EXHIBIT B-1

Biological Resources Reconnaissance Survey Report

Hibbard Ranch, 1600 Henry Road
Napa County, California (APN: 050-380-014)

Prepared For:
Jim Bushey
PPI Engineering
2800 Jefferson Street
Napa, CA 94558

On Behalf of:
Brooks Painter
Sattui Family Wines
11111 White Lane
St. Helena, CA 94574

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

Aaron Arthur
arthur@wra-ca.com

Jason Yakich
yakich@wra-ca.com

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WRA Project #:
27406

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 Reconnaissance Survey (BRRS) for the proposed development of eight vineyard blocks (Project Area) located at the Hibbard Property on Henry Road in unincorporated Napa County, California (Study Area). The vineyard blocks will total 58.8 gross acres. WRA, Inc. performed field surveys on April 12 and June 8, 2018. The Project Area is comprised of oak woodland and non-native grasslands.

Approximately 2.34 acres, of a total 134.47 acres of coast live oak woodland across the property (approximately 1.7 percent) will be converted to vineyard. Oak woodlands are considered sensitive under Napa County General Plan Conservation Element Policy CON-24. A ratio of 2:1 (4.68 acres) preservation would be applied to this impact. Likewise, approximately 0.2 acre, of a total of 0.62 acre of purple needlegrass grassland across the property (approximately 32 percent) will be converted to vineyard. Purple needlegrass grasslands are considered sensitive under Napa County General Plant Conservation Element Policy CON-17. A ratio of 2:1 (0.42) preservation would be applied to this impact.

The remainder of the vineyard blocks are situated in non-sensitive biological communities.

The Project Area is intentionally sited to avoid on-site streams and seasonal wetlands. A protocol-level rare plant survey resulted no detections of special-status plants. Therefore, no impacts to wetlands and/or special-status plants are anticipated to result from project implementation.

Several special-status bats and birds, as well as non-status birds with baseline legal protections, have the potential to occur in the Project Area. Additionally, American badger has the potential to occur in the Project Area. Mitigation measures and best management practices have been developed and provided herein to avoid impacts to these resources.

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LIST OF PREPARERS

Matt Richmond – Principal-in-Charge
Aaron Arthur – Associate Plant Biologist
Jason Yakich – Associate Wildlife Biologist
Rhiannon Korhummel – Plant Biologist
Peter Kobylarz – GIS Specialist
Chris Zumwalt – GIS Specialist

DEFINITIONS

Study Area: The area throughout which the assessment and survey effort was performed, inclusive of the entire parcel at 1600 Henry Road and of the Project Area

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

LIST OF ACRONYMS

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

1.0 INTRODUCTION

1.1 Purpose of Assessment

On April 12 and June 8, 2018, WRA, Inc. (WRA) performed an assessment of biological resources at a private parcel located at 1600 Henry Road, unincorporated Napa County (APN: 050-380-014; hereafter Study Area) (Figure 1, Appendix A). The purpose of this study was to gather the information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA) to meet the guidelines outlined by Napa County in *Guidelines for Preparing Biological Resources Reconnaissance Surveys* (Napa County 2016a) and *Guidelines for Preparing Special-status Plant Studies* (Napa County 2016b).

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

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

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

1.2 Project Summary

The proposed project (Project) involves the installation of eight vineyard blocks totaling approximately 58.8 gross acres within the 421-acre property. Associated with the installation of the grape vines will be vineyard avenues, fences, irrigation lines, etc. Site preparation (ripping, installation of erosion control measures, seeding cover crop, and installation of irrigation pipelines and trellis) will occur during the grading window of April 1 through October 15. By October 15, the site will be winterized with placement of straw wattles, seeding of vineyard avenues and planting areas, and straw mulch spread over disturbed areas as required by the Erosion Control Plan (ECP) prepared for the Project.

2.0 REGULATORY BACKGROUND

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

2.1 Federal and State Regulatory Setting

2.2.1 Sensitive Biological Communities

Herein, biological communities are understood to be those areas of a particular vegetation type, soil or bedrock formation, aquatic features, and/or other distinct phenomenon. Typically, biological communities have distinct boundaries that can be delineated based on changes in plant assemblages, soil types, and/or changes in surface/near-surface hydroperiod. The several regulations defining and protecting sensitive biological communities are discussed below.

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

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

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

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

2.2.2 Special-status Species

Plants: Special-status plants include species/taxa that have been listed as endangered or threatened, or are formal candidates for such listing, under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA). Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under CEQA. Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. A description of the CNPS Ranks is provided below in Table 1. Additionally, any plant species listed as sensitive within the Napa County General Plan or 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 (CFP), which indicates that take of that species cannot be authorized through a state permit. Additionally, CDFW Species of Special Concern (species that face extirpation in California if current population and habitat trends continue) are given special consideration under CEQA, and are therefore considered special-status species. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA. Finally, wildlife species/taxa named as "locally rare" in the Napa County Baseline Report (NCBR; Napa County 2005) are also treated as special-status for purposes of this assessment.

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

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

Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA. Additionally, the 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 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 United State Geological Survey (USGS) maps most recently published, or any replacement to that symbol (i.e., USGS “blue-line”); (2) any watercourse which has a well-defined channel with a depth greater than four feet and banks steeper than 3:1 and contains hydrophilic vegetation, riparian vegetation or woody-vegetation including tree species greater than ten feet in height; or (3) those watercourses listed in Resolution No. 94-19. No clearing of land for new agricultural uses as defined by Section 18.08.040 shall take place within the following setbacks from streams:

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

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

3.0 ENVIRONMENTAL SETTING

The Project Area is set in a single parcel of approximately 421 acres, located in southwestern Napa County, approximately 4.75 aerial miles west of Napa and 4.7 aerial miles east of Sonoma. It is situated in the southern Mayacama Mountains, south of Mount Veeder. Detailed descriptions of the local setting are below.

3.1 Topography and Soils

The overall topography of the Study Area is moderately to steeply sloped with predominantly northwestern and southeastern-facing aspects, and elevations ranging from approximately 325 to 730 feet above sea level. According to the *Soil Survey of Napa County* (USDA 1978), the Study Area is underlain by five soil mapping units: Cole silt loam, 0 to 4 percent slopes; Fagan clay loam, 5 to 15 percent slopes; Fagan clay loam, 15 to 30 percent slopes; Felton gravelly loam, 30 to 50 percent slopes; and Haire loam, 2 to 9 percent slopes. Of these, only the Felton and Fagan mapping units underlay the Project Area. The parent soil series of all the Study Area's mapping units are summarized below.

Cole Series: This series consists of very deep clay loam formed in alluvium from mixed sources on stream terraces, flood plain steps, and alluvial fans at elevations ranging from 50 to 1,500 feet (CSRL 2018, USDA 1978). These soils are not considered hydric, are somewhat poorly drained with slow runoff and slow permeability. Native vegetation includes oak savannahs with some shrubs and forbs. Typical land use includes orchards, vineyards, truck crops, and irrigated pasture (CSRL 2018, USDA 1978).

Fagan Series: This series consists of moderately deep clay loam soils formed from residuum weathered from sandstone and shale situated on hillslopes at elevations ranging from 200 to 1,500 feet (CSRL 2018, USDA 1978). These soils are not considered hydric, and are well drained, with medium to rapid runoff, and slow permeability (USDA 2012, USDA 1978). Native and naturalized vegetation consists of scattered oaks (*Quercus* spp.), annual and perennial grasses, and annual forbs, while land uses include livestock grazing and small vineyards and orchards (USDA 1978).

Felton Series: This series consists of deep silt loam soils formed from residuum weathered from sandstone and shale situated on hillslopes at elevations ranging from 400 to 3,000 feet (CSRL 2018, USDA 1978). These soils are not considered hydric, and are well drained, with rapid to very rapid runoff, and moderately slow permeability (USDA 2012, USDA 1978). Native vegetation consists of coast redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), Pacific madrone (*Arbutus menziesii*), and oaks (*Quercus* spp.), while land uses include timber production, Christmas tree farms, homesites, recreation, and watershed protection (USDA 1978).

Haire Series: This series consist of clay loam formed arkosic sandstone and granodiorite on level to moderately steep slopes at elevations ranging from 20 to 2,400 feet (CSRL 2018, USDA 1978). These soils are not considered hydric except on alluvial fans (USDA 2018). They are moderately well drained with slow to rapid runoff and very slow permeability (USDA 1978). Native vegetation includes annual grasses and forbs. Typical land use includes pasture (CSRL 2018, USDA 1978).

3.2 Climate and Hydrology

The Study Area is located in the valley fog incursion zone of Napa County. The average monthly maximum temperature of Napa State Hospital is 82.8 degrees Fahrenheit, while the average monthly minimum temperature is 48.1 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with an annual average of 26.5 inches. Precipitation-bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March, with a combined average of 22.08 inches (USDA 2018).

The local watershed is Carneros Creek (HUC 12: 180500020501), the regional watershed is San Pablo Bay Estuaries (HUC 8: 18050002), and the Napa County Planning Watershed is Browns Valley/Carneros Creek. There is one mapped dashed blue-line stream in the Study Area on the 7.5-minute quadrangles (USGS 1980a, USGS 1980b). Additionally, there are numerous streams on the National Wetlands Inventory (NWI 2018) and California Aquatic Resources Inventory (CARI 2018). The primary hydrologic sources are direct precipitation and consequent sheetflow with in-stream flow in the stream features. Precipitation infiltrates quickly with excessive events likely resulting in short-lived sheetflows, or percolates to the stream features which convey the water to the intermittent stream that exits the site on the southern edge.

3.3 Biota and Land Use

The Study Area is composed of undeveloped non-native grasslands with some patches of native grassland, coast live oak woodlands, as well as active vineyards. Several small seasonal wetlands are scattered throughout the Study Area. Detailed plant community descriptions are included in Section 5.1 below and all observed plant species are included in Appendix B.

The Study Area's grasslands are historically and currently grazed. Historically, cattle ranged on the property, but recently, sheep and goats have been used. Other management activities include fire maintenance near fences and other infrastructure. There are actively managed vineyards with associated infrastructure and an irrigation pond on-site. There are no residences or other buildings in the property. Regional land-uses include rural residential, vineyards, and grazing. Historically, the Study Area was open rangeland with no history of intensive agriculture, quarrying, mining, or timbering (Historical Aerials 2018).

4.0 ASSESSMENT METHODS

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

- *Soil Survey of Napa County, California* (USDA 1978)
- Napa and Sonoma 7.5-minute quadrangles (USGS 1980a, USGS 1980b)
- Aerial photographs (Google Earth 2018)
- Historical Aerial photographs (Historical Aerials 2018)
- National Wetlands Inventory (USFWS 2018a)
- California Natural Diversity Database (CNDDB, CDFW 2018a)
- California Native Plant Society Electronic Inventory (CNPS 2018a)
- Consortium of California Herbaria (CCH 2018)
- California Aquatic Resource Inventory (SFEI 2018)
- USFWS List of Federal Endangered and Threatened Species (USFWS 2018b)
- *eBird* Online Database (eBird 2018)
- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)

- *Breeding Birds of Napa County, California* (Smith 2003)
- *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009)
- *A Manual of California Vegetation Online* (CNPS 2018b)
- *Preliminary Descriptions of the Terrestrial Natural Communities* (Holland 1986)
- Napa County Land Cover (NCLC) map (Thorne et al. 2004)
- *California Natural Community List* (CDFW 2018b)

Database searches (i.e., CNDDB, CNPS) focused on the Kenwood, Rutherford, Yountville, Napa, Sonoma, Glen Ellen, Petaluma River, Sears Point, and Cuttings Wharf USGS 7.5-minute quadrangles for special-status plants. The special-status wildlife evaluation was based on database searches for the entirety of Napa County. Appendix A contains observations of special-status species documented within a five-mile radius of the Project Area.

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

4.1 Biological Communities

4.1.1 Terrestrial Biological Communities

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

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

[1] Due to the timing of the assessment, it may or may not constitute protocol-level species surveys; see Section 4.2 if the site assessment would constitute a formal or protocol-level species survey.
[2] Ranking of CDFW List of Vegetation Alliances is based on NatureServe Rankings (NatureServe 2018)

4.1.2 Aquatic Natural Resources

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

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

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

4.2 Special-status Species

4.2.1 General Assessment

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

A site visit was made on April 25 and June 8, 2018 to evaluate the presence of suitable habitat for special-status species. Suitable habitat conditions are based on physical and biological conditions of the site, as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. 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 Study Area on April 25 and June 8, 2018. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. The field surveys were conducted by botanists familiar with the flora of Napa and surrounding counties. The surveys were performed in accordance with those outlined by Napa County (2016b), which follow those described by resource experts and agencies (CNPS 2001, CDFW 2018c, USFWS 1996). Plants were identified using *The Jepson Manual, 2nd Edition* (Baldwin et. al. 2012) and Jepson Flora Project (eFlora 2018), to the taxonomic level necessary to determine whether or not they were sensitive. Plant names follow those of Jepson Flora Project (eFlora 2018), unless otherwise noted.

4.2.3 Special-status Wildlife

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

4.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2018b) and the NMFS Essential Fish Habitat Mapper (NMFS 2018) were queried to determine if critical habitat for any species or EFH, respectively, occurs within the Study Area.

To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), habitat connectivity data available through the CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2018d), 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 Study Area. This assessment was refined based on observations of on-site physical and/or biological conditions.

5.0 ASSESSMENT RESULTS

5.1 Biological Communities

WRA observed five biological communities within the Study Area: developed, non-native grassland, purple needlegrass grassland, coast live oak woodland, and seasonal wetland. Biological communities within the Study Area are illustrated in Figure 4 (Appendix A). The non-sensitive biological communities in the Study Area and Project Area include non-native grasslands and developed areas. Sensitive biological communities within the Study Area the oak woodlands, purple needlegrass grasslands, and seasonal wetland.

5.1.1 Terrestrial Biological Communities

Non-sensitive

Developed Area (no vegetation alliance). CDFW Rank: None. The property is a large, open ranch with development composed of vineyards, fencing, vineyard avenues, ranch roads, a barn, and a reservoir. These developed areas total 140.1 acres across the Study Area, with 4.34 acres situated in the Project Area (0.3 percent of the total land cover type on the property). The vegetation is extremely depauperate and dominated by wine grape (*Vitis vinifera*), with common weeds along the ranch roads and between vineyard rows. The developed area is synonymous with the Agricultural Cropland NCLC type (Thorne et al. 2004). This community is not considered sensitive by Napa County, CDFW, or any other regulatory entity.

Non-native Annual Grassland – Wild Oat Grassland (*Avena barbata* Semi-Natural Herbaceous Stands). CDFW Rank: None: The property contains 159.05 acres of non-native grassland, with 51.95 acres situated in the Project Area (32.7 percent of the total community type on the property). These grasslands are dominated by non-native grasses including wild oat (*Avena barbata*), soft chess (*Bromus hordeaceus*), dogtail grass (*Cynosurus echinatus*), and brome fescue (*Festuca bromoides*). Due to high thatch accumulation from the annual grasses, native wildflowers are limited in density and diversity. Such species include sky lupine (*Lupinus nanus*), blue-eyed grass (*Sisyrinchium bellum*), purple sanicle (*Sanicula bipinnatifida*), common yarrow (*Achillea millefolium*), and California poppy (*Eschscholzia californica*). This community is synonymous with the California Annual Grasslands biotic community in the NCLC (Thorne et al. 2004). This community is not considered sensitive by Napa County, CDFW, or any other regulatory entity.

Sensitive

Purple needlegrass grassland (*Stipa pulchra* Herbaceous Alliance). CDFW Rank G4 S3?: Purple needlegrass grasslands typically occur in valley and foothill areas on all topgraphic positions situated on deep soils with high clay content, or shallow rocky soils. Purple needlegrass (*Stipa pulchra*) is dominant or characteristically present in the herbaceous layer with other perennial grasses (including non-native species) (CNPS 2018b).

The property contains 0.62 acre of purple needlegrass grassland, with 0.2 acre situated in the Project Area (32.6 percent of the total community type on the property). Areas mapped as purple needlegrass grassland had greater than 10 percent purple needlegrass (*Stipa pulchra*) relative cover in the herbaceous layer (CNPS 2018b). Additional species observed in these areas include wild oats (*Avena barbata*), foothill filaree (*Erodium brachycarpum*), brome fescue (*Festuca*

bromoides), and blue-eyed grass (*Sisyrinchium bellum*). This community is synonymous with the Native Grassland biotic community in the NCLC (Thorne et al. 2004). These grasslands are considered sensitive by both the CDFW and Napa County (2005).

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance). CDFW Rank: G5 S4: Coast live oak woodlands occur in the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County, typically situated on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). The property contains 134.47 acres of coast live oak woodland, with 2.34 acres situated in the Project Area (1.7 percent of the total community type on the property).

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

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

5.1.2 Aquatic Natural Resources

Seasonal Wetland – Italian Rye Grass Grassland (*Festuca perennis* Semi-Natural Herbaceous Stands). Section 404/401 CWA; CDFW Rank: None: Seasonal wetlands are areas which are saturated for the wet season and eventually dry out with lack of precipitation. They contain a dominance or prevalence of hydrophytes, are underlain by hydric soils, and experience saturation and/or inundation for an extended period of time to create the support the previous two conditions (hydrophytic vegetation and hydric soils).

Within the Study Area, 0.11 acre seasonal wetland is located in swales at the heads of ephemeral streams. The vegetation is dominated by Italian rye grass (*Festuca perennis*), with the subdominant spike rush (*Eleocharis macrostachya*); therefore, most closely resemble the Italian rye grass grassland discussed in the *Manual of California Vegetation* (Sawyer et al. 2009). The soils were saturated during the April site visit suggesting that both wetland hydrology and hydric soil indicators are present. This aquatic natural resource is considered sensitive as it is jurisdictional under Section 404/401 of the CWA. The Project Area has been intentionally cited and designed to avoid the seasonal wetland entirely.

Ephemeral and Intermittent Streams (no vegetation alliance). Section 404/401 CWA: The Study Area contains several ephemeral streams and one intermittent stream. The intermittent feature is an unnamed dashed blue-line streams on the Sonoma and Napa 7.5-minute quadrangle (USGS

1980a, USGS 1980b). All of the ephemeral drainages except one drain into the intermittent drainage, and all drainages enter Carneros Creek at or near the property line.

Flows in in the intermittent stream run for the entire wet season and receive groundwater discharge to the channel extending their surface hydrology later in the season, but likely dry out by late spring/early summer. The ephemeral streams run during and following rain events, but draw down quickly after storms have subsided. All of the Study Area streams are high-gradient and narrowed channel. Due to their high gradient, flashy hydrology, and fine sediment channel beds, the ephemeral drainages do not have the potential to support salmonids or other fishes. Furthermore, there are partial and full barriers downstream on Carneros Creek (CDFW 2018d).

All of these streams are likely jurisdictional under Section 404/401 of the CWA and Section 1602 of the CFGC; therefore, they are considered sensitive natural resources. The ephemeral drainages do meet the Napa County stream definition pursuant to Napa County Code 18.108.025.

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, 82 special-status plant species have been documented in the vicinity of the Study Area. Three of these plants have the potential to occur in the Project Area[3]. The remaining species documented from the greater vicinity of the Study Area are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the 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., north-facing slope, 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;
- The historical landscape and/or habitat(s) of the Project Area were not suitable habitat prior to land/type conversion (e.g., reclaimed shoreline) to support the special-status plant species;
- Land use history and contemporary management (e.g., grading, intensive grazing) has degraded the localized habitat necessary to support the special-status plant species.

[3] The potential for special-status plants to occur was evaluated for the Project Area *only*; the Study Area presumably has a broader capacity to support special-status plants but was foregone as the evaluation area because potential impacts would not occur outside of the Project Area.

WRA biologists conducted the protocol-level surveys during a period sufficient to identify all three special-status plant species with the potential to occur; however, none were observed during the April and June surveys. All species with the potential to occur are summarized below.

Table 3. Special-status Plants Not Observed During Protocol-level Surveys

Name	Status	Habitat Requirements	Results
Amsinckia lunaris bent-flowered fiddleneck	Rank 1B	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation range: 10 – 1625 feet. Blooms: March – June.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Hemizonia congesta ssp. *congesta* white hayfield tarplant	Rank 1B	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1840 feet. Blooms: April – October.	**Not Present.** This species was not observed during protocol-level surveys. No further actions are recommended.
Triteleia lugens dark-mouthed Triteleia	Rank 4	Broadleaf upland forest, chaparral, lower montane coniferous forest, coastal scrub. Elevation range: 325 – 3250 feet. Blooms: April – 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 58 special-status wildlife species have been documented in Napa County (CDFW 2018a, Napa County 2005). Six of these species have a moderate to high potential to occur in the Study Area and Project Area. The remaining 52 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., coast redwood 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 nesting range.

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

Special-status Wildlife that Occur in the Study Area

No special-status wildlife were observed in the Study 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

American badger (*Taxidea taxus*). CDFW Species of Special Concern. Moderate Potential. The American badger is a large, semi-fossorial member of the Mustelidae (weasel family). It is found uncommonly within the region in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. Badgers are typically solitary and nocturnal, digging burrows to provide refuge during daylight hours. Burrow entrances are usually elliptical (rather than round), and each burrow generally has only one entrance. Young are born in the spring and independent by the end of summer. Badgers are carnivores, preying on a variety of fossorial mammals (especially ground squirrels) and occasionally other vertebrates and their eggs. Home ranges for this species tend to be large, depending on the habitat available; population density averages one badger per square mile in prime open country (Long 1973). The Study Area provides areas of open grassland suitable for badgers, with similar habitat present on parcels adjacent to the Study Area.

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 Study Area may contain cavities or snags suitable for roosting by this species, and it has a high potential to occur given documented occurrences in the vicinity (CDFW 2018a).

Fringed myotis (*Myotis thysanodes*). WBWG High Priority. Moderate Potential. The fringed myotis ranges throughout much of western North America from southern British south to southern Mexico. This species is most common in drier woodlands (e.g. oaks, pinyons-junipers); a variety of other habitats are used including desert scrubland, grassland, and coniferous and mixed (coniferous-deciduous) forests. Maternity roosting occurs in colonies of 10 to 2,000 individuals, although large colonies are rare (WBWG 2018). Caves, buildings, mines, rock crevices in cliff faces, and bridges are used for maternity and night roosts; tree cavities/hollows are also commonly used (WBWG 2018). The trees within the Study Area may contain cavities or snags suitable for roosting by this species, and it has a high potential to occur given documented occurrences in the vicinity (CDFW 2018a).

Grasshopper sparrow (*Ammodramus savannarum*). CDFW Species of Special Concern. Moderate Potential. The grasshopper sparrow is a summer resident in California, wintering in Mexico and Central America. This species occurs in open grassland and prairie-like habitats with short- to moderate-height vegetation, and often scattered shrubs (Shuford and Gardali 2008). Both perennial and annual (non-native) grasslands are used. Nests are placed on the ground and well concealed, often adjacent to grass clumps (Shuford and Gardali 2008). Grasshopper sparrows are secretive and generally detected by voice. Insects comprise the majority of the diet. The Study Area provides open grassland areas that are suitable for nesting, and this species has been recently observed in the vicinity (eBird 2018).

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. High 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 Study Area due to the presence of trees suitable for nesting, as well as the open grassland habitat to support foraging.

Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*). CDFW Species of Special Concern. Moderate Potential. This subspecies of the common and widespread savannah sparrow is a year-round resident of the coastal California fog belt. It typically occupies upper tidally-influenced habitats (often where wetland communities merge into grassland), coastal grasslands, and some drier grasslands. Nesting occurs in vegetation on or very near the ground, including along roads, levees, and canals (Shuford and Gardali 2008). Like most sparrows, Bryant's consumes primarily invertebrates and vegetable matter (e.g., seeds). The Study Area provides grassland habitat that is suitable for Bryant's savannah sparrow, including for nesting. Savannah sparrows (presumed to be of this subspecies) have been recently observed in the vicinity during the breeding season (eBird 2018).

5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Study Area does not contain any designated critical habitat (USFWS 2018b) or Essential Fish Habitat (NMFS 2018). There are both partial and full fish barriers to fish passage along Carneros Creek downstream from the Study Area; therefore, anadromous fishes (e.g., special-status salmonids) do not have the potential to occur in the streams and drainages of the Study Area.

The Study Area is not within a designated wildlife corridor (CalTrans 2010, Napa County 2005). The site is located within a much larger tract of land along the eastern and western boundaries of Sonoma and Napa Counties respectively, featuring a patchwork of agricultural/viticultural properties and lightly- to undeveloped land. At the scale of landscape linkages, this large tract of land provides connectivity between the baylands of northern San Pablo Bay and interior areas to the north. While common wildlife species presumably utilize the Study Area to some degree for movement, movement at both the landscape and local scales is unlikely to be significantly hindered by project implementation, which would maintain undeveloped wildlife corridors between vineyard blocks on the property. Ephemeral streams (even when dry) and associated vegetation within the Study Area presumably provide very localized movement and shelter habitat for common wildlife species. As such, avoidance of impacts to these stream courses (including associated vegetation) to the fullest extent feasible is recommended.

6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

6.1 Biological Communities

6.1.1 Terrestrial Biological Communities

Coast Live Oak Woodland: Although coast live oak woodlands are not considered sensitive by CDFW or included as sensitive in the NCBDR; however, the Napa County General Plan Conservation Element Policy CON-24 requires that oak woodland be maintained and/or improved to the extent feasible to provide for oak woodland and wildlife habitat, slope stabilization, soil protection, and species diversity. Policy CON-24c specifically calls for the preservation of oak woodland (on an acreage basis) at a 2:1 ratio. The Study Area contains 134.47 acres of oak woodland; in order to ensure that a 2:1 ratio is maintained of 89.64 acres of oak woodland preserved for each 1 acre impacted, only 44.82 acres can be converted to vineyard. The Project Area currently contains 2.34 acres of oak woodland. There will be no removal of trees in the oak woodlands. The following recommendation is put forward to meet Policy CON-24.

> Recommendation 1: Prior to project approval, 4.68 acres of coast live oak in the Study Area shall be set aside to compensate for the loss of 2.34 acres in the Project Area.

Purple Needlegrass Grassland: The Study Area supports one sensitive terrestrial biotic community as defined in the Napa County Baseline Report: native grassland (Napa County 2005). There is 0.2 acre of native grassland (purple needlegrass grassland) within the Project Area, which is 32.6 percent of the total (0.62 acre) mapped across the Study Area. The Napa County General Plan Conservation Element Policy CON-17 requires a no net loss of sensitive biotic communities, with a 2:1 ratio of preservation where avoidance is not feasible. The avoidance of 0.42 acre of native grassland meets the 2:1 ratio for preservation.

> Recommendation 2: Prior to project approval, 0.4 acre of purple needlegrass grassland in the Study Area shall be set aside to compensate for the loss of 0.2 acre in the Project Area.

6.1.2 Aquatic Natural Resources

The intermittent stream, ephemeral drainages, and seasonal wetland will be avoided as part of the vineyard design. Ground-breaking will occur during the dry season and protective setbacks will buffer potential effects to these aquatic natural resources. The following recommendations are put forward to protect aquatic resources.

> Recommendation 3: Setbacks ranging from 55 feet to 105 feet are provided in compliance with Napa County Code 18.108.025 for county-definitional streams. For the nondefinitional streams and seasonal wetlands, the block boundaries shall be set back by 50 feet, which includes a 26-foot undisturbed filter strip of native vegetation and a 24-foot vegetated vineyard avenue.
>
> Grading shall occur during the dry season (April 1 through October 15) and should be suspended during unseasonable rainfalls of greater than one-half inch over 24-hour period. If rainfall is in the forecast, standard erosion control measures (e.g., straw waddles,

bales, silt fencing) should be deployed on the vineyard block edge paralleling the aquatic feature.

Construction personnel should be informed of the location of the site's aquatic resources with high-visibility flagging or staking prior to construction. No materials or equipment shall be lain down or near the aquatic resources, and spill prevention materials shall be deployed for all construction equipment.

6.2 Special-status Species

6.2.1 Special-status Plants

The Project Area does not support special-status plants; therefore, the Project will result in no impacts to such.

6.2.2 Special-status Wildlife

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

American Badger: Disking of friable soils in grassland and open woodlands has the potential to destroy badger burrows, as well as disrupt breeding and result in the mortality of dependent young, if such are present. However, the proposed vineyard blocks will leave 67.4 percent of the site's grasslands intact. Furthermore, surrounding properties are predominantly open space of native and/or naturalized grassland and woodland that will continue to provide the potential to support populations of American badger. Consequently, the loss of potential habitat for badger from vineyard construction is less than significant. To reduce the potential for direct impacts to American badger individuals, the following measures are recommended.

> Recommendation 4: Prior to and within 14 days of initial ground-breaking activities within the Project Area, a qualified biologist should perform a pre-construction survey for burrows potentially belonging to American badger. The survey should cover the entire Project Area and surrounding areas within 50 feet. If survey results indicate that this species is present during the general breeding period (spring through summer), the biologist should assess if young are present in any identified dens. If young are deemed present, an exclusionary buffer should be placed around each occupied den (as described below for bird nests) until all young are independent. Once young are independent or if badgers are found to be present during the nonbreeding period, use of the site should be discouraged using passive relocation techniques (e.g., placing one-way doors across den entrances) to remove badgers from areas to be impacted prior to the initiation of ground disturbance.

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

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

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

Recommendation 6: WRA recommends that tree/vegetation removal and initial ground disturbance occur from August 16 to January 31, outside of the general bird nesting season. If tree/vegetation removal during this time is not feasible, a pre-construction nesting bird survey should be performed by a qualified biologist no more than 14 days prior to the initiation of tree removal or ground disturbance is recommended. The survey should cover the Project Area (including tree removal areas) and surrounding areas within 500 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer should be established by the qualified biologist. Once it is determined that the young have fledged (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.

6.2.3 Wildlife Movement

As stated in Section 5.2.3 above, the Study Area's streams and a majority of the terrestrial biological communities will remain intact, including areas interstitial to the proposed vineyard blocks (and fencing units), which will allow for continued wildlife movement. The Proposed Project will not create a significant impact to wildlife movement. To ensure continued wildlife movement, including in the Study Area's intermittent streams, the following recommendation is provided

Recommendation 7: Limit the vineyard block fencing to three units (see Figure 2, ECP Permit Package). Fence installation should be (near) concurrent with the vineyard installation, during the dry season. Where fencing crosses streams should either provide 1-2 feet of space from the stream to the bottom strand, or provide spaces in the wiring of at least four by six inches. This will allow frogs, fishes, and other aquatic and semi-aquatic species to continue to migrate up and down the stream. Wrack (leaves, sticks) and other detritus should be cleaned from the fence wiring several times a years to maintain regular through-flow.

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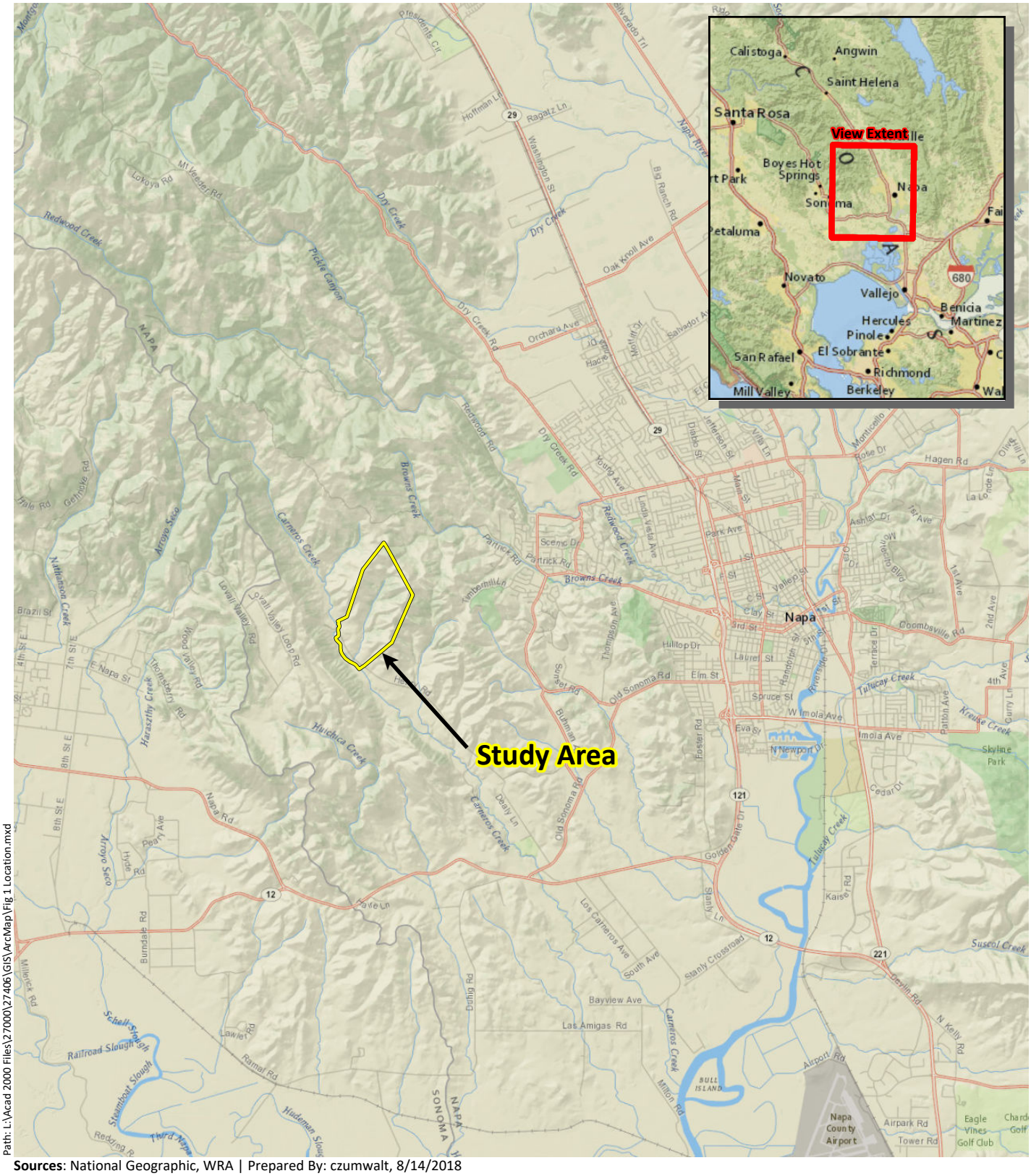
Appendix A

Figures



Sources: National Geographic, WRA | Prepared By: czumwalt, 8/14/2018

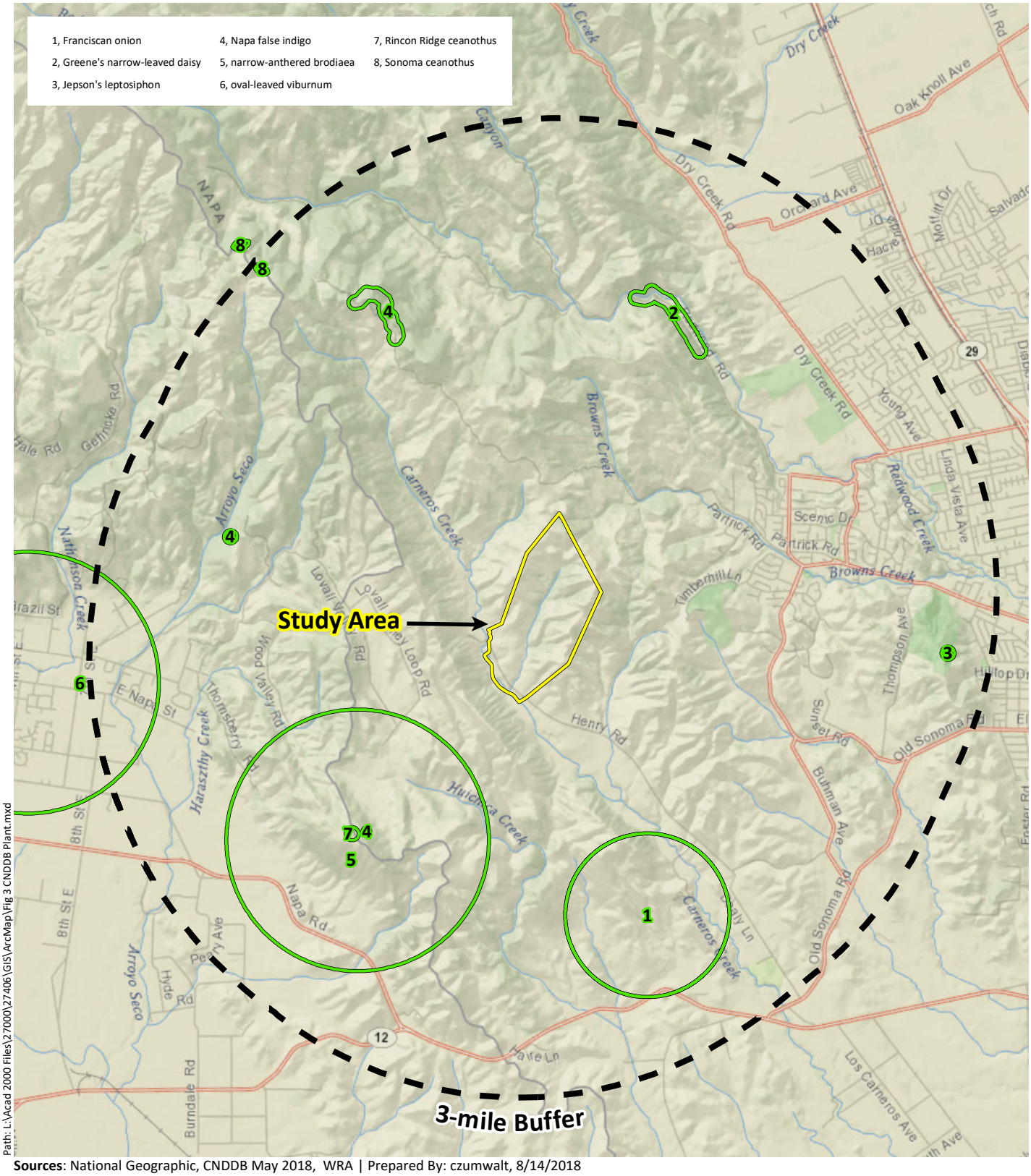
Figure A-1. Study Area Location

Hibbard
Napa County, California

0 0.75 1.5 Miles

N

ENVIRONMENTAL CONSULTANTS



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Sources: National Geographic, CNDDB May 2018, WRA | Prepared By: czumwalt, 8/14/2018

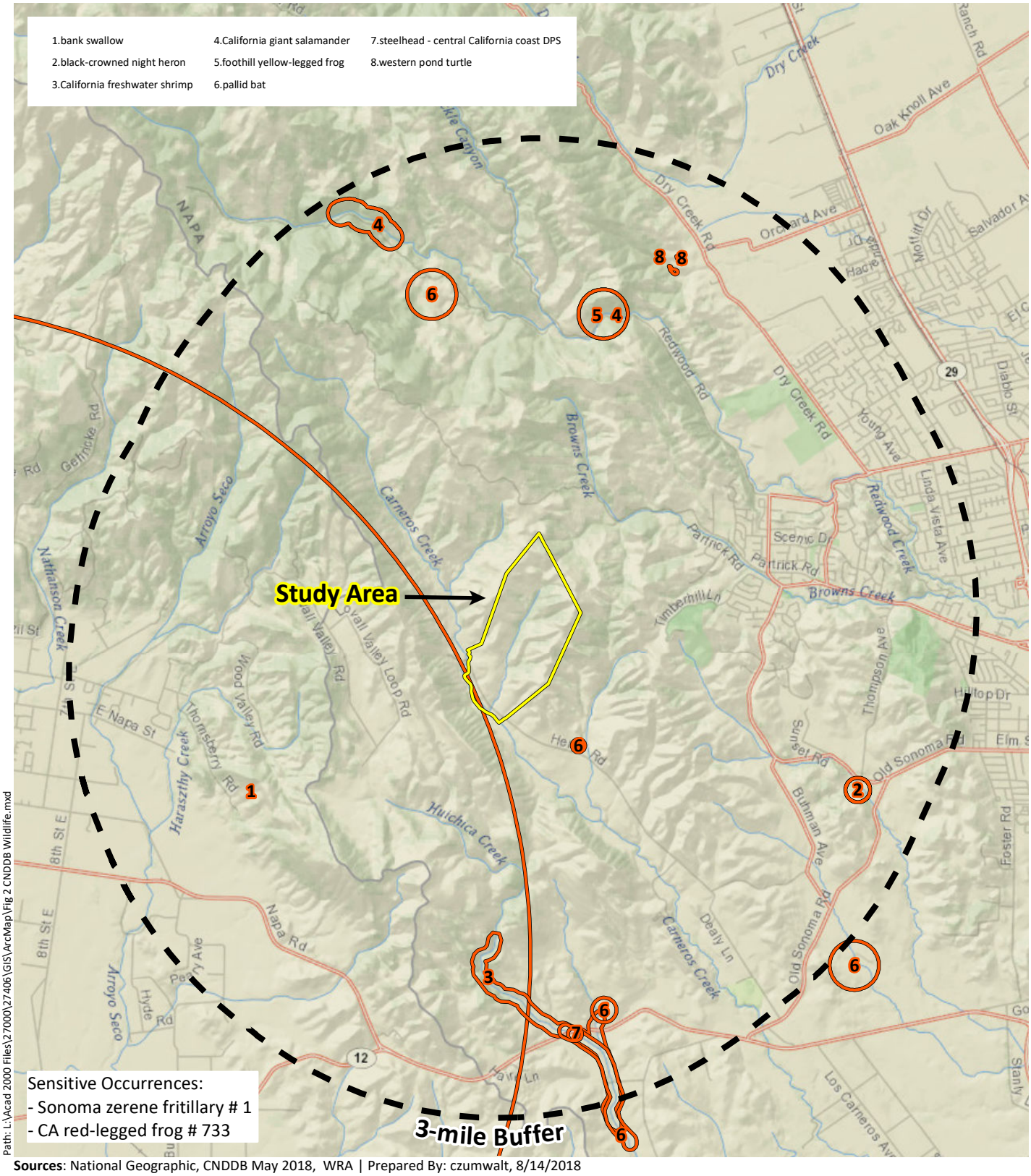
Figure A-2. Special-Status Plant Species Documented within 3-miles of the Study Area

Hibbard
Napa County, California

0 1 2 Miles

N

ENVIRONMENTAL CONSULTANTS



Sources: National Geographic, CNDDB May 2018, WRA | Prepared By: czumwalt, 8/14/2018

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

Hibbard
Napa County, California

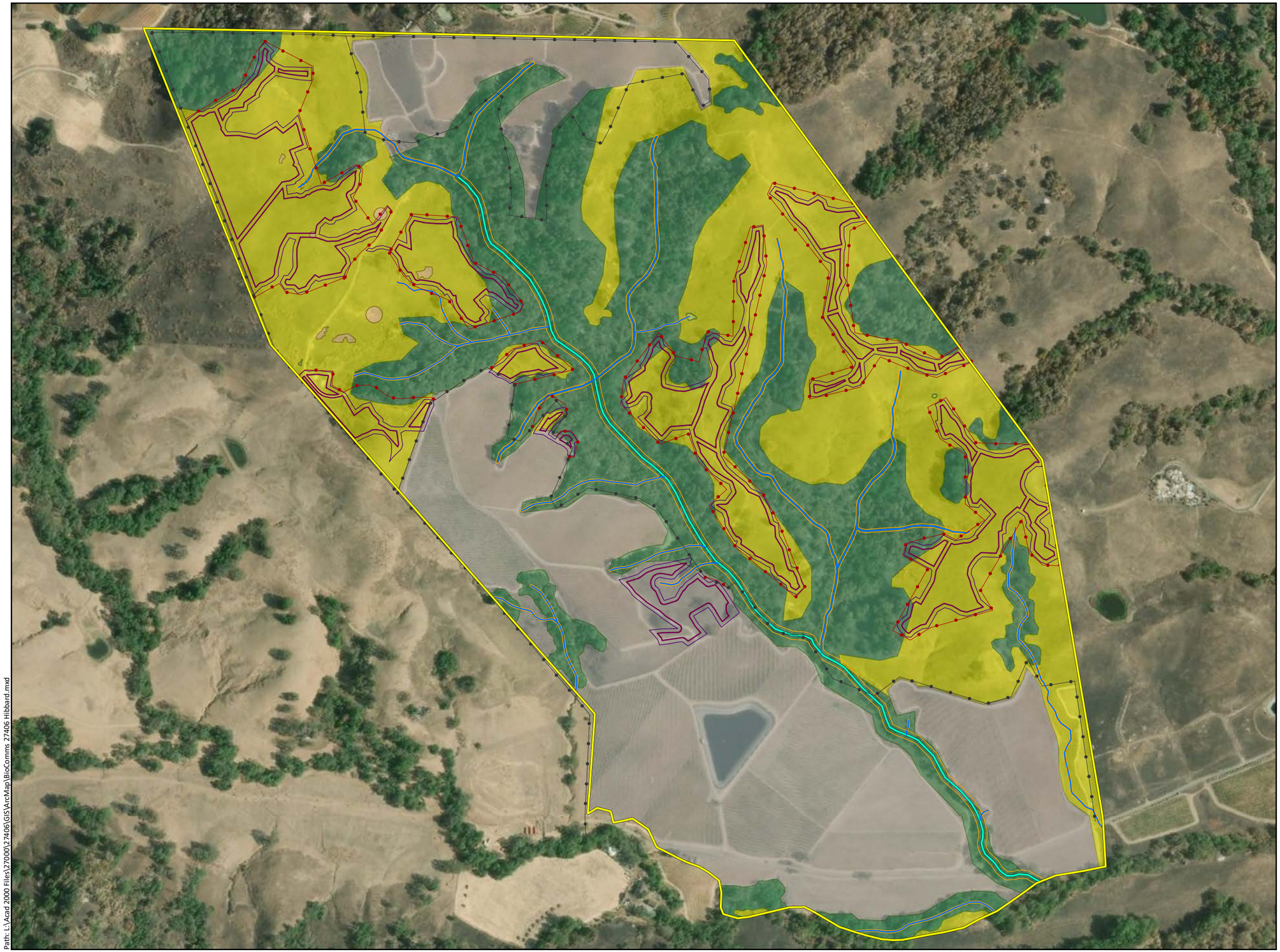
0 1 2 Miles

N

ENVIRONMENTAL CONSULTANTS

Figure A-4.
Biological Communities

Hibbard
Napa County, California



- Existing Deer Fence
- Proposed Deer Fence
- Proposed Vineyard Blocks (38.3 ac.)
- Proposed Clearing Limits (58.8 ac.)
- Study Area (434.36 ac.)

Aquatic Features

- Ephemeral Stream (18,665 lin. ft.)
- Intermittent Stream (5,830 lin. ft.)
- Top of Bank (13.47 ac.)

Sensitive Biological Communities:

- Coast live oak - California bay forest (134.47 ac.)
- Purple needle-grass grassland (0.62 ac.)
- Seasonal Wetland (0.11 ac.)

Non-sensitive Biological Communities:

- Non-native Grassland (159.05 ac.)
- Developed (140.10 ac.)

0 200 400
Feet

wra
ENVIRONMENTAL CONSULTANTS

Path: L:\Acad 2000 Files\27000\27406\GIS\ArcMap\BioComms 27406 Hibbard.mxd

Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: aarthur, 12/6/2018

Appendix B

Species Observed in the Study Area

Table B-1. Plant species observed in the Study Area, April 12 and June 8, 2018

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Agavaceae	*Chlorogalum pomeridianum* var. *pomeridianum*	common soap plant	perennial forb	native	-	-	NL
Anacardiaceae	*Toxicodendron diversilobum*	poison oak	deciduous shrub	native	-	-	NL
Apiaceae	*Lomatium caruifolium* var. *caruifolium*	alkali desert parsley	perennial forb	native	-	-	FACW
Apiaceae	*Perideridia kelloggii*	Kellogg's yampah	perennial forb	native	-	-	NL
Apiaceae	*Sanicula bipinnatifida*	purple sanicle	perennial forb	native	-	-	NL
Apiaceae	*Sanicula crassicaulis*	Pacific sanicle	perennial forb	native	-	-	NL
Apiaceae	*Torilis arvensis*	hedge parsley	annual forb	non-native	-	moderate	NL
Asteraceae	*Achillea millefolium*	common yarrow	perennial forb	native	-	-	FACU
Asteraceae	*Achyrachaena mollis*	soft blow wives	annual forb	native	-	-	FAC
Asteraceae	*Agoseris grandiflora*	large-flowered agoseris	perennial forb	native	-	-	NL
Asteraceae	*Baccharis pilularis*	coyote brush	evergreen shrub	native	-	-	NL
Asteraceae	*Carduus pycnocephalus*	Italian thistle	annual forb	non-native	-	moderate	NL
Asteraceae	*Centaurea melitensis*	tocalote	annual forb	non-native	-	moderate	NL
Asteraceae	*Centaurea solstitialis*	yellow star thistle	annual forb	non-native	-	high	NL
Asteraceae	*Erigeron bonariensis*	flax-leaved horseweed	annual forb	non-native	-	-	FACU
Asteraceae	*Helminthotheca echioides*	bristly ox-tongue	perennial forb	non-native	-	limited	FACU
Asteraceae	*Hemizonia congesta* ssp. *luzulifolia*	white hayfield tarweed	annual forb	native	-	-	NL
Asteraceae	*Hypochaeris radicata*	rough cat's-ear	perennial forb	non-native	-	moderate	FACU
Asteraceae	*Lactuca serriola*	prickly lettuce	annual forb	non-native	-	assessed	FACU
Asteraceae	*Leontodon saxatilis* ssp. *longirostris*	hawkbit	annual forb	non-native	-	-	FACU
Asteraceae	*Madia exigua*	meager tarweed	annual forb	native	-	-	NL
Asteraceae	*Madia sativa*	coast tarweed	annual forb	native	-	-	NL
Asteraceae	*Matricaria discoidea*	pineapple weed	annual forb	native	-	-	FACU
Asteraceae	*Micropus californicus* var. *californicus*	Q-tips	annual forb	native	-	-	NL
Asteraceae	*Silybum marianum*	milk thistle	perennial forb	non-native	-	limited	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Asteraceae	*Sonchus asper* ssp. *asper*	prickly sow thistle	annual forb	non-native	-	assessed	FAC
Asteraceae	*Sonchus oleraceus*	common sow thistle	annual forb	non-native	-	-	NL
Asteraceae	*Symphyotrichum chilense*	Pacific aster	perennial forb	native	-	-	FAC
Asteraceae	*Taraxacum officinale*	common dandelion	perennial forb	non-native	-	assessed	FACU
Asteraceae	*Tragopogon porrifolius*	purple salsify	perennial forb	non-native	-	-	NL
Asteraceae	*Wyethia angustifolia*	narrow leaf mule ears	perennial forb	native	-	-	FACU
Brassicaceae	*Brassica nigra*	black mustard	annual forb	non-native	-	moderate	NL
Brassicaceae	*Brassica rapa*	field mustard	annual forb	non-native	-	limited	FACU
Brassicaceae	*Hirschfeldia incana*	short podded mustard	perennial forb	non-native	-	moderate	NL
Brassicaceae	*Lepidium nitidum*	shining pepperweed	annual forb	native	-	-	FAC
Brassicaceae	*Raphanus sativus*	wild radish	perennial forb	non-native	-	limited	NL
Caryophyllaceae	*Spergularia rubra*	red sandspurry	perennial forb	non-native	-	-	FAC
Caryophyllaceae	*Stellaria media*	common chickweed	annual forb	non-native	-	-	FACU
Convolvulaceae	*Calystegia purpurata* ssp. *purpurata*	Pacific false bindweed	perennial vine	native	-	-	NL
Convolvulaceae	*Convolvulus arvensis*	field bindweed	perennial forb	non-native	-	assessed	NL
Cyperaceae	*Carex* sp.	sedge	perennial graminoid	-	-	-	FAC
Cyperaceae	*Eleocharis macrostachya*	common spikerush	perennial graminoid	native	-	-	OBL
Dryopteridaceae	*Dryopteris arguta*	California wood fern	perennial fern	native	-	-	NL
Dryopteridaceae	*Polystichum munitum*	western swordfern	perennial fern	native	-	-	FACU
Fabaceae	*Lathyrus hirsutus*	rough pea	annual forb	non-native	-	-	FAC
Fabaceae	*Lupinus albifrons*	silver bush lupine	evergreen shrub	native	-	-	NL
Fabaceae	*Lupinus bicolor*	miniature lupine	annual forb	native	-	-	NL
Fabaceae	*Medicago polymorpha*	bur medic	annual forb	non-native	-	limited	FACU
Fabaceae	*Trifolium campestre*	hop clover	annual forb	non-native	-	-	NL
Fabaceae	*Trifolium glomeratum*	clustered clover	annual forb	non-native	-	-	NL
Fabaceae	*Trifolium incarnatum*	crimson clover	annual forb	non-native	-	-	NL
Fabaceae	*Trifolium subterraneum*	subterranean clover	annual forb	non-native	-	-	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Fabaceae	*Vicia benghalensis*	reddish tufted vetch	annual forb	non-native	-	-	NL
Fabaceae	*Vicia sativa* ssp. *sativa*	common vetch	annual forb	non-native	-	-	FACU
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak	evergreen tree	native	-	-	NL
Fagaceae	*Quercus lobata*	valley oak	deciduous tree	native	-	-	FACU
Gentianaceae	*Zeltnera muehlenbergii*	Monterey centaury	annual forb	native	-	-	FACW
Geraniaceae	*Erodium brachycarpum*	foothill filaree	annual forb	non-native	-	limited	NL
Geraniaceae	*Erodium cicutarium*	redstem stork's bill	annual forb	non-native	-	limited	NL
Geraniaceae	*Geranium dissectum*	cutleaf geranium	annual forb	non-native	-	moderate	NL
Geraniaceae	*Geranium robertianum*	Robert's geranium	annual forb	non-native	-	assessed	NL
Hypericaceae	*Hypericum perforatum*	Klamath weed	perennial forb	non-native	-	moderate	FACU
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	perennial forb	native	-	-	FACW
Juncaceae	*Juncus patens*	common rush	perennial graminoid	native	-	-	FACW
Juncaceae	*Juncus phaeocephalus*	brownhead rush	perennial graminoid	native	-	-	FACW
Lamiaceae	*Mentha pulegium*	pennyroyal	perennial forb	non-native	-	moderate	OBL
Lauraceae	*Umbellularia californica*	California bay	evergreen tree	native	-	-	FAC
Liliaceae	*Prosartes hookeri*	drops of gold	perennial forb	native	-	-	NL
Montiaceae	*Claytonia perfoliata*	miner's lettuce	annual forb	native	-	-	FAC
Myrsinaceae	*Lysimachia arvensis*	scarlet pimpernel	annual forb	non-native	-	-	NL
Onagraceae	*Epilobium brachycarpum*	annual willowherb	annual forb	native	-	-	NL
Onagraceae	*Taraxia ovata*	sun cup	perennial forb	native	-	-	NL
Orobanchaceae	*Bellardia trixago*	Mediterranean lineseed	annual forb	non-native	-	limited	NL
Orobanchaceae	*Parentucellia viscosa*	yellow glandweed	annual forb	non-native	-	limited	FAC
Oxalidaceae	*Oxalis pes-caprae*	Bermuda buttercup	perennial forb	non-native	-	moderate	NL
Papaveraceae	*Eschscholzia californica*	California poppy	perennial forb	native	-	-	NL
Plantaginaceae	*Plantago lanceolata*	English plantain	perennial forb	non-native	-	limited	FAC
Plantaginaceae	*Veronica peregrina* ssp. *xalapensis*	neckweed	annual forb	native	-	-	OBL
Poaceae	*Avena barbata*	wild oat	annual graminoid	non-native	-	moderate	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Poaceae	*Avena fatua*	wild oat	annual graminoid	non-native	-	moderate	NL
Poaceae	*Briza maxima*	big rattlesnake grass	annual graminoid	non-native	-	limited	NL
Poaceae	*Briza minor*	little rattlesnake grass	annual graminoid	non-native	-	-	FAC
Poaceae	*Bromus catharticus* var. *elatus*	Chilean brome	perennial graminoid	non-native	-	-	NL
Poaceae	*Bromus diandrus*	ripgut brome	annual graminoid	non-native	-	moderate	NL
Poaceae	*Bromus hordeaceus*	soft chess	annual graminoid	non-native	-	limited	FACU
Poaceae	*Cynosurus echinatus*	dogtail grass	annual graminoid	non-native	-	moderate	NL
Poaceae	*Elymus caput-medusae*	Medusa head	perennial graminoid	non-native	-	high	NL
Poaceae	*Elymus glaucus*	blue wildrye	perennial graminoid	native	-	-	FACU
Poaceae	*Elymus triticoides*	beardless wild rye	perennial graminoid	native	-	-	FAC
Poaceae	*Festuca bromoides*	brome fescue	perennial graminoid	non-native	-	-	FAC
Poaceae	*Festuca perennis*	Italian rye grass	annual graminoid	non-native	-	moderate	FAC
Poaceae	*Gastridium phleoides*	nit grass	annual graminoid	non-native	-	-	FACU
Poaceae	*Holcus lanatus*	common velvet grass	perennial graminoid	non-native	-	moderate	FAC
Poaceae	*Hordeum murinum*	mouse barley	annual graminoid	non-native	-	moderate	FACU
Poaceae	*Phalaris aquatica*	harding grass	perennial graminoid	non-native	-	moderate	FACU
Poaceae	*Phalaris paradoxa*	hood canarygrass	annual graminoid	non-native	-	-	FAC
Poaceae	*Polypogon monspeliensis*	rabbit's-foot grass	annual graminoid	non-native	-	limited	FACW
Poaceae	*Stipa pulchra*	purple needlegrass	perennial graminoid	native	-	-	NL
Polemoniaceae	*Navarretia squarrosa*	skunkbush	annual forb	native	-	-	FACU
Polygonaceae	*Rumex acetosella*	sheep sorrel	perennial forb	non-native	-	moderate	FACU
Polygonaceae	*Rumex conglomeratus*	clustered dock	perennial forb	non-native	-	-	FACW
Polygonaceae	*Rumex crispus*	curly dock	perennial forb	non-native	-	limited	FAC
Polygonaceae	*Rumex pulcher*	fiddle dock	perennial forb	non-native	-	-	FAC
Polypodiaceae	*Polypodium* sp.	polypody	perennial fern	native	-	-	NL
Pteridaceae	*Adiantum jordanii*	maidenhair fern	perennial fern	native	-	-	FAC
Ranunculaceae	*Ranunculus californicus*	California buttercup	perennial forb	native	-	-	FACU

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Rubiaceae	*Galium aparine*	common bedstraw	annual forb	native	-	-	FACU
Rubiaceae	*Galium californicum*	California bedstraw	perennial forb	native	-	-	NL
Rubiaceae	*Sherardia arvensis*	blue fieldmadder	annual forb	non-native	-	-	NL
Sapindaceae	*Aesculus californica*	California buckeye	deciduous tree	native	-	-	NL
Scrophulariaceae	*Scrophularia californica*	California figwort	perennial forb	native	-	-	FAC
Themidaceae	*Dichelostemma capitatum*	bluedicks	perennial forb	native	-	-	FACU
Themidaceae	*Triteleia laxa*	Ithuriel's spear	perennial forb	native	-	-	NL

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2012) and *A Flora of Sonoma County* (Best et al. 1996); nomenclature follows *The Jepson Flora Project* (eFlora 2017) unless otherwise noted

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

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2017)

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

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

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

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

Table C. Potential for Special-status Species to Occur in the Project Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (2018), U.S. Fish and Wildlife Service (USFWS) Species Lists (2018), and California Native Plant Society (CNPS) Electronic Inventory (2018) searches. For plants, the Kenwood, Rutherford, Yountville, Napa, Sonoma, Glen Ellen, Petaluma River, Sears Point, Cuttings Wharf USGS 7.5' quadrangles were considered. For wildlife, the entirety of Napa County was considered for thoroughness.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
PLANTS				
Allium peninsulare var. *franciscanum* Franciscan onion	Rank 1B	Cismontane woodland, valley and foothill grassland; on clay substrate, often derived from serpentine. Elevation range 170 – 985 feet. Blooms: May – June.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Alopecurus aequalis var. *sonomensis* Sonoma alopecurus	FE, Rank 1B	Freshwater marshes and swamps, riparian scrub; closely associated with other wetland species. Elevation range: 15 – 1200 feet. Blooms: May – July.	**Unlikely.** The Project Area does not contain marshes or swamps.	**Not Present.** No further recommendations for this species.
Amorpha californica var. *napensis* Napa false indigo	Rank 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July.	**Unlikely**. The Project Area does not contain woodland or chaparral habitat. The broadleaf upland forest present within the Project Area was limited with dense canopy.	**Not Present.** No further recommendations for this species.
Amsinckia lunaris bent-flowered fiddleneck	Rank 1B	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation range: 10 – 1625 feet. Blooms: March – June.	**Moderate Potential.** The Project Area contained grassland habitat. However, no individuals were observed during the site visits.	**Not Observed.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Antirrhinum virga twig-like snapdragon	Rank 4	Chaparral, lower montane coniferous forest; located on rocky openings often derived from serpentine. Elevation range: 325 – 6550 feet. Blooms: June – July.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Arctostaphylos bakeri ssp. *bakeri* Baker's manzanita	FSC; SR; Rank 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest; located on serpentine substrate. Elevation range: 240 – 975 feet. Blooms: February – April.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Arctostaphylos stanfordiana ssp. decumbens Rincon manzanita	Rank 1B	Chaparral, cismontane woodland; highly restricted to red rhylolitic soils. Elevation range: 245 – 1215 feet. Blooms: February – April.	**No Potential.** The Project Area does not contain rhyolite soils.	**Not Present.** No further recommendations for this species.
Astragalus claranus Clara Hunt's milk-vetch	FE; ST; Rank 1B	Cismontane woodland, valley and foothill grassland, chaparral; on open grassy hillsides, especially exposed shoulders with thin, volcanic clay soils. Elevation range: 245 – 900 feet. Blooms: March – May.	**Unlikely.** The Project Area does not contain exposed shoulders with thin, volcanic clay soils.	**Not Present.** No further recommendations for this species.
Astragalus clevelandii Cleveland's milk-vetch	Rank 4	Chaparral, cismontane woodland, riparian forest; located on serpentine seeps. Elevation range: 650 – 4875 feet. Blooms: June – September.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Astragalus tener var. *tener* alkali milk-vetch	Rank 1B	Playas, vernal pools, valley and foothill grassland; located in mesic grassy areas on alkaline substrate. Elevation range: 0 – 195 feet. Blooms: March – June.	**Unlikely.** The Project Area does not contain alkali mesic sites.	**Not Present.** No further recommendations for this species.
Balsamorhiza macrolepis big-scale balsamroot	Rank 1B	Valley and foothill grassland, cismontane woodland; sometimes on serpentine substrate. Elevation range: 295 – 3100 feet. Blooms: March – June.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Blennosperma bakeri Sonoma sunshine	FE, SE, Rank 1B	Vernal pools, vernal swales, and mesic areas in valley grassland; highly restricted to the Santa Rosa Plain and Valley of the Moon. Elevation range: 35 – 360 feet. Blooms: March – April.	**Unlikely**. The Project Area is located outside of the known geographic distribution of the species. Additionally, no vernal pools or vernal swales were present.	**Not Present.** No further recommendations for this species.
Brodiaea leptandra narrow-anthered brodiaea	Rank 1B	Broadleaf upland forest, chaparral, lower montane coniferous forest. Elevation range: 360 – 3000 feet. Blooms: May – July.	**Unlikely.** The Project Area contains broadleaf upland forest with continuous canopy and does not contain chaparral nor coniferous forest.	**Not Present.** No further recommendations for this species.
Calamagrostis ophitidis serpentine reed grass	Rank 4	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; located in openings, often north-facing, underlain by rocky serpentine substrate. Elevation range: 290 – 3465 feet. Blooms: April – July.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Calandrinia breweri Brewer's Calandrinia	Rank 4	Chaparral, coastal scrub; located on sandy or loamy substrate in areas often recently disturbed or burned. Elevation range: 30 – 3965 feet. Blooms: March – June.	**No Potential.** The Project Area does not contain chaparral or coastal scrub.	**Not Present.** No further recommendations for this species.
Calochortus uniflorus large-flowered mariposa lily	Rank 4	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest. Elevation range: 30 – 3480 feet. Blooms: April – June.	**No Potential.** The Project Area is not very near the coast, nor contains coniferous forest.	**Not Present.** No further recommendations for this species.
Calycadenia micrantha small-flowered Calycadenia	Rank 1B	Chaparral, meadows and seeps, valley and foothill grassland; located on volcanic or serpentine substrate in sparsely vegetated rocky, talus, or scree areas. Elevation range: 15 – 4875 feet. Blooms: June – September.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Castilleja ambigua ssp. *ambigua* johnny-nip	Rank 4	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pool margins. Elevation range: 0 – 1415 feet. Blooms: March – August.	**Unlikely.** The Project Area is not very near the coast, does not contain vernal pools, nor contains marshes or swamps.	**Not Present.** No further recommendations for this species.
Castilleja ambigua var. *meadii* mead's owl's-clover	Rank 1B	Meadows and seeps, vernal pools; located in mesic areas or wetlands underlain by gravelly clay soils derived from volcanics. Elevation range: 1460 – 1545 feet. Blooms: April – May.	**Unlikely.** The Project Area does not contain gravelly clay soils derived from volcanics.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Ceanothus confusus Rincon Ridge ceanothus	Rank 1B	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically on dry shrubby slopes. Elevation range: 245 – 3495 feet. Blooms: February – April.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Ceanothus divergens Calistoga ceanothus	Rank 1B	Chaparral, cismontane woodland; on rocky, serpentine sites. Elevation range: 560 – 3115 feet. Blooms: February – March.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Ceanothus gloriosus var. *exaltatus* Point Reyes ceanothus	Rank 4	Chaparral. Elevation range: 95 – 1985 feet. Blooms: March – June, sometimes August.	**No Potential.** The Project Area does not contain chaparral.	**Not Present.** No further recommendations for this species.
Ceanothus purpureus holly-leaved ceanothus	Rank 1B	Chaparral, cismontane woodland; located on rocky, volcanic slopes. Elevation range: 395 – 3000 feet. Blooms: February – June.	**No Potential.** The Project Area does not contain rocky or volcanic slopes.	**Not Present.** No further recommendations for this species.
Ceanothus sonomensis Sonoma ceanothus	Rank 1B	Chaparral; located on sandy serpentine or volcanic substrates. Elevation range: 705 – 2625 feet. Blooms: February – April.	**No Potential.** The Project Area does not contain volcanic or serpentine soils.	**Not Present.** No further recommendations for this species.
Centromadia parryi ssp. *parryi* pappose tarplant	Rank 1B	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland; in vernally mesic sites, often with alkali substrate. Elevation range: 5 – 1380 feet. Blooms: May – November.	**Unlikely.** The Project Area does not contain mesic alkali sites.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Chloropyron molle ssp. *molle* soft bird's-beak	FE, SR, Rank 1B	Coastal brackish or salt marshes; located in low-growing saltgrass and picklweed mats. Elevation range: 0 – 10 feet. Blooms: June – November.	**No Potential.** The Project Area does not contain coastal wetlands.	**Not Present.** No further recommendations for this species.
Chloropyron maritimum ssp. *palustre* Point Reyes bird's-beak	FSC; Rank 1B	Coastal salt marshes; located in low-growing saltgrass and pickleweed mats. Elevation range: 0 – 35 feet. Blooms: June – October.	**No Potential.** The Project Area does not contain coastal wetlands.	**Not Present.** No further recommendations for this species.
Chorizanthe valida Sonoma spineflower	FE; SE; Rank 1B	Coastal prairie; in sandy soils. Elevation range: 35 – 1000 feet. Blooms: June – August.	**No Potential.** The Project Area does not contain coastal prairie.	**Not Present.** No further recommendations for this species.
Clarkia breweri Brewer's clarkia	Rank 4	Chaparral, cismontane woodland, coastal scrub; frequently on serpentine substrate. Elevation range: 695 – 3625 feet. Blooms: April – June.	**Unlikely.** The Project Area does not contain chaparral, coastal scrub or serpentine soils.	**Not Present.** No further recommendations for this species.
Clarkia gracilis ssp. *tracyi* Tracy's clarkia	Rank 4	Chaparral; located in openings and situated on substrates often derived from serpentine. Elevation range: 210 – 2115 feet. Blooms: April – July.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Cordylanthus tenuis ssp. *brunneus* serpentine bird's-beak	Rank 4	Closed-cone coniferous forest, chaparral, cismontane woodland; typically located serpentine substrate. Elevation range: 1540 – 2975 feet. Blooms: July – August.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Downingia pusilla dwarf downingia	Rank 2B	Valley and foothill grassland, vernal pools; located in mesic grassy sites, pool and lake margins. Elevation range: 3 – 1450 feet. Blooms: March – May.	**Unlikely.** The Project Area does not contain pool and lake margins or exposed mesic sites in grasslands.	**Not Present.** No further recommendations for this species.
Eleocharis parvula small spikerush	Rank 4	Marshes and swamps. Elevation range: 5 – 9815 feet. Blooms: sometimes April, June – August, sometimes September.	**No Potential.** The Project Area does not contain marsh or swamp.	**Not Present.** No further recommendations for this species.
Erigeron biolettii Streamside daisy	Rank 3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest; on rocky, mesic. Elevation range: 95 – 3610 feet. Blooms: June – October.	**Unlikely**. The Project Area does not contain rocky mesic sites, coniferous forest or woodland habitat.	**Not Present.** No further recommendations for this species.
Erigeron greenei Greene's narrow-leaved daisy	Rank 1B	Chaparral; located on volcanic or serpentine substrate. Elevation range: 260 – 3270 feet. Blooms: May – September.	**No Potential.** The Project Area does not contain chaparral or serpentine soils.	**Not Present.** No further recommendations for this species.
Eriogonum luteolum var. *caninum* Tiburon buckwheat	Rank 1B	Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie; located on sandy or gravelly substrate derived from serpentine. Elevation range: 0 – 2275 feet. Blooms: May – September.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Eryngium jepsonii Jepson's coyote thistle	Rank 1B	Valley and foothill grassland, vernal pools; located on clay soil. Elevation range: 5 – 900 feet. Blooms: April – August.	**Unlikely**. The Project Area does not contain vernal pools and the soils are not strictly clay.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Extriplex joaquiniana San Joaquin spearscale	Rank 1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; located on alkaline substrate. Elevation range: 0 – 2715 feet. Blooms: April – October.	**Unlikely.** The Project Area does not contain alkali mesic sites.	**Not Present.** No further recommendations for this species.
Fritillaria liliacea fragrant fritillary	Rank 1B	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland; located in grassy sites underlain by clay, typically derived from volcanics or serpentine. Elevation range: 10 – 1335 feet. Blooms: February – April.	**No Potential.** The Project Area does not contain volcanic or serpentine soils.	**Not Present.** No further recommendations for this species.
Harmonia nutans nodding harmonia	Rank 4	Chaparral, cismontane woodland; located on rocky to gravelly substrates derived from volcanics. Elevation range: 240 – 3170 feet. Blooms: March – May.	**No Potential.** The Project Area does not contain volcanic or serpentine soils.	**Not Present.** No further recommendations for this species.
Hemizonia congesta ssp. congesta Hayfield tarplant	Rank 1B	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1840 feet. Blooms: April – October.	**Moderate Potential**. The Project Area contains grassland habitat. However, no individuals were observed during the site visits.	**Not Observed.** No further recommendations for this species.
Hesperolinon bicarpellatum Two-carpellate western flax	Rank 1B	Chaparral; located on serpentine substrate. Elevation range: 195 – 3270 feet. Blooms: May – July.	**No Potential.** The Project Area does not contain volcanic or serpentine soils.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Hesperolinon congestum Marin western flax	FT; ST; Rank 1B	Chaparral, valley and foothill grassland; located on serpentine substrate. Elevation range: 15 – 1205 feet. Blooms: April – July.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Hesperolinon sharsmithiae Sharsmith's western flax	Rank 1B	Chaparral; located on serpentine substrate. Elevation range: 875 – 975 feet. Blooms: May – July.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Horkelia tenuiloba thin-lobed horkelia	Rank 1B	Broadleaf upland forest, coastal scrub, valley and foothill grassland, chaparral; in mesic openings, on sandy substrate. Elevation range: 165 – 1640 feet. Blooms: May – July.	**Unlikely.** The Project Area does not contain sandy soils nor is very near the coast.	**Not Present.** No further recommendations for this species.
Iris longipetala coast iris	Rank 4	Coastal prairie, lower montane coniferous forest, meadows and seeps; located on mesic sites. Elevation range: 0 – 1950 feet. Blooms: March – May.	**Unlikely.** The Project Area is not very near the coast nor contains wet meadows or seeps.	**Not Present.** No further recommendations for this species.
Juglans hindsii North California black walnut	Rank 1B	Riparian forest, riparian woodland. Elevation range: 0 – 1430 feet. Blooms: April – May.	**No Potential.** While the Project Area contains riparian forest and riparian woodland, this species is widely planted and is not afforded protection outside of its native range.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Lasthenia conjugens Contra Costa goldfields	FE; Rank 1B	Valley and foothill grassland, vernal pools, cismontane woodland; located in pools, swales, and depressions in mesic grassy sites underlain by alkaline substrate. Elevation range: 0 – 1530 feet. Blooms: March – June.	**Unlikely.** The Project Area does not contain alkali mesic sites.	**Not Present.** No further recommendations for this species.
Lathyrus jepsonii var. *jepsonii* Delta tule pea	Rank 1B	Freshwater and brackish marshes; typically located near or on slough margins, closely associated with cattail, tules, bulrushes, Baltic rush, California rose, and Suisun Marsh aster; known widely throughout Suisun Bay and Delta regions. Elevation range: 0 – 15 feet. Blooms: May – July, sometimes September.	**No Potential.** The Project Area does not contain coastal wetlands.	**Not Present.** No further recommendations for this species.
Layia septentrionalis Colusa layia	Rank 1B	Chaparral, cismontane woodland, valley and foothill grassland; on sandy, serpentine substrate; typically in fields and grassy slopes. Elevation range: 330 – 3595 feet. Blooms: April – May.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Legenere limosa legenere	Rank 1B	Vernal pools; typically located in the deepest portions of pools. Elevation range: 3 – 2860 feet. Blooms: April – June.	**No Potential.** The Project Area does not contain vernal pools.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Leptosiphon acicularis bristly leptosiphon	Rank 4	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; often located on shallow, rocky substrate in foothill positions. Elevation range: 175 – 4875 feet. Blooms: April – July.	**Unlikely.** The Project Area does not contain shallow, rocky areas.	**Not Present.** No further recommendations for this species.
Leptosiphon jepsonii Jepson's leptosiphon	Rank 1B	Chaparral, cismontane woodland; on open to partially shaded grassy slopes on volcanic or the periphery of serpentine substrate. Elevation range: 330 – 1640 feet. Blooms: April – May.	**No Potential.** The Project Area does not contain volcanic or serpentine soils.	**Not Present.** No further recommendations for this species.
Leptosiphon latisectus broad-lobed leptosiphon	Rank 4	Broadleaf upland forest, cismontane woodland. Elevation range: 550 – 4875 feet. Blooms: April – June.	**Unlikely.** While the Project Area contains limited upland forest, these areas have continuous canopy likely precluding this diminutive annual species. Additionally, no individuals were observed during the site visits.	**Not Present.** No further recommendations for this species.
Lessingia hololeuca woolly-headed lessingia	Rank 3	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; typically on clay, serpentine substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	**Unlikely**. The Project Area does not contain serpentine or clay soils.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Lilaeopsis masonii Mason's Lilaeopsis	SR, Rank 1B	Freshwater and brackish coastal marshes, riparian scrub; located on channel banks in the splash zone on bare mud substrate. Elevation range: 0 – 35 feet. Blooms: April – November.	**No Potential.** The Project Area does not contain coastal wetlands.	**Not Present.** No further recommendations for this species.
Lilium pardalinum ssp. *pitkinense* Pitkin Marsh lily	FE; SE; Rank 1B	Cismontane woodland, meadows and seeps, freshwater marsh, riparian scrub; located on acidic saturated sandy substrate. Elevation range: 110 – 215 feet. Blooms: June – July.	**No Potential**. The Project Area is not located in Pitkin Marsh, nor contains acidic sandy substrate.	**Not Present.** No further recommendations for this species.
Lilium rubescens redwood lily	Rank 4	Broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, North Coast coniferous forest; often located on serpentine substrates, and along roadcuts. Elevation range: 95 – 6210 feet. Blooms: April – September.	**Unlikely.** The Project Area does not contain coniferous forests, chaparral, or serpentine soils. Upland forest which is present is limited. Additionally, no individuals were observed during the site visits.	**Not Present.** No further recommendations for this species.
Limnanthes vinculans Sebastopol meadowfoam	FE, SE, Rank 1B	Mesic meadows, valley and foothill grassland, vernal pools; located in swales, wet meadows, depressions, and pools in the oak savanna of the Santa Rosa Plain on heavy adobe clay substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	**Unlikely.** The Project Area is not located within the Santa Rosa Plain nor does it contain heavy adobe clay substrate.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Lomatium repostum Napa Lomatium	Rank 4	Chaparral, cismontane woodland; located on serpentine substrate. Elevation range: 290 – 2700 feet. Blooms: March – June.	**Unlikely.** The Project Area does not contain serpentine soils.	**Not Present.** No further recommendations for this species.
Lupinus sericatus Cobb Mountain lupine	Rank 1B	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest; typically located in stands of knobcone pine-oak woodland, on open wooded slopes in gravelly substrate, sometimes serpentine. Elevation range: 890 – 4960 feet. Blooms: March – June.	**Unlikely**. The Project Area does not contain gravelly substrate or serpentine soils.	**Not Present.** No further recommendations for this species.
Micropus amphibolus Mt. Diablo cottonweed	Rank 3	Broadleaf upland forest, chaparral, cismontane woodland, valley and foothill grassland; typically on thin, rocky soils. Elevation range: 145 – 2710 feet. Blooms: March – May.	**No Potential.** The Project Area does not contain thin, rocky soils.	**Not Present.** No further recommendations for this species.
Monardella viridis green monardella	Rank 4	Broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 325 – 3285 feet. Blooms: June – September.	**Unlikely.** The Project Area does not contain very rocky soils or chaparral. Additionally, no individuals were observed during the site visits.	**Not Present.** No further recommendations for this species.
Navarretia cotulifolia cotula navarretia	Rank 4	Chaparral, cismontane woodland, valley and foothill grassland; located on adobe substrate. Elevation range: 10 – 5950 feet. Blooms: May – June.	**No Potential.** The Project Area does not contain adobe substrate.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Navarretia heterandra Tehama navarretia	Rank 4	Valley and foothill grasslands, vernal pools; situated in pools and mesic grasslands. Elevation range: 95 – 3285 feet. Blooms: April – June.	**Unlikely.** The Project Area does not contain vernal pools or exposed mesic grasslands.	**Not Present.** No further recommendations for this species.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	Rank 1B	Wet, mesic sites underlain by adobe and/or alkaline substrate in cismontane woodland, meadows, seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Elevation range: 15 – 5710 feet. Blooms: April – July.	**No Potential.** The Project Area does not contain alkali mesic sites.	**Not Present.** No further recommendations for this species.
Navarretia leucocephala ssp. *pauciflora* few-flowered navarretia	FE; ST; Rank 1B	Vernal pools; located on volcanic ash flow and volcanic substrate pools. Elevation range: 1300 – 2780 feet. Blooms: May – June.	**No Potential**. The Project Area does not contain vernal pools nor soils derived from volcanic ash.	**Not Present.** No further recommendations for this species.
Navarretia leucocephala ssp. *plieantha* many-flowered navarretia	FE, SE, Rank 1B	Vernal pools underlain by substrate derived from volcanic ash flows. Elevation range: 95 – 3120 feet. Blooms: May – June.	**No Potential**. The Project Area does not contain vernal pools nor soils derived from volcanic ash.	**Not Present.** No further recommendations for this species.
Penstemon newberryi var. *sonomensis* Sonoma beardtongue	Rank 1B	Chaparral; crevices in rock outcrops and talus slopes. Elevation range: 2295 – 4495 feet. Blooms: April – August.	**No Potential.** The Project Area does not contain chaparral.	**Not Present.** No further recommendations for this species.
Plagiobothrys mollis var. *vestitus* Petaluma popcornflower	FSC; Rank 1A	Coastal salt marsh, valley and foothill grassland; presumed to occur in mesic grasslands on marsh fringe. Elevation range: 30 – 165 feet. Blooms: June – July.	**No Potential.** The Project Area does not contain coastal salt marsh nor freshwater marsh.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Polygonum marinense Marin knotweed	Rank 3	Salt and brackish coastal marshes. Elevation range: 0 – 35 feet. Blooms: sometimes April, May – August, sometimes October.	**No Potential.** The Project Area does not contain coastal wetlands.	**Not Present.** No further recommendations for this species.
Ranunculus lobbii Lobb's buttercup	Rank 4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; located in mesic, vernally wet areas. Elevation range: 45 – 1530 feet. Blooms: February – May.	**Unlikely**. The Project Area does not contain sufficient vernally wet areas. Additionally, no individuals were observed during the several site visits.	**Not Present.** No further recommendations for this species.
Sagittaria sanfordii Sanford's arrowhead	Rank 1B.2	Marshes and swamps (assorted shallow freshwater). Elevations form 0 to 2,113 feet. Blooms: May-October (November).	**No Potential**. The Project Area does not contain marshes or swamps. Additionally, no individuals were observed during the site visits.	**Not Present.** No further recommendations for this species.
Sidalcea calycosa ssp. *rhizomata* Point Reyes checkerbloom	Rank 1B	Marshes and swamps; located in freshwater marsh habitat near the coast. Elevation range: 10 – 245 feet. Blooms: April – September.	**No Potential.** The Project Area does not contain coastal wetlands.	**Not Present.** No further recommendations for this species.
Sidalcea oregana ssp. *valida* Kenwood Marsh checkerbloom	FE; SE; Rank 1B	Freshwater marshes and swamps, on the edges of marshes. Elevation range: 375 – 495 feet. Blooms: June – September.	**No Potential**. The Project Area does not contain marshes or swamps. Additionally, no individuals were observed during the site visits.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Streptanthus hesperidis green jewelflower	Rank 1B	Chaparral, cismontane woodland; located in openings in brushy/wooded sites on rocky serpentine substrate. Elevation range: 420 – 2470 feet. Blooms: May – July.	**No Potential.** The Project Area does not contain volcanic or serpentine soils.	**Not Present.** No further recommendations for this species.
Symphyotrichum lentum Suisun Marsh aster	Rank 1B	Freshwater and brackish marshes and swamps; typically located on slough margins and edges, closely associated with cattail, tules, bulrushes, California rose, and Delta Tule pea. Elevation range: 0 – 10 feet. Blooms: May – November.	**No Potential.** The Project Area does not contain coastal wetlands.	**Not Present.** No further recommendations for this species.
Trichostema ruygtii Napa bluecurls	Rank 1B	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools, lower montane coniferous forest; located in open, sunny locations, and dried vernal pools. Elevation range: 95 – 2210 feet. Blooms: June – October.	**Unlikely**. The Project Area does not contain chaparral, vernal pools, or coniferous forest. While open, sunny locations are present within the grasslands, no rocky areas within the grassland are present.	**Not Present.** No further recommendations for this species.
Trifolium amoenum showy rancheria clover	FE, Rank 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine. Elevation range: 15 – 1365 feet. Blooms: April – June.	**Unlikely**. While the Project Area contains grassland habitat, these areas were dominated by aggressive, non-native grasses which likely preclude this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Trifolium hydrophilum saline clover	Rank 1B	Marshes and swamps, mesic portions of alkali vernal pools; mesic, alkali valley and foothill grassland. Elevation range: 0 – 985 feet. Blooms: April – June.	**Unlikely**. The Project Area does not contain mesic alkaline sites.	**Not Present.** No further recommendations for this species.
Triteleia lugens dark-mouthed triteleia	Rank 4	Broadleaf upland forest, chaparral, lower montane coniferous forest, coastal scrub. Elevation range: 325 – 3250 feet. Blooms: April – June.	**Moderate Potential.** The Project Area contains upland forest habitat which provides suitable habitat. However, no individuals were observed during the site visits.	**Not Observed.** No further recommendations for this species.
Viburnum ellipticum oval-leaved viburnum	Rank 2B	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation range: 705 – 4595 feet. Blooms: May – June.	**Unlikely.** The Project Area does not contain chaparral, woodland or coniferous forest.	**Not Present.** 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.** Tree cavities within the Study Area are suitable for roosting; there are several CNDDB occurrences in the vicinity, including two within 2.0 miles of the Study Area (CDFW 2018).	**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 (CDFW 2018).	**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.
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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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.
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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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.	**Moderate Potential.** Grassland and open woodland within the Study Area provides suitable habitat for this species.	**Presence Unknown.** Prior to ground disturbance, a pre-construction survey for potential badger burrows within the Project Area plus a 150-foot buffer should be performed. If present, badgers should be excluded from occupied burrows, and burrows with young avoided.

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 Study Area does not provide vegetated ponds or emergent marsh suitable 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.	**Moderate Potential.** Open grassland within the Study Area provides suitable nesting habitat; there are recent observations in the general vicinity (eBird 2018).	**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.
Aquila chrysaetos golden eagle	FEPA, 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.** No nest structures indicative of this species were observed during the site visit; the Napa County population is largely restricted to the eastern portion of the County (Smith 2003).	**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 sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**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.
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
long-eared owl *Asio otus*	SSC	Occurs year-round in California. Nests in trees in a variety of woodland/forest 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.
Buteo swainsoni Swainson's hawk	ST	Summer resident in the Central Valley and very limited coastal foothill valley areas. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**Unlikely.** Napa County's very small breeding population is restricted to the Napa Valley floor in association with the Napa River (CDFW 2018).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Charadrius alexandrines nivosus western snowy plover	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees and basins, 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.
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 likely too small I area and in proximity to disturbance (vineyards) to support nesting. May forage within the Study Area.	**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 stands of the type typically used by this species.	**Presumed Absent.** 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.** Streams within the Study Area are not perennial and lack the 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.
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.	**High Potential.** 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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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 and adjacent vegetation. Requires thick, continuous cover down to water surface for foraging; tall grasses, emergent vegetation, and/or willows used for nesting.	**No Potential.** The Study Area does not contain densely-vegetated marsh habitat.	**Not Present.** No further recommendations for this species.
Haliaeetus leucocephalus bald eagle	FEPA, 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 (2018), 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 (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
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.	**Moderate Potential.** The Study Area provides open woodland and grassland, and there are recent observations in the vicinity (eBird 2018).	**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.
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.

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. Uses drier grasslands in some areas. Nests near the ground in taller vegetation, including along levees and canals.	**Moderate Potential.** Open grassland within the Study Area provides suitable nesting habitat.	**Presence Unknown.** Initial ground disturbance should occur outside of nesting season, or conduct pre-construction surveys and avoid any active nests found.
Progne subis purple martin	SSC, LR	Inhabits woodlands and lower-elevation coniferous forests. Nests in old woodpecker cavities and man-made structures. 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.
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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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.
Spizella atrogularis black-chinned sparrow	LR	Summer resident. Typically occurs on arid, rocky slopes with brushy vegetation, e.g. mixed chaparral, and sagebrush.	**Unlikely.** The Study Area does not contain chaparral or similar habitats with dense, mature brush.	**Presumed Absent.** No further recommendations for this species.
Strix occidentalis caurina northern spotted owl	FT, ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with old-growth conifers. In Marin 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.	**Unlikely.** The Study Area does not contain mature forest nor is any present in the immediate vicinity.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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.	**Unlikely.** The on-site pond lacks dense emergent vegetation and not provide suitable breeding habitat.	**Presumed Absent.** No further recommendations for this species.
Herpetofauna (Reptiles and Amphibians)				
Dicamptodon ensatus California giant salamander	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**Unlikely.** The on-site intermittent stream appears to have insufficient hydrology (depth, inundation duration) to support breeding by this species. The nearest occurrences in CNDDB are located at least 1.8 miles away in separate watershed to the north and northeast, within a perennial stream (CDFW 2018).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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.** The on-site pond is artificially lined, lacking vegetation and other typical habitat elements. On-site stream channels lack sufficient hydrology (depth, duration and character of inundation) to support any regular occupation by this species. The nearest occurrence in CNDDB is located approximately 1.8 miles to the northeast in a perennial stream (CDFW 2018).	**Presumed Absent.** No further recommendations for this species.
Rana boylii foothill yellow-legged frog	SC (T), SSC	Found in or near rocky streams in a variety of habitats; highly aquatic. Prefers partly-shaded, 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 on-site intermittent stream appears to have insufficient hydrology (depth, inundation) to support this species. The nearest occurrence in CNDDB is located approximately 1.8 miles to the northeast in a perennial stream (CDFW 2018).	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Rana draytonii California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, marshes, and stream pools. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	**Unlikely.** The on-site pond is artificially lined and lacks vegetation, while the stream channels lack sufficient hydrology (depth, duration and character of inundation) to support breeding by this species. The nearest occurrences in CNDDB in Napa County are located a minimum of 7.5 miles to the west (Sonoma County) and 9.4 miles to the southeast (Napa) (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	Spawn in the Sacramento River and the Klamath River. Spawn 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, they need 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.
Hypomesus transpacificus Delta smelt	FT, ST	Lives in 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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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.
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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
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.
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.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA	RESULTS AND RECOMMENDATIONS
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT	Found in riparian and oak savannah where elderberry (*Sambucus* sp.), the host plant, is present.	**No Potential.** Elderberry was not observed during the site visit; CNDDB occurrences are restricted to its southeastern-most portion (CDFW 2018).	**Not Present.** No further recommendations for this species.
Speyeria callippe callippe Callippe silverspot butterfly	FE	Two populations are recognized, on San Bruno Mountain and the Cordelia Hills. Host plant is *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.** Streams within the Study Area are not perennial and no offer typical habitat characteristics required by this species.	**Not Present.** No further recommendations for this species.

***Key to status codes:**

FC	Federal Candidate for Listing
FE	Federal Endangered
FEPA	Federal 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 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.

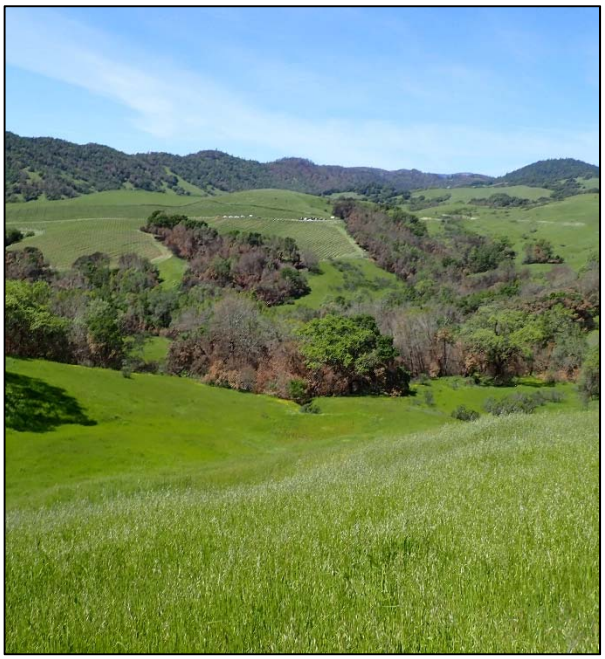
Presumed Absent. Species is presumed to not be present due to a lack of key habitat components.

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

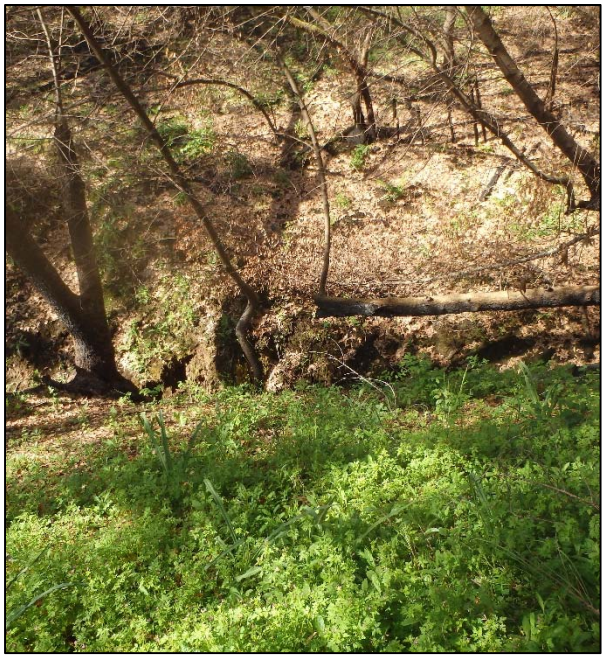
Representative Photographs



Mix of coast live oak woodland and non-native grassland

Native grassland: purple needlegrass grassland

Coast live oak woodland



Ephemeral drainage

Appendix E

Statement of Qualifications

Appendix E. Statement of Qualifications

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

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

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

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