Exhibit B-1

Biological Resource Assessment Report

Quantum Limit Vineyards
Napa County, California (APN: 033-140-052)

Prepared For:
Glenn Rice
Quantum Limit Partners LLC
2700 Aqua Vista Blvd
Fort Lauderdale, FL 33301

Prepared by:
Matt Richmond
richmond@wra-ca.com

Jason Yakich
yakich@wra-ca.com

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WRA Project #:
28130

ENVIRONMENTAL CONSULTANTS

2169-G East Francisco Blvd., San Rafael, CA 94901 (415) 454-8868 tel (415) 454-0129 fax info@wra-ca.com www.wra-ca.com

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EXECUTIVE SUMMARY

This report details the regulatory background, methods, results, and recommendations of a biological resources assessment for proposed vineyard expansion (Project Area) at Quantum Limit Vineyards property located at 25 Quail Ridge Drive in unincorporated Napa County, California (Study Area). The Study Area is a mostly developed parcel with vineyards, a residence, a winery (in progress), and an irrigation pond; undeveloped portions consist of oak woodlands, non-native grassland, scrub, and ruderal biological communities. The Project Area includes four proposed vineyard blocks in the undeveloped portion of the Study Area with oak woodland and ruderal areas.

The proposed project will follow the existing Erosion Control Plan (#P1-00356-ECPA). Oak woodlands are considered sensitive under Napa County General Plan Conservation Element Policy CON-24. A total of 21 trees are to be removed; however, a ratio of 3:1 preservation would be applied to potential oak woodland impacts. An ephemeral stream is located near the northern edge of a proposed vineyard block; however, a no-development setback extending 50 feet from the top of each bank of the drainage is recommended.

No special-status plant species were observed during protocol-level plant surveys within the Project Area; as such, no further actions regarding special-status plant species are recommended. Special-status bats and birds, as well as non-status birds with baseline legal protections, have the potential to occur in the Project Area. Mitigation measures and best management practices have been developed and provided herein to avoid impacts to these resources.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

LIST OF PREPARERS

Matt Richmond – Principal-in-Charge
Rhiannon Korhummel – Plant Biologist
Jason Yakich – Senior Wildlife Biologist
Michael Rochelle – GIS Specialist

LIST OF ACRONYMS

CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of Napa
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
DBH	Diameter at Breast Height
EFH	Essential Fish Habitat
ESA	Federal Endangered Species Act
Inventory	CNPS Rare and Endangered Plant Inventory
MBTA	Migratory Bird Treaty Act
NCBR	Napa County Baseline Report
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
OHWM	Ordinary High Water Mark
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality 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
WRA	WRA, Inc.

1.0 INTRODUCTION

1.1 Purpose of Assessment

On May 11 and July 3, 2018, and June 7, 2019 WRA, Inc. (WRA) performed a biological resources assessment at the Quantum Limit Vineyards property located at 25 Quail Ridge Drive (APN 033-140-052), in unincorporated Napa County (Figure 1, Appendix A). It is WRA's understanding that four new vineyard blocks (collectively, Project Area) are being proposed within the Study Area. The purpose of this study was to gather the information necessary to complete a review of biological resources within the Project Area.

A biological resource assessment provides general information on the presence or potential presence, of sensitive species and habitats. These survey(s) contain the results of protocol-level surveys for special-status plant species documented in the vicinity of the Project Area; however, protocol-level surveys for wildlife are not included as part of the survey. This survey is not a formal wetland delineation. This survey is based on information available at the time of the study and on-site conditions that were observed on the dates 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. 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 Area is included as Appendix C. Representative photographs of the Project Area are included as Appendix D. The qualifications of the biologists who prepared this report are included as Appendix E. A topographical map of the Study Area produced by CMP Civil Engineering & Land Surveying is included as Appendix F, and a table of tree inventory data is included as Appendix G.

1.2 Project Background

The proposed project (Project) involves new vineyard expansion within the Study Area. A suite of resource assessments and associated reports covering all or portions of the Quantum Limit Vineyards Property were prepared in 2014 and 2015 (Balance Geo 2015, Barrow 2014, Northwest Biosurvey 2014), including an Erosion Control Plan (#P1-00356-ECPA). The Project will follow the existing Erosion Control Plan.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological study, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

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.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by the California Department of Fish and Wildlife (CDFW) under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes

generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). “Riparian” is defined as “on, or pertaining to, the banks of a stream.” Riparian vegetation is defined as “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Sensitive Natural Communities

Sensitive natural communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2018a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2019). 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 the California Environmental Quality Act (CEQA) (CCR Title 14, Div. 6, Chap. 3, Appendix G). The Napa County Baseline Data Report (NCBR) identifies sensitive Napa County natural communities (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; CNPS 2018a) 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 (Napa County 2008) or NCBR are likewise considered sensitive.

Table 1. CNPS Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
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
Threat Ranks	
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, 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) and USFWS Birds of Conservation Concern are considered special-status species. Although species in the two latter categories generally have no special legal status, they are typically given special consideration under CEQA. 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 (MBTA) and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, intentionally destroying or collecting 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 priority are typically given special consideration under CEQA.

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 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 the National Marine Fisheries Service (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 NCBR (Napa County 2005) outlines important corridor resources within the County and encourages protection of these resources via Policy CON-18 (see section 2.2 below).

2.2 Napa County Regulatory Setting

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

Napa County Baseline Data Report

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

Natural Resource Goals and Policies

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

a) Maintain the following essentials for fish and wildlife resources:
    a. Sufficient dissolved oxygen in the water.
    b. Adequate amounts of proper food.
    c. Adequate amounts of feeding, escaping, and nesting habitat.
    d. Proper temperature through maintenance and enhancement of streamside vegetation volume flows, and velocity of water.
b) Employ supplemental planting and maintenance of grasses, shrubs and trees of like quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for

wildlife and special-status species and maintain the watersheds, especially streams side areas, in good condition.

c) Provide protection for habitat supporting special-status species through buffering or other means.
d) Provide replacement habitat of like quantity and quality on- or off-site for special-status species to mitigate impacts to special-status species.
e) Enhance existing habitat values, particularly for special-status species, through restoration and replanting of native plant species as part of discretionary permit review and approval.
f) Require temporary or permanent buffers of adequate size (based on the requirements of the special-status species) to avoid nest abandonment of birds and raptors associated with construction and site development activities.
g) Demonstrate compliance with applicable provisions and regulations of recovery plans for listed species.

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

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

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

a) In sensitive domestic water supply drainages where new development is required to retain between 40 and 60 percent of the existing (as of June 16, 1993) vegetation onsite, the vegetation selected for retention should be in areas designed to maximize habitat value and connectivity.
b) Outside of sensitive domestic water supply drainages, streamlined permitting procedures should be instituted for new vineyard projects that voluntarily retain valuable habitat and connectivity, including generous setbacks from streams and buffers around ecologically sensitive areas.
c) Preservation of habitat and connectivity of adequate size, quality and configuration to support special-status species should be required within the Project Area. The size of habitat and connectivity to be preserved shall be determined based on the specific needs of the species.

d) The County shall require discretionary projects to retain movement corridors of adequate size and habitat quality to allow for continued wildlife use based on the needs of the species occupying the habitat.
e) The County shall require new vineyard development to be designed to minimize the reduction of wildlife movement to the maximum extent feasible. In the event the County concludes that such development will have a significant impact on wildlife movement, the County may require the applicant to relocate or remove existing perimeter fencing installed on or after February 16, 2007 to offset the impact cause by the new vineyard development.

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

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

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

General Provisions – Intermittent/perennial streams

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

[1] Amendments to Napa County Ordinance 18.180 require a 3:1 ratio for replacement.

Table 2. Napa County Stream Setbacks

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

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 6 inches in diameter or larger, measured at diameter breast height (DBH), or tree stands of trees 6 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 and consists of four separate areas totaling approximately 4.94 acres, located in southeastern Napa County, approximately 6.5 miles northwest of central Fairfield. It is situated on the steep western slopes of Okell Hill, east of Suisun Valley. Detailed descriptions of the local regional setting are below.

3.1 Topography and Soils

The overall topography of the Study Area is gently to steeply sloped with a general western-facing aspect, and elevations ranging from approximately 270 to 620 feet above sea level. The *Soil Survey of Napa County* (USDA 1978) indicates that the Study Area is composed of one mapping unit: Bressa-Dibble complex, 30 to 50 percent slopes. The two soil series that compose this soil mapping unit is described below.

Bressa Series. The Bressa series consists of moderately deep, well drained soils over weathered sandstone that formed in material weathered from fine grained sandstone and shale. Bressa soils have medium to very rapid runoff and moderately slow permeability. A representative profile for the Bressa series consists of an A horizon from 0 to 10 inches containing brown (10YR 4/3), slightly acid (pH 6.5) silt loam. Below this is a B horizon from 10 to 33 inches consisting of dark yellowish brown to yellowish brown (10YR 4/4 to 10YR 5/4) slightly acid to moderately acid (pH 5.6) silty clay loam. This underlain by a Cr horizon from 33 to 37 inches consisting of weathered soft, fractured, fine grained sandstone. These soils are not considered hydric (USDA 1978).

Dibble Series. The Dibble series consists of moderately deep, well drained soils formed in material weathered from shale, sandstone, and semi-consolidated densic material and is located on foothills and fan remnants. These soils have slow to rapid runoff and slow permeability. A representative profile consists of an A horizon from 0 to 6 inches consisting of olive brown (2.5Y 4/4) to brown (10YR 4/3) moderately acid (pH 5.8) silt loam to light clay loam. Below this is a B horizon from 6 to 34 inches consisting of yellowish brown (10YR 5/4 to 10YR 5/6) moderately acid (pH 5.7 to 5.8) heavy clay loam to clay. This is underlain by a Cd horizon from 34 to 40 inches consisting of yellow (10YR 8/8) moderately acid silt loam. These soils are not considered hydric (USDA 1978).

3.2 Climate and Hydrology

The Study Area is located outside of the coastal fog belt of the Bay Area, but annual rainfall is substantial in winter through early spring. Average annual precipitation for Fairfield (GHCND:US1CASO0007), the closest reporting weather station to the Study Area located approximately 6.5 miles southeast, is 23.25 inches, with the majority falling as rain in the winter months (November through March) (NOAA 2018). The mean daily low and high temperatures in degrees Fahrenheit range from 47.6 in December to 73.3 in July, however, temperatures frequently exceed 80 degrees (USDA 2018).

The primary hydrologic sources for the Study Area are precipitation and localized surface runoff from immediately adjacent lands. As the Study Area experiences some large winter/spring rainfall events and small valleys in the topography, evidence of ephemeral directional flow during high rain events are evident in the form of one ephemeral drainage. No wetlands or other drainages are mapped in the Study Area in USFWS National Wetlands Inventory (USFWS 2018a) or on the Mt. George USGS 7.5-minute topographic quadrangle (USGS 2015). The parcel is located within the Suisun Reservoir Watershed (Napa County 2018).

3.3 Biota and Land Use

The Study Area is composed of a mix of development, agriculture, oak woodland, coyote brush scrub, grassland, and ruderal areas, and is currently used for cattle grazing. Detailed plant

community descriptions are included in Section 5.1 below and all observed plant species are included in Appendix B.

Historical photos dating back to 1948 indicate very little historic land use within the Study Area (NETR 2018) up to 1993, after which contemporary development of the Study Area began. Major vineyard development within the Study Area began in 2012. The Study Area burned in the Atlas Fire of 2017. Historically, surrounding land uses consisted of rural residential and agriculture, and agricultural use in the form of vineyard blocks began as early as 1993 and has increased since then. At present, surrounding parcels are composed of rural residences, vineyards, and undeveloped land (Google Earth 2018, NETR 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 resources (e.g., wetlands) and special-status species (e.g., endangered plants):

- *Soil Survey of Napa County, California* (USDA 1978)
- Mount George 7.5-minute quadrangle (USGS 2015)
- Aerial photographs (Google Earth 2018, NETR 2018)
- National Wetlands Inventory (USFWS 2018a)
- CNDDB (CDFW 2019)
- California Native Plant Society Electronic Inventory (CNPS 2018a)
- Consortium of California Herbaria (CCH 2018)
- California Aquatic Resource Inventory (SFEI 2018)
- USFWS Information for Planning and Conservation Database (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)
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003)
- *A Manual of California Vegetation, Online Edition* (CNPS 2018b)
- Napa County Land Cover (NCLC) map (Thorne et al. 2004)
- *California Natural Community List* (CDFW 2018a)

Database searches (i.e., CNDDB, CNPS) focused on the Capell Valley, Cordelia, Cuttings Wharf, Fairfield North, Fairfield South, Mount George, Mount Vaca, Napa, and Yountville USGS 7.5-minute quadrangles. Appendix A contains observations of special-status species documented in the CNDDB within a 5-mile radius of the Project Area.

Following the remote assessment, a WRA biologist 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[2].

4.1 Biological Communities

4.1.1 Terrestrial Natural Communities

The Project 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 2018a) 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[3] Additionally, any sensitive natural communities as described in the Napa County Baseline Report (Napa County 2005) or General Plan (Napa County 2008) were considered.

Additionally, to facilitate oak woodland retention requirements, stands of oak woodland were mapped within the Study Area (including outside of the Project Area).

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 for these aquatic resources.

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, if present. 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 within or adjacent to the Project Area, 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 OHWM 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*

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

and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code (CDFG 1994).

4.1.3 Tree Survey

On June 7, 2019 a tree survey was performed within the Project Area to record the species and diameter-at-breast-height (dbh) of trees to be removed for the proposed vineyard development. Locations of trees to be measured were provided to WRA.

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.

Site visits were made on May 11 and July 3, 2018 and June 7, 2019, 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 Project 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 (e.g. CNDDB, 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 Project Area on May 11 and July 3, 2018, and subsequently on June 7, 2019. 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 a botanist familiar with the flora of Napa and surrounding counties. The surveys were performed in accordance with those outlined by Napa County (2016a), which follow those described by resource experts and agencies (CNPS 2001, CDFW 2018b, USFWS 1996). Plants were identified using Jepson eFlora (Jepson Flora Project 2018) to the taxonomic level necessary to determine whether or not they were special-status. Plant names follow those of the Jepson Flora Project (2018), unless otherwise noted.

4.2.3 Special-status Wildlife

The site visits did not constitute formal or protocol-level wildlife surveys. The general assessment for special-status wildlife determined that a few species have the potential to occur in the Project Area. Targeted assessments and surveys for these species (e.g., protocol-level presence/absence surveys) were not performed given the limited scope of the present study

4.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2019c) and the NMFS Essential Fish Habitat Mapper (NMFS 2019) were queried to determine if designated 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 (CDFW and CalTrans 2010), habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2018a), and the NCBR (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 Project 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 three biological communities within the Project Area: interior live oak woodland, blue oak woodland, and ruderal. Biological communities within the Project Area are shown in Figure 2 (Appendix A). The non-sensitive biological communities in the Project Area includes ruderal. Sensitive biological communities within the Project Area include oak woodland. For mapping purposes, each oak woodland type was combined into a single biological community of oak woodland.

Table 3. Biological Communities within the Project Area

Biological Community	Acres
Ruderal	2.98
Oak Woodland (Interior Live and Blue Oak)	1.96

5.1.1 Terrestrial Biological Communities

Ruderal. CDFW Rank: none. Ruderal vegetation is extensive throughout California, particularly in developed and disturbed areas; however, these communities are not described in *A Manual of California Vegetation, Online Edition* (CNPS 2018b). The Project Area contains approximately 2.98 acres of ruderal. This community occurs where vegetation was cleared for fire safety reasons following the Atlas Fire of 2017 and where vineyard rows were removed. At the time of the 2018 site visits, native plant species were resprouting in the burned area, such as snowberry (*Symphoricarpos albus*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), and interior live oak (*Quercus wislizeni*); however, the ground was heavily disturbed by vegetation removal activities, and though the vegetation was sparse overall, the most abundant species were non-native annuals, such as common wheat (*Triticum aestivum*), crimson clover (*Trifolium incarnatum*), rose clover (*T. hirtum*), slim oat (*Avena barbata*), goat grass (*Aegilops triuncialis*), and soft chess (*Bromus hordeaceus*). This community is not considered sensitive.

Interior Live Oak Woodland (*Quercus wislizeni* Forest Alliance). CDFW Rank G4 S4. Interior live woodland occurs on upland slopes, valley bottoms, and terraces in the Klamath Mountains, the Coast Ranges, the Sierra Nevada, Peninsular Ranges, Transverse Ranges, and the edges of the Great Valley. They are typically situated on shallow, moderately to excessively drained soils (CDFW 2018b). The Project Area contains approximately 1.19 acres of interior live oak woodland, located entirely within proposed vineyard Block X. The trees present are remnant of a stand that burned in 2017, and a previous fire in 1994 also impacted this area as per the land owner.

The dominant tree is interior live oak (*Quercus wislizeni*), with a mix of other tree species including California black oak (*Q. kelloggii*), blue oak (*Quercus douglasii*), California bay (*Umbellularia californica*), and California buckeye (*Aesculus californica*). The canopy varies from open to dense. Where the canopy is dense, the understory is sparse and open, consisting of poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), and field hedge parsley (*Torilis arvensis*). Where the canopy is open, the understory is characterized by dense herbaceous vegetation, with species such as slim oat, soft chess, spring vetch (*Vicia sativa*), and Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*). In some portions of oak woodland, the understory vegetation was extensively burned in the 2017 Atlas Fire, and has been heavily grazed by cattle since; as such, this vegetation was extremely sparse during the 2018 and 2019 site visits.

This community is synonymous with the Interior 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. They are sensitive to Napa County under the General Plan Conservation Element Policy CON-24 (oak woodland retention).

Blue Oak Woodland (*Quercus douglasii* Woodland Alliance). CDFW Rank: G4 S4: Blue oak woodlands occur on valley bottoms, foothills, and rocky outcrops in the Klamath Mountains, Coast Range, Sierra Nevada Foothills, and Transverse Range. They are typically situated on low fertility, shallow, moderately to excessively drained soils within the California Floristic Province (CDFW 2018c). The Project Area contains approximately 0.76 acre of blue oak woodland, consisting of one tree within proposed vineyard Block W, and several trees surrounding proposed

vineyard Block V (i.e., there is canopy coverage over Block V, though no oak tree removal from this block is proposed).

The dominant tree is blue oak (*Quercus douglasii*), with subdominant interior live oaks. The canopy is somewhat open providing sunlight for a dense herbaceous layer, which is overwhelmingly composed of non-native grasses, such as purple false brome, soft chess, and slim oat.

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

5.1.2 Aquatic Natural Resources

Ephemeral Drainage (no vegetation alliance). CDFW Rank: not applicable. Ephemeral drainages are common throughout California in all topographic positions and habitat types. An ephemeral drainage is located near the northern edge of proposed vineyard Block X. This drainage, which is not mapped on the Mt. George USGS 7.5-minute quadrangle map (USGS 2015), extends upslope and downslope of the Project Area and eventually drains to Suisun Creek. The top of bank (TOB) of a portion of the stream was mapped by WRA in 2018. However, this area was limited to a portion which was within the vineyard block, prior to design changes to avoid the stream and the TOB. The remainder of the portions of the drainage upslope and downslope of the Project Area were not mapped by WRA; however, CMP Civil Engineering & Land Surveying produced a topographical map (Appendix F) of the Rice property (the Study Area), which depicts two ephemeral drainages, outlined in red. The southern of these drainages is the subject drainage near the vineyard block. WRA has not verified the locations of the drainages outside of the Project Area, and Appendix F is included for reference only. The ephemeral drainage contains clear OHWM and bed-and-bank; therefore, it is likely jurisdictional under Section 404 of the CWA and Section 1600 of the CFGC. However, this drainage is not considered a “County-definitional stream” pursuant to Napa County municipal code Section 18.108.030.

The ephemeral drainage is located within interior live oak woodland. The vegetation associated with the drainage is similar to that of the adjacent areas away from the drainage. None of the species present appear to be dependent on the ephemeral drainage or occur there because of the drainage. The tree canopy is dense and is composed of interior live oak, black oak, and California bay. The understory is open and comprised of sparsely distributed individuals of poison oak, California blackberry, field hedge parsley, and California maidenhair fern (*Adiantum jordanii*).

Flows within the drainage run during and following rain events, but draw down quickly after storms have subsided. The drainage is high-gradient and narrow-channeled and contains a channel bed of sorted sediments dominated by large cobbles and small boulders. Due to its high gradient, flashy hydrology (limited average period of flow), this drainage does not have the potential to support salmonids or other special-status fishes.

5.1.3 Tree Survey

A total of 21 trees were inventoried in this assessment, all of which are native to Napa County. A complete list of all trees surveyed is presented in Appendix G. The species of trees surveyed were: interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), and valley oak (*Quercus lobata*). The number and DBH range of trees by species is summarized in Table 4.

The largest tree on site was a 31.0-inch diameter, single stemmed interior live oak. Among all 21 trees, DBH ranged from 12.0 to 31.0 inches with an average of 23.7 inches.

Table 4. Tree Inventory Results Summary

Species	# Present	DBH Range (in.)
Blue oak(*Quercus douglasii*)	2	17.4 - 19.0
Valley oak(*Quercus lobata*)	2	24.5 - 29.5
Interior live oak(*Quercus wislizenii*)	17	12.0 - 31.0
Total	**21**	**12.0 - 31.0**

5.2 Special-status Species

5.2.1 Special-status Plant Species

Based upon a review of the resource databases listed in Section 4.0, 74 special-status plant species have been documented in the vicinity of the Project Area. Fifteen of these species have the potential to occur in the Project Area. The remaining species documented from the greater vicinity of the Project Area are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., tidal) necessary to support the special-status plant species are not present in the Project Area;
- Edaphic (soil) conditions (e.g., volcanic tuff, serpentine) necessary to support the special-status plant species are not present in the Project Area;
- Topographic conditions (e.g., montane) necessary to support the special-status plant species are not present in the Project Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Project Area;
- Associated natural communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present in the Project Area;
- The Project Area is geographically isolated (e.g. below elevation, coastal environ) from the documented range of the special-status plant species;
- Land use history and contemporary management (e.g., grading) has degraded the localized habitat necessary to support the special-status plant species.

A WRA biologist conducted the protocol-level surveys during a period sufficient to identify all 15 special-status plant species with a moderate or high potential to occur. No special-status plants were observed in the Project Area during protocol-level surveys. Those species that have moderate or high potential to occur but were not observed are summarized in Table 5 below. Special-status plant species occurrences documented in the CNDDB within 5 miles of the Project Area are depicted in Figure 3.

Table 5. Special-status Plants Not Observed During Protocol-level Surveys

Name	Status	Habitat Requirements	Results
Napa false indigo *Amorpha californica* var. *napensis*	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
twig-like snapdragon *Antirrhinum virga*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 325 to 6610 feet (100 to 2015 meters). Blooms Jun-Jul.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 5100 feet (45 to 1555 meters). Blooms Mar-Jun.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Brewer's calandrinia *breweri*	Rank 4.2	Chaparral, coastal scrub. Elevation ranges from 30 to 4005 feet (10 to 1220 meters). Blooms (Jan)Mar-Jun.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Mt. Diablo fairy-lantern *Calochortus pulchellus*	Rank 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation ranges from 95 to 2755 feet (30 to 840 meters). Blooms Apr-Jun.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
streamside daisy *Erigeron bioletti*	Rank 3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest. Elevation ranges from 95 to 3610 feet (30 to 1100 meters). Blooms Jun-Oct.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Diablo helianthella *castanea*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 95 to 3100 feet (30 to 945 meters). Blooms May-Jul.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Brewer's western flax *Hesperolinon breweri*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 95 to 3100 feet (30 to 945 meters). Blooms May-Jul.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Northern California black walnut *Juglans hindsii*	Rank 1B.1	Riparian forest, riparian woodland. Elevation ranges from 0 to 1445 feet (0 to 440 meters). Blooms Apr-May.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.

Name	Status	Habitat Requirements	Results
broad-lobed leptosiphon *Leptosiphon latisectus*	Rank 4.3	Broadleafed upland forest, cismontane woodland. Elevation ranges from 555 to 4920 feet (170 to 1500 meters). Blooms Apr-Jun.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
redwood lily *Lilium rubescens*	Rank 4.2	Broadleafed upland forest, chaparral, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest. Elevation ranges from 95 to 6265 feet (30 to 1910 meters). Blooms Apr-Aug(Sep).	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
two-fork clover *Trifolium amoenum*	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
dark-mouthed triteleia *Triteleia lugens*	Rank 4.3	Broadleafed upland forest, chaparral, coastal scrub, lower montane coniferous forest. Elevation ranges from 325 to 3280 feet (100 to 1000 meters). Blooms Apr-Jun.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
oval-leaved viburnum *Viburnum ellipticum*	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 705 – 4595 feet (215 to 1400 meters). Blooms: May – June.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.

5.2.2 Special-status Wildlife Species

A total of 59 special-status wildlife species have been documented within the greater vicinity of the Project Area. Three of these species have a moderate potential to occur in the Project Area and Project Area. The remaining 56 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 Project Area;
- Vegetation habitats (e.g., coniferous forest, coastal prairie) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present in the Project 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 Project 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 Project Area;

- The Project Area is outside (e.g., north of, west of) of the special-status wildlife species documented range, including nesting range for birds.

Special-status wildlife species occurrences documented in the CNDDB within 5 miles of the Project Area are depicted in Figure 4. Special-status wildlife with the potential to occur in the Project Area are discussed below.

Special-status Wildlife that Occur in the Project Area

No special-status wildlife were observed in the Project Area; however, without targeted assessments or protocol-level surveys, their absence 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). The trees within the Project Area may contain cavities or snags suitable for roosting by this species, and it has a moderate potential to occur given documented occurrences in the vicinity (CDFW 2019). 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 is determined to have a moderate potential to occur within the Project Area due to the presence of trees suitable for nesting, as well as the vineyard and open grassland habitat to support foraging of this species found in immediately adjacent areas.

5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Project Area does not contain any designated critical habitat (USFWS 2018b) or Essential Fish Habitat (NMFS 2018).

The Project Area is not within a designated wildlife corridor (CDFW and Caltrans 2010, Napa County 2005). The site is located within a much larger tract of agricultural/viticultural and lightly-developed to undeveloped land within a rural portion of Napa County. While common wildlife species presumably utilize the site to some degree for movement at a local scale, the Project Area itself does not provide corridor functions beyond connecting similar land parcels in surrounding areas. Within this context, agricultural expansion within the Project Area is in and of itself unlikely to result in any significant impacts to local wildlife movement. The ephemeral drainage course (even when dry) and associated vegetation within the Project Area presumably provide very localized movement and shelter habitat for common wildlife species. As such, avoidance of impacts to this drainage course to the fullest extent feasible is recommended.

6.0 SUMMARY AND RECOMMENDATIONS

6.1 Biological Communities

No sensitive biotic communities as defined in the Napa County Baseline Report (Napa County 2005) occur within the Project Area. While the oak woodlands are not considered sensitive by CDFW, 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 3:1 ratio. The Project Area contains 1.96 acres of oak woodland. It is recommended that individual oak trees within the Project Area be avoided, or 5.88 acres of oak woodland outside of the Project Area within the Study Area be permanently retained.

The ephemeral drainage near proposed vineyard Block X does not meet the County definition of a stream and therefore does not require setbacks pursuant to Napa County Code 18.108.025. However, this drainage may be under the jurisdiction of the Corps, RWQCB, and CDFW, and impacts to this drainage may require permits from one or more agencies. As such, it is recommended that the drainage be avoided. In addition, although setbacks are not required, a no-development setback of 50 feet from the top of each bank of the drainage is recommended to reduce the likely of potential impacts to water quality within the drainage.

A total of 21 trees are present within the vineyard blocks and are expected to be removed for development. Each tree is a native oak species and are the remnants of a forest which burned in the 2017 fire. Removal of the trees will be mitigated through on-site oak woodland retention at a minimum 3:1 ratio.

6.2 Special-status Species

The Project Area does not support special-status plants; therefore, there are no recommendations for special-status plant species.

The Project Area has the potential to support three special-status wildlife species (two bats, and one bird). Therefore the following actions are recommended for these species.

Bat Species: 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. WRA recommends that any required 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 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 white-tailed kite, a variety of native bird species with baseline protections under the MBTA and CFGC may use vegetation within the Project Areas for nesting. Therefore, it is recommended that any required tree and vegetation removal be performed from September 1 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 conducted by a qualified biologist no more than 14 days prior to the initiation of tree removal or ground disturbance is recommended. 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 (let 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.

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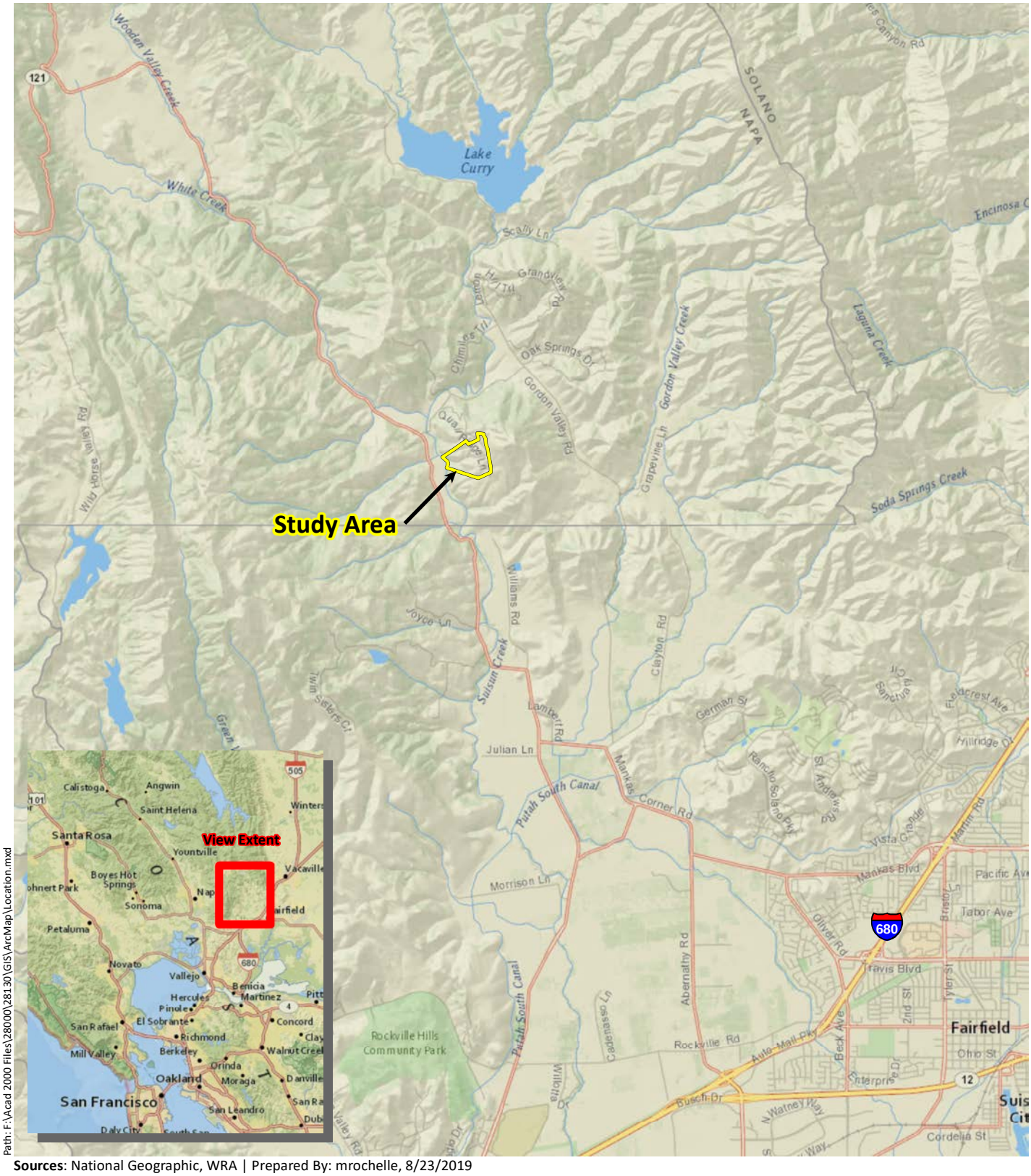
Appendix A

Figures



Sources: National Geographic, WRA | Prepared By: mrochelle, 8/23/2019

Figure 1. Study Area Location

Quantum Limit Vineyards
Nap County, California

0 0.5 1 Miles

N

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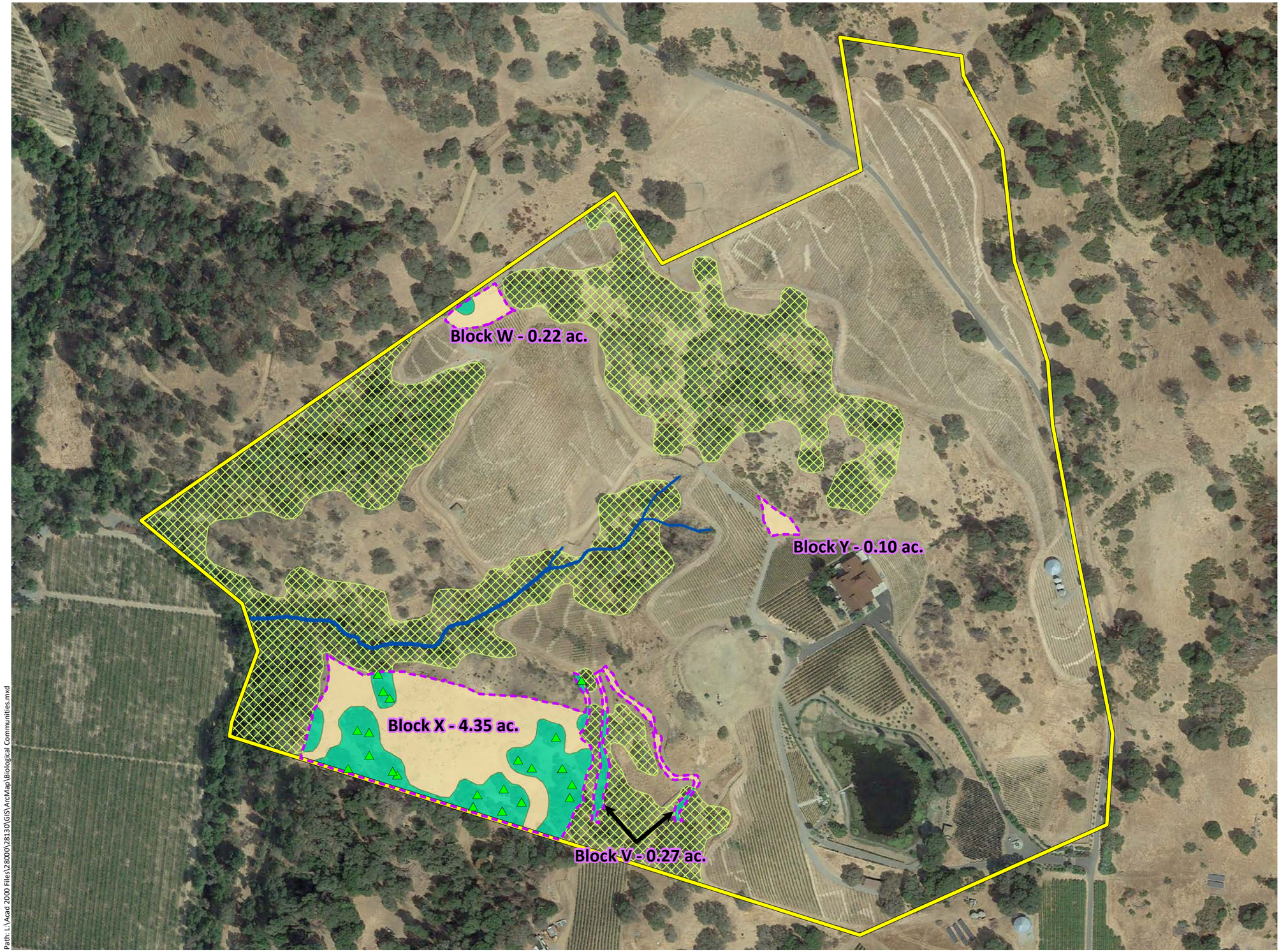
ENVIRONMENTAL CONSULTANTS

Figure 2.
Biological Communities

Quantum Limit Vineyards
Napa County, California



Study Area - 69. 30

Proposed Vineyard Blocks - 4.94 ac.

Trees to be Removed

Non-Sensitive Communities

Within Proposed Vineyard Blocks:

Ruderal - 2.98 ac.

Sensitive Communities

Within Proposed Vineyard Blocks:

Oak Woodland - 1.96 ac.

Outside Proposed Vineyard Blocks:

Ephemeral Stream - 0.16 ac. and 1,479 LF

Oak Woodland - 16.68 ac.

N

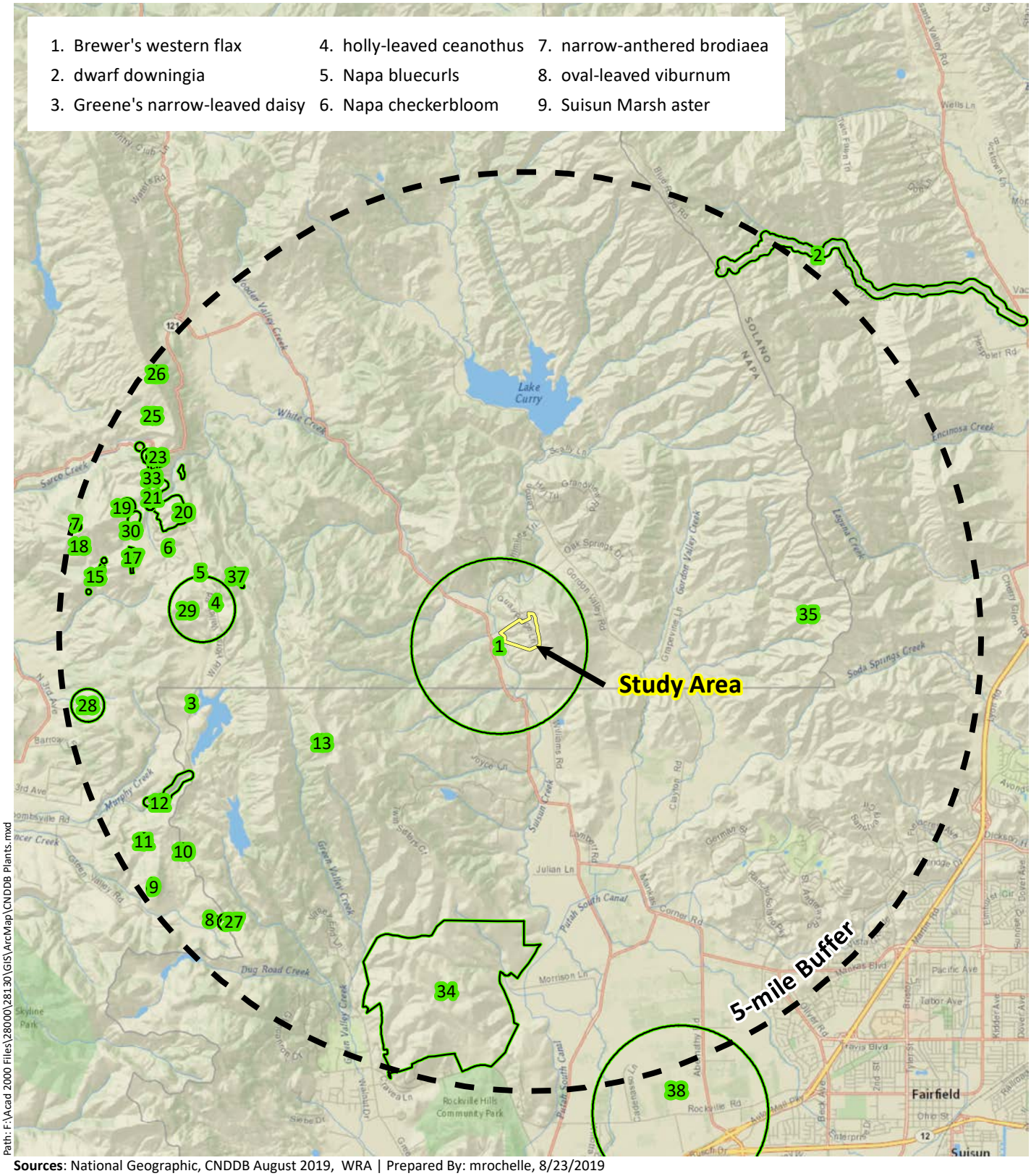
0 200 400

Feet

wra
ENVIRONMENTAL CONSULTANTS

Path: L:\Acad 2000 Files\28000\28130\GIS\ArcMap\Biological Communities.mxd

Sources: Google Earth 2018 Aerial, WRA | Prepared By: mrochelle, 8/26/2019



Sources: National Geographic, CNDDB August 2019, WRA | Prepared By: mrochelle, 8/23/2019

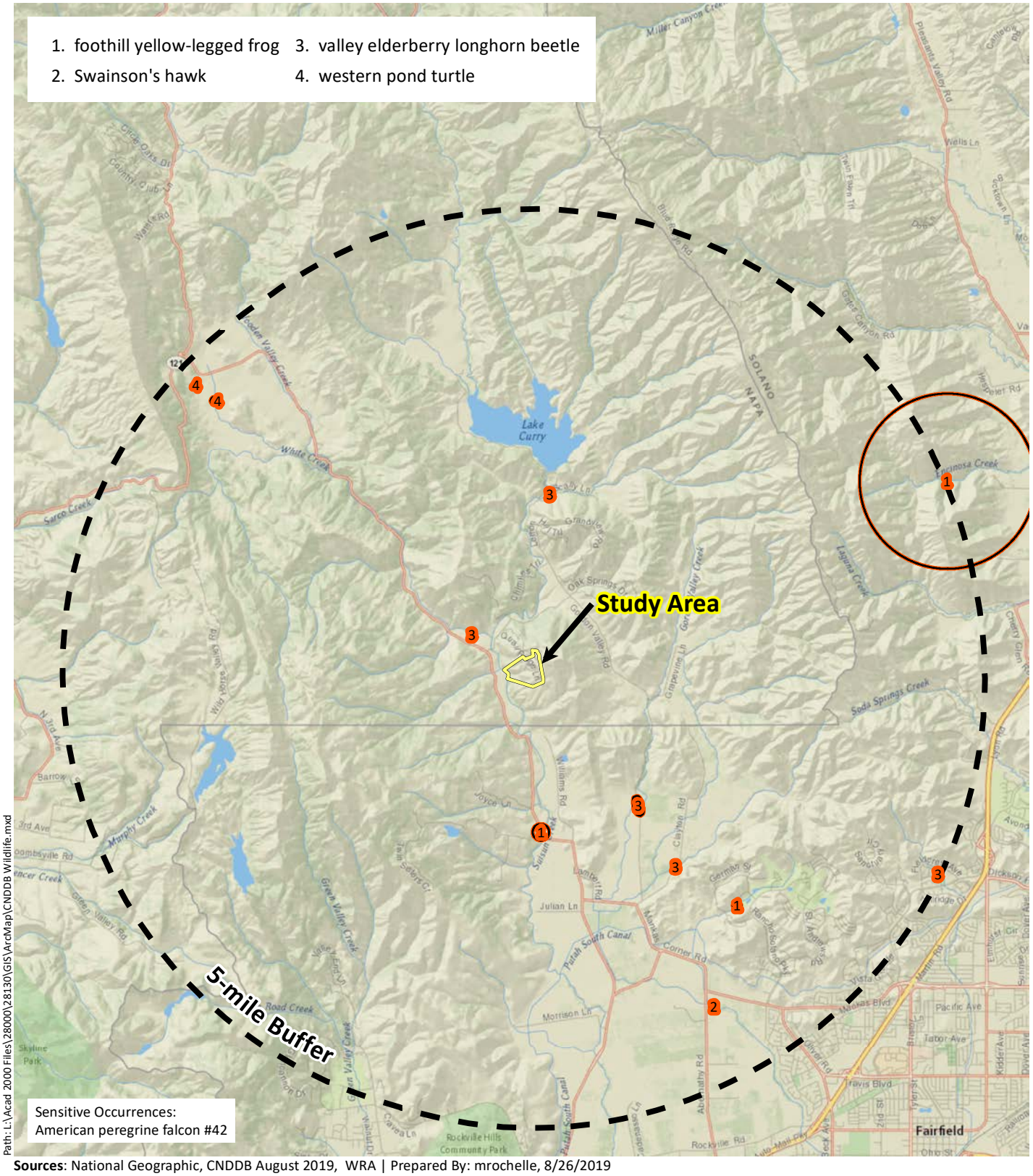
Figure 3. Special-Status Plant Species Documented in the CNDDB within 5 Miles of the Study Area

Quantum Limit Vineyards
Napa County, California

0 1 2 Miles

N

ENVIRONMENTAL CONSULTANTS



Sources: National Geographic, CNDDB August 2019, WRA | Prepared By: mrochelle, 8/26/2019

Figure 4. Special-Status Wildlife Species Documented in the CNDDB within 5 Miles of the Study Area

Quantum Limit Vineyard
Napa County, California

0 1 2 Miles

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Appendix B

Species Observed in the Project Area

Appendix B. Plant species observed in the Study Area, May 11 and July 3, 2018, and June 7, 2019

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Adoxaceae.	*Sambucus nigra ssp. caerulea*	Blue elderberry	native	shrub	-	-	FAC
Anacardiaceae	*Toxicodendron diversilobum*	Poison oak	native	vine, shrub	-	-	FACU
Apiaceae	*Daucus carota*	Carrot	non-native	perennial herb	-	-	UPL
Apiaceae	*Foeniculum vulgare*	Fennel	non-native (invasive)	perennial herb	-	High	-
Apiaceae	*Perideridia kelloggii*	Yampah	native	perennial herb	-	-	-
Apiaceae	*Sanicula crassicaulis*	Pacific sanicle	native	perennial herb	-	-	-
Apiaceae	*Torilis arvensis*	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-
Aristolochiaceae	*Aristolochia californica*	California pipevine	native	vine, shrub	-	-	-
Asparagaceae	*Chlorogalum pomeridianum*	Amole	native	perennial herb	-	-	-
Asparagaceae	*Triteleia laxa*	Ithuriel's spear	native	perennial herb	-	-	-
Asteraceae	*Achillea millefolium*	Yarrow	native	perennial herb	-	-	FACU
Asteraceae	*Agoseris grandiflora*	Giant mountain dandelion	native	perennial herb	-	-	-
Asteraceae	*Baccharis pilularis*	Coyote brush	native	shrub	-	-	-
Asteraceae	*Centaurea melitensis*	Tocalote	non-native (invasive)	annual herb	-	Moderate	-
Asteraceae	*Carduus pycnocephalus ssp. pycnocephalus*	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Asteraceae	*Centaurea solstitialis*	Yellow starthistle	non-native (invasive)	annual herb	-	High	-

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Asteraceae	*Cirsium vulgare*	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	*Dittrichia graveolens*	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Asteraceae	*Erigeron bonariensis*	Flax-leaved horseweed	non-native	annual herb	-	-	FACU
Asteraceae	*Hypochaeris glabra*	Smooth cats ear	non-native (invasive)	annual herb	-	Limited	-
Asteraceae	*Hypochaeris radicata*	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	*Lactuca serriola*	Prickly lettuce	non-native	annual herb	-	-	FACU
Asteraceae	*Logfia filaginoides*	California cottonrose	native	annual herb	-	-	-
Asteraceae	*Madia gracilis*	Gumweed	native	annual herb	-	-	-
Asteraceae	*Madia sativa*	Coastal tarweed	native	annual herb	-	-	-
Asteraceae	*Pseudognaphalium californicum*	Ladies' tobacco	native	annual, perennial herb	-	-	-
Asteraceae	*Pseudognaphalium luteoalbum*	Jersey cudweed	non-native	annual herb	-	-	FAC
Asteraceae	*Silybum marianum*	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Asteraceae	*Sonchus asper ssp. asper*	Sow thistle	non-native	annual herb	-	-	FAC
Asteraceae	*Sonchus oleraceus*	Sow thistle	non-native	annual herb	-	-	UPL
Asteraceae	*Logfia filaginoides*	California cottonrose	native	annual herb	-	-	-

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Asteraceae	*Silybum marianum*	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Boraginaceae	*Nemophila heterophylla*	Canyon nemophila	native	annual herb	-	-	-
Brassicaceae	*Brassica nigra*	Black mustard	non-native (invasive)	annual herb	-	Moderate	-
Brassicaceae	*Cardamine hirsuta*	Hairy bittercress	non-native	annual herb	-	-	FACU
Brassicaceae	*Hirschfeldia incana*	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Brassicaceae	*Raphanus sativus*	Wild radish	non-native (invasive)	annual, biennial herb	-	Limited	-
Brassicaceae	*Sinapis arvensis*	Charlock	non-native (invasive)	annual herb	-	Limited	-
Brassicaceae	*Sisymbrium officinale*	Hedge mustard	non-native	annual herb	-	-	-
Caprifoliaceae	*Symphoricarpos albus var. laevigatus*	Snowberry	native	shrub	-	-	FACU
Cucurbitaceae	*Marah fabacea*	California man-root	native	perennial herb, vine	-	-	-
Caryophyllaceae	*Cerastium glomeratum*	Large mouse ears	non-native	annual herb	-	-	UPL
Convolvulaceae	*Calystegia purpurata* ssp. *purpurata*	Smooth western morning glory	native	perennial herb	-	-	-
Ericaceae	*Arctostaphylos manzanita ssp. manzanita*	Common manzanita	native	shrub	-	-	-
Euphorbiaceae	*Croton setiger*	Turkey-mullein	native	perennial herb	-	-	-
Fabaceae	*Lathyrus vestitus*	Common pacific pea	native	perennial herb	-	-	-

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Fabaceae	*Lupinus nanus*	Valley sky lupine	native	annual herb	-	-	-
Fabaceae	*Medicago polymorpha*	California burclover	non-native (invasive)	annual herb	-	Limited	FACU
Fabaceae	*Rupertia physodes*	Common rupertia	native	perennial herb	-	-	-
Fabaceae	*Trifolium dubium*	Shamrock	non-native	annual herb	-	-	UPL
Fabaceae	*Trifolium hirtum*	Rose clover	non-native (invasive)	annual herb	-	Limited	-
Fabaceae	*Trifolium incarnatum*	Crimson clover	non-native	annual herb	-	-	-
Fabaceae	*Trifolium oliganthum*	Few flowered clover	native	annual herb	-	-	-
Fabaceae	*Trifolium subterraneum*	Subterranean clover	non-native	annual herb	-	-	-
Fabaceae	*Vicia sativa*	Spring vetch	non-native	annual herb, vine	-	-	FACU
Fabaceae	*Vicia villosa*	Hairy vetch	non-native	annual herb, vine	-	-	-
Fagaceae	*Quercus douglasii*	Blue oak	native	tree	-	-	-
Fagaceae	*Quercus kelloggii*	California black oak	native	tree	-	-	-
Fagaceae	*Quercus lobata*	Valley oak	native	tree	-	-	FACU
Fagaceae	*Quercus wislizeni*	Interior live oak	native	tree	-	-	-
Gentianaceae	*Zeltnera muehlenbergii*	Muehlenberg's centaury	native	annual herb	-	-	FAC
Geraniaceae	*Erodium botrys*	Big heron bill	non-native	annual herb	-	-	FACU
Geraniaceae	*Erodium brachycarpum*	White stemmed filaree	non-native	annual herb	-	-	-

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Geraniaceae	*Geranium dissectum*	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
Geraniaceae	*Geranium molle*	Crane's bill geranium	non-native	annual, perennial herb	-	-	-
Iridaceae	*Iris macrosiphon*	Ground iris	native	perennial herb	-	-	-
Juglandaceae	*Juglans hindsii*	Northern california black walnut	native	tree	Rank 1B.1	-	FAC
Juncaceae	*Juncus bufonius*	Common toad rush	native	annual grasslike herb	-	-	FACW
Lamiaceae	*Monardella villosa*	Coyote mint	native	perennial herb	-	-	-
Lamiaceae	*Stachys rigida* var. *quercetorum*	Rough hedgenettle	native	perennial herb	-	-	FACW
Lauraceae	*Umbellularia californica*	California bay	native	tree	-	-	FAC
Onagraceae	*Epilobium brachycarpum*	Willow herb	native	annual herb	-	-	-
Orobanchaceae	*Parentucellia viscosa*	Yellow parentucellia	non-native (invasive)	annual herb	-	Limited	FAC
Oxalidaceae	*Oxalis pes-caprae*	Bermuda buttercup	non-native (invasive)	perennial herb	-	Moderate	-
Plantaginaceae	*Keckiella breviflora var. glabrisepala*	Hairless gaping keckiella	-	Shrub	-	-	-
Plantaginaceae	*Kickxia elatine*	Sharp point fluellin	non-native	perennial herb	-	-	UPL
Poaceae	*Aegilops triuncialis*	Goat grass	non-native (invasive)	annual grass	-	High	-

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Poaceae	*Aira caryophyllea*	Silvery hairgrass	non-native	annual grass	-	-	FACU
Poaceae	*Avena barbata*	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Poaceae	*Avena fatua*	Wildoats	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	*Brachypodium distachyon*	Purple false brome	non-native (invasive)	annual, perennial grass	-	Moderate	-
Poaceae	*Briza minor*	Little rattlesnake grass	non-native	annual grass	-	-	FAC
Poaceae	*Bromus diandrus*	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	*Bromus hordeaceus*	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Poaceae	*Cynosurus echinatus*	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	*Festuca myuros*	Rattail sixweeks grass	non-native (invasive)	annual grass	-	Moderate	FACU
Poaceae	*Festuca perennis*	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Poaceae	*Gastridium phleoides*	Nit grass	non-native	annual grass	-	-	FACU
Poaceae	*Hordeum marinum ssp. gussoneanum*	Barley	non-native (invasive)	annual grass	-	Moderate	FAC
Poaceae	*Hordeum murinum*	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Poaceae	*Melica torreyana*	Torrey's melica	native	perennial grass	-	-	-
Poaceae	*Stipa lepida*	Foothill needle grass	native	perennial grass	-	-	-

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Poaceae	*Stipa pulchra*	Purple needle grass	native	perennial grass	-	-	-
Poaceae	*Triticum aestivum*	Common wheat	non-native	annual grass	-	-	-
Polygonaceae	*Polygonum aviculare*	Prostrate knotweed	non-native	annual, perennial herb	-	-	FAC
Polygalaceae	*Polygala californica*	Milkwort	native	perennial herb	-	-	-
Primulaceae	*Lysimachia arvensis*	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Pteridaceae	*Adiantum jordanii*	California maidenhair fern	native	fern			FAC
Pteridaceae	*Pentagramma triangularis*	Gold back fern	native	fern	-	-	-
Ranunculaceae	*Ranunculus occidentalis*	Western buttercup	native	perennial herb	-	-	FAC
Rosaceae	*Heteromeles arbutifolia*	Toyon	native	shrub	-	-	-
Rosaceae	*Prunus* sp.	Cherry	non-native	tree	-	-	-
Rosaceae	*Rubus ursinus*	California blackberry	native	vine, shrub	-	-	FAC
Rubiaceae	*Galium aparine*	Cleavers	native	annual herb	-	-	FACU
Rubiaceae	*Galium parisiense*	Wall bedstraw	non-native	annual herb	-	-	UPL
Rubiaceae	*Galium porrigens*	Climbing bedstraw	native	vine, shrub	-	-	-
Solanaceae	*Nicotiana quadrivalvis*	Indian tobacco	native	annual herb	-	-	FACU
Solanaceae	*Solanum americanum*	White nightshade	native	annual, perennial herb	-	-	FACU

Family	Scientific Name	Common Name	Life Form	Origin	Rarity Status[1]	Invasive Status[2]	Wetland Indicator[3]
Solanaceae	*Solanum parishii*	Parish's purple nightshade	native	shrub	-	-	-
Themidaceae	*Dichelostemma capitatum*	Blue dicks	native	perennial herb	-	-	FACU
Themidaceae	*Dichelostemma volubile*	Twining brodiaea	native	perennial herb	-	-	-
Vitaceae	*Vitis californica*	California wild grape	native	vine, shrub	-	-	FACU
Vitaceae	*Vitis vinifera*	Cultivated grape	non-native	vine, shrub	-	-	-

All species identified using the Jepson eFlora (Jepson Flora Project 2018); nomenclature follows Jepson eFlora.

Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain as to the identity of the species.

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2018a)

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 1B: Rare in native stands only)
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

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2018)

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

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

Appendix C

Special-status Species Potential Table

Appendix C. Potential for Special-status Species to Occur in the Study Area. List compiled from the California Department of Fish and Wildlife Natural Diversity Database (CDFW 2018b), U.S. Fish and Wildlife Service Information for Planning and Conservation Database (USFWS 2018b), U.S. Fish and Wildlife Service Threatened and Endangered Species Lists, and California Native Plant Society Electronic Inventory of Rare and Endangered Plants (CNPS 2018a) for the Capell Valley, Cordelia, Cuttings Wharf, Fairfield North, Fairfield South, Mount George, Mount Vaca, Napa, and Yountville USGS 7.5' quadrangles, as well as a review of historical and current satellite imagery via Google Earth (2018).

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
PLANTS				
Henderson's bent grass *Agrostis hendersonii*	Rank 3.2	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 225 to 1000 feet (70 to 305 meters). Blooms Apr-Jun.	**Unlikely**. The Study Area does not contain mesic grassland or vernal pools.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Franciscan onion *Allium peninsulare var. franciscanum*	Rank 1B.2	Cismontane woodland, valley and foothill grassland; clay, volcanic, often serpentine. Elevation ranges from 170 to 1000 feet (52 to 305 meters)	**No Potential.** The Study Area does not contain clay, volcanic, or serpentine substrates.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Napa false indigo *Amorpha californica var. napensis*	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul.	**Moderate Potential**. The Study Area contains potentially suitable upland forested habitat.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
twig-like snapdragon *Antirrhinum virga*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 325 to 6610 feet (100 to 2015 meters). Blooms Jun-Jul.	**Moderate Potential**. The Study Area contains small, potentially suitable, rocky areas.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.
modest rockcress *Arabis modesta*	Rank 4.3	Chaparral, lower montane coniferous forest. Elevation ranges from 390 to 2625 feet (120 to 800 meters). Blooms Mar-Jul.	**No Potential**. The Study Area does not contain chaparral or lower montane coniferous forest habitats.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Cleveland's milk-vetch *Astragalus clevelandii*	Rank 4.3	Chaparral, cismontane woodland, riparian forest. Elevation ranges from 655 to 4920 feet (200 to 1500 meters). Blooms Jun-Sep.	**No Potential**. This species is known from ultramafic substrate (CDFW 2018), which is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
alkali milk-vetch *Astragalus tener var. tener*	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 0 to 195 feet (1 to 60 meters). Blooms Mar-Jun.	**No Potential**. The Study Area does not contain playas, adobe clay substrate, or vernal pool habitats or alkaline substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
vernal pool smallscale *Atriplex persistens*	Rank 1B.2	Vernal pools (alkaline). Elevation ranges from 30 to 375 feet (10 to 115 meters). Blooms (Jun)Aug-Sep(Oct).	**No Potential**. The Study Area does not contain vernal pool habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 5100 feet (45 to 1555 meters). Blooms Mar-Jun.	**Moderate Potential.** The Study Area contains cismontane woodland and grassland habitat.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.
narrow-anthered brodiaea *Brodiaea leptandra*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 360 to 3000 feet (110 to 915 meters). Blooms May-Jul.	**No Potential**. The Study Area does not contain volcanic substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Brewer's calandrinia *Calandrinia breweri*	Rank 4.2	Chaparral, coastal scrub. Elevation ranges from 30 to 4005 feet (10 to 1220 meters). Blooms (Jan)Mar-Jun.	**Moderate Potential**. The Study Area does not contain chaparral habitat. However, this species often occurs in disturbed or burned sites (CDFW 2018), and the western portion of Study Area burned in 2017 Atlas Fire.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Mt. Diablo fairy-lantern *Calochortus pulchellus*	Rank 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation ranges from 95 to 2755 feet (30 to 840 meters). Blooms Apr-Jun.	**Moderate Potential.** The Study Area contains cismontane woodland and grassland habitat.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.
small-flowered calycadenia *Calycadenia micrantha*	Rank 1B.2	Chaparral, meadows and seeps (volcanic), valley and foothill grassland. Elevation ranges from 15 to 4920 feet (5 to 1500 meters). Blooms Jun-Sep.	**Unlikely**. The Study Area does not contain chaparral, meadow, or seep habitats. The grassland habitat is characterized by dense, tall, non-native annual species, which could outcompete this species. In addition, this species is known from rocky substrate (CDFW 2018, Jepson eFlora 2018), and areas within the Study Area with rocky substrate are small and highly disturbed.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Lyngbye's sedge *Carex lyngbyei*	Rank 2B.2	Marshes and swamps (brackish or freshwater). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Aug.	**No Potential**. The Study Area does not contain marsh or swamp habitats.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Tiburon paintbrush *Castilleja affinis var. neglecta*	FE, ST, Rank 1B.2	Valley and foothill grassland (serpentine). Elevation ranges from 195 to 1310 feet (60 to 400 meters). Blooms Apr-Jun.	**No Potential**. The Study Area does not contain serpentine substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
johnny-nip *Castilleja ambigua var. ambigua*	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	**Unlikely**. This species is known to occur primarily along the coast or in vernally moist habitats inland. The Study Area does not contain moist grassland or coastal scrub habitats and is not near the coast.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Mead's owl's-clover *Castilleja ambigua var. meadii*	Rank 1B.1	Meadows and seeps, vernal pools. Elevation ranges from 1475 to 1560 feet (450 to 475 meters). Blooms Apr-May.	**No Potential**. The Study Area does not contain meadows, seeps, or vernal pool habitats. In addition, this species is known to occur on soils of volcanic origin that tend to have high clay content (CDFW 2018), and such substrate is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
holly-leaved ceanothus *Ceanothus purpureus*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 390 to 2100 feet (120 to 640 meters). Blooms Feb-Jun.	**No Potential**. This species is known from volcanic substrate (CDFW 2018), which is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
pappose tarplant *Centromadia parryi ssp. parryi*	Rank 1B.2	Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic). Elevation ranges from 0 to 1380 feet (0 to 420 meters). Blooms May-Nov.	**Unlikely**. This species is known from vernally mesic, often alkaline sites (CDFW 2018), chaparral, coastal prairie, meadows, seeps, coastal salt marsh and swamp, and vernally mesic grassland, and such habitats are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Parry's rough tarplant *Centromadia parryi ssp. rudis*	Rank 4.2	Valley and foothill grassland, vernal pools. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms May-Oct.	**No Potential**. This species is known from alkaline substrate in vernally mesic grassland habitat (CDFW 2018), and such substrate and habitat is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
soft bird's-beak *Chloropyron molle ssp. molle*	FE, SR, Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Jun-Nov.	**No Potential**. The Study Area does not contain coastal salt marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Bolander's water-hemlock *Cicuta maculata var. bolanderi*	Rank 2B.1	Marshes and swamps coastal, fresh or brackish water. Elevation ranges from 0 to 655 feet (0 to 200 meters). Blooms Jul-Sep.	**No Potential**. The Study Area does not contain marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Suisun thistle *Cirsium hydrophilum var. hydrophilum*	FE, Rank 1B.1	Marshes and swamps (salt). Elevation ranges from 0 to 5 feet (0 to 1 meters). Blooms Jun-Sep.	**No Potential**. The Study Area does not contain salt marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Tracy's clarkia *Clarkia gracilis ssp. tracyi*	Rank 4.2	Chaparral (openings, usually serpentine). Elevation ranges from 210 to 2135 feet (65 to 650 meters). Blooms Apr-Jul.	**Unlikely**. The Study Area does not contain chaparral habitat or serpentine substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
serpentine collomia *Collomia diversifolia*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 655 to 1970 feet (200 to 600 meters). Blooms May-Jun.	**No Potential**. This species is known from serpentine ultramafic substrate (CDFW 2018), which is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
serpentine cryptantha *Cryptantha dissita*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 1295 to 1905 feet (395 to 580 meters). Blooms Apr-Jun.	**No Potential**. This species is known from serpentine ultramafic substrate, which is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
dwarf downingia *Downingia pusilla*	Rank 2B.2	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 0 to 1460 feet (1 to 445 meters). Blooms Mar-May.	**No Potential**. The Study Area does not contain vernal pool or mesic grassland habitats.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
small spikerush *Eleocharis parvula*	Rank 4.3	Marshes and swamps. Elevation ranges from 0 to 9910 feet (1 to 3020 meters). Blooms (Apr)Jun-Aug(Sep).	**No Potential**. The Study Area does not contain marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
streamside daisy *Erigeron biolettii*	Rank 3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest. Elevation ranges from 95 to 3610 feet (30 to 1100 meters). Blooms Jun-Oct.	**Moderate Potential.** The Study Area contains potentially suitable broadleafed upland forest and cismontane woodland habitats.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.
Greene's narrow-leaved daisy *Erigeron greenei*	Rank 1B.2	Chaparral (serpentine or volcanic). Elevation ranges from 260 to 3295 feet (80 to 1005 meters). Blooms May-Sep.	**No Potential**. The Study Area does not contain volcanic or serpentine substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Tiburon buckwheat *Eriogonum luteolum var. caninum*	Rank 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms May-Sep.	**No Potential**. The Study Area does not contain serpentine substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Mt. Diablo buckwheat *Eriogonum truncatum*	Rank 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Elevation ranges from 5 to 1150 feet (3 to 350 meters). Blooms Apr-Sep(Nov-Dec).	**Unlikely**. This species is known from dry, exposed clay or sandy substrates, which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Jepson's coyote thistle *Eryngium jepsonii*	Rank 1B.2	Valley and foothill grassland, vernal pools. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	**No Potential**. The Study Area does not contain vernal pool habitat. In addition, this species occurs on clay substrate, which is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
San Joaquin spearscale *Extriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 0 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	**No Potential**. This species is known from alkaline substrate, which is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
woolly-headed gilia *Gilia capitata ssp. tomentosa*	Rank 1B.1	Coastal bluff scrub, valley and foothill grassland. Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms May-Jul.	**No Potential**. This species is known from coastal bluff scrub and from serpentine substrate (CDFW 2018), and such conditions are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
nodding harmonia *Harmonia nutans*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 245 to 3200 feet (75 to 975 meters). Blooms Mar-May.	**No Potential**. This species is known from volcanic substrate (CDFW 2018), which is not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Diablo helianthella *Helianthella castanea*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 195 to 4265 feet (60 to 1300 meters). Blooms Mar-Jun.	**Moderate Potential.** The Study Area contains potentially suitable broadleafed upland forest, cismontane woodland, coastal scrub, riparian woodland, and grassland habitats.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.
two-carpellate western flax *Hesperolinon bicarpellatum*	Rank 1B.2	Chaparral (serpentine). Elevation ranges from 195 to 3295 feet (60 to 1005 meters). Blooms May-Jul.	**No Potential**. The Study Area does not contain serpentine substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Brewer's western flax *Hesperolinon breweri*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 95 to 3100 feet (30 to 945 meters). Blooms May-Jul.	**Moderate Potential.** The Study Area contains potentially suitable cismontane woodland grassland habitats.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.
Sharsmith?s western flax *Hesperolinon sharsmithiae*	Rank 1B.2	Chaparral. Elevation ranges from 885 to 985 feet (270 to 300 meters). Blooms May-Jul.	**No Potential**. The Study Area does not contain chaparral habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
coast iris *Iris longipetala*	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May.	**Unlikely.** The Study Area does not contain coastal prairie, lower montane coniferous forest, or meadows and seep habitats or heavy soils.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Northern California black walnut *Juglans hindsii*	Rank 1B.1	Riparian forest, riparian woodland. Elevation ranges from 0 to 1445 feet (0 to 440 meters). Blooms Apr-May.	**Moderate Potential.** The Study Area contains potentially suitable forested habitat.	**Not Present.** This species was not observed during the May and July site visits. No further recommendations for this species.
Contra Costa goldfields *Lasthenia conjugens*	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	**No Potential**. The Study Area does not contain alkaline substrate or vernally mesic swales and depressions.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Ferris' goldfields *Lasthenia ferrisiae*	Rank 4.2	Vernal pools (alkaline, clay). Elevation ranges from 65 to 2295 feet (20 to 700 meters). Blooms Feb-May.	**No Potential**. The Study Area does not contain alkaline, clay substrate or vernal pool habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Delta tule pea *Lathyrus jepsonii var. jepsonii*	Rank 1B.2	Marshes and swamps (freshwater and brackish). Elevation ranges from 0 to 15 feet (0 to 5 meters). Blooms May-Jul(Aug-Sep).	**No Potential**. The Study Area does not contain marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
legenere *Legenere limosa*	Rank 1B.1	Vernal pools. Elevation ranges from 0 to 2885 feet (1 to 880 meters). Blooms Apr-Jun.	**No Potential**. The Study Area does not contain vernal pool habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Jepson's leptosiphon *Leptosiphon jepsonii*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 325 to 1640 feet (100 to 500 meters). Blooms Mar-May.	**No Potential**. This species is known from volcanic and serpentine substrates (CDFW 2018), which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
broad-lobed leptosiphon *Leptosiphon latisectus*	Rank 4.3	Broadleafed upland forest, cismontane woodland. Elevation ranges from 555 to 4920 feet (170 to 1500 meters). Blooms Apr-Jun.	**Moderate Potential**. The Study Area contains broadleafed upland forest and cismontane woodland. However, much of the western Study Area was recently and heavily disturbed by the 2017 Atlas Fire and post-fire vegetation removal, and this species is unlikely to occur in this disturbed area. The nearest documented occurrence of this species is approximately 9 miles northwest of the Study Area (CCH 2018).	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
woolly-headed lessingia *Lessingia hololeuca*	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**No Potential.** This species is known from clay, serpentine soils (CDFW 2018), which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Mason's lilaeopsis *Lilaeopsis masonii*	SR, Rank 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Nov.	**No Potential**. The Study Area does not contain tidal marsh habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
redwood lily *Lilium rubescens*	Rank 4.2	Broadleafed upland forest, chaparral, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest. Elevation ranges from 95 to 6265 feet (30 to 1910 meters). Blooms Apr-Aug(Sep).	**Moderate Potential.** The Study Area contains potentially suitable forested habitat.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Sebastopol meadowfoam *Limnanthes vinculans*	FE, SE, Rank 1B.1	Meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Apr-May.	**No Potential.** The Study Area does not contain suitable vernally wet depression and swales.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Napa lomatium *Lomatium repostum*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 295 to 2725 feet (90 to 830 meters). Blooms Mar-Jun.	**No Potential.** This species is known from volcanic and serpentine soils (CDFW 2018), which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**Moderate Potential.** The Study Area contains potentially suitable forest and grassland habitats.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
green monardella *Monardella viridis*	Rank 4.3	Broadleafed upland forest, chaparral, cismontane woodland. Elevation ranges from 325 to 3315 feet (100 to 1010 meters). Blooms Jun-Sep.	**Unlikely.** Although the Study Area contains broadleafed upland forest and cismontane woodland habitats, in the greater vicinity of Napa County, this species is only known from serpentine or volcanic substrates (CCH 2018), which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE, ST, Rank 1B.1	Vernal pools (volcanic ash flow). Elevation ranges from 1310 to 2805 feet (400 to 855 meters). Blooms May-Jun.	**No Potential**. The Study Area does not contain vernal pool habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	Rank 1B.3	Chaparral (rocky). Elevation ranges from 2295 to 4495 feet (700 to 1370 meters). Blooms Apr-Aug.	**Unlikely.** The Study Area does not contain chaparral habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Marin knotweed *Polygonum marinense*	Rank 3.1	Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms (Apr)May-Aug(Oct).	**No Potential**. The Study Area does not contain marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
California alkali grass *Puccinellia simplex*	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 5 to 3050 feet (2 to 930 meters). Blooms Mar-May.	**No Potential**. The Study Area does not contain strongly alkaline substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**No Potential**. This species occurs in areas that are at least seasonally inundated (CCH 2018), and no such areas are present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
California beaked-rush *Rhynchospora californica*	Rank 1B.1	Bogs and fens, lower montane coniferous forest, meadows and seeps (seeps), marshes and swamps (freshwater). Elevation ranges from 145 to 3315 feet (45 to 1010 meters). Blooms May-Jul.	**No Potential**. The Study Area does not contain bogs, fens, or other marshy habitats.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Sanford's arrowhead *Sagittaria sanfordii*	Rank 1B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov).	**No Potential**. The Study Area does not contain marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Cleveland's ragwort *Senecio clevelandii var. clevelandii*	Rank 4.3	Chaparral (serpentine seeps). Elevation ranges from 1195 to 2955 feet (365 to 900 meters). Blooms Jun-Jul.	**No Potential**. The Study Area does not contain serpentine substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Napa checkerbloom *Sidalcea hickmanii ssp. napensis*	Rank 1B.1	Chaparral. Elevation ranges from 1360 to 2000 feet (415 to 610 meters). Blooms Apr-Jun.	**No Potential**. The Study Area does not contain chaparral habitat. Additionally, this species is known from rhyolitic substrates (CDFW 2018), which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Marin checkerbloom *Sidalcea hickmanii ssp. viridis*	Rank 1B.1	Chaparral (serpentine). Elevation ranges from 160 to 1410 feet (50 to 430 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain serpentine or volcanic substrate.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Keck's checkerbloom *Sidalcea keckii*	FE, Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation ranges from 245 to 2135 feet (75 to 650 meters). Blooms Apr-May(Jun).	**Unlikely.** This species is known from grassland and grassy areas in blue oak woodland (CDFW 2018, CCH 2018), often on serpentine substrate, and the Study Area does not contain such substrate. The tiny portion of the Study Area occupied by blue oak woodland is disturbed by vineyard row installation and removal and the adjacent road and provides poor quality habitat for this species. The nearest documented occurrence is approximately 9 miles northwest of the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
green jewelflower *Streptanthus hesperidis*	Rank 1B.2	Chaparral (openings), cismontane woodland. Elevation ranges from 425 to 2495 feet (130 to 760 meters). Blooms May-Jul.	**No Potential.** This species is known from serpentine substrates (CDFW 2018), which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
slender-leaved pondweed *Stuckenia filiformis ssp. alpina*	Rank 2B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 980 to 7055 feet (300 to 2150 meters). Blooms May-Jul.	**No Potential.** The Study Area does not contain marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Suisun Marsh aster *Symphyotrichum lentum*	Rank 1B.2	Marshes and swamps (brackish and freshwater). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms (Apr)May-Nov.	**No Potential.** The Study Area does not contain marsh or swamp habitat.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
Napa bluecurls *Trichostema ruygtii*	Rank 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 95 to 2230 feet (30 to 680 meters). Blooms Jun-Oct.	**No Potential.** This species is endemic to volcanic substrates, which are not present within the Study Area.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
two-fork clover *Trifolium amoenum*	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	**Moderate Potential.** The Study Area contains potentially suitable grassland habitat.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain mesic, alkaline areas.	**Not Present.** Suitable habitat for this species was not observed within the Study Area, nor was the species observed during the May and July site visits. No further recommendations for this species.
dark-mouthed triteleia *Triteleia lugens*	Rank 4.3	Broadleafed upland forest, chaparral, coastal scrub, lower montane coniferous forest. Elevation ranges from 325 to 3280 feet (100 to 1000 meters). Blooms Apr-Jun.	**Moderate Potential.** The Study Area contains potentially suitable forest and coastal scrub habitats.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.
oval-leaved viburnum *Viburnum ellipticum*	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 705 to 4595 feet (215 to 1400 meters). Blooms May-Jun.	**Moderate Potential.** The Study Area contains potentially suitable cismontane woodland habitats.	**Not Observed.** This species was not observed during the May and July site visits. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
WILDLIFE				
Mammals				
Antrozous pallidus pallid bat	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Moderate Potential.** Oak woodland within the Study Area provides trees suitable for roosting.	**Presence Unknown.** Tree removal outside of maternity roosting season, or conduct pre-construction roost habitat assessment.
Bassariscus astutus ringtail (ringtail cat)	SFP	Widely distributed throughout much of California. Found in a variety of habitats including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 4,600 ft. elevation. Typically uses cliffs or large trees for shelter.	**Unlikely.** The Study Area lacks cliffs and large tree cavities/hollows typical of dens for this species.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Corynorhinus townsendii townsendii Townsend's western big-eared bat	SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance	**Unlikely.** The Study Area does not contain caves, mines, or buildings suitable for roosting. CNDDB occurrences in Napa County are all located in the northern portion of the County (CDFW 2018a).	**Presumed Absent.** No further recommendations for this species.
Eumops perotis californicus western mastiff bat	SSC, WBWG High	Found in a wide variety of open, arid and semi-arid habitats. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**Unlikely.** The Study Area lacks large rock structures that are suitable for roosting. There are no CNDDB occurrences of this species in Napa County.	**Presumed Absent.** No further recommendations for this species.
Lasiurus blossevillii western red bat	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	**Unlikely.** The Study Area lacks large, broadleaved trees of the type typically used for roosting (maples, sycamores, etc.).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Myotis thysanodes fringed myotis	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Building, mines, and large trees and snags are important day and night roosts.	**Moderate Potential.** Oak woodland within the Study Area provides trees suitable for roosting.	**Presence Unknown.** Tree removal outside of maternity roosting season, or conduct pre-construction roost habitat assessment.
Myotis volans long-legged myotis	WBWG High	Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices, buildings, mines, and caves are important day roosts.	**Unlikely.** The Study Area lacks caves, buildings or similar refugia and does not contain coniferous forest.	**Presumed Absent.** No further recommendations for this species.
Reithrodontomys raviventris salt marsh harvest mouse	FE, SE, SFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for dryland refugia during high tides.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Sorex ornatus sinuosus Suisun shrew	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Require dense low-lying vegetation cover, driftwood, and other litter above the mean high tide line for nesting and foraging.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	**Not Present.** No further recommendations for this species.
Taxidea taxus 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.	**Unlikely.** The Study Area provides grassland/woodland with some suitable habitat elements, but there are no occurrences within the eastern portion of Napa County (e.g., CDFW 2018a).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Birds				
Agelaius tricolor tricolored blackbird	SC (E), SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**No Potential.** The pond in the immediate vicinity of the Study Area lacks stands of dense emergent vegetation or analogous substrates favored by this species for nesting.	**Not Present.** No further recommendations for this species.
Ammodramus savannarum grasshopper sparrow	SSC, LR	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	**Unlikely.** Suitable grassland cover is very limited in area, and this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2018).	**Presumed Absent.** No further recommendations for this species.
Aquila chrysaetos golden eagle	BGEPA, SFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**Unlikely.** The Study Area does not provide cliffs or typical large trees for nesting; may forage in the vicinity.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Ardea alba great egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further recommendations for this species.
Ardea herodias great blue heron	LR (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequested terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Asio flammeus short-eared owl	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	**Unlikely.** Known distribution (wintering) is restricted to the Napa baylands; breeding in the County has never been documented (Smith 2003).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Asio otus long-eared owl	SSC	Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding.	**Unlikely.** Rare in Napa County, with the nearest observations located on the Napa Valley floor (eBird 2018).	**Presumed Absent.** No further recommendations for this species.
Athene cunicularia burrowing owl	SSC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Unlikely.** Breeding and wintering distribution within Napa County are restricted to the vicinity of Lake Berryessa and southern baylands (Smith 2003, CDFW 2018).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Buteo swainsoni Swainson's hawk	ST	Summer resident in Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**Unlikely.** Napa County's small breeding population is restricted to the Napa Valley floor in association with the Napa River and baylands (CDFW 2018a).	**Presumed Absent.** No further recommendations for this species.
Charadrius alexandrines nivosus western snowy plover	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**No Potential.** The Study Area does not contain beaches or other suitable barren habitat near water.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Circus cyaneus northern harrier	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Unlikely.** Open grassland areas within the Study Area are limited in extent, and the Study Area is disturbed overall. May forage or pass through the area during the non-breeding season.	**Presumed Absent.** No further recommendations for this species.
Contopus cooperi olive-sided flycatcher	SSC	Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.	**Unlikely.** The Study Area does not contain forest or woodland stands of the type typically used by this species.	**Presumed Absent.** No further recommendations for this species.
Coturnicops noveboracensis yellow rail	BCC, SSC	Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.	**No Potential.** The Study Area does not provide the specific marsh/meadow habitat required by this species. No breeding records in Napa County as per Smith (2003).	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Cypseloides niger black swift	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas. No modern nesting records in Napa County.	**No Potential.** The Study Area does not contain waterfalls; there are no modern breeding records for Napa County (Smith 2003, Shuford and Gardali 2008).	**Not Present.** No further recommendations for this species.
Dendroica petechia brewsteri (Brewster's) yellow warbler	SSC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting is variable, but dense willow growth is typical. Occurs widely on migration.	**Unlikely.** 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.	**Presumed Absent.** No further recommendations for this species.
Egretta thula snowy egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees, at times in sequestered beds of dense emergent vegetation (e.g., tules). Rookery sites usually situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Elanus leucurus white-tailed kite	SFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Moderate Potential.** Open woodland within the Study Area provides suitable nesting trees, and open areas for foraging.	**Presence Unknown.** Tree/vegetation removal and initial ground disturbance should occur outside of nesting season, or conduct pre-construction surveys and avoid any active nests found.
Falco peregrinus anatum American peregrine falcon	SE, SFP	Year-round resident and winter visitor. Occurs near water, including coastal areas, wetlands, lakes and rivers. Usually nests on sheltered cliffs or tall man-made structures. Preys primarily on waterbirds.	**Unlikely.** The Study Area does not contain cliffs or suitable man-made structures for nesting.	**Presumed Absent.** No further recommendations for this species.
Geothlypis trichas sinuosa San Francisco (saltmarsh) common yellowthroat	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Unlikely.** No marsh vegetation is present within the Study Area.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Haliaeetus leucocephalus bald eagle	BGEPA, SE, SFP	Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Unlikely.** Larger water bodies are not within or in close proximity to the Study Area. As per Smith (2003) and CDFW (2018a), nesting within Napa County is known only from the immediate vicinity of Lake Berryessa.	**Presumed Absent.** No further recommendations for this species.
Icteria virens yellow-breasted chat	SSC, LR	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow (*Salix* ssp.), blackberry (*Rubus* spp.), and wild grape (*Vitis californicus*).	**Unlikely.** 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).	**Presumed Absent.** No further recommendations for this species.
Lanius ludovicianus loggerhead shrike	SSC, LR	Year-round resident in open woodland, grasslands, savannah, and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	**Unlikely.** The Study Area provides some suitable habitat elements, but is disturbed overall. This species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2018).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Laterallus jamaicensis coturniculus California black rail	ST, SFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	**No Potential.** The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	**Not Present.** No further recommendations for this species.
Melospiza melodia samuelis San Pablo song sparrow	SSC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed, with gumplant and other shrubs present in the upper zone for nesting. May forage in areas adjacent to marshes.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' limited Napa County range.	**Not Present.** No further recommendations for this species.
Nycticorax nycticorax black-crowned night heron	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Passerculus sandwichensis alaudinus Bryant's savannah sparrow	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas, including grasslands. Also uses drier, more upland coastal grasslands. Nests near the ground in taller vegetation, including along levees and canals.	**Unlikely.** Grassland cover within the Study Area is limited in extent, and this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2018).	**Presumed Absent.** No further recommendations for this species.
Progne subis purple martin	SSC, LR	Summer resident. Inhabits woodlands and low-elevation coniferous forests. Nests in old woodpecker cavities and man-made structures (bridges, utility towers). Nest is often located in tall, isolated tree or snag.	**Unlikely.** 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).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Rallus obsoletus obsoletus California Ridgway's (clapper) rail	FE, SE, SFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on mollusks and crustaceans.	**No Potential.** The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	**Not Present.** No further recommendations for this species.
Riparia riparia bank swallow	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**No Potential.** The Study Area does not contain cliffs or cuts with fine-textured soils or any other potentially suitable nesting substrate. Not known to nest in Napa County as per Smith (2003).	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Spizella atrogularis black-chinned sparrow	LR	Summer resident. Typically occurs on arid, rocky slopes with brushy vegetation, e.g. mixed chaparral, and sagebrush.	**Unlikely.** The Study Area does not contain proper chaparral or similar habitats with dense, mature brush.	**Presumed Absent.** No further recommendations for this species.
Strix occidentalis caurina northern spotted owl	FT,ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with stands of mature conifers. In Napa County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	**No Potential.** The Study Area does not contain mature forest nor is any present in the immediate vicinity.	**Not Present.** No further recommendations for this species.
Xanthocephalus xanthocephalus yellow-headed blackbird	SSC, LR	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	**No Potential.** The Study Area lacks marsh vegetation suitable for nesting.	**Not Present.** No further recommendations for this species.
Reptiles and Amphibians				

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Dicamptodon ensatus California giant salamander	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**No Potential.** The Study Area does not contain any permanent/semi-permanent streams and is outside of this species' known range in Napa County.	**Not Present.** No further recommendations for this species.
Emys marmorata 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.	**Unlikely.** Although a man-made pond is present in the immediate vicinity of the Study Area, the site is disturbed overall; the nearest occurrence in CNDDB is located 6.2 miles to the east (CDFW 2018b).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Rana boylii 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).	**Unlikely.** The Study Area does not contain any permanent/semi-permanent streams	**Presumed Absent.** No further recommendations for this species.
Rana draytonii California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, marshes, and stream pools. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	**Unlikely.** Although a man-made pond is present in the immediate vicinity of the Study Area, the nearest occurrences in CNDDB are located approximately 8.4 miles to the south, in Solano County (CDFW 2018).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Scaphiopus hammondii 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.	**Unlikely.** 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.	**Presumed Absent.** No further recommendations for this species.
Fishes				
Acipenser medirostris green sturgeon	FT, SSC	Spawns in the Sacramento River and Klamath Rivers, at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further recommendations for this species.
Eucyclogobius newberryi tidewater goby	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches. Requires fairly still but not stagnant water and high oxygen levels.	**No Potential.** The Study Area does not contain brackish or ore estuarine waters.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Hypomesus transpacificus Delta smelt	FT, ST	Endemic to the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt; most often at salinities < 2 ppt.	**No Potential.** The Study Area does not contain estuarine waters.	**Not Present.** No further recommendations for this species.
Lampetra ayresi river lamprey	SSC	Lower Sacramento River, San Joaquin River and Russian River. May occur in coastal streams north of San Francisco Bay. Adults need clean, gravelly riffles, Ammocoetes need sandy backwaters or stream edges, good water quality and temps < 25 degrees C.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further recommendations for this species.
Oncorhynchus mykiss irideus steelhead - central CA coast DPS	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Oncorhynchus tshawytscha Chinook salmon - California coastal ESU	FT	This ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further recommendations for this species.
Pogonichthys macrolepidotus Sacramento splittail	SSC	Formerly endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young. A freshwater species, but tolerant of moderate salinity (10-18 parts per thousand).	**No Potential.** The Study Area does not contain riverine or estuarine waters.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Spirinchus thaleichthys longfin smelt	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**No Potential.** The Study Area does not contain riverine or estuarine waters.	**Not Present.** No further recommendations for this species.
Invertebrates				
Branchinecta lynchi vernal pool fairy shrimps	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**No Potential.** The Study Area does not contain vernal pools or other suitable seasonal aquatic features (e.g., swales deep and ponded enough to support this species).	**Not Present.** No further recommendations for this species.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT	Found in riparian and oak savannah where elderberry (*Sambucus* sp.), the host plant, is present.	**Unlikely.** The nearest occurrences in CNDDB are located a minimum distance of 1.8 miles to the south, effectively on the Central Valley floor (CDFW 2018a).	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Speyeria callippe callippe Callippe silverspot butterfly	FE	Two populations are recognized, on San Bruno Mountain and the Cordelia Hills. Host plant is *Viola pedunculata*, which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	**No Potential.** *Viola* was not observed during the site visit, and this species' known range with Napa County is restricted to the immediate vicinity of the Cordelia Hills.	**Not Present.** No further recommendations for this species.
Syncaris pacifica California freshwater shrimp	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	**No Potential.** The Study Area does not contain any perennial streams.	**Not Present.** 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. CNDDB, other reports) on the site recently.

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

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

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

Not 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

Photograph 1: Interior live oak woodland and ruderal within the southwestern portion of the Study Area. Taken May 11, 2018.

Photograph 2. Ephemeral stream and riparian interior live oak woodland within the Study Area. Taken May 11, 2018.

Photograph 3. Coyote brush scrub in the northern portion of the Study Area. Taken May 11, 2018.

Photograph 4. Annual grassland in the southeastern portion of the Study Area. Taken July 3, 2018.

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, Ridgway'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.

Rhiannon Korhummel, BS, Plant Biologist with WRA, has over six years of experience performing vegetation and habitat mapping, rare plant surveys, botanical assessments, and wetland delineations. Her project focus is in vineyard development, coastal development permits, and habitat mitigation and monitoring plans in Sonoma, Marin, Napa, and Mendocino counties. Ms. Korhummel's technical training includes the flora of northern California, plant taxonomy, agrostology, and plant ecology. Additionally, she has completed the 40-hour Corps wetland delineation course. Ms. Korhummel received her Bachelor of Science in Botany from Humboldt State University.

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.

Appendix F

Topographical Map of the Rice Property

TOPOGRAPHICAL MAP

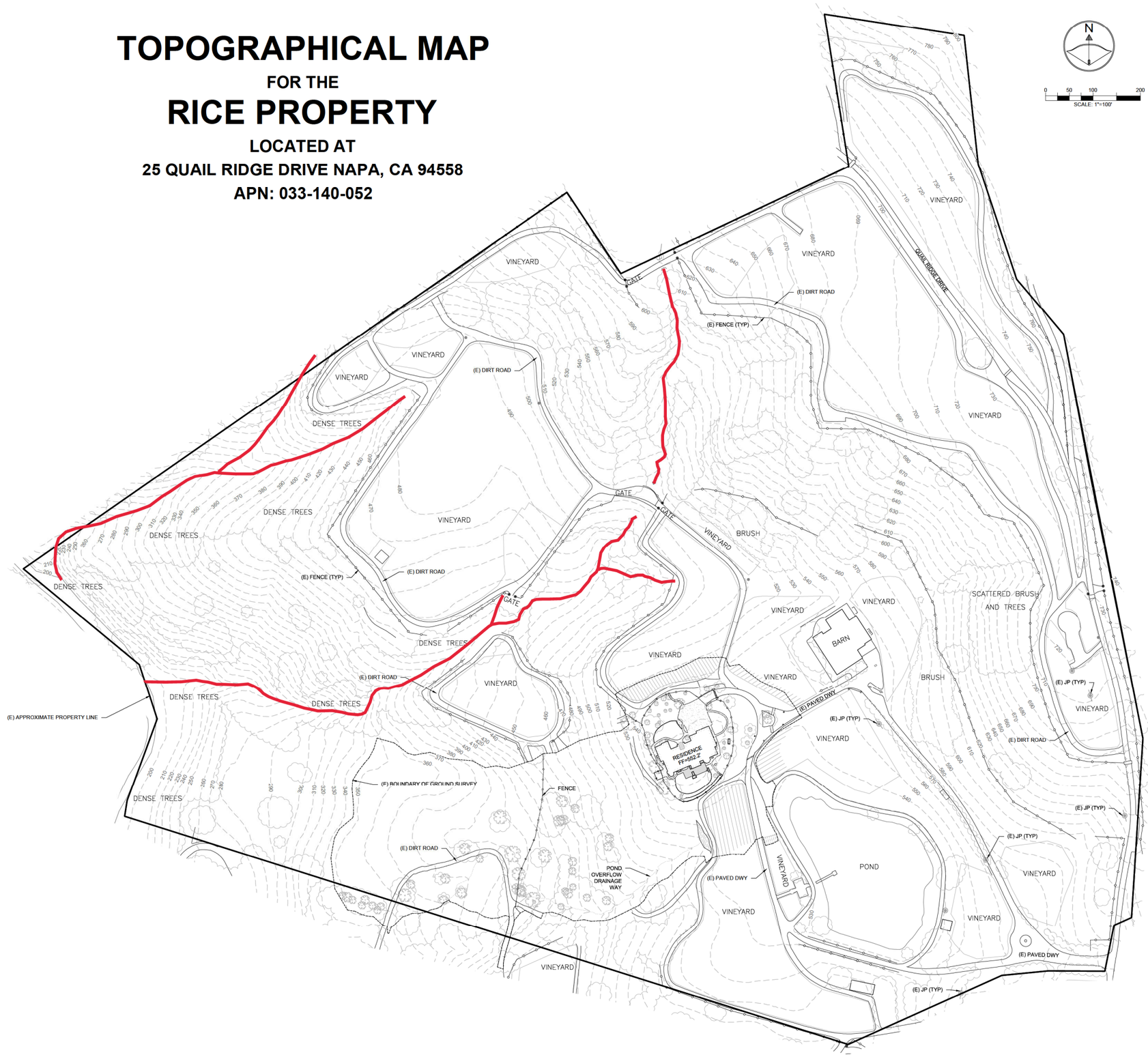
FOR THE

RICE PROPERTY

LOCATED AT

25 QUAIL RIDGE DRIVE NAPA, CA 94558

APN: 033-140-052



LINE LEGEND

EXISTING

- PROPERTY LINE
- EASEMENT
- SS — SANITARY SEWER PIPE
- STORM DRAIN PIPE
- W — W — WATER PIPE
- UE — BURIED ELECTRIC
- OHW — OVERHEAD ELECTRIC
- GAS — GAS LINE
- 45 — CONTOURS
- LIMITS OF GRADING
- HEDGE
- FENCE LINE

SYMBOL LEGEND

- EXISTING TREE

AB	AGGREGATE BASE	ESMT	EASEMENT	R	RADIUS
AC	ASPHALT CONCRETE	ETW	EDGE OF TRAVELED WAY	RCP	REINFORCED CONCRETE PIPE
A/C	AIR CONDITIONING	EVC	END VERTICAL CURVE	RD	RELATIVE DENSITY
AD	AREA DRAIN	FC	FACE OF CURB	REQ	REQUIRED
AP	ANGLE POINT	FF	FINISHED FLOOR	RIM	RIM ELEVATION
APR	APPROVED	FG	FINISHED GRADE	RT	RIGHT
ARV	AIR RELIEF VALVE	FH	FIRE HYDRANT	ROW	RIGHT OF WAY
BC	BEGIN CURVE	FI	FIELD INLET	S	SLOPE
BCR	BEGIN CURB RETURN	FL	FLOW LINE	SD	STORM DRAIN
BM	BENCHMARK	GB	GRADE BREAK	SDE	STORM DRAIN EASEMENT
BO	BLOWOFF VALVE	GR	GRATE ELEVATION	SDMH	STORM DRAIN MANHOLE
BP	BEGINNING POINT	HP	HIGH POINT	SE	SIDEWALK EASEMENT
BVC	BEGIN VERTICAL CURVE	INV	INVERT ELEVATION	SF	SQUARE FEET
BW	BOTTOM OF WALL	IRR	IRRIGATION	SPEC	SPECIFICATIONS
BOW	BACK OF WALK	JP	UTILITY JUNCTION POLE	SS	SANITARY SEWER
CL	CENTER LINE	JT	JOINT TRENCH	SSE	SANITARY SEWER EASEMENT
CLR	CLEAR	LAT	LATERAL	SSLAT	SANITARY SEWER LATERAL
CB	CATCH BASIN	LF	LINEAL FEET	SSMH	SANITARY SEWER MANHOLE
CMP	CORRUGATED METAL PIPE	LOP	LIP OF GUTTER	STA	STATION
CO	CLEAN OUT	LP	LOW POINT	STD	STANDARD
CONC	CONCRETE	LT	LEFT	STLT	STREET LIGHT
CP	CONTROL POINT	MAX	MAXIMUM	T	TANGENT
CR	CURB RETURN	MH	MANHOLE	(T)	TOTAL
DI	DRAIN INLET	MIN	MINIMUM	TBI	TRAIL BOX
DIP	DUCTILE IRON PIPE	ORN	ORNAMENTAL TREE	TC	TOP OF CURB
DWY	DRIVEWAY	OHW	OVER HEAD UTILITY WIRE	TEMP	TEMPORARY
(E)	EXISTING	(P)	PROPOSED	TG	TOP OF GRATE
EA	EACH	PI	POINT OF INTERSECTION	TW	TOP OF WALL
EC	END CURVE	PL	PROPERTY LINE	TYP	TYPICAL
ECR	END CURB RETURN	PSDE	PRIVATE STORM DRAIN ESMT	UE	UNDER GROUND ELECTRICAL
EGR	EDGE OF GRAVEL	PUE	PUBLIC UTILITY EASEMENT	VC	VERTICAL CURVE
EL	ELEVATION	PVC	POLYVINYL CHLORIDE	W	WATER
EP	EDGE OF PAVEMENT	PVI	VERTICAL CURVE INTERSECTION	WLAT	WATER SERVICE LATERAL
EQ	EQUAL	PAV	PAVEMENT	WM	WATER METER

UNAUTHORIZED CHANGES & USES:

THE ENGINEER/SURVEYOR PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND APPROVED BY THE DESIGNER OF THESE PLANS.

PROPERTY LINES:

THE PROPERTY LINES SHOWN HEREON ARE BASED ON PRELIMINARY SURVEY DATA, AND ARE FOR REFERENCE ONLY. THIS IS NOT A BOUNDARY SURVEY MAP AND SHOULD NOT BE USED AS SUCH.

SURVEY STATEMENT:

THIS MAP IS BASED ON FIELD SURVEY INFORMATION PERFORMED BY *CMP CIVIL ENGINEERING & LAND SURVEYING* IN SEPTEMBER OF 2017 AROUND RESIDENCE, MARCH OF 2018 AROUND WW AREA AND AERIAL SURVEY INFORMATION PROVIDED BY AMERICAN AERIAL SURVEY, FLOWN AUGUST 2018. HORIZONTAL AND VERTICAL DATUM IS ASSUMED. EXISTING FIELD SURVEY CONTOURS ARE SHOWN AS FOLLOWS: MAJOR =10'

CMP CIVIL ENGINEERING & LAND SURVEYING

PREPARED BY:
CAMERON PRIDMORE PE, PLS
1607 CAPELL VALLEY ROAD
NAPA, CA 94558
(707) 815-0868
CAMERON@CMPENGINEERING.COM
CMPENGINEERING.COM

PROJECT #: 00121 DATE: 09/05/2018

REV. #	DESCRIPTION	DATE

PROJECT INFO:
RICE PROPERTY
25 QUAIL RIDGE DRIVE
NAPA, CA 94558
APN: 033-140-052

SHEET NAME:
TOPOGRAPHICAL MAP

SHEET:
1
OF 4

Appendix G

Tree Inventory Data

Appendix G. Tree Inventory Data

Common Name	Species Name	DBH	DBH
Blue Oak	*Quercus douglasii*	17.4	
Blue Oak	*Quercus douglasii*	19.0	
Interior Live Oak	*Quercus wislizenii*	31.0	
Interior Live Oak	*Quercus wislizenii*	30.5	
Interior Live Oak	*Quercus wislizenii*	27.8	19.5
Interior Live Oak	*Quercus wislizenii*	20.2	15.0
Interior Live Oak	*Quercus wislizenii*	21.5	
Interior Live Oak	*Quercus wislizenii*	26.7	
Interior Live Oak	*Quercus wislizenii*	29.0	
Interior Live Oak	*Quercus wislizenii*	27.0	
Interior Live Oak	*Quercus wislizenii*	24.0	
Interior Live Oak	*Quercus wislizenii*	18.4	
Interior Live Oak	*Quercus wislizenii*	18.5	
Interior Live Oak	*Quercus wislizenii*	26.0	
Interior Live Oak	*Quercus wislizenii*	18.7	
Interior Live Oak	*Quercus wislizenii*	19.0	12.0
Interior Live Oak	*Quercus wislizenii*	23.2	
Interior Live Oak	*Quercus wislizenii*	19.5	
Interior Live Oak	*Quercus wislizenii*	25.6	
Valley Oak	*Quercus lobata*	29.5	
Valley Oak	*Quercus lobata*	24.5	