSIS AND RECOMMENDATIONS**

### **6.1 Biological Communities**

#### **6.1.1 Coast Live Oak Woodland**

Although coast live oak and blue oak woodlands are not considered sensitive by CDFW or included as sensitive in the NCBP, 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. The Study Area contains 23.94 acres of oak woodland; in order to ensure that a 2:1 ratio is maintained of 2 acres of oak woodland preserved for each 1 acre impacted, only 7.98 acres can be converted to vineyard. The Project Area currently contains 10.7 acres of oak woodland. Therefore, to ensure compliance with General Plan Policy CON-24, 2.72 acres of proposed vineyard shall be removed from the project prior to approval and the remaining 15.9 acres of oak woodland on the property will be retained. Block 2 is currently 0.9 gross acres of coast live oak woodland; it is recommended that Block 2 be removed from the Proposed Project, which will also remove the need for one of the rock water crossings discussed in Section 6.1.2 below. In addition, there is a population of nodding harmonia recommended for avoidance (see Recommendation 3 discussed in Section 6.2.1 below) that overlaps with 0.64 acres of oak woodland in Block 4. The avoidance of Block 2 and a portion of Block 4 will remove 1.54 acres of coast live oak woodland from the Proposed Project. Another 1.2 acres of proposed vineyard in the coast live oak woodland should be removed to ensure compliance with Policy CON-24. It is recommended that this occur on the edges of a proposed vineyard block to widen a wildlife corridor, at the discretion of Napa County during the CEQA process. This will result in 15.9 acres of oak woodland outside of the Project Area being permanently retained.

Recommendation 1: Prior to project approval, 2.72 acres of coast live oak woodland shall be removed from the Proposed Project. Block 2 shall be removed in its entirety to preserve 0.9 acres of coast live oak woodland, and the portion of Block 4 that overlaps with the nodding harmonia population shall be avoided to preserve 0.64 acres of the oak woodland. An additional 1.2 acres of coast live oak woodland shall be removed from the Proposed Project.

### **6.1.2 Seasonal Wetlands**

The seasonal wetlands completely transect the property and cut off access to the southwestern and southeastern portions of the property. Although these seasonal wetlands will be avoided as part of the vineyard design, there are three proposed rocked water crossings that are required in order to access the proposed vineyard blocks. After Block 2 is removed from the final project pursuant to Recommendation 1 above, only two rocked crossings will remain. The crossings will be rock-lined pursuant to the engineered Erosion Control Plan prepared for the project, and will be used minimally in winter months. The crossings will be permitted separately with the Corps through the Section 404 process and the RWQCB through the 401 Water Quality Certification process. Otherwise, the vineyards will avoid the swales by 50 feet or greater.

Recommendation 2: The Applicant shall obtain all required permits for impacts to Waters of the U.S. and Waters of the State prior to construction of the rocked water crossings.

## **6.2 Special-status Species**

### **6.2.1 Special-status Plants**

The Project Area contains two special-status plants, Greene's narrow-leaved daisy and nodding harmonia. Napa County is the center of statewide populations for each of these species, with 16 of the 48 Calflora (2018) records and 96 of the 121 Calflora records for Greene's narrow-leaved daisy and nodding harmonia, respectively. All seven individuals of Greene's narrow-leaved daisy and about 2.3 acres of the on-site nodding harmonia population are situated in the Project Area.

Nodding harmonia: Nodding harmonia is a CRPR 4.3 species, meaning that it is of "limited distribution" but "not very endangered in California". It is recommended that the population occurring within Block 4 be avoided (removing 0.7 acres of vineyard), which will result in the retention of 1.2 acres (52.2 percent) of this plant species on the property. Given that this species is CRPR 4.3, the retention of over half of the population, particularly the population that extends off the property and will not be isolated by vineyard, will reduce the impacts to this plant species.

Recommendation 3: Prior to project approval, the area containing the population of nodding harmonia located in Block 4 shall be removed from the project.

Greene's narrow-leaved daisy: There are seven individual Greene's narrow-leaved daisy plants, all seven occurring within the Project Area. Isolating these seven individuals within a vineyard could lead to their collapse. Transplantation of this plant has had documented success (Napa County 2016c), and propagation from on-site seed collection may magnify the stock of

mitigation plantings. A habitat mitigation and monitoring plan (HMMP) should be drafted to provide guidance for mitigating project impacts to this species. A qualified biologist should select an on-site location of analogous microhabitat for the transplanting site. All transplants should be monitored annually by a biologist for at least three years to document success of transplanting. Nursery grown plants from collected seed should be added to the transplant population to increase the numbers in the population. Eighty-five percent (6 of 7) survival after three years should be considered success.

Recommendation 4: A qualified biologist shall draft a HMMP to guide mitigation planting of seven Greene's narrow-leaved daisy. An ecologically suitable area on the property 25 feet or greater from the vineyards and other development shall be selected as a donor site. Seed shall be collected from the plants prior to their transplantation. A minimum of approximately a two-foot diameter by one-foot deep plug of soil should be transported intact with each of the seven plants. Transplanting of Greene's narrow-leaved daisy should occur in the fall following the onset of rains, but when soil temperatures are still warm enough to support the plantings. A qualified biologist or botanist will monitor the transplants annually for a minimum of three years to ensure at least an 85 percent success rate for replanting of Greene's narrow-leaved daisy.

#### 6.2.2 *Special-status Wildlife*

The Project Area has the potential to support three special-status wildlife species (two bats and one bird). The following measures are recommended to avoid or otherwise minimize potential impacts to these species.

Bat Species: Two special-status bats have the potential to occur within the Study Area (pallid bat, fringed myotis). Removal and trimming of trees during the bat maternity season (generally, April through August) could impact bat breeding and potentially result in the take of bats. Because a targeted bat habitat assessment was not conducted as part of this biological assessment, preconstruction surveys for bat habitat and recommendations for tree removal to avoid impacts to bat species are provided below.

Recommendation 5: WRA recommends that any tree removal be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, it is recommended that a bat habitat assessment and survey effort (the latter if needed) be performed by a qualified biologist no more than 14 days prior to tree removal to determine if bats are present in the trees. If no suitable roosting habitat for bats is found, then no further study is warranted. If special-status bat species or bat maternity roosts are detected, then roost trees should be avoided until the end of the maternity roosting season. If this avoidance is not feasible, appropriate species- and roost-specific mitigation measures should be developed in consultation with CDFW. Irrespective of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.

All Bird Species (including non-special-status): In addition to the special-status bird species discussed above (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.

Preconstruction surveys are recommended to ensure that the implementation of the Proposed Project would not impact any nesting birds.

Recommendation 6: Therefore, 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*

Wildlife may potentially move across the property, and the property has been designated as part of a 3.5-mile wide north-south Essential Connectivity Area. There are numerous residences to the south, east, and north of the property along Atlas Peak Road that would deter wildlife movement. Areas to the west of the property are largely undeveloped open space that would continue to provide wildlife movement opportunities even after development of the Proposed Project. While the Proposed Project will result in portions of the site having reduced potential for on-site wildlife movement, the preservation/avoidance of wetland swales within the Study Area, as well as the condition of surrounding lands, will continue to allow for movement through the vicinity. Removal of Block 2 from the Proposed Project (see Recommendation 1 above) would preserve a corridor in the southeastern portion of the property. That, combined with setbacks from the wetland swales, will help potential impacts to wildlife movement by preserving important areas of the Essential Connectivity Area.

## 7.0 REFERENCES

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. *The Jepson Manual: Vascular Plants of California*, 2<sup>nd</sup> Edition. University of California Press, Berkeley, CA. 1568 pp.
- Calflora website (Calflora). 2018. Website: Information on wild California plants for conservation, education, and appreciation. Available at: <http://www.calflora.org/>. Accessed: September 2018.
- California Department of Fish and Game (CDFG). 1994. *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607*. Environmental Service Division, California Department of Fish and Game, Sacramento, CA.
- (CDFG). 2010. *List of Vegetation Alliances and Associations*. Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento, CA. September 2010.
- California Department of Fish and Wildlife (CDFW). 2018a. *California Natural Diversity Database (CNDDDB)*, Wildlife and Habitat Data Analysis Branch. Sacramento, CA. Accessed: September 2018.
- (CDFW). 2018b. *California Natural Community List*. Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento, CA. January 24, 2018.
- (CDFW). 2018c. *Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities*. California Natural Resources Agency, California Department of Fish and Game. March 20, 2018.
- (CDFW). 2018d. *California Fish Passage Assessment Database*. Available at: <https://map.dfg.ca.gov/metadata/ds0069.html>. Accessed: September 2018.
- (CDFW) and California Department of Transportation (CalTrans). 2010. *California Essential Habitat Connectivity Project*. Available at: <https://nrm.dfg.ca.gov/>. Accessed: September 2018.
- Californica Invasive Plant Council (Cal-IPC). 2006. *California Invasive Plant Inventory: Cal-IPC Publication 2006-2*. California Invasive Plant Council, Berkeley, CA. Available online: <http://www.cal-ipc.org/ip/inventory/index.php>. Accessed: September 2018.
- California Native Plant Society (CNPS). 2001. *CNPS Botanical Survey Guidelines*. June 2, 2001.
- (CNPS). 2018a. *Online Inventory of Rare, Threatened, and Endangered Plants of California*. Available at: <http://www.rareplants.cnps.org/>. Accessed: September 2018.
- (CNPS). 2018b. *A Manual of California Vegetation Online*. Available at: <http://vegetation.cnps.org/>. Accessed September 2018.

- California Soil Resources Lab (CSRL). 2018. Online Soil Survey. Available at: <http://casoilresource.lawr.ucdavis.edu/drupal/> Accessed: September 2018.
- Consortium of California Herbaria (CCH). 2018. Data provided by the participants of the Consortium of California Herbaria. Available at: <http://ucjeps.berkeley.edu/consortium>. Accessed: September 2018.
- Davis, Jeff N. 1999. Lawrence's Goldfinch (*Spinus lawrencei*). In: Poole, A., ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/480/articles/introduction>
- Dunk, JR. 1995. White-tailed Kite (*Elanus leucurus*), The Birds of North America Online (A Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/178>.
- eBird. 2018. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available at: <http://www.ebird.org>. Accessed: September 2018.
- Jepson Herbarium. Jepson Flora Project (eFlora). 2018. Jepson eFlora Online at: <http://ucjeps.berkeley.edu/IJM.html>. Accessed: September 2018.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.
- Google Earth. 2018. Napa area: 38.5115°, -122.3875°. Image dates: 1993-2018. Accessed: September 2018.
- Historical Aerials. 2018. Available at: <http://historicalaerials.com>. Accessed: September 2018.
- Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA. 156 pp.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17.
- Napa County. 2018. Napa County Public Browser (Online Map). Available at: [http://gis.napa.ca.gov/Html5Viewer/Index.html?viewer=Public\\_HTML](http://gis.napa.ca.gov/Html5Viewer/Index.html?viewer=Public_HTML). Accessed: September 2018.
- Napa County. 2016a. Attachment B: Guidelines for Preparing Biological Resources Reconnaissance Surveys. Planning, Building, and Environmental Services. August 2016.
- Napa County. 2016b. Attachment C: Guidelines for Preparing Special-status Plant Studies. Planning, Building, and Environmental Services. August 2016.
- Napa County. 2016c. Biological Resources Management Plan for the Walt Ranch ECP #P11-00205-ESPA. Prepared by: Analytical Environmental Services. July 2016.

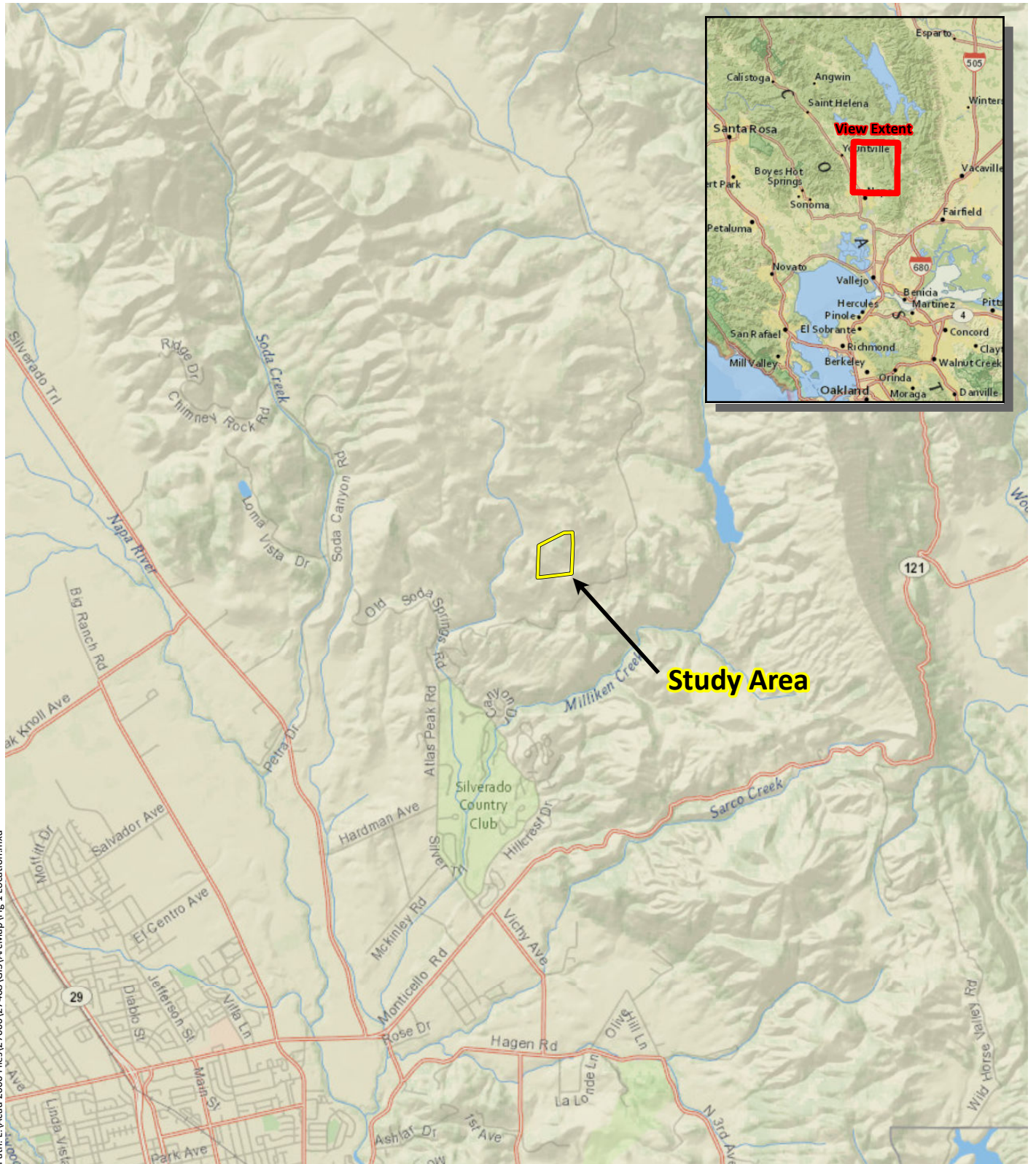
- Napa County. 2008. Napa County General Plan. June 2, 2008. Available at: <http://www.co.napa.ca.us/GOV/Departments/>
- Napa County. 2005. Napa County Baseline Data Report. Available at: <http://www.co.napa.us/gov/>
- National Marine Fisheries Service (NMFS). 2018. Essential Fish Habitat Mapper. Available at: <https://www.habitat.noaa.gov/protection/efh/efhmapper/>. Accessed: September 2018.
- NatureServe. 2018. NatureServe Explorer: NatureServe Conservation Status. Available at: <http://www.natureserve.org/explorer/ranking#relationship>. Accessed: September 2018.
- San Francisco Estuary Institute (SFEI). 2018. California Aquatic Resource Inventory (CARI). Available at: <http://www.sfei.org/cari#sthash.Mzz93W9i.dpbs>. Accessed: April 2018.
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, 2<sup>nd</sup> Edition. California Native Plant Society in collaboration with California Department of Fish and Game. Sacramento, CA. 1300 pp.
- Shuford, W.D. and Gardali, T., eds. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
- Smith, A., ed. 2003. Breeding Birds of Napa County, California. Napa-Solano Audubon Society, Vallejo, California. 199 pp.
- Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians, Third Edition. Houghton Mifflin Company, Boston, MA and New York, NY.
- Thomson, R.C., A.N. Wright, and H.B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. Co-published by the California Department of Fish and Wildlife and University of California Press. Oakland, California.
- Thorne, J., Kennedy, J., Quinn, J., McCoy, M., Keeler-Wolfe, T. A Vegetation Map of Napa County Using the Manual of California Vegetation Classification and its Comparison to Other Digital Vegetation Maps. Information Center for the Environment (ICE). University of California, Davis. 2004.
- U.S. Army Corps of Engineers (Corps). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS. September 28, 2008.
- U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS). 1978. Soil Survey of Napa County, California. In cooperation with the University of California Agricultural Experiment Station.

- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2018. Climate Information for Napa County in the State of California. Available at: <http://www.wcc.nrcs.usda.gov/>. Accessed: September 2018.
- U.S. Fish and Wildlife Service (USFWS). 2018a. National Wetlands Inventory. Available at: <http://www.fws.gov/wetlands/index.html>. Accessed: September 2018.
- U.S. Fish and Wildlife Service (USFWS). 2018. List of Federal Endangered and Threatened Species that Occur in Napa County, California. Available at: <https://ecos.fws.gov/ipac/>. Accessed: September 2018.
- U.S. Geological Survey (USGS). 2012. Yountville, California 7.5-minute quadrangle topographic map.
- Western Bat Working Group (WBWG). 2018. Species Accounts. Available at: [http://www.wbwg.org/speciesinfo/species\\_accounts/species\\_accounts.html](http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html). Accessed: September 2018.



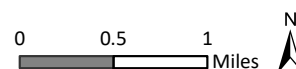
## Appendix A

### Figures



**Figure A-1. Study Area Location**

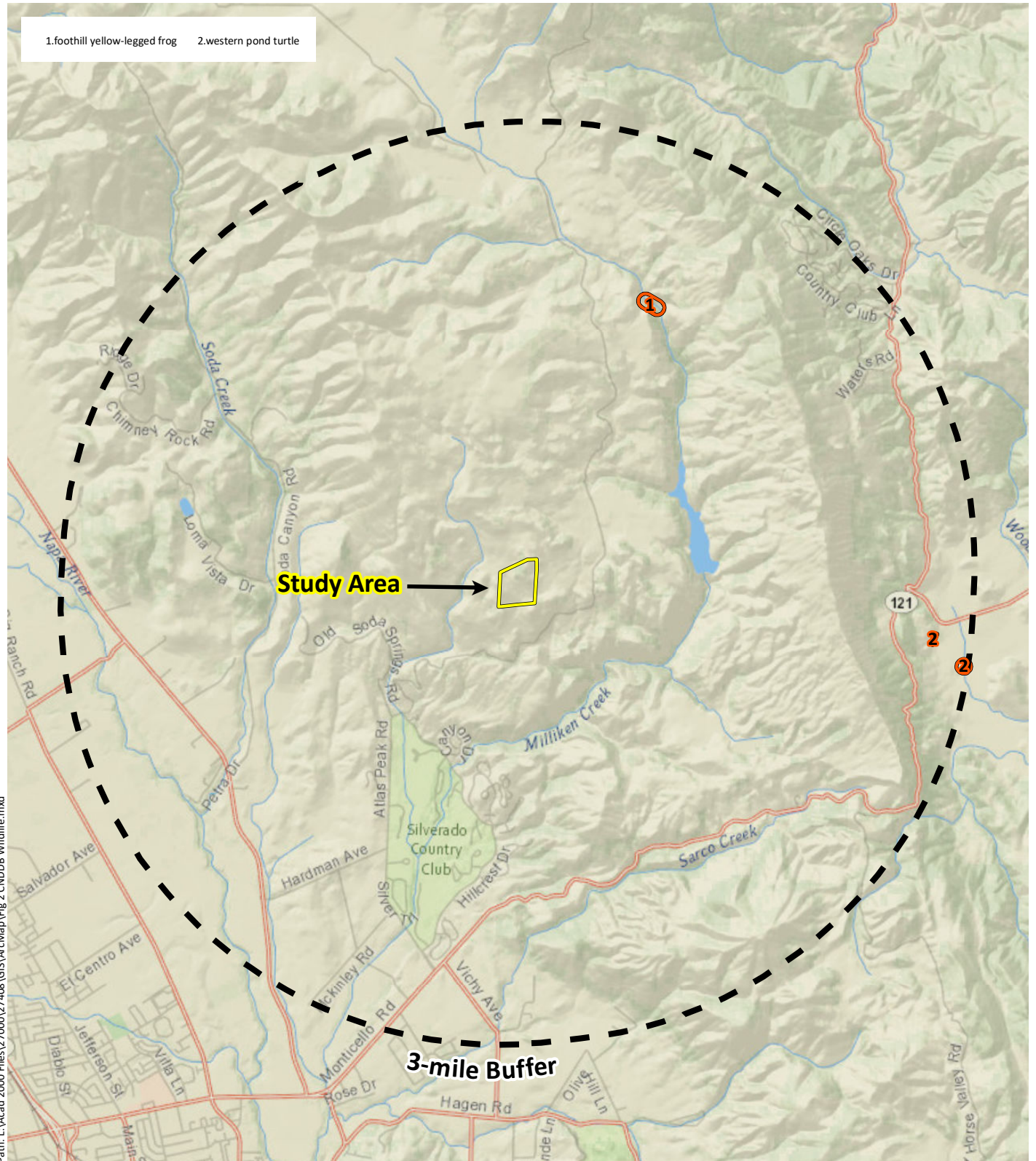
Hess  
Napa County, California











Sources: National Geographic, CNDDDB May 2018, WRA | Prepared By: czumwalt, 8/15/2018

**Figure A-3. Special-Status Wildlife Species Documented within 3-miles of the Study Area**

Hess  
Napa County, California

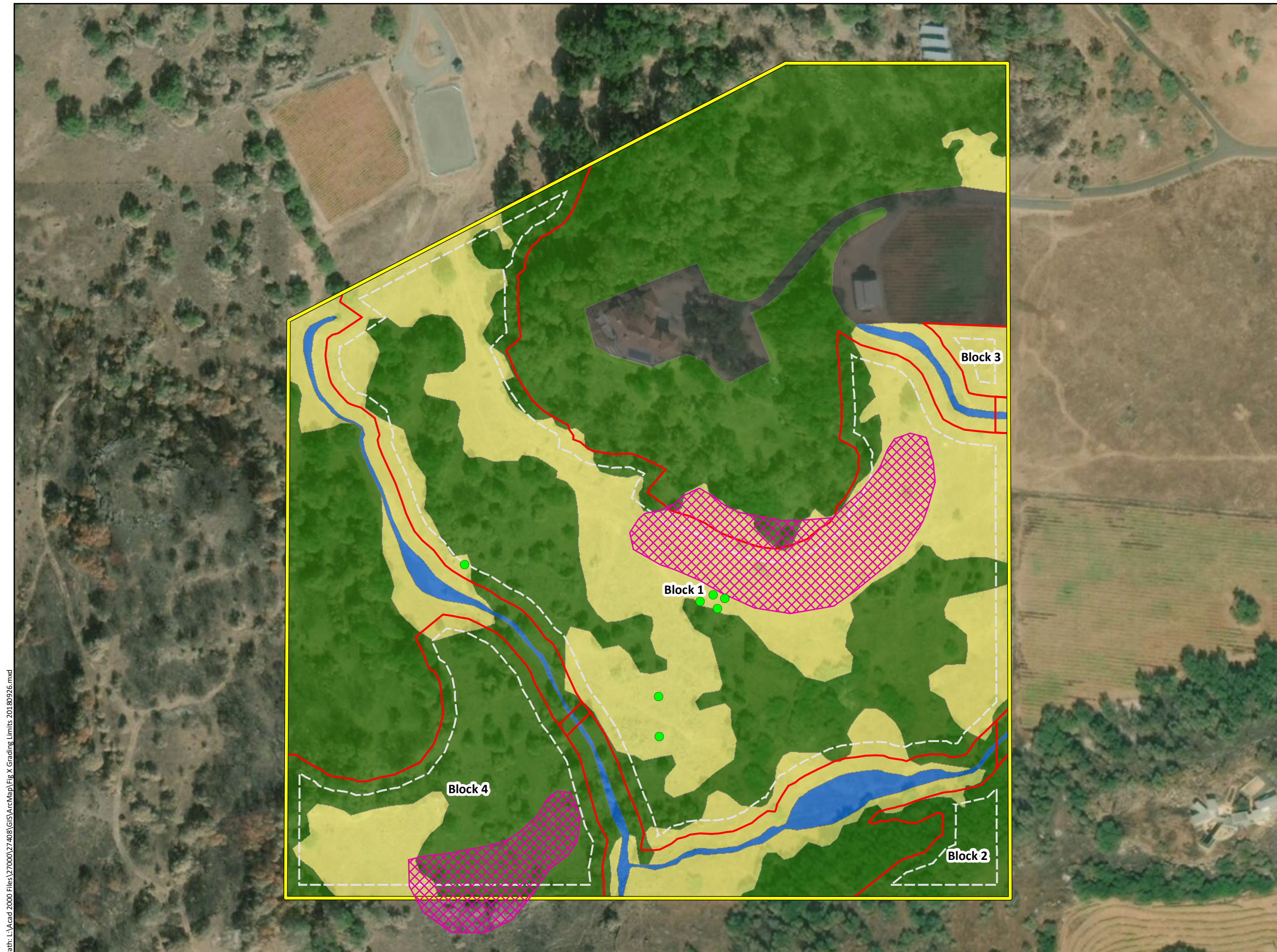
0 1 2 Miles



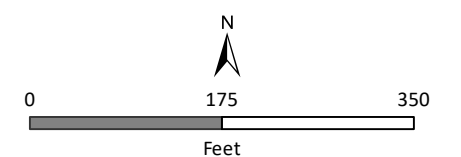


**Figure A-4.  
Proposed Grading Limits**

Hess  
Napa County, California



- Study Area (40.12 ac.)
- Outer Grading Limits
- Extent of Vineyards
- Biological Communities**
- Coast Live Oak Woodland (23.94 ac.)
- Developed (2.68 ac.)
- Non-native Annual Grassland (12.64 ac.)
- Seasonal Wetland (0.87 ac.)
- Rare Plants**
- Nodding Harmonia
- Greene's Narrow-leaved Daisy





## Appendix B

### Species Observed in the Study Area

Table B-1. Plant species observed in the Study Area, April 25 and June 8, 2018

Family	Scientific name	Common name	Origin	Life Form	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
Agavaceae	<i>Chlorogalum pomeridianum</i>	soap plant	native	perennial forb	-	-	-
Alliaceae	<i>Allium amplexans</i>	narrow leaved onion	native	perennial forb	-	-	-
Anacardiaceae	<i>Toxicodendron diversilobum</i>	poison oak	native	deciduous shrub	-	-	FACU
Apiaceae	<i>Perideridia kelloggii</i>	yampah	native	perennial forb	-	-	-
Apiaceae	<i>Sanicula bipinnatifida</i>	purple sanicle	native	perennial forb	-	-	-
Apiaceae	<i>Sanicula crassicaulis</i>	Pacific sanicle	native	perennial forb	-	-	-
Apiaceae	<i>Sanicula tuberosa</i>	Turkey pea	native	perennial forb	-	-	-
Apiaceae	<i>Torilis arvensis</i>	field hedge parsley	non-native	annual forb	-	Moderate	-
Asteraceae	<i>Achyraea mollis</i>	blow wives	native	annual forb	-	-	FAC
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle	non-native	annual forb	-	Moderate	-
Asteraceae	<i>Centaurea calcitrapa</i>	purple star thistle	non-native	annual forb	-	Moderate	-
Asteraceae	<i>Centaurea melitensis</i>	Tocalote	non-native	annual forb	-	Moderate	-
Asteraceae	<i>Centaurea solstitialis</i>	yellow star thistle	non-native	annual forb	-	High	-
Asteraceae	<i>Erigeron canadensis</i>	Canada horseweed	native	annual forb	-	-	FACU
Asteraceae	<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	native	perennial forb	Rank 1B	-	-
Asteraceae	<i>Gamochaeta ustulata</i>	featherweed	native	perennial forb	-	-	-
Asteraceae	<i>Grindelia hirsutula</i>	gumweed	native	perennial forb	-	-	FACW
Asteraceae	<i>Harmonia nutans</i>	nodding harmonia	native	annual forb	Rank 4	-	-
Asteraceae	<i>Holozonia filipes</i>	holozonia	native	perennial forb	-	-	FACU
Asteraceae	<i>Hypochaeris radicata</i>	hairy cat's-ear	non-native	perennial forb	-	Moderate	FACU
Asteraceae	<i>Lasthenia gracilis</i>	needle goldfields	native	annual forb	-	-	-
Asteraceae	<i>Leontodon saxatilis</i>	hawkbit	non-native	annual forb	-	-	FACU
Asteraceae	<i>Micropus californicus</i>	Q-tips	native	annual forb	-	-	FACU
Asteraceae	<i>Microseris douglasii</i>	Douglas' microseris	native	annual forb	-	-	FACU
Asteraceae	<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	non-native	annual forb	-	-	FAC
Asteraceae	<i>Rhagadiolus stellatus</i>	endive daisy	non-native	annual forb	-	-	-

Family	Scientific name	Common name	Origin	Life Form	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
Asteraceae	<i>Senecio vulgaris</i>	common groundsel	non-native	annual forb	-	-	FACU
Asteraceae	<i>Soliva sessilis</i>	South American soliva	non-native	annual forb	-	-	FACU
Asteraceae	<i>Sonchus oleraceus</i>	sow thistle	non-native	annual forb	-	-	UPL
Asteraceae	<i>Taraxacum officinale</i>	common dandelion	non-native	perennial forb	-	-	FACU
Asteraceae	<i>Tragopogon porrifolius</i>	purple salsify	non-native	perennial forb	-	-	-
Asteraceae	<i>Wyethia angustifolia</i>	narrow leaved mule ears	native	perennial forb	-	-	FACU
Boraginaceae	<i>Nemophila menziesii</i> var. <i>atomaria</i>	baby blue eyes	native	annual forb	-	-	-
Boraginaceae	<i>Phacelia imbricata</i>	imbricate phacelia	native	perennial forb	-	-	-
Boraginaceae	<i>Plagiobothrys nothofulvus</i>	rusty popcornflower	native	annual forb	-	-	FAC
Brassicaceae	<i>Barbarea orthoceras</i>	winter cress	native	perennial forb	-	-	FACW
Caprifoliaceae	<i>Lonicera hispidula</i>	pink honeysuckle	native	evergreen vine	-	-	FACU
Caryophyllaceae	<i>Cerastium glomeratum</i>	large mouse ears	non-native	annual forb	-	-	UPL
Caryophyllaceae	<i>Petrorhagia dubia</i>	windmill pink	non-native	annual forb	-	-	-
Caryophyllaceae	<i>Silene gallica</i>	common catchfly	non-native	annual forb	-	-	-
Caryophyllaceae	<i>Spergularia rubra</i>	purple sand spurry	non-native	perennial forb	-	-	FAC
Crassulaceae	<i>Crassula connata</i>	sand pygmy weed	native	annual forb	-	-	FAC
Crassulaceae	<i>Sedella pumila</i>	Sierra mock stonecrop	native	annual forb	-	-	FAC
Cucurbitaceae	<i>Marah fabacea</i>	California man-root	native	perennial forb	-	-	-
Cyperaceae	<i>Cyperus eragrostis</i>	tall flatsedge	native	perennial graminoid	-	-	FACW
Dennstaedtiaceae	<i>Pteridium aquilinum</i> var. <i>pubescens</i>	western bracken fern	native	perennial fern	-	-	FACU
Ericaceae	<i>Arbutus menziesii</i>	Pacific madrone	native	evergreen tree	-	-	-
Ericaceae	<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	common manzanita	native	evergreen shrub	-	-	-
Euphorbiaceae	<i>Croton setiger</i>	turkey mullein	native	perennial forb	-	-	-
Fabaceae	<i>Acemisson americanus</i>	Spanish lotus	native	annual forb	-	-	UPL
Fabaceae	<i>Acemisson micranthus</i>	small-flowered lotus	native	annual forb	-	-	-
Fabaceae	<i>Acemisson wrangelianus</i>	Chilean trefoil	native	annual forb	-	-	-



Family	Scientific name	Common name	Origin	Life Form	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
Fabaceae	<i>Lupinus bicolor</i>	miniature lupine	native	annual forb	-	-	-
Fabaceae	<i>Lupinus nanus</i>	sky lupine	native	annual forb	-	-	-
Fabaceae	<i>Medicago polymorpha</i>	burclover	non-native	annual forb	-	Limited	FACU
Fabaceae	<i>Trifolium angustifolium</i>	narrow leaved clover	non-native	annual forb	-	-	-
Fabaceae	<i>Trifolium campestre</i>	hop clover	non-native	annual forb	-	-	-
Fabaceae	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	dwarf bladder clover	native	annual forb	-	-	FAC
Fabaceae	<i>Trifolium glomeratum</i>	clustered clover	non-native	annual forb	-	-	-
Fabaceae	<i>Trifolium hirtum</i>	rose clover	non-native	annual forb	-	Limited	-
Fabaceae	<i>Trifolium microcephalum</i>	small-head clover	native	annual forb	-	-	FAC
Fabaceae	<i>Trifolium microdon</i>	Valparaíso clover	native	annual forb	-	-	-
Fabaceae	<i>Trifolium subterraneum</i>	subterranean clover	non-native	annual forb	-	-	-
Fabaceae	<i>Trifolium variegatum</i> var. <i>variegatum</i>	variegated clover	native	annual forb	-	-	FAC
Fabaceae	<i>Trifolium willdenovii</i>	tomcat clover	native	annual forb	-	-	FACW
Fabaceae	<i>Vicia benghalensis</i>	purple vetch	non-native	annual forb	-	-	-
Fabaceae	<i>Vicia villosa</i> ssp. <i>villosa</i>	hairy vetch	non-native	annual forb	-	-	-
Fagaceae	<i>Quercus agrifolia</i>	coast live oak	native	evergreen tree	-	-	-
Gentianaceae	<i>Cicendia quadrangularis</i>	common microcalis	native	annual forb	-	-	FAC
Gentianaceae	<i>Zeltnera muehlenbergii</i>	Muehlenberg's centaury	native	annual forb	-	-	FAC
Geraniaceae	<i>Erodium brachycarpum</i>	White stemmed filaree	non-native	annual forb	-	-	-
Geraniaceae	<i>Erodium cicutarium</i>	coastal heron's bill	non-native	annual forb	-	Limited	-
Geraniaceae	<i>Geranium dissectum</i>	wild geranium	non-native	annual forb	-	Limited	-
Geraniaceae	<i>Geranium robertianum</i>	Robert's geranium	non-native	annual forb	-	-	FACU
Geraniaceae	<i>Pelargonium</i> sp.	geranium	non-native	perennial forb	-	-	-
Hypericaceae	<i>Hypericum anagalloides</i>	tinker's penny	native	perennial forb	-	-	OBL
Iridaceae	<i>Iris macrosiphon</i>	ground iris	native	perennial forb	-	-	-
Iridaceae	<i>Sisyrinchium bellum</i>	blue-eyed grass	native	perennial forb	-	-	FACW
Juncaceae	<i>Juncus bufonius</i>	common toad rush	native	annual graminoid	-	-	FACW

Family	Scientific name	Common name	Origin	Life Form	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
Juncaceae	<i>Juncus patens</i>	common rush	native	perennial graminoid	-	-	FACW
Juncaceae	<i>Juncus tenuis</i>	slender rush	native	perennial graminoid	-	-	FACW
Juncaceae	<i>Luzula comosa</i>	hairy wood rush	native	perennial graminoid	-	-	FAC
Lamiaceae	<i>Stachys rigida</i>	rough hedgenettle	native	perennial forb	-	-	FACW
Lamiaceae	<i>Trichostema laxum</i>	turpentine weed	native	annual forb	-	-	-
Lauraceae	<i>Umbellularia californica</i>	California bay	native	evergreen tree	-	-	FAC
Liliaceae	<i>Calochortus luteus</i>	yellow mariposa	native	perennial forb	-	-	-
Liliaceae	<i>Calochortus superbus</i>	yellow mariposa	native	perennial forb	-	-	-
Linaceae	<i>Linum bienne</i>	flax	non-native	annual forb	-	-	-
Montiaceae	<i>Calandrinia menziesii</i>	red maids	native	annual forb	-	-	FACU
Montiaceae	<i>Claytonia perfoliata</i>	miner's lettuce	native	annual forb	-	-	FAC
Myrsinaceae	<i>Lysimachia arvensis</i>	scarlet pimpernel	non-native	annual forb	-	-	FAC
Orobanchaceae	<i>Castilleja attenuata</i>	valley tassles	native	annual forb	-	-	-
Orobanchaceae	<i>Castilleja densiflora</i> ssp. <i>densiflora</i>	dense flower owl's clover	native	annual forb	-	-	-
Orobanchaceae	<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	butter 'n' eggs	native	annual forb	-	-	-
Orobanchaceae	<i>Triphysaria pusilla</i>	little owl's clover	native	annual forb	-	-	-
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	native	perennial forb	-	-	-
Phrymaceae	<i>Mimulus guttatus</i>	common monkey flower	native	perennial forb	-	-	OBL
Plantaginaceae	<i>Plantago erecta</i>	California plantain	native	annual forb	-	-	-
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain	non-native	perennial forb	-	Limited	FAC
Poaceae	<i>Agrostis stolonifera</i>	redtop	non-native	perennial graminoid	-	Limited	FACW
Poaceae	<i>Aira caryophyllea</i>	silvery hairgrass	non-native	annual graminoid	-	-	FACU
Poaceae	<i>Avena barbata</i>	wild oat	non-native	annual graminoid	-	Moderate	-
Poaceae	<i>Avena fatua</i>	wild oat	non-native	annual graminoid	-	Moderate	-
Poaceae	<i>Briza minor</i>	little rattlesnake grass	non-native	annual graminoid	-	-	FAC
Poaceae	<i>Bromus diandrus</i>	ripgut brome	non-native	annual graminoid	-	Moderate	-
Poaceae	<i>Bromus hordeaceus</i>	soft chess	non-native	annual graminoid	-	Limited	FACU

Family	Scientific name	Common name	Origin	Life Form	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
Poaceae	<i>Bromus madritensis</i>	foxtail brome	non-native	annual graminoid	-	-	UPL
Poaceae	<i>Cynodon dactylon</i>	Bermuda grass	non-native	perennial graminoid	-	Moderate	FACU
Poaceae	<i>Cynosurus echinatus</i>	dogtail grass	non-native	annual graminoid	-	Moderate	-
Poaceae	<i>Danthonia californica</i>	California oatgrass	native	perennial graminoid	-	-	FAC
Poaceae	<i>Elymus glaucus</i>	blue wildrye	native	perennial graminoid	-	-	FACU
Poaceae	<i>Festuca bromoides</i>	brome fescue	non-native	annual graminoid	-	-	FACU
Poaceae	<i>Festuca perennis</i>	Italian rye grass	non-native	annual graminoid	-	Moderate	FAC
Poaceae	<i>Glyceria declinata</i>	waxy mannagrass	non-native	perennial graminoid	-	Moderate	FACW
Poaceae	<i>Holcus lanatus</i>	common velvetgrass	non-native	perennial graminoid	-	Moderate	FAC
Poaceae	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	non-native	annual graminoid	-	Moderate	FAC
Poaceae	<i>Hordeum murinum</i>	mouse barley	non-native	annual graminoid	-	Moderate	FACU
Poaceae	<i>Poa annua</i>	annual blue grass	non-native	annual graminoid	-	-	FAC
Poaceae	<i>Stipa lepida</i>	foothill needle grass	native	perennial graminoid	-	-	-
Poaceae	<i>Stipa pulchra</i>	purple needle grass	native	perennial graminoid	-	-	-
Polemoniaceae	<i>Leptosiphon parviflorus</i>	variable linanthus	native	annual forb	-	-	-
Polemoniaceae	<i>Navarretia intertexta</i>	interwoven navarretia	native	annual forb	-	-	FACW
Polemoniaceae	<i>Navarretia pubescens</i>	purple navarretia	native	annual forb	-	-	-
Polemoniaceae	<i>Navarretia tagetina</i>	marigold navarretia	native	annual forb	-	-	FACW
Polygonaceae	<i>Rumex acetosella</i>	sheep sorrel	non-native	perennial forb	-	Moderate	FACU
Polygonaceae	<i>Rumex crispus</i>	curly dock	non-native	perennial forb	-	Limited	FAC
Polygonaceae	<i>Rumex pulcher</i>	fiddleleaf dock	non-native	perennial forb	-	-	FAC
Primulaceae	<i>Primula hendersonii</i>	mosquito bill	native	perennial forb	-	-	-
Pteridaceae	<i>Pellaea mucronata</i> var. <i>mucronata</i>	bird's foot fern	native	perennial fern	-	-	-
Ranunculaceae	<i>Delphinium variegatum</i> ssp. <i>variegatum</i>	royal larkspur	native	perennial forb	-	-	-
Ranunculaceae	<i>Ranunculus californicus</i> var. <i>californicus</i>	common buttercup	native	perennial forb	-	-	FACU
Ranunculaceae	<i>Ranunculus muricatus</i>	cursed buttercup	non-native	perennial forb	-	-	FACW

Family	Scientific name	Common name	Origin	Life Form	Rare Status <sup>1</sup>	Invasive Status <sup>2</sup>	Wetland indicator <sup>3</sup>
Ranunculaceae	<i>Ranunculus occidentalis</i>	Western buttercup	native	perennial forb	-	-	FAC
Rosaceae	<i>Rosa sp.</i>	rose	non-native	evergreen shrub	-	-	-
Rubiaceae	<i>Galium aparine</i>	cleavers	native	annual forb	-	-	FACU
Rubiaceae	<i>Sherardia arvensis</i>	field madder	non-native	annual forb	-	-	-
Tecophilaeaceae	<i>Odontostomum hartwegii</i>	Hartweg's odontostomum	native	perennial forb	-	-	-
Themidaceae	<i>Brodiaea elegans</i> ssp. <i>elegans</i>	harvest brodiaea	native	perennial forb	-	-	FACU
Themidaceae	<i>Dichelostemma capitatum</i>	blue dicks	native	perennial forb	-	-	FACU
Themidaceae	<i>Dichelostemma congestum</i>	fork toothed ookow	native	perennial forb	-	-	-
Themidaceae	<i>Triteleia laxa</i>	Ithuriel's spear	native	perennial forb	-	-	-
Violaceae	<i>Viola pedunculata</i>	California golden violet	native	perennial forb	-	-	-
Viscaceae	<i>Phoradendron leucarpum</i>	mistletoe	native	evergreen shrub	-	-	-

All species identified using the *Jepson Manual, 2<sup>nd</sup> Edition* (Baldwin et al. 2012) and *Jepson Flora Project* (eFlora 2018); nomenclature follows *The Jepson Flora Project* (eFlora 2018) unless otherwise noted

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

<sup>1</sup>Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2018)

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

<sup>2</sup>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

<sup>3</sup>Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Lichvar et al. 2016)

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 the Study Area on April 25, 2018

Scientific name	Common name (status if applicable)
<b>BIRDS</b>	
<i>Baeolophus inornatus</i>	oak titmouse
<i>Carduelis psaltria</i>	lesser goldfinch
<i>Cathartes aura</i>	turkey vulture
<i>Colaptes auratus</i>	northern flicker
<i>Corvus corax</i>	common raven
<i>Melanerpes formicivorus</i>	acorn woodpecker
<i>Myiarchus cinerascens</i>	ash-throated flycatcher
<i>Oreothlypis celata</i>	orange-crowned warbler
<i>Pipilo maculatus</i>	spotted towhee
<i>Polioptila caerulea</i>	blue-gray gnatcatcher
<i>Sayornis nigricans</i>	black phoebe
<i>Sitta carolinensis</i>	white-breasted nuthatch
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Vireo huttoni</i>	Hutton's vireo

## Appendix C

### Special-status Species Potential Table

Table C. Potential for Special-status Species to Occur in the Project Area. List compiled from the CDFW BIOS database (CDFW 2018a), USFWS Species Lists (USFWS 2018a), and CNPS Electronic Inventory (CNPS 2018a) searches. For plants, the Saint Helena, Chiles Valley, Lake Berryessa, Rutherford, Yountville, Capell Valley, Sonoma, Napa, and Mount George 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 PROJECT AREA	RESULTS AND RECOMMENDATIONS
<b>PLANTS</b>				
<i>Agrostis hendersonii</i> Henderson's bentgrass	Rank 3	Valley and foothill grassland, vernal pools; situated in mesic grasslands. Elevation range: 225 – 995 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains mesic grasslands.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	Rank 1B	Cismontane woodland, valley and foothill grassland; on clay substrate, often derived from serpentine. Elevation range 170 – 985 feet. Blooms: May – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	Rank 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July.	<b>Moderate Potential.</b> The Study Area contains broadleaf upland forest and cismontane woodland.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	Rank 1B	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation range: 10 – 1625 feet. Blooms: March – June.	<b>Moderate Potential.</b> The Study Area contains cismontane woodland and grassland.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Antirrhinum virga</i> twig-like snapdragon	Rank 4	Chaparral, lower montane coniferous forest; located on rocky openings often derived from serpentine. Elevation range: 325 – 6550 feet. Blooms: June – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Arabis modesta</i> modest rockcress	Rank 4	Chaparral, lower montane coniferous forest. Elevation range: 390 – 2600 feet. Blooms: March – July.	<b>Moderate Potential.</b> The Study Area contains rocky habitat, similar to chaparral.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i> Baker's manzanita	FSC; SR; Rank 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest; located on serpentine substrate. Elevation range: 240 – 975 feet. Blooms: February – April.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon manzanita	Rank 1B	Chaparral, cismontane woodland; highly restricted to red rhyolitic soils. Elevation range: 245 – 1215 feet. Blooms: February – April.	<b>Moderate Potential.</b> The Study Area contains rocky areas underlain by rhyolitic soils	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Astragalus breweri</i> Brewer's milk-vetch	Rank 4	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland; located on open, gravelly serpentine or volcanic substrate. Elevation range: 290 – 2375 feet. Blooms: April – June.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	FE; ST; Rank 1B	Cismontane woodland, valley and foothill grassland, chaparral; on open grassy hillsides, especially exposed shoulders with thin, volcanic clay soils. Elevation range: 245 – 900 feet. Blooms: March – May.	<b>Moderate Potential.</b> The Study Area contains open, grassy hillsides underlain by soils derived from volcanic bedrock.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Astragalus clevelandii</i> Cleveland's milk-vetch	Rank 4	Chaparral, cismontane woodland, riparian forest; located on serpentine seeps. Elevation range: 650 – 4875 feet. Blooms: June – September.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	Rank 1B	Playas, vernal pools, valley and foothill grassland; located in mesic grassy areas on alkaline substrate. Elevation range: 0 – 195 feet. Blooms: March – June.	<b>Unlikely.</b> The Study Area lacks alkaline substrates.	<b>Not Present.</b> No further recommendations.
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	Rank 1B	Valley and foothill grassland, cismontane woodland; sometimes on serpentine substrate. Elevation range: 295 – 3100 feet. Blooms: March – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE, SE, Rank 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.	<b>Unlikely.</b> The Study Area does not contain vernal pools nor is located within the Santa Rosa Plain.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Brodiaea leptandra</i> narrow-anthered brodiaea	Rank 1B	Broadleaf upland forest, chaparral, lower montane coniferous forest. Elevation range: 360 – 3000 feet. Blooms: May – July.	<b>Moderate Potential.</b> The Study Area contains broadleaf upland forest and exposed rocky areas similar to chaparral.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Calamagrostis ophitidis</i> serpentine reed grass	Rank 4	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; located in openings, often north-facing, underlain by rocky serpentine substrate. Elevation range: 290 – 3465 feet. Blooms: April – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Calandrinia breweri</i> Brewer's Calandrinia	Rank 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.	<b>Moderate Potential.</b> The Study Area contains loamy soils and was recently burned.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Calochortus pulchellus</i> Mt. Diablo fairy lantern	Rank 1B	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation range: 95 – 2730 feet. Blooms: April-June	<b>Unlikely.</b> This species confined to the Mt. Diablo area, Contra Costa County. Reports from Napa County erroneous.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Calycadenia micrantha</i> small-flowered Calycadenia	Rank 1B	Chaparral, meadows and seeps, valley and foothill grassland; located on volcanic or serpentine substrate in sparsely vegetated rocky, talus, or scree areas. Elevation range: 15 – 4875 feet. Blooms: June – September.	<b>Moderate Potential.</b> The Study Area contains sparsely vegetated areas on rocky volcanic slopes.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Calystegia collina</i> ssp. <i>oxyphylla</i> Mt. Saint Helena morning-glory	Rank 4	Chaparral; located on serpentine barrens, slopes, and hillsides. Elevation range: 815 – 3315 feet. Blooms: April – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Castilleja ambigua</i> ssp. <i>ambigua</i> johnny-nip	Rank 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.	<b>Unlikely.</b> The Study Area is not very near the coast, nor contains vernal pools. Additionally, no alkali sites are present.	<b>Not Present.</b> No further recommendations.
<i>Castilleja ambigua</i> var. <i>meadii</i> mead's owl's-clover	Rank 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.	<b>Moderate Potential.</b> The Study Area contains mesic grasslands and wetlands underlain by soils derived from volcanic bedrock.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	Rank 1B	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically on dry shrubby slopes. Elevation range: 245 – 3495 feet. Blooms: February – April.	<b>Unlikely.</b> This species has not been documented from the east side of Napa Valley.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Ceanothus divergens</i> Calistoga ceanothus	Rank 1B	Chaparral, cismontane woodland; on rocky, serpentine sites. Elevation range: 560 – 3115 feet. Blooms: February – March.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Ceanothus purpureus</i> holly-leaved ceanothus	Rank 1B	Chaparral, cismontane woodland; located on rocky, volcanic slopes. Elevation range: 395 – 3000 feet. Blooms: February – June.	<b>Moderate Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils. This species is typically situated in dense chaparral or woodland with a dense shrub cover.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	Rank 1B	Chaparral; located on sandy serpentine or volcanic substrates. Elevation range: 705 – 2625 feet. Blooms: February – April.	<b>Unlikely.</b> The Study Area does not contain sandy soils.	<b>Not Present.</b> No further recommendations.
<i>Centromadia parryi</i> ssp. <i>rudis</i> Parry's rough tarplant	Rank 4	Valley and foothill grassland, vernal pools; alkaline, vernal mesic, seeps. Elevation range: 0-325 feet. Blooms: May-October	<b>Unlikely.</b> The Study Area does not contain alkaline areas, vernal pools.	<b>Not Present.</b> No further recommendations.
<i>Chorizanthe valida</i> Sonoma spineflower	FE; SE; Rank 1B	Coastal prairie; in sandy soils. Elevation range: 35 – 1000 feet. Blooms: June – August.	<b>No Potential.</b> The Study Area does not contain coastal prairie.	<b>Not Present.</b> No further recommendations.
<i>Clarkia breweri</i> Brewer's clarkia	Rank 4	Chaparral, cismontane woodland, coastal scrub; frequently on serpentine substrate. Elevation range: 695 – 3625 feet. Blooms: April – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Clarkia gracilis</i> ssp. <i>tracyi</i> Tracy's clarkia	Rank 4	Chaparral; located in openings and situated on substrates often derived from serpentine. Elevation range: 210 – 2115 feet. Blooms: April – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Collomia diversifolia</i> serpentine collomia	Rank 4	Chaparral, cismontane woodland; situated on rocky to gravelly serpentine substrates. Elevation range: 975 – 1950 feet. Blooms: May – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i> serpentine bird's-beak	Rank 4	Closed-cone coniferous forest, chaparral, cismontane woodland; typically located serpentine substrate. Elevation range: 1540 – 2975 feet. Blooms: July – August.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Cryptantha dissita</i> serpentine cryptantha	Rank 1B	Chaparral; located on serpentine outcrops. Elevation range: 1280 – 1885 feet. Blooms: April – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Delphinium uliginosum</i> swamp larkspur	Rank 4	Chaparral, valley and foothill grassland; located in seeps and wet meadows underlain by serpentine substrate. Elevation range: 1105 – 1985 feet. Blooms: May – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Downingia pusilla</i> dwarf downingia	Rank 2B	Valley and foothill grassland, vernal pools; located in mesic grassy sites, pool and lake margins. Elevation range: 3 – 1450 feet. Blooms: March – May.	<b>Unlikely.</b> The Study Area does not contain pool or lake margins nor vernal pools.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Erigeron biolettii</i> streamside daisy	Rank 3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest; on rocky, mesic. Elevation range: 95 – 3610 feet. Blooms: June – October.	<b>Moderate Potential.</b> The Study Area contains rocky areas and broadleaf upland forest.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	Rank 1B	Chaparral; located on volcanic or serpentine substrate. Elevation range: 260 – 3270 feet. Blooms: May – September.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Present.</b> See Section 6.2 for recommendations.
<i>Eryngium jepsonii</i> Jepson's coyote thistle	Rank 1B.2	Valley and foothill grassland, vernal pools; located on clay soil. Elevation range from 9-900 feet. Blooms: April-August	<b>Unlikely.</b> The Study Area does not contain clay soils or vernal pools.	<b>Not Present.</b> No further recommendations.
<i>Extriplex joaquinana</i> San Joaquin spearscale	Rank 1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; located on alkaline substrate. Elevation range: 0 – 2715 feet. Blooms: April – October.	<b>No Potential.</b> The Study Area does not contain alkaline substrates.	<b>Not Present.</b> No further recommendations.
<i>Gilia capitata</i> ssp. <i>tomentosa</i> woolly-headed gilia	Rank 1B	Coastal bluff scrub; rocky outcrops on the coast. Elevation range: 15 – 155 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area is not located along the coast.	<b>Not Present.</b> No further recommendations.
<i>Harmonia nutans</i> nodding harmonia	Rank 4	Chaparral, cismontane woodland; located on rocky to gravelly substrates derived from volcanics. Elevation range: 240 – 3170 feet. Blooms: March – May.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Present.</b> See Section 6.2 for recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Hemizonia congesta</i> ssp. <i>congesta</i> Hayfield tarplant	Rank 1B	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1840 feet. Blooms: April – October.	<b>Unlikely.</b> Although the Study Area contains grasslands, this species has only been reported from southern Napa County, and the bulk of the population is known from grasslands in Sonoma and Marin counties.	<b>Not Present.</b> No further recommendations.
<i>Hesperolinon bicarpellatum</i> Two-carpellate western flax	Rank 1B	Chaparral; located on serpentine substrate. Elevation range: 195 – 3270 feet. Blooms: May – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Hesperolinon breweri</i> Brewer's western flax	Rank 1B	Chaparral, cismontane woodland, valley and foothill grassland; typically located in serpentine grassland and serpentine chaparral underlain by rocky substrates. Elevation range: 95 – 2925 feet. Blooms: May – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Hesperolinon sharsmithiae</i> Sharsmith's western flax	Rank 1B	Chaparral; located on serpentine substrate. Elevation range: 875 – 975 feet. Blooms: May – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Horkelia tenuiloba</i> thin-lobed horkelia	Rank 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.	<b>Unlikely.</b> The Study Area does not contain mesic openings in sandy substrate.	<b>Not Present.</b> No further recommendations.
<i>Juglans hindsii</i> North California black walnut	Rank 1B	Riparian forest, riparian woodland. Elevation range: 0 – 1430 feet. Blooms: April – May.	<b>No Potential.</b> The Study Area does not contain riparian habitat.	<b>Not Present.</b> No further recommendations.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE; Rank 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.	<b>Unlikely.</b> The Study Area does not contain alkaline substrate, vernal pools.	<b>Not Present.</b> No further recommendations.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	Rank 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.	<b>No Potential.</b> The Study Area is not located very near the delta nor contains marsh habitat.	<b>Not Present.</b> No further recommendations.
<i>Layia septentrionalis</i> Colusa layia	Rank 1B	Chaparral, cismontane woodland, valley and foothill grassland; on sandy, serpentine substrate; typically in fields and grassy slopes. Elevation range: 330 – 3595 feet. Blooms: April – May.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Leptosiphon acicularis</i> bristly leptosiphon	Rank 4	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.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	Rank 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.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Leptosiphon latisectus</i> broad-lobed leptosiphon	Rank 4	Broadleaf upland forest, cismontane woodland; frequently situated on serpentine substrate. Elevation range: 550 – 4875 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains woodlands that may support this species; however, serpentine soils are lacking.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Lilaeopsis masonii</i> Mason's Lilaeopsis	SR, Rank 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.	<b>No Potential.</b> The Study Area is not located along the banks of the delta.	<b>Not Present.</b> No further recommendations.
<i>Lilium rubescens</i> redwood lily	Rank 4	Broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, North Coast coniferous forest; often located on serpentine substrates, and along roadcuts. Elevation range: 95 – 6210 feet. Blooms: April – September.	<b>Moderate Potential.</b> The Study Area contains broadleaf upland forest and rocky areas similar to chaparral.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Limnanthes vincularis</i> Sebastopol meadowfoam	FE, SE, Rank 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.	<b>No Potential.</b> The Study Area does not contain adobe soils nor is located within the Santa Rosa Plain.	<b>Not Present.</b> No further recommendations.
<i>Lomatium repostum</i> Napa Lomatium	Rank 4	Chaparral, cismontane woodland; located on serpentine substrate. Elevation range: 290 – 2700 feet. Blooms: March – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Lupinus sericatus</i> Cobb Mountain lupine	Rank 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, sometimes serpentine. Elevation range: 890 – 4960 feet. Blooms: March – June.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Malacothamnus helleri</i> Heller's bush-mallow	Rank 4	Chaparral; situated on soils derived from sandstone. Elevation range: 3220 – 2065 feet. Blooms: June – August.	<b>No Potential.</b> The Study Area does not contain soils derived from sandstone.	<b>Not Present.</b> No further recommendations.
<i>Micropus amphibolus</i> Mt. Diablo cottonweed	Rank 3	Broadleaf upland forest, chaparral, cismontane woodland, valley and foothill grassland; typically on thin, rocky soils. Elevation range: 145 – 2710 feet. Blooms: March – May.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Monardella viridis</i> green monardella	Rank 4	Broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 325 – 3285 feet. Blooms: June – September.	<b>Moderate Potential.</b> The Study Area contains rocky areas similar to chaparral, broadleaf upland forest, and cismontane woodland.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Navarretia cotulifolia</i> cotula navarretia	Rank 4	Chaparral, cismontane woodland, valley and foothill grassland; located on adobe substrate. Elevation range: 10 – 5950 feet. Blooms: May – June.	<b>No Potential.</b> The Study Area does not contain adobe soils.	<b>Not Present.</b> No further recommendations.
<i>Navarretia heterandra</i> Tehama navarretia	Rank 4	Valley and foothill grasslands, vernal pools; situated in pools and mesic grasslands. Elevation range: 95 – 3285 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains mesic grasslands with patches of sparse vegetation.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Navarretia jepsonii</i> Jepson's navarretia	Rank 4	Chaparral, cismontane woodland, valley and foothill grassland; situated on serpentine substrates. Elevation range: 565 – 2780 feet. Blooms: April – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	Rank 1B	Wet, mesic sites underlain by adobe and/or alkaline substrate in cismontane woodland, meadows, seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Elevation range: 15 – 5710 feet. Blooms: April – July.	<b>No Potential.</b> The Study Area does not contain adobe clay or alkaline substrates.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> few-flowered navarretia	FE; ST; Rank 1B	Vernal pools; located on volcanic ash flow and volcanic substrate pools. Elevation range: 1300 – 2780 feet. Blooms: May – June.	<b>No Potential.</b> The Study Area does not contain volcanic ash soils or vernal pools.	<b>Not Present.</b> No further recommendations.
<i>Navarretia rosulata</i> Marin County navarretia	Rank 1B	Closed-cone coniferous forest, chaparral; located on dry, rocky sites often formed from serpentine. Elevation range: 650 – 2065 feet. Blooms: May – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Penstemon newberryi</i> var. <i>sonomensis</i> Sonoma beardtongue	Rank 1B	Chaparral; crevices in rock outcrops and talus slopes. Elevation range: 2295 – 4495 feet. Blooms: April – August.	<b>Moderate Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils. Typically located on large rock outcrops on ridgelines.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Ranunculus lobbii</i> Lobb's buttercup	Rank 4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; located in mesic, vernal wet areas. Elevation range: 45 – 1530 feet. Blooms: February – May.	<b>Unlikely.</b> The Study Area wetlands likely do not have a saturation duration extensive enough to support this species.	<b>Not Present.</b> No further recommendations.
<i>Rhynchospora californica</i> California beaked-rush	Rank 1B	Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps. Elevation range: 145 – 3315 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area does not contain bogs, fens, or marshes.	<b>Not Present.</b> No further recommendations.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	Rank 1B	Marshes and swamps (assorted shallow freshwater). Elevations form 0 – 2113 feet. Blooms: May-October, sometimes November.	<b>No Potential.</b> The Study Area does not contain marsh habitat.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Senecio clevelandii</i> var. <i>clevelandii</i> Cleveland's ragwort	Rank 4	Chaparral; situated on serpentine seeps. Elevation range: 1185 – 2925 feet. Blooms: June – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Sidalcea hickmanii</i> ssp. <i>napensis</i> Napa checkerbloom	Rank 1B	Chaparral; located on rhyolitic substrates. Elevation range: 1345 – 1985 feet. Blooms: April – June.	<b>High Potential.</b> The Study Area contains rocky, gravelly substrates derived from volcanic soils.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Sidalcea hickmanii</i> ssp. <i>viridis</i> Marin checkerbloom	Rank 1B	Chaparral; located on serpentine or volcanic substrate, often located in burns. Elevation range: 160 – 1400 feet. Blooms: May – June.	<b>Moderate Potential.</b> The Study Area contains rocky volcanic areas and was recently burned.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Sidalcea keckii</i> Keck's checkerbloom	FE; Rank 1B	Cismontane woodland, valley and foothill grassland; located in grassy areas in blue oak woodland underlain by serpentine substrate. Elevation range: 240 – 2115 feet. Blooms: April – June.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i> marsh checkerbloom	Rank 1B	Meadows and seeps, riparian forest; located on wet soils along streambanks and meadows. Elevation range: 3575 – 7475 feet. Blooms: July – August.	<b>No Potential.</b> The Study Area does not contain wet meadows.	<b>Not Present.</b> No further recommendations.
<i>Sidalcea oregana</i> ssp. <i>valida</i> Kenwood Marsh checkerbloom	FE; SE; Rank 1B	Freshwater marshes and swamps, on the edges of marshes. Elevation range: 375 – 495 feet. Blooms: June – September.	<b>No Potential.</b> The Study Area does not contain marsh or swamps.	<b>Not Present.</b> No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Streptanthus hesperidis</i> green jewelflower	Rank 1B	Chaparral, cismontane woodland; located in openings in brushy/wooded sites on rocky serpentine substrate. Elevation range: 420 – 2470 feet. Blooms: May – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils.	<b>Not Present.</b> No further recommendations.
<i>Symphyotrichum lentum</i> Suisun Marsh aster	Rank 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.	<b>No Potential.</b> The Study Area is not very close to the delta, nor contains marsh habitat.	<b>Not Present.</b> No further recommendations.
<i>Toxicoscordion fontanum</i> marsh zigzag	Rank 4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps; located in vernal mesic sites, often underlain by serpentine. Elevation range: 45 – 3250 feet. Blooms: April – July.	<b>Unlikely.</b> The Study Area does not contain serpentine soils nor has marsh habitat.	<b>Not Present.</b> No further recommendations.
<i>Trichostema ruygtii</i> Napa blue curls	Rank 1B	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.	<b>Moderate Potential.</b> The Study Area contains rocky areas similar to chaparral, grassland, and cismontane woodland.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Trifolium amoenum</i> showy rancheria clover	FE, Rank 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine. Elevation range: 15 – 1365 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains grassland.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Trifolium hydrophilum</i> saline clover	Rank 1B	Marshes and swamps, mesic portions of alkali vernal pools; mesic, alkali valley and foothill grassland. Elevation range: 0 – 985 feet. Blooms: April – June.	<b>No Potential.</b> The Study Area does not contain alkaline soils or marsh habitat.	<b>Not Present.</b> No further recommendations.
<i>Triteleia lugens</i> dark-mouthed triteleia	Rank 4	Broadleaf upland forest, chaparral, lower montane coniferous forest, coastal scrub. Elevation range: 325 – 3250 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains broadleaf upland forest, and rocky areas similar to chaparral.	<b>Not Observed.</b> This species was not observed during the protocol level special-status plant survey. No further recommendations.
<i>Viburnum ellipticum</i> oval-leaved viburnum	Rank 2B	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation range: 705 – 4595 feet. Blooms: May – June.	<b>Unlikely.</b> The Study Area does not contain dense woodland or coniferous forest.	<b>Not Present.</b> No further recommendations.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<b>WILDLIFE</b>				
<b>Mammals</b>				
<i>Antrozous pallidus</i> 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.	<b>Moderate Potential.</b> Tree cavities within the Study Area are suitable for roosting; there are several CNDDDB occurrences in the greater vicinity (CDFW 2018).	<b>Presence Unknown.</b> Tree removal outside of maternity roosting season, or conduct pre-construction roost habitat assessment.
<i>Bassariscus astutus</i> 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.	<b>Unlikely.</b> The Study Area lacks cliffs and large tree cavities/hollows typical of dens for this species.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Corynorhinus townsendii townsendii</i> 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	<b>Unlikely.</b> The Study Area does not contain caves, mines, or buildings suitable for roosting; the on-site barn appeared to be regularly used/occupied. CNDDDB occurrences in Napa County are all located in the northern portion of the County (CDFW 2018a).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Eumops perotis californicus</i> 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.	<b>Unlikely.</b> The Study Area lacks large rock structures that are suitable for roosting. There are no CNDDDB occurrences of this species in Napa County.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Lasiurus blossevillei</i> 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.	<b>Unlikely.</b> The Study Area lacks large, broadleaved trees of the type typically used for roosting (maples, sycamores, etc.).	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Myotis thysanodes</i> 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.	<b>Moderate Potential.</b> Oak woodland within the Study Area provides trees suitable for roosting.	<b>Presence Unknown.</b> Tree removal outside of maternity roosting season, or conduct pre-construction roost habitat assessment.
<i>Myotis volans</i> 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.	<b>Unlikely.</b> The Study Area lacks caves, buildings or similar refugia and does not contain coniferous forest.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Reithrodontomys raviventris</i> 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.	<b>No Potential.</b> The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	<b>Not Present.</b> No further recommendations for this species.
<i>Sorex ornatus sinuosus</i> 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.	<b>No Potential.</b> The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	<b>Not Present.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Taxidea taxus</i> American badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	<b>Unlikely.</b> The Study Area provides grassland and woodland with some suitable habitat elements, but there are no occurrences within the eastern portion of Napa County (e.g., CDFW 2018a).	<b>Presumed Absent.</b> No further recommendations for this species.
<b>Birds</b>				
<i>Agelaius tricolor</i> 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.	<b>No Potential.</b> The Study Area does not provide vegetated ponds or emergent marsh suitable for nesting.	<b>Not Present.</b> No further recommendations for this species.
<i>Ammodramus savannarum</i> 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.	<b>Unlikely.</b> Suitable grassland cover is relatively limited in area within most of the Study Area, and this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2018).	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Aquila chrysaetos</i> 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.	<b>Unlikely.</b> The Study Area does not provide cliffs or typical large trees for nesting; may forage in the vicinity.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Ardea alba</i> 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.	<b>Unlikely.</b> The Study Area is not within close proximity to suitable waters to support a breeding colony.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Ardea herodias</i> great blue heron	LR (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequestered 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.	<b>Unlikely.</b> The Study Area is not within close proximity to suitable waters to support a breeding colony.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Asio flammeus</i> 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.	<b>Unlikely.</b> Known distribution (wintering) is restricted to the Napa baylands; breeding in the County has never been documented (Smith 2003).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Asio otus</i> 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.	<b>Unlikely.</b> Rare in Napa County, with the nearest observations located on the Napa Valley floor (eBird 2018).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Athene cunicularia</i> 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.	<b>Unlikely.</b> Breeding and wintering distribution within Napa County are restricted to the vicinity of Lake Berryessa and southern baylands (Smith 2003, CDFW 2018).	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Buteo swainsoni</i> 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.	<b>Unlikely.</b> Napa County's very small breeding population is restricted to the Napa Valley floor in association with the Napa River and baylands (CDFW 2018a).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Charadrius alexandrinus nivosus</i> 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.	<b>No Potential.</b> The Study Area does not contain beaches or other suitable barren habitat near water.	<b>Not Present.</b> No further recommendations for this species.
<i>Circus cyaneus</i> 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.	<b>Unlikely.</b> Open grassland areas within the Study Area are generally arid and relatively 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.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Contopus cooperi</i> 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.	<b>Unlikely.</b> The Study Area does not contain forest or woodland stands of the type typically used by this species.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Cypseloides niger</i> 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.	<b>No Potential.</b> The Study Area does not contain waterfalls; there are no modern breeding records for Napa County (Smith 2003, Shuford and Gardali 2008).	<b>Not Present.</b> No further recommendations for this species.
<i>Dendroica petechia brewsteri</i> (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.	<b>Unlikely.</b> The Study Area does not contain streams and associated dense riparian thickets (e.g., willow cover) favored by this species for breeding. Individuals presumably occur during migration.	<b>Presumed Absent.</b> No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Egretta thula</i> 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.	<b>Unlikely.</b> The Study Area is not within close proximity to suitable waters to support a breeding colony.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Elanus leucurus</i> 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.	<b>Moderate Potential.</b> Woodland within the Study Area provides suitable nesting trees, and open areas for foraging.	<b>Presence Unknown.</b> Tree/vegetation removal and initial ground disturbance should occur outside of nesting season, or conduct pre-construction surveys and avoid any active nests found.
<i>Falco peregrinus anatum</i> 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.	<b>Unlikely.</b> The Study Area does not contain cliffs or suitable man-made structures for nesting.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Geothlypis trichas sinuosa</i> 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.	<b>Unlikely.</b> No marsh vegetation is present within the Study Area.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Haliaeetus leucocephalus</i> 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.	<b>Unlikely.</b> Larger water bodies are not within or in close proximity to the Study Area. As per Smith (2003) and CDFW (2018a), nesting within Napa County is known only from the immediate vicinity of Lake Berryessa.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Icteria virens</i> 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 ( <i>Salix</i> spp.), blackberry ( <i>Rubus</i> spp.), and wild grape ( <i>Vitis californicus</i> ).	<b>Unlikely.</b> 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 2018).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Lanius ludovicianus</i> 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.	<b>Unlikely.</b> 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 2018).	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Laterallus jamaicensis coturniculus</i> 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.	<b>No Potential.</b> The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	<b>Not Present.</b> No further recommendations for this species.
<i>Melospiza melodia samuelis</i> 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.	<b>No Potential.</b> The Study Area contains no tidal or brackish marsh and is outside of this species' limited Napa County range.	<b>Not Present.</b> No further recommendations for this species.
<i>Nycticorax nycticorax</i> 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.	<b>No Potential.</b> The Study Area and adjacent lands lack aquatic foraging habitat.	<b>Not Present.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Passerculus sandwichensis alaudinus</i> 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.	<b>Unlikely.</b> 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 2018).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Progne subis</i> 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.	<b>Unlikely.</b> 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 2018).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Rallus obsoletus obsoletus</i> 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.	<b>No Potential.</b> The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	<b>Not Present.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Riparia riparia</i> 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.	<b>No Potential.</b> 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).	<b>Not Present.</b> No further recommendations for this species.
<i>Spizella atrogularis</i> black-chinned sparrow	LR	Summer resident. Typically occurs on arid, rocky slopes with brushy vegetation, e.g. mixed chaparral, and sagebrush.	<b>Unlikely.</b> The Study Area does not contain chaparral or similar habitats with dense, mature brush.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Strix occidentalis caurina</i> 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.	<b>Unlikely.</b> The Study Area does not contain mature forest nor is any present in the immediate vicinity.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Xanthocephalus xanthocephalus</i> 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.	<b>No Potential.</b> The Study Area lacks marsh vegetation suitable for nesting.	<b>Not Present.</b> No further recommendations for this species.
<b>Reptiles and Amphibians</b>				
<i>Dicamptodon ensatus</i> 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.	<b>No Potential.</b> The Study Area does not contain any streams.	<b>Not Present.</b> No further recommendations for this species.
<i>Emys marmorata</i> Pacific (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.	<b>Unlikely.</b> Aquatic features within the Study Area are restricted to seasonal wetlands that have insufficient hydrology (depth, duration) to provide aquatic habitat. Surrounding lands do not appear to feature ponds or other typical habitat (Google Earth 2018).	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Rana boylei</i> foothill yellow-legged frog	SC (T), 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).	<b>No Potential.</b> The Study Area does not contain any streams.	<b>Not Present.</b> No further recommendations for this species.
<i>Rana draytonii</i> 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.	<b>Unlikely.</b> Aquatic features within the Study Area are restricted to seasonal wetlands that have insufficient hydrology (depth, duration) to support breeding. The nearest occurrences in CNDDB in Napa County are located greater than 5.0 miles to the northeast (Napa) (CDFW 2018).	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Scaphiopus hammondi</i> western spadefoot	SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Shallow temporary pools formed by winter rains are essential for breeding and egg-laying. Range within Napa County is extremely restricted.	<b>Unlikely.</b> The Study Area lacks vernal pools and similar temporary water features; in Napa County the known range is restricted to a very small area in its eastern portion.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<b>Fishes</b>				
<i>Acipenser medirostris</i> 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.	<b>No Potential.</b> The Study Area does not contain suitable anadromous or estuarine waters.	<b>Not Present.</b> No further recommendations for this species.
<i>Eucyclogobius newberryi</i> 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.	<b>No Potential.</b> The Study Area does not contain brackish or ore estuarine waters.	<b>Not Present.</b> No further recommendations for this species.
<i>Hypomesus transpacificus</i> 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.	<b>No Potential.</b> The Study Area does not contain estuarine waters.	<b>Not Present.</b> No further recommendations for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Lampetra ayresi</i> 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.	<b>No Potential.</b> The Study Area does not contain suitable anadromous or estuarine waters.	<b>Not Present.</b> No further recommendations for this species.
<i>Oncorhynchus mykiss irideus</i> 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.	<b>No Potential.</b> The Study Area does not contain suitable anadromous or estuarine waters.	<b>Not Present.</b> No further recommendations for this species.
<i>Oncorhynchus tshawytscha</i> 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.	<b>No Potential.</b> The Study Area does not contain suitable anadromous or estuarine waters.	<b>Not Present.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<i>Pogonichthys macrolepidotus</i> 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).	<b>No Potential.</b> The Study Area does not contain riverine or estuarine waters.	<b>Not Present.</b> No further recommendations for this species.
<i>Spirinchus thaleichthys</i> 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.	<b>No Potential.</b> The Study Area does not contain riverine or estuarine waters.	<b>Not Present.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
<b>Invertebrates</b>				
<i>Branchinecta lynchi</i> 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.	<b>No Potential.</b> 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).	<b>Not Present.</b> No further recommendations for this species.
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT	Found in riparian and oak savannah where elderberry ( <i>Sambucus</i> sp.), the host plant, is present.	<b>No Potential.</b> Elderberry was not observed during the site visit; CNDDDB occurrences are restricted to its southeastern-most portion (CDFW 2018a).	<b>Not Present.</b> No further recommendations for this species.
<i>Speyeria callippe callippe</i> Callippe silverspot butterfly	FE	Two populations are recognized, on San Bruno Mountain and the Cordelia Hills. Host plant is <i>Viola pedunculata</i> , which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	<b>No Potential.</b> Although <i>Viola</i> 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.	<b>Not Present.</b> No further recommendations for this species.
<i>Syncaris pacifica</i> 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.	<b>No Potential.</b> The Study Area does not contain any streams.	<b>Not Present.</b> No further recommendations 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
Rank 1A	CNPS Rank 1A: Plants presumed extinct in California
Rank 1B	CNPS Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	CNPS Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B	CNPS Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CNPS Rank 3: Plants about which CNPS needs more information (a review list)
Rank 4	CNPS Rank 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. CNDDDB, 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 Observed. Species was not observed during dedicated/formal surveys.

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

Appendix D

Representative Photographs



Seasonal wetland (swale) in the southeastern portion of the Study Area



Nodding harmonia (*Harmonia nutans*) and Greene's daisy (*Erigeron greenei*) habitat



Seasonal wetland and non-native grassland (upland) in foreground; coast live oak woodland in background



Existing development: vineyard and barn in the northeastern portion of the Study Area

## Appendix E

### Statement of Qualifications



## Appendix E. 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 seventeen 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 twelve 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.