EXHIBIT B-1

Biological Resources Reconnaissance Survey Report

Chappellet Vineyard LLC
Sage Canyon Road
Napa County, California (APN: 032-010-076, 032-010-094)

Prepared For:
Dave Pirio
Chappellet Vineyard LLC
1581 Sage Canyon Road
St. Helena, CA 94574

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

Jason Yakich
yakich@wra-ca.com

Date:
February 2020

WRA Project #:
28061

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

[Page left intentionally blank]

EXECUTIVE SUMMARY

This report details the regulatory background, methods, results, and recommendations of a Biological Resources Reconnaissance Survey (BRRS) for the proposed development of approximately 43.0 gross acres of vineyard and associated elements (Project Area) located at the Chappellet Vineyard LLC properties located on Sage Canyon Road in unincorporated Napa County, California (Study Area). WRA, Inc. performed field surveys on April 25, June 20, and July 10, 2018, with a subsequent tree survey performed on August 30 and 31, 2019.

The Study Area is composed of oak woodlands, chaparral, scrub, non-native grasslands, disturbed areas, seasonal wetlands, and streams. The proposed vineyards have been designed to avoid and minimize impacts to sensitive biological resources to a large extent. A much larger project was originally considered, and the current design included in this application is the result of multiple reductions in project size to specifically avoid these resources. While minimization of impacts to sensitive resources is a key element to this project, some impacts to special-status plants and sensitive land cover types are anticipated.

Seven sensitive land cover types are present within the Study Area, including coast live oak-California bay woodland, blue oak woodland, riparian coast live oak forest, coast live oak-blue oak forest, leather oak-chamise chaparral, common manzanita chaparral, and potentially jurisdictional waters (pond and streams). Blue oak woodland, riparian coast live oak woodland, and potentially jurisdictional waters are to be completely avoided and left intact. Approximately 4.5 acres of 75.7 total acres (approximately 6 percent) of sensitive biological communities are expected to be impacted, leaving approximately 94 percent of all sensitive land cover types intact.

Five special-status plants occur within the Study Area, including Sharsmith's western flax (*Hesperolinon sharsmithiae*, Rank 1B), narrow-anthered brodiaea (*Brodiaea leptandra*, Rank 1B), green Monardella (*Monardella viridis*, Rank 4), nodding harmonia (*Harmonia nutans*, Rank 4), and holly-leaved ceanothus (*Ceanothus purpureus*, Rank 1B). Sharsmith's flax, narrow anthered brodiaea, and nodding harmonia are to be completely avoided; the remainder will be largely avoided, but a limited amount will be removed within the proposed grading limits. A minimum of approximately 70 percent and 80 percent of the acreage occupied respectively by holly leaved ceanothus and green monardella is to be retained.

Some special-status birds, as well as non-status birds with baseline legal protections have the potential to occur in the Study Area. Likewise, the state candidate (for listing) foothill yellow-legged frog has the potential to occur. Mitigation measures and best management practices have been developed and provided herein to avoid impacts to these resources.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

LIST OF PREPARERS

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

DEFINITIONS

Study Area: The area throughout which the assessment and survey effort was performed, inclusive of approximately 232 acres spanning across the entirety of two parcels (APN: 032-010-076 and 032-010-094) on Sage Canyon Road

Project Area: The area within which the proposed vineyard(s) and associated avenues and access roads will be installed; area evaluated for potential impacts to sensitive biological resources

LIST OF ACRONYMS

BGEPA	Bald and Golden Eagle Protection Act
BIOS	Biogeographic Information and Observation System
BRRS	Biological Resources Reconnaissance Survey
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
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
NCBDR	Napa County Baseline Data Report
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OHWM	Ordinary High Water Mark
Rank	California Rare Plant Ranks
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
SFP	State Fully Protected Species
SWRCB	State Water Resource Control Board
TOB	Top of Bank
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WRA	WRA, Inc.

1.0 INTRODUCTION

1.1 Purpose of Assessment

On April 25, June 20, and July 10, 2018, WRA, Inc. (WRA) performed an assessment of biological resources at two Chappallet Vineyard, LLC parcels located on Sage Canyon Road, unincorporated Napa County (APNs: 032-010-076, 032-010-094; hereafter Study Area) (Figure A-1, Appendix A). The area assessed also included an approximately 13-acre portion of a directly adjacent parcel under the same ownership (Additional Area; APN: 032-010-022), to ensure that setbacks from sensitive biological resources (if warranted) are adequate. 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). In addition to those biological resources considered under CEQA, this study accounted for resources protected under federal, state, and local environmental regulations.

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

This report describes the results of the site 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, if necessary.

1.2 Project Summary

The proposed project (Project) involves the installation of five vineyard blocks totaling approximately 43.0 gross acres across the two subject parcels. Associated with the installation of the grape vines will be vineyard avenues, access roads, 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 September 15. By September 15, the site will be winterized with placement of straw wattles, seeding of vineyard avenues and planting areas, and straw mulch spread over disturbed areas as required by the ECP prepared for the Project.

2.0 REGULATORY BACKGROUND

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

2.1 Federal and State Regulatory Setting

2.1.1 Sensitive Land Cover Types

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

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

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

River watershed, recently adopted the General Permit for Vineyard Properties in the Napa River and Sonoma Creek Watersheds to comply with the WDRs for sediment and nutrient discharge from vineyards.

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

Sensitive Natural Communities: Sensitive natural communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2018a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2019). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2018) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). The Napa County Baseline Data Report (NCBDR) identifies sensitive Napa County natural communities, discussed further in Section 2.2 below (Napa County 2005).

2.1.2 Special-status Species

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

Wildlife: As with plants, special-status wildlife include species/taxa that have been listed or are formal candidates for such under ESA and/or CESA. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*)] that in some regards are similar

to those provided by ESA. The CFGC designates some species as Fully Protected (SFP), which indicates that take of that species cannot be authorized through a state permit. Additionally, CDFW Species of Special Concern (species that face extirpation in California if current population and habitat trends continue) are given special consideration under CEQA, and are therefore considered special-status species. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA. Finally, wildlife species/taxa named as "locally rare" in the NCBDR (Napa County 2005) are also treated as special-status for purposes of this assessment.

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

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

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

2.2 Napa County Regulatory Setting

Napa County General Plan and Napa County Code: Natural resource use in Napa County is 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 NCBDR (Napa County 2005). In addition to those biological communities identified by CDFW, the NCBDR also identifies biotic communities of limited distribution that "encompass less than 500 acres of cover within the County and are considered by local biological experts to be worthy of conservation" (Napa County 2005).

Natural Resource Goals and Policies

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

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

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

a) Prevent removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species.
b) In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible.
c) Promote protection from overgrazing and other destructive activities.

d) Encourage scientific study and require monitoring and active management where biotic communities and habitats of limited distribution or sensitive natural plant communities are threatened by the spread of invasive non-native species.
e) Require no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Where avoidance, restoration, or replacement is not feasible, preserve like habitat at a 2:1 ratio or greater within Napa County to avoid significant cumulative loss of valuable habitats.

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

a) In sensitive domestic water supply drainages where new development is required to retain between 40 and 60 percent [now 70 percent; see below] 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 [now a 3:1 ratio; see below] when retention of existing vegetation is found to be infeasible.

Removal of oak species limited in distribution shall be avoided to the maximum extent feasible.

d) Support hardwood cutting criteria that require retention of adequate stands of oak trees sufficient for wildlife, slope stabilization, soil production be left standing.
e) Maintain, the extent feasible, a mixture of oak species which is needed to ensure acorn production. Black, canyon, live, and brewer oaks as well as blue, white, scrub and live oaks are common associations.

General Provisions – 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 1. Napa County Stream Setbacks

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

In 2019, Napa County added to Code Section 18.108.025 the requirement of a 35-foot setback for ephemeral or intermittent streams not meeting Napa County's criteria for a stream. Likewise, 18.108.026 was added to the Napa County Code to include the requirement of a 50-foot setback from the delineated edge of wetland boundaries.

Vegetation Preservation and Replacement

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

Existing vegetation shall be preserved to the maximum extent consistent with the project. Vegetation shall not be removed if it is identified as being necessary for erosion control in the approved erosion control plan or if necessary for the preservation of threatened or endangered

plant or animal habitats as designated by state or federal agencies with jurisdiction and identified on the County's environmental sensitivity maps.

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

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

Water Quality and Tree Protection Ordinance

In 2019, the Napa County Board of Supervisors adopted the Water Quality and Tree Protection Ordinance (WQTPO) modifying Chapter 18.108 Conservation Regulations to provide additional protections to trees and water quality. As noted above, additional setbacks were added for ephemeral and intermittent drainages and wetlands (Chapters 18.108.025 and 18.108.026). In addition, the tree retention required by Chapter 18.108.027 in sensitive domestic water supply drainages was increased from 60 percent to 70 percent retention based on vegetation that existed within the parcel in 1993. In addition, Chapter 18.108.020 subsections C and D were added to the Code that require a minimum of 70 percent retention of canopy cover based on the vegetation that existed within the parcel in 2016, and the preservation or mitigation of trees at a minimum 3:1 ratio.

3.0 ENVIRONMENTAL SETTING

The approximately 232-acre Study Area is set across the entirety of two parcels; the approximately 13-acre Additional Area is located on a neighboring parcel, and directly adjacent to the northwestern portion of the Study Area. The Study Area is located in central Napa County, approximately 5.0 aerial miles northeast of the Yountville and 7.8 aerial miles southeast of St. Helena. It is situated in the Howell Mountains, north of Atlas Peak. 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 all aspects represented, and elevations ranging from approximately 1,350 to 1,850 feet above sea level. According to the *Soil Survey of Napa County* (USDA 1978), the Study Area is underlain by five soil mapping units: Hambright rock-Outcrop Complex, 30 to 75 percent slopes; Rock outcrop-Hambright complex, 50 to 75 percent slopes; Guenoc-Rock Outcrop Complex, 5 to 30 percent slope; Sobrante loam, 5 to 30 percent slope; Sobrante loam, 30 to 50 percent slope. The parent soil series of all the Study Area's mapping units are summarized below.

Hambright Series: This series consists of shallow loamy soils formed from residuum weathered from basic volcanic rock, and is situated on backslope hills at elevations ranging from 300 to 3,000 feet (CSRL 2019, USDA 1978). These soils are not considered hydric, and are well drained with medium to very rapid runoff, and moderate permeability (USDA 2012, USDA 1978). Soil pH is moderately acid (pH 5.6) throughout the profile. Native and naturalized vegetation includes annual grasses, with scattered blue oak (*Quercus douglasii*) and shrubs, while the land uses are predominantly livestock grazing (USDA 1978).

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

Guenoc Series: This series consists of moderately deep clay loam formed from weathered volcanic and metamorphic rocks, mainly basaltic, and is situated on foothills at elevations ranging from 400 to 3,000 feet (CSRL 2019, USDA 1978). These soils are not considered hydric, and are well drained with low to very high runoff and moderately slow to slow permeability (USDA 2012, USDA 1978). Soil pH is neutral (pH 7.0) throughout the profile. Native and naturalized vegetation includes grasslands, chaparral, and mixed evergreen woodlands, while the land uses are predominantly rangeland and watershed or agriculture (apples, pears, walnuts, grain) (USDA 1978).

Sobrante Series: This series consist of moderately deep silt loam formed from weathered basic igneous and metamorphic rocks and is situated on foothills at elevations ranging from 125 to 3,500 feet. (CSRL 2019, USDA 1978). These soils are not considered hydric, are well drained with low to very high runoff and moderate permeability (USDA 2012, USDA 1978). Soil pH is moderately acid (pH 6.0) to slightly acid (pH 6.3). Native and naturalized vegetation includes oak savannah and perennial grasslands, while the land use is predominately range, irrigated hay and dry land crops (USDA 1978).

3.2 Climate and Hydrology

The Study Area is located above the valley fog incursion zone of Napa County. The average monthly maximum temperature of St. Helena is 89.5 degrees Fahrenheit, while the average monthly minimum temperature is 36.1 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with an annual average of 36.47 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 31.35 inches (USDA 2020).

The local watershed is Lake Hennessey-Conn Creek (HUC 12: 180500020102) and the regional watershed is San Pablo Bay Estuaries (HUC 8: 18050002). The Study Area is situated in the Napa County Planning Watershed of Lake Hennessey-Rector Reservoir. There are two unnamed dashed blue-line stream in the Study Area (USGS 2018). One stream is mapped as Riverine and the other Freshwater Forested/Shrub Wetland in the National Wetlands Inventory (NWI; USFWS 2019a), and Fluvial in the California Aquatic Resources Inventory (CARI; SFEI 2019). NWI and SFEI also map two freshwater ponds along the main drainage. The primary hydrologic sources are direct precipitation and consequent sheet- and in-channel flows. Precipitation in the majority of the Study Area infiltrates quickly do to coarse textured soils with a high percent of rock content. Detailed description of aquatic resources are described in Section 5.1 below.

3.3 Land Cover and Land Use

The Study Area is largely undeveloped and is composed of oak woodlands, chaparral, scrub, non-native grasslands, and streams; the adjacent Additional Area is undeveloped. The Study Area was not burned in the Atlas Fire of October 2017, however as preventative measures a large area of vegetation was cleared as a fire break. Detailed plant community descriptions are included in Section 5.1 below, and all observed plants are included in Appendix B.

Currently the Study Area has no dwellings and unpaved ranch roads for access. Vineyards are also present in portions of the Study Area. Regional land uses include rural residential, wineries, livestock grazing, and vineyards (Google Earth 2019). Historically, the region was open rangeland of larger ranches and vineyards. There is no history of intensive agriculture, quarrying, mining, or timbering in the Study Area (Historic Aerials 2019).

4.0 ASSESSMENT METHODS

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

- *Soil Survey of Napa County, California* (USDA 1978)
- Yountville 7.5-minute quadrangle (USGS 1978)
- Contemporary aerial photographs (Google Earth 2018)
- Historical aerial photographs (Historical Aerials 2018)
- National Wetlands Inventory (USFWS 2018a)
- California Natural Diversity Database (CNDDB, CDFW 2019)
- 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 2018a)
- *eBird* Online Database (eBird 2019)
- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- *Breeding Birds of Napa County, California* (Smith 2003)
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003)
- *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009)
- *A Manual of California Vegetation Online* (CNPS 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 2018a)

Database searches (i.e., CNDDB, CNPS) focused on the St. Helena, Chiles Valley, Lake Berryessa, Rutherford, Yountville, Capell Valley, Sonoma, Napa, and Mt. George USGS 7.5-minute quadrangles for special-status plants. The special-status wildlife evaluation was based

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

Following the remote assessment, a botanist with 40-hour Corps wetland delineation and wildlife biologist training traversed the entire Study Area on foot to document: (1) 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 Land Cover Types

4.1.1 Terrestrial Land Cover Types

WRA biologists evaluated the Study Area and Additional Area's terrestrial land cover types (e.g., natural communities, built environment) to determine if such areas have the potential to support special-status plants or wildlife. In most instances, cover types are delineated based on distinct shifts in plant assemblage (vegetation), and follow the *California Natural Community List* (CDFW 2018a), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *A Manual of California Vegetation, Online Edition* (CNPS 2019b).

Terrestrial land cover types were evaluated to determine if they would be considered sensitive. Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled (S1/G1), imperiled (S2/G2), or vulnerable (S3/G3), on the *List of Vegetation Alliances*, were considered as part of this evaluation.[2] Additionally, any sensitive natural communities as described in the Napa County Baseline Data Report (NCBDR; Napa County 2005) or General Plan (Napa County 2008) were considered.

4.1.2 Aquatic Resources

Aquatic 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.

This site assessment does not constitute a formal wetland delineation; however, the surveys looked for superficial indicators of wetlands such as hydrophytic vegetation (i.e., plant communities dominated by wetland species), evidence of inundation or flowing water, saturated soils and seepage, and topographic depressions/swales. None were noted, so there was no need for WRA biologists to perform 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).

If streams potentially jurisdictional under the CWA and/or the CFGC are noted on a site, they are delineated using a mix of surveyed topography data, high resolution aerial photographs, and a sub-meter GPS unit. The ordinary high water mark would be used to determine the extent of potential Section 404 jurisdiction, while the top-of-bank would be used to determine the extent of CFGC Section 1602 and 401. Streams with associated woody vegetation were assessed to

[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).

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).

4.1.3 Tree Survey

On August 30 and 31, 2019 WRA performed a tree survey within the Project Area to record the species and diameter-at-breast-height (DBH; to the nearest inch) of trees to be removed for the proposed vineyard development and associated Project elements. Due to subsequent Project revisions (to avoid or otherwise minimize impacts to sensitive biological resources), some portions of the current Project Area were not surveyed at that time.

4.2 Special-status Species

4.2.1 General Assessment

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

A site visit was made on April 25, 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 visits, 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, June 20, and July 10, 2018; the Additional Area was also covered during this effort. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. The field surveys were conducted by botanists familiar with the flora of Napa and surrounding counties. The surveys were performed in accordance with those outlined by Napa County (2016b), which follow those described by resource experts and agencies (CNPS 2001, CDFW 2018b, USFWS 1996). Plants were identified using *The Jepson Manual, 2nd Edition* (Baldwin et. al. 2012) and Jepson Flora Project (eFlora 2018), to the taxonomic level necessary to determine whether or not they were special-status. 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. On-site trees proposed for removal were assessed for their potential to support roosting by special-status bats; primary relevant characteristics include the presence of large/substantial cavities and hollows. Otherwise, targeted assessments and protocol-level surveys were deemed inapplicable or infeasible at the time of the site visits, 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 2019c) and the NMFS Essential Fish Habitat Mapper (NMFS 2019) 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 2019), and the NCBDR (Napa County 2005). Additionally, aerial imagery (Google 2019) 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 Land Cover Types

As shown in Figure A-2 (Appendix A), WRA observed 14 land cover types within the Study Area and Additional Area. The non-sensitive biological communities present include agriculture, chamise chaparral, coast live oak-California bay scrub, coyote brush scrub, disturbed, leather oak chaparral, and non-native grassland. Sensitive biological communities present include coast live oak-California bay woodland, blue oak woodland, riparian coast live oak forest, coast live oak-blue oak forest, common manzanita chaparral, leather oak-chamise chaparral, and potential waters of the U.S. (streams and ponds).

5.1.1 Terrestrial Land Cover Types

Disturbed (No MVC Alliance) CDFW Rank: None. Areas mapped as disturbed is within the footprint of vegetation clearing to create a fire break. This area is dominated by non-native grasses and plants within common erosion control mix such as wheat (*Triticum* sp.) and clover (*Trifolium* spp.)

Agriculture (No MVC Alliance). CDFW Rank: None. Agriculture areas are those dedicated to growing crops where significant land alterations have converted and/or disrupted natural processes in the localized landscape. Vegetation is almost entirely composed of planted agricultural crops.

Within the Study Area, agriculture areas include vineyards. The Study Area contains 13.81 acres of agriculture, 0.7 acre of which is within the Project Area.

Chamise Chaparral (*Adenostoma fasciculatum* Shrubland Alliance). CDFW Rank: G5 S5. Chamise chaparral typically occurs on varied topography where soils are shallow over colluvium or bedrock throughout cismontane California. Chamise is dominant in the intermittent to continuous canopy of the shrub layer (Sawyer et. al. 2009). In Napa County, chamise chaparral occurs throughout, on dry, rocky south to southwest facing slopes. Chamise is the dominant species with other shrubs present in small amounts (Napa County 2005).

Within the Study Area, chamise chaparral occurs throughout and is the most abundant natural biological community. In these areas, chamise was the dominant shrub species forming an open to continuous canopy with coyote bush (*Baccharis pilularis*), leather oak (*Quercus durata*), and holly-leaved ceanothus (*Ceanothus purpureus*) characteristically present. In locations where the canopy was open, non-native grasses and Sonoma salvia (*Salvia sonomensis*) were dominant understory plants. The Study Area contains 74.45 acres of chamise chaparral, 14.98 of which are within the Project Area. The Additional Area also contains 9.49 acres of this community. Chamise chaparral is synonymous with the chamise alliance biotic community in the NCLC (Thorne et al. 2004). This community is not considered sensitive by Napa County, CDFW, or any other regulatory entity.

Non-native Annual Grassland – Wild Oat Grassland (*Avena barbata* Semi-Natural Herbaceous Stands). CDFW Rank: None. Non-native annual grasslands are known throughout California on all aspects and topographic positions underlain by a variety of substrates (Holland 1986). Within the Study Area, the grasslands are best described as wild oat grasslands (CNPS 2019b). The grasslands are dominated by non-native grasses including wild oat (*Avena barbata*), soft chess (*Bromus hordeaceus*), dogtail grass (*Cynosurus echinatus*), and brome fescue (*Festuca bromoides*). Native wildflowers provide a characteristic component of these grasslands with such species as sky lupine (*Lupinus nanus*), baby blue eyes (*Nemophila menziesii* var. *menziesii*), blue-eyed grass (*Sisyrinchium bellum*), elegant brodiaea (*Brodiaea elegans*), and dense owl's clover (*Castilleja densiflora*). The Study Area contains 19.25 acres of non-native grassland, of which approximately 2.48 acres are located within the Project Area. 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.

Coast Live Oak Shrubland Alliance. CDFW Rank: None. Coast live oak shrubland is not currently described within the literature (CNPS 2019b). This vegetation is different from coast live oak

woodland, as the structure of coast live oak are shrubby, having two to several stems from the base, a broad crown, and generally less than 16 feet in height (Sawyer et. al. 2009). Coast live oak is a widespread and common species in shrublands, forest, and woodlands of the state, occurring within the Coast Ranges from Humboldt County to the Mexico border (CNPS 2019b). Shrubby stands are likely the result of abiotic factors, including hydrology, topographic position, soils, and/or fire regime.

Within the Study Area, coast live oak shrubland is located in various locations underlain by Hambright-Rock Outcrop soils. The canopy is continuous and co-dominated by California bay (*Umbellularia californica*) with common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*) and chamise as characteristically present. The understory is sparse due to shading, high organic matter (leaf litter), and shallow soils. The Study Area contains 28.42 acres of coast live oak scrub, of which 8.96 acres are located within the Project Area. The Additional Area also contains 0.65 acre of this community. Coast live oak shrubland is most similar to the coast live oak woodland alliance biotic community in the NCLC (Thorne et al. 2004). However, this community is not considered sensitive by Napa County, CDFW, or any other regulatory entity due largely to the typical limited growth (stunting) of trees that precludes the formation of mature oak woodland.

Coyote Brush Scrub (*Baccharis pilularis* Shrubland Alliance). CDFW Rank: G5 S5. Coyote brush scrub is known from the outer Coast Ranges and Sierra Nevada Foothills from Del Norte County south to San Diego County. This vegetation community is typically located on river mouths, riparian areas, terraces, stabilized dunes, coastal bluffs, open hillsides, and ridgelines on all aspects underlain by variable substrate of sand to clay (CNPS 2019b).

Within the Study Area, coyote brush scrub is located in a previously disturbed area which forms the berm and a basin adjacent to the existing pond. The canopy was intermittent and the understory was dominated by non-native grassland. The Study Area contains 1.14 acres of coyote brush scrub, none of which are located within the Project Area. This community is synonymous with the coyote brush alliance biotic community in the NCLC (Thorne et al. 2004). This community is not considered sensitive by Napa County, CDFW, or any other regulatory entity.

Leather Oak Chaparral (*Quercus durata* Shrubland Alliance). CDFW Rank: G4 S4. Leather oak chaparral typically occurs on varied topography where soils are shallow, rocky and derived from ultramafic substrates. Leather oak is dominant or co-dominant in the open to continuous shrub layer. Stands within the northern California Coast Ranges (i.e. Napa County) are also known to occur on Franciscan formation and volcanic substrates (CNPS 2019b).

Within the Study Area, leather oak chaparral is located on shallow, rocky soils derived from volcanic substrates, occurring as pockets amongst chamise chaparral. Leather oak is dominant with chamise, Fremont's silk tassel (*Garrya fremontii*), common manzanita, chaparral pea (*Pickeringia californica*), and interior live oak (*Quercus wislizenii*) as co-dominants. Species diagnostic of serpentine soils are not associated with the leather oak chaparral within the Study Area. The shrub canopy is continuous, allowing for limited understory growth. The Study Area contains 6.22 acres of leather oak chaparral, of which 4.36 acres are located within the Project Area. This community is most similar to Leather Oak-Whiteleaf Manzanita-Chamise Xeric Serpentine not formally described (NFD) Super Alliance in the NCLC (Thorne et al. 2004). This community is considered sensitive by Napa County (Napa County 2005), but this status is specific to stands situated on ultramafic (i.e., serpentine) substrates. The chaparral present in the Study Area is underlain by volcanic-derived substrates and thus considered non-sensitive.

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance). CDFW Rank: G5 S4. Coast live oak woodlands occur in the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Humboldt County south to the Mexico border (Sawyer et al. 2009, CNPS 2019b). These woodlands are typically situated on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (CNPS 2019b).

Within the Study Area, coast live oak woodland best fits several vegetation associations, including Coast Live Oak-Blue Oak Woodland (*Quercus agrifolia-Quercus douglasii* Association) and Coast Live Oak-California Bay Woodland (*Quercus agrifolia-Umbellularia californica* Association) (CNPS 2019b). Within this vegetation alliance, coast live oak is the dominant or co-dominant with California bay, blue oak, black oak (*Quercus kelloggii*), and Pacific madrone (*Arbutus menziesii*). Predominant understory species include poison oak (*Toxicodendron diversilobum*), common bedstraw (*Galium aparine*), California Helianthella (*Helianthella californica*), Italian thistle (*Carduus pycnocephalus*), honeysuckle (*Lonicera hispidula*), Pacific sanicle (*Sanicula crassicaulis*), onion grass (*Melica* spp.), blue dicks (*Dichelostemma capitatum*), and numerous non-native annual grasses.

Coast live oak woodland is also associated with the lower reaches of the un-named stream which transects the Study Area. Coast live oak woodland associated with the stream is considered riparian vegetation.

The Study Area contains 55.34 total acres of coast live oak woodland, of which 2.33 acres are located within the Project Area. The Additional Area also contains 2.27 acres of coast live oak woodland. This community is synonymous with the Coast Live Oak Alliance biotic community in the NCLC (Thorne et al. 2004). These woodlands provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with woodlands. The CDFW does not consider coast live oak woodland a sensitive natural community. Conversely, these woodlands are considered sensitive Napa County under the General Plan Conservation Element Policy CON-24 (oak woodland retention). The riparian coast live oak woodland is also protected under Section 1600 of the CFGC.

Blue Oak Woodland (*Quercus douglasii* Woodland Alliance). CDFW Rank: G4 S4. In California, blue oak woodlands typically occur on valley bottoms, foothills and rocky outcrops on shallow, moderately to excessively drained soils low in fertility within the California Floristic Province (CNPS 2019b).

Within the Study Area, blue oak woodland is located in the northern portion on loamy soils. Blue oak was dominant or co-dominant in the canopy with coast live oak and black oak. The understory is dominated by non-native grassland as described above. Scattered patches of common manzanita occur in the understory.

The Study Area contains 8.50 acres of blue oak woodland, none of which is located within the Project Area. This community is synonymous with the Blue Oak Alliance biotic community in the NCLC (Thorne et al. 2004). These woodlands provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with woodlands. The CDFW does not consider blue oak woodland a sensitive natural community. Conversely, these woodlands are considered sensitive Napa County under the General Plan Conservation Element Policy CON-24 (oak woodland retention).

Leather Oak-Chamise Chaparral (*Quercus durata-Adenostoma fasciculata* Provisional Shrubland Association). CDFW Rank: G3 S3. This vegetation association is similar to the Leather Oak Chaparral described above. However, the areas mapped as this type have a higher canopy coverage of chamise. Within the Study Area, this vegetation type is located in each parcel on shallow, rocky soils.

The Study Area contains 6.16 acres of leather oak-chamise chaparral, of which 1.08 acres are located within the Project Area, and the Additional Area also contains 0.65 acre of this community. Leather oak-chamise chaparral is most similar to Leather Oak-Whiteleaf Manzanita-Chamise Xeric Serpentine not formally described (NFD) Super Alliance in the NCLC (Thorne et al. 2004). These shrublands provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with shrublands. While the CDFW does not consider leather oak chaparral as a sensitive natural community on the alliance level, this association is ranked as sensitive by CDFW.

Common Manzanita Chaparral (*Arctostaphylos manzanita* Shrubland Alliance). CDFW Rank: G3 S3. Common manzanita chaparral typically occurs on mid to upper slopes and ridges in transitional settings between grassland and oak woodland or closed-cone coniferous forest, or associated with extensive old growth chaparral. Soils are sandy to clayey loam, often derived from sandstone or volcanic (CNPS 2019b).

Within the Study Area, common manzanita is located in both parcels, situated on edges of chamise or coast live oak woodland. The shrub canopy is dense and continuous, precluding most understory plants. The Study Area contains 4.06 acres of common manzanita chaparral, of which 1.11 acres are located within the Project Area. The Additional Area also contains 0.31 acre of this community. Common manzanita chaparral is synonymous with the Sclerophyllous Shrubland Formation biotic community in the NCLC (Thorne et al. 2004). These shrublands provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with shrublands. This alliance is ranked as sensitive by CDFW.

5.1.2 Aquatic Resources

Ephemeral, Intermittent Streams (no vegetation alliance). Section 404/401 CWA; CFGC Section 1602: The Study Area contains one primary intermittent stream which is an unnamed dashed blue-line stream on the Yountville 7.5-minute quadrangle (USGS 1978). Two ephemeral tributaries of the stream as well five additional ephemeral streams are also present within the Study Area. The primary stream flows into the reservoir, only exiting if water levels exceed a certain depth. An overflow channel is located at the northeastern edge of the reservoir which serves as the overflow stream. Water from this stream eventually flows off-site to Lake Hennessey located to the northwest. The remaining ephemeral drainages flow south toward Rector Reservoir.

Flows in in the intermittent streams run for the entire wet season and receive groundwater discharge to the channel extending their surface hydrology later in the season, but dry out by late spring/early summer. The ephemeral streams run during and following rain events, but draw down quickly after storms have subsided. The upper reaches of the streams are high-gradient, while the primary stream in the central portion of the Study Area is moderate- to low-gradient. The banks of the primary stream is shallow to deep, steep and primarily of stable, fine sediments (clays, loams), while the beds contain a mix of sorted sands, gravels, and cobbles with exposed bed rock. The banks of the ephemeral streams are shallow and of stable, fine sediment, while

the beds contain mixed gravels and fine sediment. All of the streams are too narrow, too shallow, and do not have an extended hydrology to support anadromous fishes, or have natural movement barriers (i.e. the berm along the reservoir).

All of these streams are likely jurisdictional under Section 404/401 of the CWA and Section 1602 of the CFGC and are therefore considered sensitive natural resources. The ephemeral stream located in the southeast corner of the western parcel, as well as the intermittent stream are mapped USGS streams and therefore meets the Napa County stream definition pursuant to Napa County Code 18.108.025. The remainder of the ephemeral drainages do not meet the Napa County stream definition.

Pond/Reservoir (no vegetation alliance). Section 404/401 CWA. Two pond/reservoirs are located adjacent to the east side of the main access road. Based on aerial imagery, the more southern feature remains filled for the entire year, whereas the northern feature dries up each year. The intermittent stream connects the features; however, water only flows from the southern feature if water levels exceed a certain depth. The southern feature has a berm along the northern edge, while the northern feature is a swale in the topography with no berm. However, vegetation outside of the features includes non-native grassland and coast live oak woodland. These features are likely under the jurisdiction of the Corps and/or RWQCB under Section 404/401 or the Porter Cologne Act, and CDFW under Section 1600 of the CFGC.

A5.1.3 Tree Survey

A total of 371 trees were inventoried within the Project Area. The tree species recorded were coast live oak, blue oak, and California bay, all of which are native to Napa County. Tree locations are shown in Figure A-3 (Appendix A), and a complete list of all trees surveyed is presented in Appendix E.

The number and DBH range of trees by species is summarized in Table 2. The largest tree recorded was a multi-stemmed coast live oak with a total DBH of 163-inches; all trees with a DBH of approximately 70 inches or greater were multi-stemmed. The DBH of approximately 17 percent of the surveyed trees (57 trees) was less than 12 inches.

Table 2. Tree Survey Results Summary

Species	# Present	DBH Range (in.)
coast live oak (*Quercus agrifolia*)	137	6 – 163*
blue oak (*Q. douglasii*)	47	10 – 108*
California bay (*Umbellularia californica*)	144	6 –146*
Total	**328**	**6 -163***

* All maximum DBH values represent multi-stemmed trees.

Based on a review of aerial photography, approximately 80 trees within the Project Area were not inventoried in August 2019. The majority of these trees are in Block A (approximately 40 trees) and Block C (approximately 20 trees), with smaller numbers of trees located within proposed roads/avenues between blocks.

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, 83 special-status plant species have been documented in the vicinity of the Study Area. Occurrences of these species within 5 miles of the Study Area are shown in Figure A-4 (Appendix A). As outlined in Appendix C, 27 of these plants were assessed as having the potential to occur in the Study Area. The remaining species documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

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

WRA biologists conducted the protocol-level surveys during a period sufficient to identify all 27 special-status plant species with the potential to occur. Five special-status plant were observed in the Study Area during protocol-level surveys: narrow-anthered brodiaea (*Brodiaea leptandra*, CRPR 1B), holly-leaved ceanothus (*Ceanothus purpureus*, CRPR 1B), nodding harmonia (*Harmonia nutans*, CRPR 4), Sharsmith's western flax (*Hesperolinon sharsmithiae*, CRPR 1B), and green monardella (*Monardella viridis*, CRPR 4). Populations of these species within the Study Area are shown in Figure A-5 (Appendix A).

Special-status Plants Present in the Study Area

Narrow-anthered brodiaea (*Brodiaea leptandra*). CRPR 1B. High Potential (Observed). Narrow-anthered brodiaea is a perennial herb in the brodiaea family (Themidaceae) that blooms from May to July. It typically occurs in broadleaf upland forest, chaparral, and lower montane coniferous forest habitat at elevations ranging from 360 to 3,000 feet (CDFW 2018a, CNPS 2018a). Soil survey data from documented locations suggest this species is associated with gravelly loam and clay loam substrates derived from rhyolites, metavolcanics, and serpentine (CDFW 2018a). Known associated species include chamise, mountain mahogany (*Cercocarpus betuloides*), scrub oak (*Quercus berberidifolia*), white oak, Ponderosa pine (*Pinus ponderosa*), knobcone pine (*P. attenuata*), Pacific madrone (*Arbutus menziesii*), manzanitas (*Arctostaphylos* spp.), buck brush (*Ceanothus cuneatus*), harvest brodiaea (*Brodiaea elegans*), California oat grass (*Danthonia californica*), narrow leaf mules ears (*Wyethia angustifolia*), and Sonoma sage (CDFW 2019).

Approximately 17 individuals were observed within less than 0.01 acre of the entire Study Area during the April 2018 survey, and approximately 36 individuals were observed in the Additional Area. No individuals are located within the Project Area.

Holly-leaved ceanothus (*Ceanothus purpureus*). CRPR 1B. High Potential (Observed). Holly-leafed ceanothus is an evergreen shrub in the buckhorn family (Rhamnaceae) that blooms from February to April, but is typically identifiable by vegetative structures throughout the year. It typically occurs on rocky slopes underlain by volcanic substrate in chaparral and cismontane woodland habitat at elevations ranging from 390 to 2080 feet (CDFW 2018a, CNPS 2018a). Observed associated species include Stanford manzanita (*Arctostaphylos stanfordiana*), hoary manzanita (*A. canescens*), Sonoma sage, pitcher sage (*Lepechinia calycina*), wavy-leaf ceanothus (*Ceanothus foliosus*), toyon (*Heteromeles arbutifolia*), coyote brush, sticky monkey, redberry (*Rhamnus crocea*), chamise, and Fremont star lily (*Toxicoscordion fremontii*) (CDFW 2019).

Approximately 1,322 individuals within 33.48 acres were observed within the entire Study Area during the April and June surveys, and approximately 226 individuals within 4.49 acres were observed in the Additional Area. Approximately 356 individuals within 9.96 acres are located in the Project Area.

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

Approximately 21 individuals within 0.08 acre were observed within the entire Study Area during the April surveys. No individuals are within the Project Area.

Sharsmith's western flax (*Hesperolinon sharsmithiae*). CRPR 1B. High Potential (Observed). Sharsmith's western flax is an annual herb in the flax (Linaceae) family that blooms from May through July. It typically occurs on serpentinite open chaparral habitat ranging in elevations from 884 through 1,000 feet (CNPS 2018a). Known associated species includes sergeant cypress, white leaf manzanita, leather oak, brewer's jewelflower (*Streptanthus breweri*), green jewelflower (*Streptanthus hesperidis*) Jepson's Navarretia (*Navarretia jepsonii*), popcorn flower (*Cryptantha microstachys*), Napa cryptantha (*Cryptantha hispidula*), and Fringed onion (*Allium fimbriatum*) (CDFW 2019).

Approximately 10 individuals within less than 0.01 acre were observed throughout the entire Study Area during the June survey. No individuals are within the Project Area.

Green monardella (*Monardella viridis*) CRPR 4. High Potential (Observed). Green monardella is a perennial rhizomatous herb in the mint (Lamiaceae) family that blooms from June through September. It typically occurs in broadleafed upland forest, chaparral, and cismontane woodland habitat at elevations ranging from 300 to 3,100 feet (CNPS 2018a). Known associated species include boxleaf silk tassel (*Garrya sp.*), ceanothus, mahogany, and Stanford's manzanita (CCH 2018).

Approximately 347 individuals within 0.51 acre were observed throughout the entire Study Area. Approximately 77 individuals within 0.10 acre are within the Project Area.

Special-status Plants Not Observed in the Study Area

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

- Franciscan onion (*Allium peninsulare* var. *franciscanum*); CRPR 1B
- Napa false indigo (*Amorpha californica* var. *napensis*); CRPR 1B
- Bent-flowered fiddleneck (*Amsinckia lunaris*); CRPR 1B
- Brewer's milk-vetch (*Astragalus breweri*); CRPR 4
- Clara Hunt's milk-vetch (*A. claranus*); FE, ST, CRPR 1B
- Big-scale balsamroot (*Balsamorhiza macrolepis*); CRPR 1B
- Narrow-anthered Brodiaea (*Brodiaea leptandra*); CRPR 1B
- Brewer's Calandrinia (*Calandrinia breweri*); CRPR 4
- Small-flowered Calycadenia (*Calycadenia micrantha*); CRPR 1B
- Johnny nip (*Castilleja ambigua* ssp. *ambigua*); CRPR 4
- Streamside daisy (*Erigeron biolettii*); CRPR 3
- Greene's narrow-leaved daisy (*E. greenei*); CRPR 1B
- Hayfield tarplant (*Hemizonia congesta* ssp. *congesta*); CRPR 1B
- Jepson's leptosiphon (*Leptosiphon jepsonii*); CRPR 1B
- Redwood lily (*Lilium rubescens*); CRPR 4
- Napa lomatium (*Lomatium repostum*); CRPR 4
- Cobb Mountain lupine (*Lupinus sericatus*); CRPR 1B
- Mt. Diablo cottonweed (*Micropus amphibolus*); CRPR 3
- Marin checkerbloom (*Sidalcea hickmanii* ssp. *viridis*); CRPR 1B
- Napa bluecurls (*Trichostema ruygtii*); CRPR 1B
- Showy Rancheria clover (*Trifolium amoenum*); FE, CRPR 1B
- Dark-mouthed Triteleia (*Triteleia lugens*); CRPR 4
- Oval-leaved viburnum (*Viburnum ellipticum*); CRPR 2B

5.2.2 Special-status Wildlife Species

A total of 62 special-status wildlife species have been documented in Napa County (CDFW 2019, Napa County 2005). Occurrences of these species in CNDDB within 5 miles of the Study Area are shown in Figure A-6 (Appendix A). As outlined in Appendix C, three of these species were assessed as having the potential to occur in the Study Area. The remaining species documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

- Aquatic habitats (e.g., rivers, estuaries) necessary to support the special-status wildlife species are not present in the Study Area;
- Vegetation habitats (e.g., coast redwood forest, coastal prairie) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present in the Study Area;

- Physical structures and vegetation (e.g., mines/caves, old-growth coniferous trees) necessary to provide nesting, cover, and/or foraging habitat to support the special-status wildlife species are not present in the Study Area;
- Trees within the Project Area lacked sufficiently large/deep cavities and hollows to provide any typical bat roosting substrates;
- Host plants (e.g., dog violet, harlequin lotus) necessary to provide larval and nectar resources for the special-status wildlife species are not present in the Study Area;
- The Study Area is outside (e.g., north of, west of) of the special-status wildlife species documented local range.

Special-status wildlife species with the potential to occur in the Study Area are discussed below.

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

Black-chinned sparrow (*Spizella atrogularis*). Locally Rare. Moderate Potential. The black-chinned sparrow is a summer resident in dry brushlands and mountain slopes up to 8,800 feet in elevation. This species breeds in California in the inner north and south Coast Ranges, Transverse Range, Peninsular Range, the western slopes of the Sierra Nevada from Kern to Mariposa Counties, irregularly in Tehama County, and locally on mountains of southeastern California (Tenney 1997). This species inhabits scrub, chaparral, and sagebrush habitats and prefers sloping, dense, xeric environments, often with ceanothus, manzanita, sagebrush, and chamise. Pairs nest in the interior of dense shrubs (Tenney 1997). This is species is rare in Napa County, but the Study Area provides stands of dense, mature chaparral that are suitable for nesting.

Foothill yellow-legged frog (*Rana boylii*). State Candidate (Threatened), CDFW Species of Special Concern. Moderate Potential. The foothill yellow-legged frog (FYLF) historically occurred in coastal and mountain streams from southern Oregon to Los Angeles County, but has declined in many parts of this range. This species is strongly associated with perennial streams, and prefers shallow, flowing water with a rocky substrate. FYLF individuals do not typically move overland and are rarely observed far from a source of permanent water (typically less than ten feet). Aquatic breeding sites are in-stream, often near confluences, with eggs typically deposited behind or sometimes under rocks in low-flow areas with cobble and/or gravel (Thomson et al. 2016). Metamorphosis takes at least 15 weeks. Portions of intermittent streams within the Study Area provide a rocky substrate and may be occupied when the stream is flowing; any individuals present would presumably retreat downstream when flow ceases. Breeding within on-site streams is unlikely given the limited water depth and intermittent nature of the flow. There were

no observations of this species during the site visits; however, a focused survey was not performed during this assessment.

5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Study Area does not contain any designated Critical Habitat (USFWS 2019c) or EFH (NMFS 2019). While streams are present within the Study Area, they are generally high-gradient and lack suitable hydrology (depth, duration, extent) to support anadromous fishes (e.g., special-status salmonids).

As per CDFW and Caltrans (2010) most of the Study Area (including the Project Area) is located within a mapped "Essential Connectivity Area," specifically a large, north-south oriented tract of land east of Napa Valley. The Study Area is located near the western boundary of this mapped area, which is approximately 9 miles wide in that vicinity. At the scale of landscape linkages, this tract provides connectivity between baylands of San Pablo Bay and areas from northern Napa County northward. Given the relatively small size of the Study Area (relative to the width of the corridor tract) and the lack of apparent development impacts within the more central portion of this tract, agricultural expansion within the Study Area is in and of itself unlikely to result in any significant impacts to wildlife movement or migration at the landscape-linkage scale. At a more local scale, the Study Area provides connectivity between a patchwork of undeveloped lands (primarily chaparral and woodlands/forest), and agricultural (vineyards) and low-density, rural developments.

While the Project (installation of five new vineyard blocks) will result in portions of the site having reduced potential for on-site wildlife movement, the retention of other on-site areas of contiguous chaparral, grassland, and woodland, with direct connectivity with similar habitats on neighboring properties, will allow for continued local wildlife movement. The primary example is within the eastern parcel of the Study Area, where relatively wide areas of intact native vegetation will remain interstitial to the blocks, allowing for movement from south and west of the parcel to its northeast. A similarly large corridor of grassland and woodland will remain in the western parcel. The Project's fencing plan (included in the ECP application) indicates that areas interstitial to vineyard blocks will remain unfenced in the eastern parcel, and that new fencing in the western parcel will not restrict potential movement relative to existing conditions (e.g., considering existing on-site and adjacent fencing). Additionally, the on-site stream courses presumably provide at least some corridor function for seasonal localized movement, and these will be avoided by the Project.

6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

6.1 Land Cover Types

6.1.1 Terrestrial Land Cover Types

<u>Oak Woodlands</u>

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, as

amended in 2019, specifically calls for the preservation of oak woodland (on an acreage basis) at a 3:1 ratio. The Study Area contains 63.84 acres of oak woodlands in total, with only 2.03 acres of oak woodland within the Project Area. The Project proposes to retain oak woodlands at greater than a 26:1 ratio, well in excess of the required 3:1 ratio and therefore is in compliance with CON-24. (This retention ratio does not include the approximately 2.3 acres that are subject to potential preservation in the Additional Area.)

Other Sensitive Land Cover Types

The Study Area contains two additional sensitive natural community types: common manzanita chaparral and leather oak-chamise chaparral. While neither is considered sensitive by Napa County, the CDFW lists both as sensitive (CDFW 2018b). Policy CON-17e calls for the avoidance, restoration, replacement, and/or preservation of other sensitive biological communities, and stipulates that preservation should be at a 2:1 ratio.

The Study Area contains 4.06 acres of common manzanita chaparral, with 0.31 acre also within the Additional Area; only 1.11 acres of this community are within the Project Area. As such, the on-site retention ratio of this vegetation community will be approximately 2.7:1 (without the Additional Area) or up to approximately 2.9:1 (Additional Area included). For leather oak-chamise chaparral, the Study Area contains 6.16 acres, with 0.48 acre also within the Additional Area; only 1.08 acres are within the Project Area, resulting in a retention ratio of approximately 4.7: 1 (without the Additional Area) or approximately 5.1:1 (Additional Area included).

As retention for both communities is in excess of the required 2:1 ratio, the Project is in compliance with CON 17e.

6.1.2 Aquatic Natural Resources

The intermittent stream and the ephemeral stream in the southeast corner of the western parcel meet the Napa County stream definitions. The remainder of the streams (all of which are ephemeral) do not meet the definition. In accordance with County Code 18.108.025, all of the streams will be entirely avoided with a 35-foot setback from top-of-bank (TOB) of the ephemeral streams near proposed vineyards, and greater than 35-foot setbacks from all other streams. No project work is proposed within the vicinity of the ponds/reservoirs. Ground-breaking occurring during the dry season and protective setbacks will buffer effects to these aquatic natural resources. The following recommendations are put forth to sufficiently protect aquatic natural resources.

> Recommendation 1: Grading shall occur during the dry season (April 1 through September 15) and should be suspended during unseasonable rainfalls of greater than one-half inch over a 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. Fence posts shall be located above the top-of-bank of the Study Area's streams.
>
> 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 Study Area contains five special-status plants, two of which are located within the Project Area: holly-leaved ceanothus and green monardella. Napa County is the center of statewide populations for both of these species. Populations of other special-status plant species will be completely avoided by a minimum setback of 25 feet (larger in many cases). Table 2 below summarizes impacts and retention values for each of these special-status plants within the Study Area.

Table 3. Special-Status Plants Retention within the Study Area

Species	Status	Acreage w/in Study Area	Count w/in Study Area	Acreage within the Project Area	Count within the Project Area	% Retention (Acreage)*
holly-leaved ceanothus	CRPR 1B.2	33.48	1,322	9.96	356	70
green monardella	CRPR 4.3	0.51	347	0.10	76	80

* Does not include acreage in the Additional Area; see text below.

Holly-leaved ceanothus: Holly-leaved ceanothus is a CRPR 1B.2 species, meaning that it is "rare, threatened, or endangered in California and elsewhere" and "moderately threatened in California." The Study Area contains approximately 33 acres of holly-leaved ceanothus and associated habitat, and approximately 70 percent of this total area is to be retained; retention increases to approximately 74 percent if the Additional Area is included. The design of the vineyard blocks allows for connectivity of the retained populations between each population, adjacent properties, and adjacent suitable habitat. Holly-leaved ceanothus is relatively tolerant to disturbance, and have been repeatedly observed by WRA on the edge of vineyard avenues and other disturbed places within Napa County. Peripheral remnant individuals of these species (adjacent to cleared areas) are unlikely to be negatively affected by the new vineyards and associated avenues, while those situated deeper within the proposed remnant habitat will be provided with buffering benefits. As such, no further recommendations related to this species are warranted.

Green monardella: Green monardella is also a CRPR 4.3 species, meaning that is of "limited distribution" but "not very endangered in California." The Study Area contains 0.51 acre of green monardella and associated habitat and approximately 80 percent of this total area is to be retained. The design of the vineyard blocks allows for connectivity of the retained populations between each population, adjacent properties, and adjacent suitable habitat. Green monardella is relatively tolerant to disturbance, and has been repeatedly observed by WRA on the edge of vineyard avenues and other disturbed substrates within Napa County. Peripheral remnant individuals of these species (adjacent to cleared areas) are unlikely to be negatively affected by the new vineyards, while those situated deeper within the proposed remnant habitat will be provided with buffering benefits. No further recommendations related to this species are warranted.

6.2.2 Special-status Wildlife

The Study Area (including the Project Area) has the potential to support three special-status wildlife species (two birds and one amphibian), as well as non-status birds protected under the MBTA and CFGC. The following measures are recommended to avoid or otherwise minimize potential impacts to these species.

All Bird Species (including non-special-status): In addition to the special-status bird species discussed above (white-tailed kite, black-chinned sparrow), a variety of non-status bird species with baseline protections under the MBTA and CFGC may use vegetation within the Project Area for nesting. Pre-construction surveys are recommended to ensure that the implementation of the Project avoids potential impacts to nesting birds.

> Recommendation 2: As tree/vegetation removal outside of the general nesting bird season (from August 16 to January 31) is presumably not feasible in this case, a pre-construction nesting bird survey shall 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.

Foothill yellow-legged frog: When inundated and flowing, on-site streams have the potential to support FYLF that have moved upstream from off-site perennial streams. However, because the on-site stream draws down following the end of the wet season, on-site breeding by this species is unlikely. Targeted surveys for FYLF were not performed as part of this assessment, and therefore, its presence/absence is unknown. To avoid any potential impacts to this species, the following measures are put forth.

> Recommendation 3: FYLF individuals require aquatic stream habitat and rarely stray far from such habitat. If construction is initiated following the complete draw-down of the Study Area's streams, no further actions are recommended for FYLF.
>
> If on-site streams are still running or contain sizable pools (greater than 25 square feet, and greater than one foot deep) during the period of construction initiation, a pre-construction survey for FYLF shall be performed by a qualified biologist. The survey shall consist of walking on-site stream courses within 300 feet of proposed impact areas to determine if FYLF is present. If FYLF are not present, no additional measures are needed.
>
> If FYLF is present, ground-breaking should be delayed until the site's streams have drawn-down. In such a scenario, it is recommended that a second pre-construction survey be performed to ensure that FYLF is no longer present at the site. Alternatively, if the project proponent proposes to initiate ground-breaking with FYLF on-site, protective measures shall be deployed in areas where ground disturbance occurs within 300 feet of flowing/ponded water in stream courses. Such measures include (1) installation of exclusion fencing, (2) presence of on-site biologist during ground disturbance activities, and (3) implementation of a worker education program. Exclusion fencing shall be installed along the inhabited stream(s) immediately adjacent to the vineyard blocks, extending 100 feet beyond the terminus of the proposed vineyard blocks in each direction.

The on-site biologist will be present to perform a survey of the vineyard blocks in the morning prior to that day's ground-breaking activities. If a FYLF is present within the vineyard block, individual frogs shall be allowed to leave the disturbance area of their own accord, as confirmed by the biologist. Alternately, other measures shall be derived and approved in coordination with the CDFW. Finally, the worker education program shall consist of a qualified biologist providing construction personnel with information regarding the identification and ecology of FYLF, the potential for occurrence of the species within work areas, the legal status of the species and ramifications for take, the specific measures being implemented to avoid impacts to FYLF, and the role of the on-site biologist.

6.2.3 Wildlife Movement

As stated in Section 5.2.3 above, the Study Area's streams and much of the native landcover will remain intact and unfenced, including areas interstitial to the proposed vineyard blocks, which will allow for continued wildlife movement. Therefore, the Project is not anticipated to impact wildlife movement, and no measures related to wildlife movement are put forth at this time.

7.0 REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. The Jepson Manual: Vascular Plants of California, 2nd Edition. University of California Press, Berkeley, CA. 1568 pp.

California Department of Fish and Game (CDFG). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607. Environmental Service Division, California Department of Fish and Game, Sacramento, CA.

California Department of Fish and Wildlife (CDFW). 2019. California Natural Diversity Database (CNDDB), Wildlife and Habitat Data Analysis Branch. Sacramento, CA. Accessed: August 2019.

(CDFW). 2018a. California Natural Community List. Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento, CA. October 15, 2018.

(CDFW). 2018b. Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities. California Natural Resources Agency, California Department of Fish and Game. March 20, 2018.

California Department of Transportation (CalTrans). 2010. California Essential Habitat Connectivity Project. Available at: https://www.wildlife.ca.gov/conservation/planning. Accessed: September 2019.

Californica Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory: Cal-IPC Publication 2006-2. California Invasive Plant Council, Berkeley, CA. Available online: http://www.cal-ipc.org/ip/inventory/index.php. Accessed: April 2018.

California Native Plant Society (CNPS). 2001. CNPS Botanical Survey Guidelines. June 2, 2001.

(CNPS). 2019a. Online Inventory of Rare, Threatened, and Endangered Plants of California. Available at: http://www.rareplants.cnps.org/. Accessed: September 2018.

(CNPS). 2019b. A Manual of California Vegetation Online. Available at: http://vegetation.cnps.org/. Accessed September 2018.

California Soil Resources Lab (CSRL). 2019. Online Soil Survey. Available at: http://casoilresource.lawr.ucdavis.edu/drupal/ Accessed: September 2019.

Consortium of California Herbaria (CCH). 2018. Data provided by the participants of the Consortium of California Herbaria. Available at: http://ucjeps.berkeley.edu/consortium. Accessed: April 2018.

Dunk, JR. 1995. White-tailed Kite (*Elanus leucurus*), The Birds of North America Online (A Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/178.

eBird. 2019. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available at: http://www.ebird.org. Accessed: August 2019.

Jepson Herbarium. Jepson Flora Project (eFlora). 2018. Jepson eFlora Online at: http://ucjeps.berkeley.edu/IJM.html. Accessed: August 2018.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.

Google Earth. 2018. Napa area: 38.3992°, -122.2966°. Image dates: 1993-2018. Accessed: April 2018.

Historical Aerials. 2018. Available at: http://historicalaerials.com. Accessed: April 2018.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA. 156 pp.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17.

Martin, J.W. and M.K. Wicksten. Review and Redescription of the Freshwater Atyid Shrimp Genus *Syncaris* Holmes, 1900, in California. Journal of Crustacean Biology 24(3): 447-462.

Napa County. 2018. Napa County Public Browser (Online Map). Available at: http://gis.napa.ca.gov/Html5Viewer/Index.html?viewer=Public_HTML. Accessed: April 2018.

Napa County. 2016a. Attachment B: Guidelines for Preparing Biological Resources Reconnaissance Surveys. Planning, Building, and Environmental Services. August 2016.

Napa County. 2016b. Attachment C: Guidelines for Preparing Special-status Plant Studies. Planning, Building, and Environmental Services. August 2016.

Napa County. 2008. Napa County General Plan. June 2, 2008. Available at: http://www.co.napa.ca.us/GOV/Departments/

Napa County. 2005. Napa County Baseline Data Report. Available at: http://www.co.napa.us/gov/

National Marine Fisheries Service (NMFS). 2019. Essential Fish Habitat Mapper. Available at: https://www.habitat.noaa.gov/protection/efh/efhmapper/. Accessed: September 2019.

NatureServe. 2018. NatureServe Explorer: NatureServe Conservation Status. Available at: http://www.natureserve.org/explorer/ranking#relationship.

San Francisco Estuary Institute (SFEI). 2019. California Aquatic Resource Inventory (CARI). Available at: http://www.sfei.org/cari#sthash.Mzz93W9i.dpbs. Accessed: September.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, 2nd Edition. California Native Plant Society in collaboration with California Department of Fish and Game. Sacramento, CA. 1300 pp.

Shuford, W.D. and Gardali, T., eds. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Smith, A., ed. 2003. Breeding Birds of Napa County, California. Napa-Solano Audubon Society, Vallejo, California. 199 pp.

Stebbins, RC. 2003. A Field Guide to Western Reptiles and Amphibians, Third Edition. Houghton Mifflin Company, Boston, MA and New York, NY.

Tenney, Chris R. 1997. Black-chinned Sparrow (Spizella atrogularis), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/270.

Thomson, R.C., A.N. Wright, and H.B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. Co-published by the California Department of Fish and Wildlife and University of California Press. Oakland, California.

Thorne, J., Kennedy, J., Quinn, J., McCoy, M., Keeler-Wolfe, T. A Vegetation Map of Napa County Using the Manual of California Vegetation Classification and its Comparison to Other Digital Vegetation Maps. Information Center for the Environment (ICE). University of California, Davis. 2004.

U.S. Army Corps of Engineers (Corps). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS. September 28, 2008.

U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS). 1978. Soil Survey of Napa County, California. In cooperation with the University of California Agricultural Experiment Station.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2020. Climate Information for Napa County in the State of California. Available at: http://www.wcc.nrcs.usda.gov/. Accessed: February.

U.S. Fish and Wildlife Service (USFWS). 2019a. National Wetlands Inventory. Available at: http://www.fws.gov/wetlands/index.html. Accessed: September 2019.

(USFWS). 2019b. List of Federal Endangered and Threatened Species that Occur in Napa County, California. Available at: https://ecos.fws.gov/ipac/. Accessed: August 2019.

(USFWS). 2019c. Threatened and Endangered Species Active Critical Habitat Report. Available at: https://ecos.fws.gov/ecp/report/table/critical-habitat.html. Accessed: September 2019.

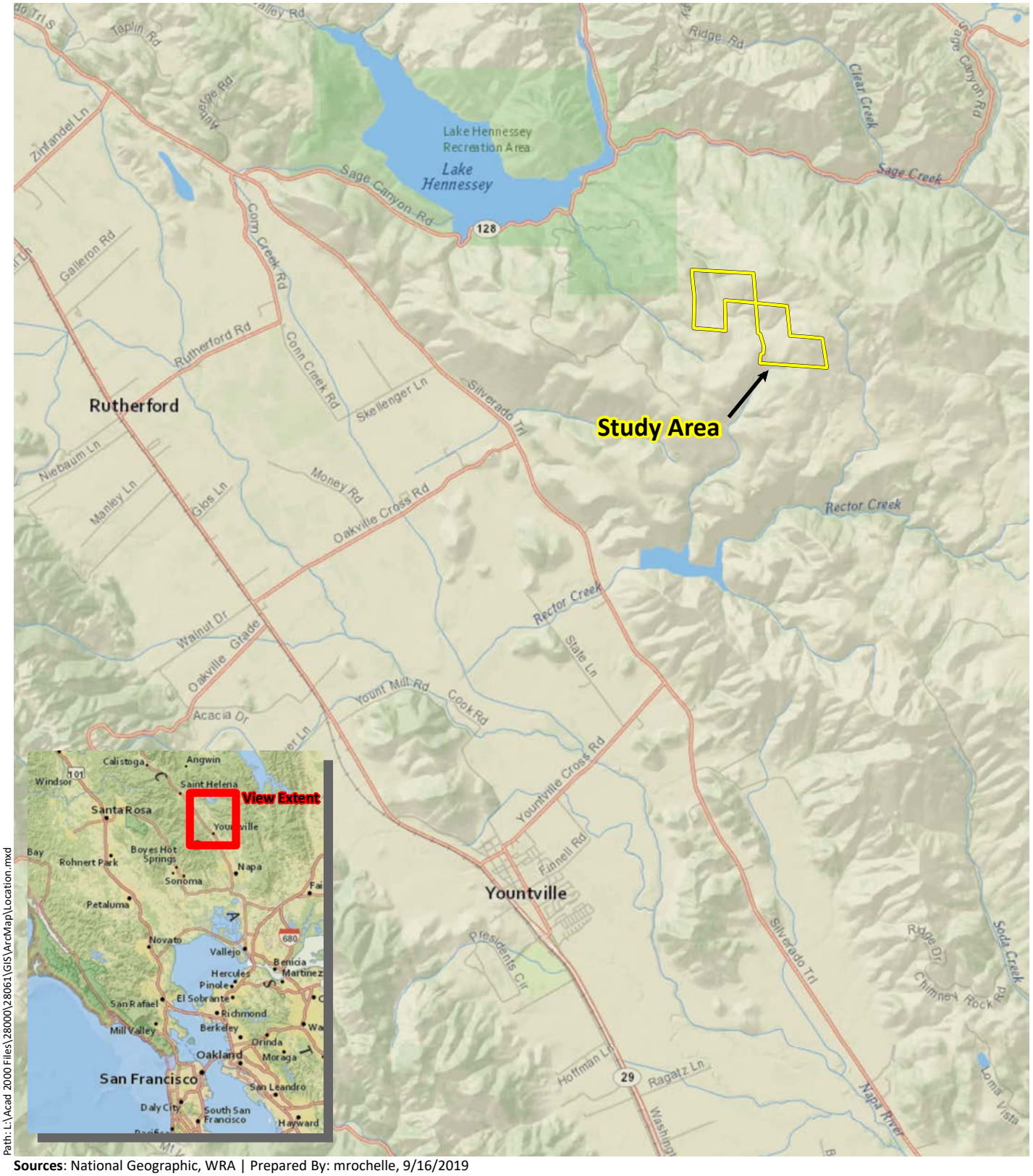
U.S. Geological Survey (USGS). 1951 (Photorevised 1978). Yountville, California 7.5-minute quadrangle topographic map.

Western Bat Working Group (WBWG). 2019. Species Accounts. Available at: http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html. Accessed: August 2019.

Xerces Society. 2018. A Petition to the State of California Fish and Game Commission to List the Crotch Bumble Bee (*Bombus crotchii*), Franklin's Bumble Bee (*Bombus franklini*), Suckley Cuckoo Bumble Bee (*Bombus suckleyi*), and Western Bumble Bee (*Bombus occidentalis occidentalis*) as Endangered Under the California Endangered Species Act. 119 pp. October.

Appendix A

Figures



Path: L:\Acad 2000 Files\28000\28061\GIS\ArcMap\Location.mxd

Sources: National Geographic, WRA | Prepared By: mrochelle, 9/16/2019

Figure A-1. Study Area Location

Chappellet Vineyards
Nap County, California

0 0.5 1 Miles

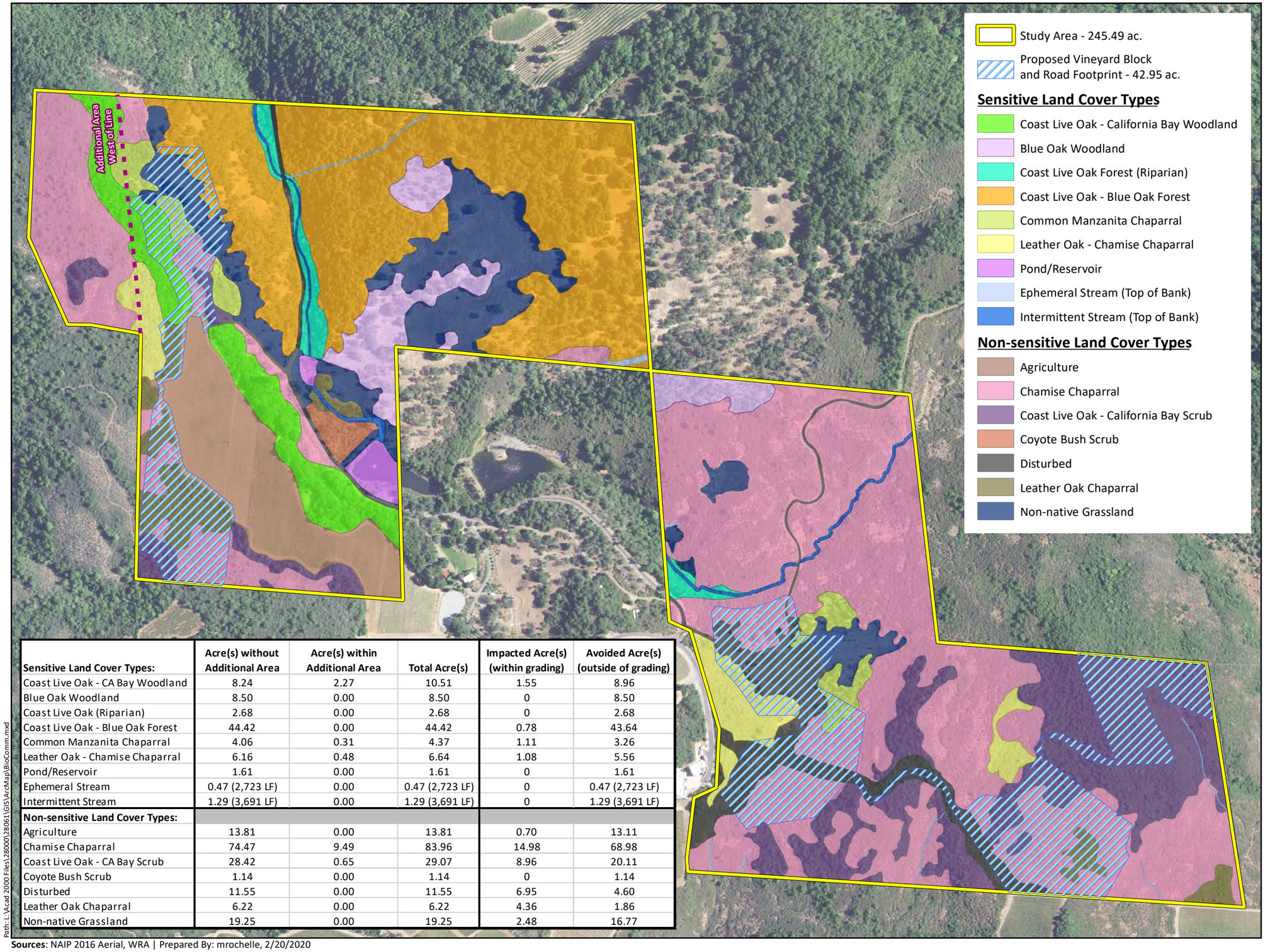
N

wra
ENVIRONMENTAL CONSULTANTS

Figure A-2.
Land Cover Types

Chappellet Vineyards

Napa County,
California



Sensitive Land Cover Types:	Acre(s) without Additional Area	Acre(s) within Additional Area	Total Acre(s)	Impacted Acre(s) (within grading)	Avoided Acre(s) (outside of grading)
Coast Live Oak - CA Bay Woodland	8.24	2.27	10.51	1.55	8.96
Blue Oak Woodland	8.50	0.00	8.50	0	8.50
Coast Live Oak (Riparian)	2.68	0.00	2.68	0	2.68
Coast Live Oak - Blue Oak Forest	44.42	0.00	44.42	0.78	43.64
Common Manzanita Chaparral	4.06	0.31	4.37	1.11	3.26
Leather Oak - Chamise Chaparral	6.16	0.48	6.64	1.08	5.56
Pond/Reservoir	1.61	0.00	1.61	0	1.61
Ephemeral Stream	0.47 (2,723 LF)	0.00	0.47 (2,723 LF)	0	0.47 (2,723 LF)
Intermittent Stream	1.29 (3,691 LF)	0.00	1.29 (3,691 LF)	0	1.29 (3,691 LF)
Non-sensitive Land Cover Types:					
Agriculture	13.81	0.00	13.81	0.70	13.11
Chamise Chaparral	74.47	9.49	83.96	14.98	68.98
Coast Live Oak - CA Bay Scrub	28.42	0.65	29.07	8.96	20.11
Coyote Bush Scrub	1.14	0.00	1.14	0	1.14
Disturbed	11.55	0.00	11.55	6.95	4.60
Leather Oak Chaparral	6.22	0.00	6.22	4.36	1.86
Non-native Grassland	19.25	0.00	19.25	2.48	16.77

N

0 250 500

Feet

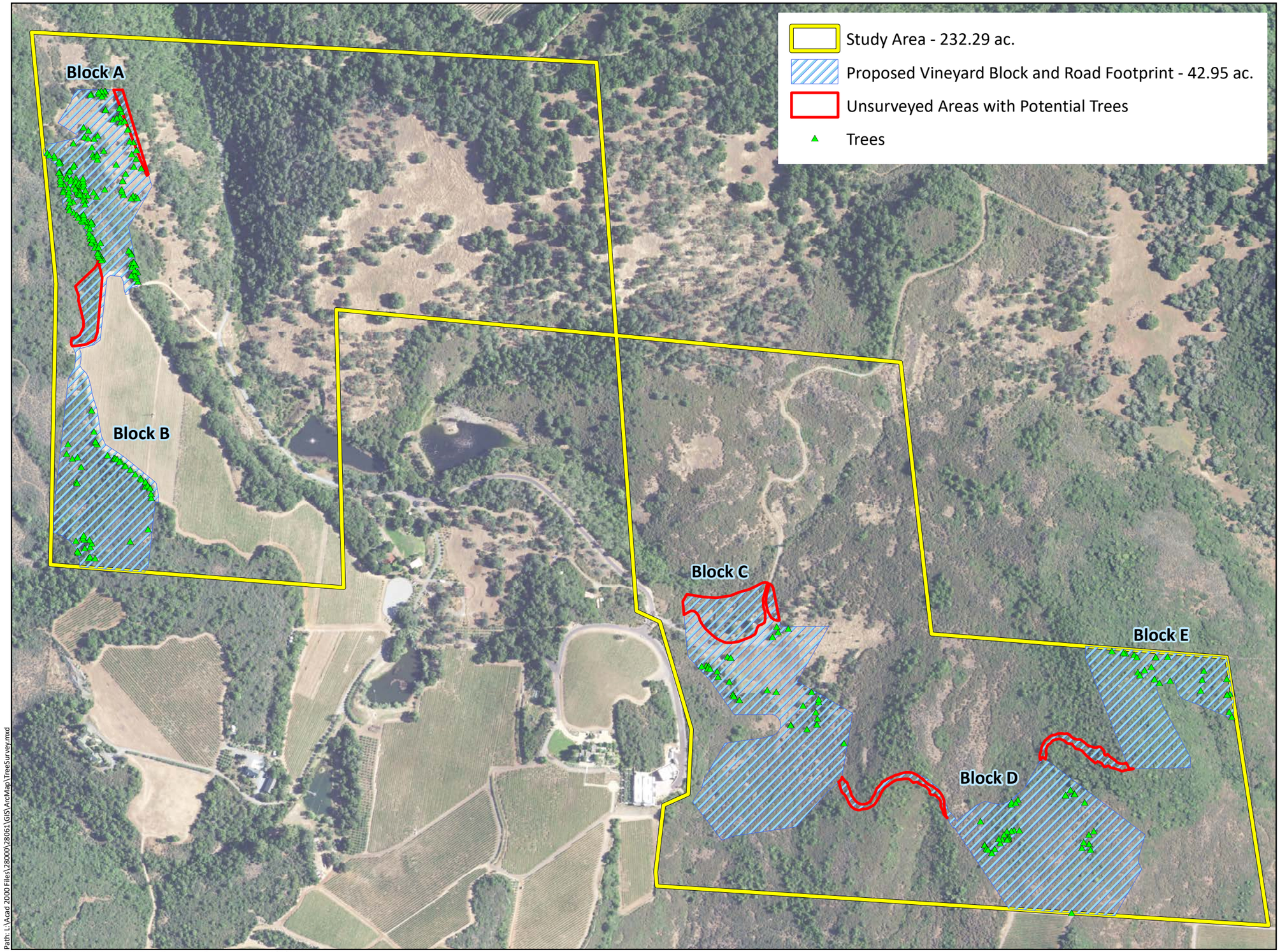
Path: I:\Acad 2000 Files\28000\280611\GIS\ArcMap\BioComm.mxd

Sources: NAIP 2016 Aerial, WRA | Prepared By: mrochelle, 2/20/2020

wra
ENVIRONMENTAL CONSULTANTS

Figure A-3.
Tree Survey

Chappellet Vineyards
Napa County, California



N

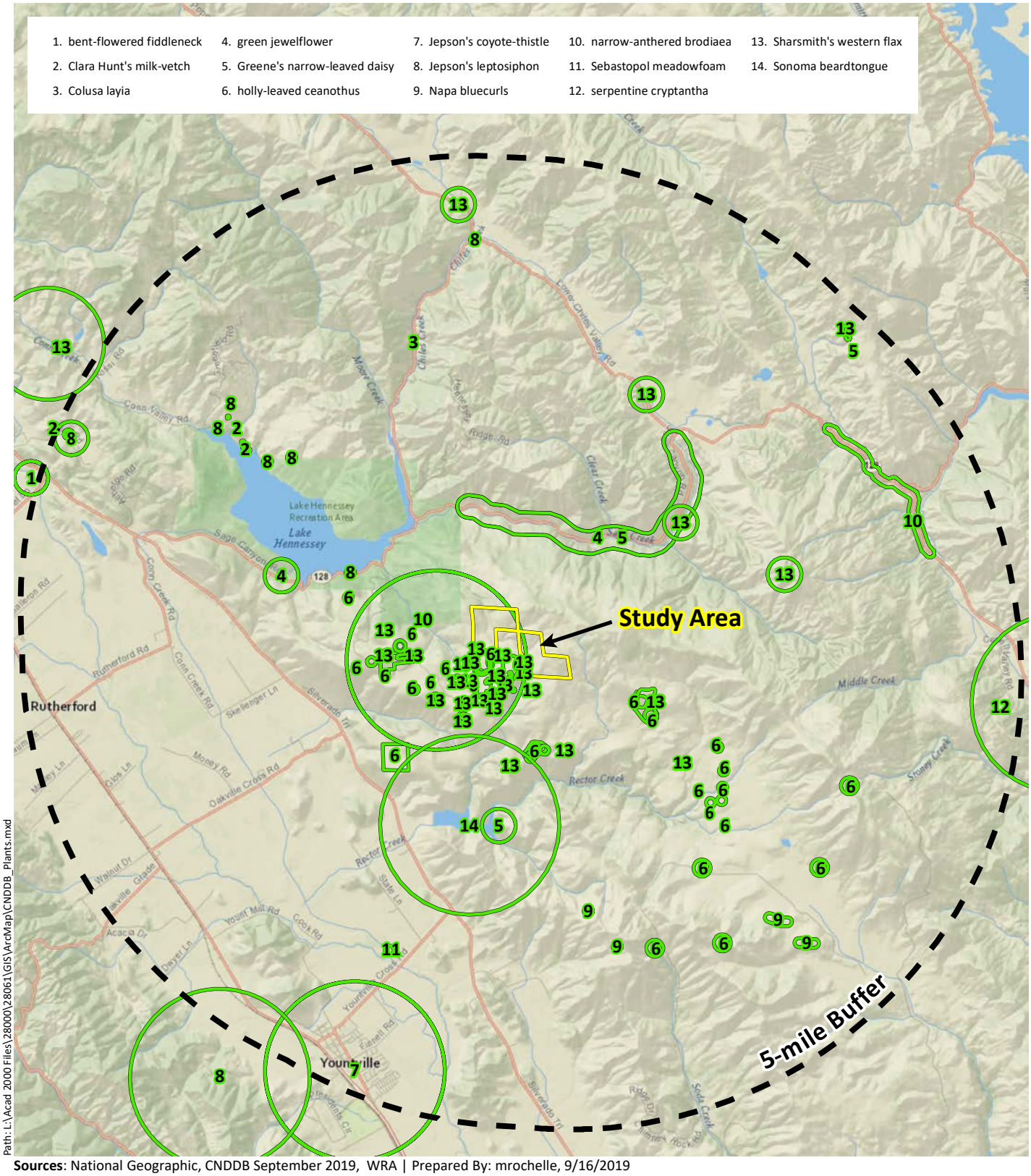
0 200 400

Feet

wra
ENVIRONMENTAL CONSULTANTS

Path: L:\Acad 2000 Files\28000\28061\GIS\ArcMap\TreeSurvey.mxd

Sources: NAIP 2016 Aerial, WRA | Prepared By: mrochelle, 2/7/2020



Sources: National Geographic, CNDDB September 2019, WRA | Prepared By: mrochelle, 9/16/2019

Figure A-4. Special-Status Plant Species Documented within 5-miles of the Study Area

Chappellet Vineyards
Nap County, California

0 1 2 Miles

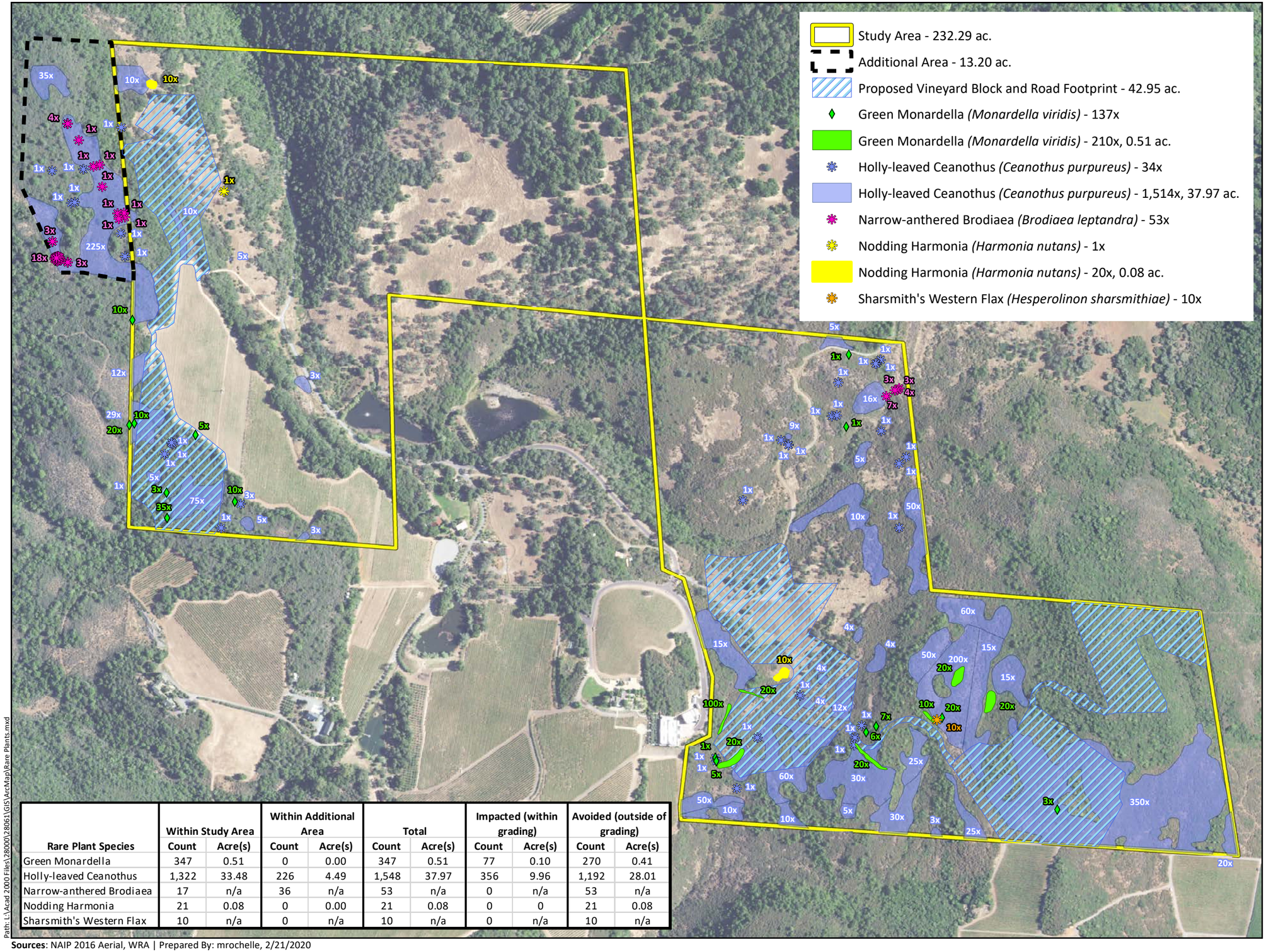
N

ENVIRONMENTAL CONSULTANTS

Figure A-5. Special-status Plant Survey Results

Chappellet Vineyards

Napa County, California



Rare Plant Species	Within Study Area		Within Additional Area		Total		Impacted (within grading)		Avoided (outside of grading)	
	Count	Acre(s)	Count	Acre(s)	Count	Acre(s)	Count	Acre(s)	Count	Acre(s)
Green Monardella	347	0.51	0	0.00	347	0.51	77	0.10	270	0.41
Holly-leaved Ceanothus	1,322	33.48	226	4.49	1,548	37.97	356	9.96	1,192	28.01
Narrow-anthered Brodiaea	17	n/a	36	n/a	53	n/a	0	n/a	53	n/a
Nodding Harmonia	21	0.08	0	0.00	21	0.08	0	0	21	0.08
Sharsmith's Western Flax	10	n/a	0	n/a	10	n/a	0	n/a	10	n/a

N

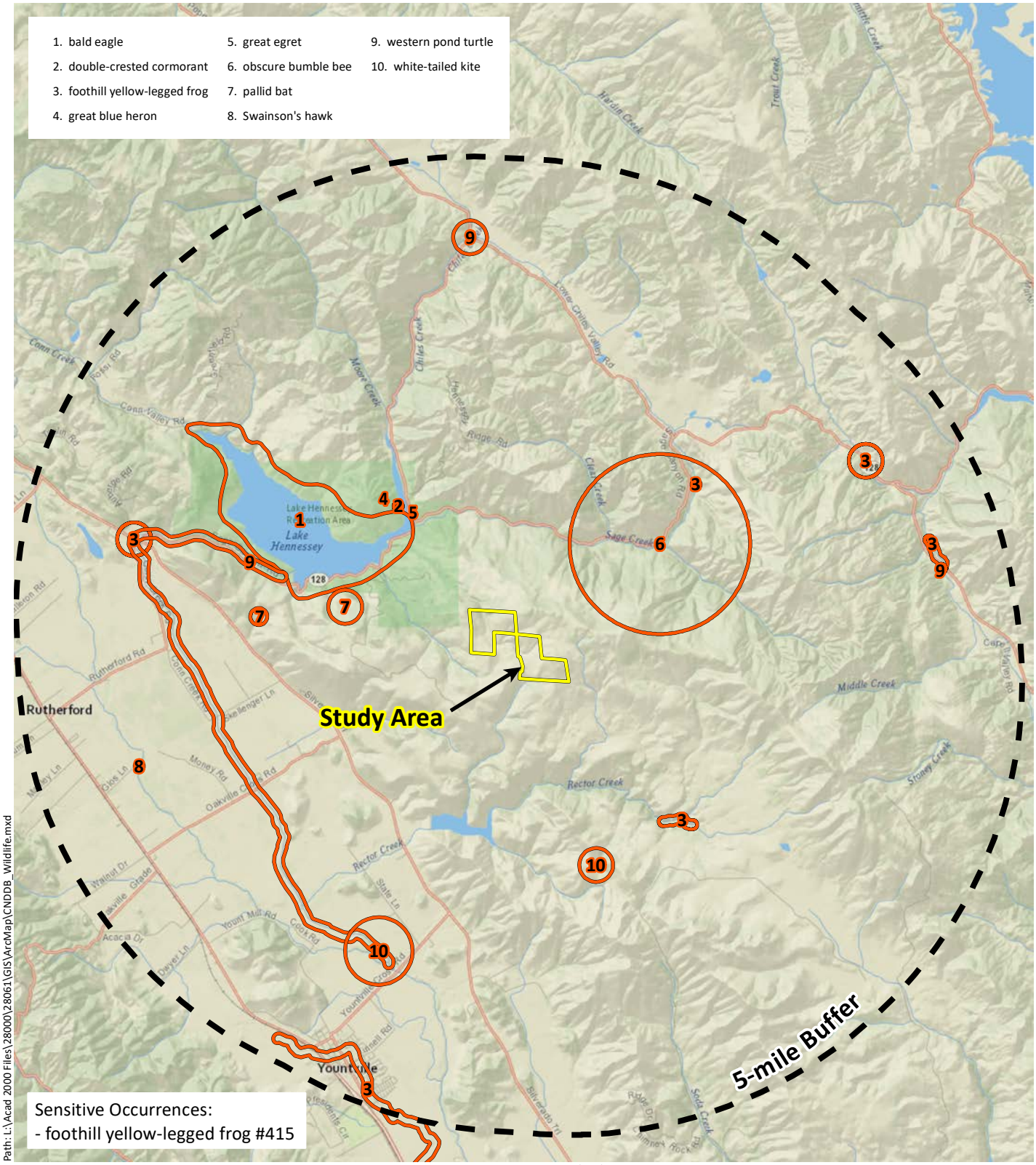
0 500 1,000

Feet

wra ENVIRONMENTAL CONSULTANTS

Path: L:\Acad 2000 Files\28000\28061\GIS\ArcMap\Rare Plants.mxd

Sources: NAIP 2016 Aerial, WRA | Prepared By: mrochelle, 2/21/2020



Sources: National Geographic, CNDDB September 2019, WRA | Prepared By: mrochelle, 9/16/2019

Figure A-6. Special-Status Wildlife Species Documented within 5-miles of the Study Area

Chappellet Vineyards
Nap County, California

0 1 2 Miles

N

ENVIRONMENTAL CONSULTANTS

Appendix B

Species Observed in the Study Area

Table B. Plant species observed in the Study Area, April 25, June 20, July 10, 2018

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Achillea millefolium	Yarrow	native	perennial herb	-	-	FACU
Achyrachaena mollis	Blow wives	native	annual herb	-	-	FAC
Acmispon glaber	Deerweed	native	perennial herb	-	-	-
Acmispon micranthus	Small flowered lotus	native	annual herb	-	-	-
Acmispon wrangelianus	Chilean trefoil	native	annual herb	-	-	-
Adenostoma fasciculatum	Chamise	native	tree, shrub	-	-	-
Adiantum jordanii	California maidenhair fern	native	fern	-	-	FAC
Agrostis stolonifera	Redtop	non-native (invasive)	perennial grass	-	Limited	FACW
Aira caryophyllea	Silvery hairgrass	non-native	annual grass	-	-	FACU
Amsinckia lycopsoides	Tarweed fiddleneck	native	annual herb	-	-	-
Amsinckia menziesii	Fiddleneck	native	annual herb	-	-	-
Amsinckia retrorsa	Rigid fiddleneck	native	annual herb	-	-	-
Anthriscus caucalis	Bur chervil	non-native	annual herb, vine	-	-	-
Aphanes occidentalis	Ladie's mantle	native	annual, perennial herb	-	-	-
Apiastrum angustifolium	Wild celery	native	annual herb	-	-	UPL
Arbutus menziesii	Madrone	native	tree	-	-	-
Arctostaphylos glandulosa ssp. *cushingiana*	Cushing manzanita	native	shrub	-	-	-
Arctostaphylos manzanita ssp. *manzanita*	Common manzanita	native	shrub	-	-	-
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-
Brachypodium distachyon	Purple false brome	non-native (invasive)	annual, perennial grass	-	Moderate	-
Briza minor	Little rattlesnake grass	non-native	annual grass	-	-	FAC
Brodiaea elegans ssp. *elegans*	Harvest brodiaea	native	perennial herb	-	-	FACU
Brodiaea leptandra	Narrow-anthered brodiaea	native	perennial herb	Rank 1B.2	-	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Bromus hordeaceus	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Bromus madritensis	Foxtail chess, foxtail brome	non-native	annual grass	-	-	UPL
Calycadenia fremontii	Fremont's calycadenia	native	annual herb	-	-	-
Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Castilleja attenuata	Narrow leaved owl's clover	native	annual herb	-	-	-
Castilleja densiflora	Dense flower owl's clover	native	annual herb	-	-	-
Castilleja foliolosa	Texas paintbrush	native	perennial herb	-	-	-
Caulanthus lasiophyllus	California mustard	native	annual herb	-	-	-
Ceanothus cuneatus	Buck brush	native	shrub	-	-	-
Ceanothus purpureus	Hollyleaf ceanothus	native	shrub	Rank 1B.2	-	-
Centaurea calcitrapa	Purple star thistle	non-native (invasive)	annual, perennial herb	-	Moderate	-
Centaurea melitensis	Tocalote	non-native (invasive)	annual herb	-	Moderate	-
Centaurea solstitialis	Yellow starthistle	non-native (invasive)	annual herb	-	High	-
Cercocarpus betuloides	Birch leaf mountain mahogany	native	tree, shrub	-	-	-
Chlorogalum pomeridianum var. *pomeridianum*	Common soaproot	native	perennial herb	-	-	-
Cirsium occidentale	Western thistle	native	perennial herb	-	-	-
Clarkia purpurea ssp. *quadrivulnera*	Purple clarkia	native	annual herb	-	-	-
Claytonia perfoliata	Miner's lettuce	native	annual herb	-	-	FAC
Clematis lasiantha	Pipestem	native	perennial herb, vine	-	-	-
Collinsia sparsiflora	Few flowered collinsia	native	annual herb	-	-	-
Collomia heterophylla	Varied leaved collomia	native	annual herb	-	-	-
Crocanthemum scoparium	Peak rush-rose	native	shrub	-	-	-
Cynoglossum grande	Houndstongue	native	perennial herb	-	-	-
Cynosurus echinatus	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Delphinium sp.	-	-	-	-	-	-
Dichelostemma capitatum ssp. *capitatum*	Wild hyacinth	native	perennial herb	-	-	FACU
Diplacus aurantiacus	Sticky monkeyflower	native	shrub	-	-	FACU
Elymus caput-medusae	Medusa head	non-native (invasive)	annual grass	-	High	-
Elymus elymoides	Squirrel tail grass	native	perennial grass	-	-	FACU
Eriodictyon californicum	Yerba santa	native	shrub	-	-	-
Eriophyllum lanatum	Wooly sunflower	native	perennial herb	-	-	-
Erodium botrys	Big heron bill	non-native	annual herb	-	-	FACU
Erodium brachycarpum	White stemmed filaree	non-native	annual herb	-	-	-
Erythranthe guttata	Seep monkeyflower	native	perennial herb (rhizomatous)	-	-	OBL
Festuca bromoides	Brome fescue	non-native	annual grass	-	-	FACU
Festuca californica	California fescue	native	perennial grass	-	-	FACU
Festuca microstachys	Small fescue	native	annual grass	-	-	-
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Frangula californica	California coffeeberry	native	shrub	-	-	-
Fraxinus dipetala	Two petaled ash	native	tree, shrub	-	-	-
Galium aparine	Cleavers	native	annual herb	-	-	FACU
Galium californicum	California bedstraw	native	perennial herb	-	-	-
Gastridium phleoides	Nit grass	non-native	annual grass	-	-	FACU
Geranium molle	Crane's bill geranium	non-native	annual, perennial herb	-	-	-
Geranium purpureum	Herb robert	non-native (invasive)	annual, biennial herb	-	Limited	-
Gilia capitata ssp. *capitata*	Blue field gilia	native	annual herb	-	-	-
Githopsis diffusa	San gabriel bluecup	native	annual herb	-	-	FAC
Grindelia camporum	Gumweed	native	perennial herb	-	-	FACW
Grindelia hirsutula	Gumweed	native	perennial herb	-	-	FACW
Harmonia nutans	Nodding harmonia	native	annual herb	Rank 4.3	-	-
Hesperolinon sharsmithiae	Sharsmith's western flax	native	annual herb	Rank 1B.2	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Heteromeles arbutifolia	Toyon	native	shrub	-	-	-
Holocarpha virgata	Narrow tarplant	native	annual herb	-	-	-
Hypericum concinnum	Gold wire	native	perennial herb	-	-	-
Hypochaeris glabra	Smooth cats ear	non-native (invasive)	annual herb	-	Limited	-
Iris macrosiphon	Ground iris	native	perennial herb	-	-	-
Lathyrus vestitus	Common pacific pea	native	perennial herb	-	-	-
Leptosiphon bicolor	True babystars	native	annual herb	-	-	UPL
Leptosiphon parviflorus	Variable linanthus	native	annual herb	-	-	-
Linum bienne	Narrow-leaved flax	non-native	annual herb	-	-	-
Logfia filaginoides	California cottonrose	native	annual herb	-	-	-
Logfia gallica	Narrowleaf cottonrose	non-native	annual herb	-	-	-
Lonicera hispidula	Pink honeysuckle	native	vine, shrub	-	-	FACU
Lupinus albifrons	Silver bush lupine	native	shrub	-	-	-
Lupinus nanus	Sky lupine	native	annual herb	-	-	-
Lysimachia arvensis	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Madia elegans	Common madia	native	annual herb	-	-	-
Madia exigua	Small tarweed	native	annual herb	-	-	-
Marah fabacea	California man-root	native	perennial herb, vine	-	-	-
Melica sp.	-	-	-	-	-	-
Melilotus indicus	Annual yellow sweetclover	non-native	annual herb	-	-	FACU
Microseris douglasii	Douglas' microseris	native	annual herb	-	-	FACU
Monardella viridis	Green monardella	native	perennial herb	Rank 4.3	-	-
Navarretia heterodoxa	Calistoga navarretia	native	annual herb	-	-	-
Nemophila menziesii var. *menziesii*	Baby blue eyes	native	annual herb	-	-	-
Nemophila parviflora var. *parviflora*	Small flowered nemophila	native	annual herb	-	-	-
Odontostomum hartwegii	Hartweg's odontostomum	native	perennial herb	-	-	-
Pentagramma triangularis	Gold back fern	native	fern	-	-	-
Perideridia kelloggii	Kellogg's yampah	native	perennial herb	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Phoradendron leucarpum	American mistletoe	native	shrub (parasitic)	-	-	-
Pickeringia montana	Chaparral pea	native	shrub	-	-	-
Plagiobothrys nothofulvus	Rusty haired popcorn flower	native	annual herb	-	-	FAC
Plantago erecta	California plantain	native	annual herb	-	-	-
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Plectritis sp.	-	-	-	-	-	-
Poa secunda	Pine bluegrass	native	perennial grass	-	-	FACU
Polygala californica	Milkwort	native	perennial herb	-	-	-
Polypodium sp.	-	-	-	-	-	-
Primula hendersonii	Mosquito bill	native	perennial herb	-	-	-
Quercus agrifolia	Coast live oak	native	tree	-	-	-
Quercus berberidifolia	Inland scrub oak	native	tree	-	-	-
Quercus douglasii	Blue oak	native	tree	-	-	-
Quercus durata var. *durata*	Leather oak	native	shrub	-	-	-
Quercus kelloggii	California black oak	native	tree	-	-	-
Quercus wislizeni var. *wislizeni*	Interior live oak	native	tree, shrub	-	-	-
Ranunculus californicus	Common buttercup	native	perennial herb	-	-	FACU
Rhamnus crocea	Redberry	native	shrub	-	-	-
Rupertia physodes	Common rupertia	native	perennial herb	-	-	-
Salvia sonomensis	Sonoma sage	native	perennial herb	-	-	-
Sanicula bipinnatifida	Purple sanicle	native	perennial herb	-	-	-
Sanicula crassicaulis	Pacific sanicle	native	perennial herb	-	-	-
Sanicula tuberosa	Turkey pea	native	perennial herb	-	-	-
Scandix pecten-veneris	Shepherd's needle	non-native	annual herb, vine	-	-	-
Scutellaria siphocampyloides	Gray leaved skullcap	native	perennial herb	-	-	FACU
Senecio vulgaris	Common groundsel	non-native	annual herb	-	-	FACU
Silene gallica	Common catchfly	non-native	annual herb	-	-	-
Sisyrinchium bellum	Blue eyed grass	native	perennial herb	-	-	FACW
Stachys rigida var. *quercetorum*	Rough hedgenettle	native	perennial herb	-	-	FACW
Stipa pulchra	Purple needle grass	native	perennial grass	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Thysanocarpus curvipes	Common fringe pod	native	annual herb	-	-	-
Torilis arvensis	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-
Toxicodendron diversilobum	Poison oak	native	vine, shrub	-	-	FACU
Toxicoscordion fremontii	Fremont's star lily	native	perennial herb	-	-	-
Tragopogon sp.	-	-	-	-	-	-
Trifolium dubium	Shamrock	non-native	annual herb	-	-	UPL
Trifolium hirtum	Rose clover	non-native (invasive)	annual herb	-	Limited	-
Trifolium incarnatum	Crimson clover	non-native	annual herb	-	-	-
Trifolium microdon	Valparaiso clover	native	annual herb	-	-	-
Trifolium willdenovii	Tomcat clover	native	annual herb	-	-	FACW
Triticum aestivum	Common wheat	non-native	annual grass	-	-	-
Umbellularia californica	California bay	native	tree	-	-	FAC
Vicia sativa ssp. *sativa*	Common vetch	non-native	annual herb, vine	-	-	FACU
Vicia villosa	Hairy vetch	non-native	annual herb, vine	-	-	-
Wyethia angustifolia	Narrow leaved mule ears	native	perennial herb	-	-	FACU
Wyethia glabra	Smooth mule ears	native	perennial herb	-	-	-
Zeltnera muehlenbergii	Muehlenberg's centaury	native	annual herb	-	-	FAC

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2019) or *The Jepson Flora Project* (eFlora 2019), and nomenclature follows *The Jepson Flora Project* (eFlora 2019) 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 2019)

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 Study Area. List compiled from the CDFW BIOS database (CDFW 2019), USFWS IPaC Report (USFWS 2019b), and CNPS Electronic Inventory (CNPS 2018a) searches. For plants, the St. Helena, Chiles Valley, Lake Berryessa, Rutherford, Yountville, Capell Valley, Sonoma, Napa, and Mt. George USGS 7.5' quadrangles were included in the search. For wildlife, the entirety of Napa County was considered.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
PLANTS				
Agrostis hendersonii Henderson's bentgrass	Rank 3	Valley and foothill grassland, vernal pools; situated in mesic grasslands. Elevation range: 225 – 995 feet. Blooms: April – June.	**No Potential.** This species is closely associated valley grassland-seasonal wetland complexes not present in the Study Area.	**Not Present.** No further actions are recommended for this species.
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.	**Moderate Potential.** The Study Area contains oak woodlands; this species is known from open woodland habitat with a substantial herbaceous component rather than scrub-woodland that is present in the other portions of the Study Area.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**Moderate Potential.** The Study Area contains oak woodlands; this species is known from open woodland habitat with a substantial herbaceous component rather than scrub-woodland that is present in the other portions of the Study Area.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
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 Study Area contains grassland habitat.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
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 Study Areas do not contain serpentine habitat.	**Not Present.** No further actions are recommended for this species.
Arabis modesta modest rockcress	Rank 4	Chaparral, lower montane coniferous forest; located on steep slopes, cliffs, and shaded canyons underlain by deep soils. Elevation range: 390 – 2600 feet. Blooms: March – July.	**No Potential.** The Study Area does not contain steep slopes, cliffs, or shaded canyons to support this species.	**Not Present.** No further actions are recommended for this species.
Arctostaphylos bakeri ssp. *bakeri* Baker's manzanita	SR; Rank 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest; located on serpentine substrate. Elevation range: 240 – 975 feet. Blooms: February – April.	**No Potential.** The Study Area does not contain serpentine substrate to support this species. This species is highly restricted to central-western Sonoma County; reports from the vicinity of the subject property are likely erroneous.	**Not Present.** No further actions are recommended for this species.
Arctostaphylos stanfordiana ssp. decumbens Rincon manzanita	Rank 1B	Chaparral, cismontane woodland; highly restricted to red rhyolite soils. Elevation range: 245 – 1215 feet. Blooms: February – April.	**Unlikely.** Although the Study Area contains woodlands, it lacks red rhyolites to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Astragalus breweri Brewer's milk-vetch	Rank 4	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland; located on open, gravelly serpentine or volcanic substrate. Elevation range: 290 – 2375 feet. Blooms: April – June.	**Moderate Potential.** The Study Area contains gravelly volcanic substrate that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**Moderate Potential.** The Study Area contains gravelly volcanic substrate that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**No Potential.** The Study Area does not contain serpentine seeps.	**Not Present.** No further actions are recommended for this species.
Astragalus tener var. *tener* alkali milk-vetch	Rank 1B	Playas, vernal pools, valley and foothill grassland; located in vernal pools and similar wetlands/mesic areas on alkaline substrate. Elevation range: 0 – 195 feet. Blooms: March – June.	**No Potential.** The Study Area does not contain vernal pools or similar wetland types underlain by alkaline substrate.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Balsamorhiza macrolepis big-scale balsamroot	Rank 1B	Valley and foothill grassland, cismontane woodland; situated on rocky substrates, typically derived from metavolcanics, sometimes on serpentine substrate. Elevation range: 295 – 3100 feet. Blooms: March – June.	**Moderate Potential.** The Study Area contains woodland and grasslands underlain by gravelly volcanic substrate.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**No Potential.** The Study Area does not contain vernal pool wetlands; this species has only been documented on Santa Rosa Plain and Valley of the Moon.	**Not Present.** No further actions are recommended for this species.
Brodiaea leptandra narrow-anthered brodiaea	Rank 1B	Broadleaf upland forest, chaparral, lower montane coniferous forest; situated on gravelly soils derived from volcanics, particularly rhyolitic tuff. Elevation range: 360 – 3000 feet. Blooms: May – July.	**High Potential.** The Study Area contains volcanic substrate that may support this species.	**Present.** This species was observed during the protocol-level survey. See Section 6.2 of the report for discussion of recommendations.
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.	**No Potential.** The Study Area does not contain serpentine substrate to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
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.	**Moderate Potential.** The Study Area contains chaparral or scrubby areas that have recently burned.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
Calochortus pulchellus Mt. Diablo fairy-lantern	Rank 1B	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation range: 90 – 2500 feet. Blooms: April - June	**Unlikely.** Although the Study Areas contain chaparral habitat, this species is restricted to the Mt. Diablo region of Contra Costa County. (Reports from Napa County may be in error).	**Not Present.** No further actions are recommended 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.	**Moderate Potential.** The Study Area contains grassland underlain by volcanic substrate to support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
Calystegia collina ssp. *oxyphylla* Mt. Saint Helena morning-glory	Rank 4	Chaparral; located on serpentine barrens, slopes, and hillsides. Elevation range: 815 – 3315 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine substrates.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Castilleja 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.	**Moderate Potential.** The Study Area contains grasslands that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**No Potential.** The Study Areas do not contain vernal pool and/or other seasonal wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Ceanothus confusus Rincon Ridge ceanothus	Rank 1B	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically situated on dry shrubby slopes. Elevation range: 245 – 3495 feet. Blooms: February – April.	**Unlikely.** The Study Areas contain chaparral habitat that may support this species; however, there are no documented occurrences east of the Napa Valley.	**Not Present.** No further actions are recommended 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 Study Areas do not contain serpentine soils. Additionally, there are no documented occurrences east of the Napa Valley.	**Not Present.** No further actions are recommended 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.	**High Potential.** The Study Area contains chaparral or shrubby areas underlain by volcanic soils that may support this species.	**Present.** This species was observed during the protocol-level survey. See Section 6.2 of the report for discussion of recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Ceanothus sonomensis Sonoma ceanothus	Rank 1B	Chaparral; located on sandy serpentine or volcanic substrates. Elevation range: 705 – 2625 feet. Blooms: February – April.	**Unlikely.** The Study Areas do not contain sandy soils. Additionally, there are no documented occurrences east of the Napa Valley.	**Not Present.** No further actions are recommended for this species.
Centromadia parryi ssp. *rudis* Parry's rough tarplant	Rank 4	Valley and foothill grassland, vernal pools; situated on vernally mesic sites underlain by alkaline soils, frequently seeps, swales, and roadsides. Elevation range: 0 – 330 feet. Blooms: May – October.	**No Potential.** The Study Area does not support alkali grasslands or vernal pools.	**Not Present.** No further actions are recommended 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 Study Area does contain coastal prairie habitat or sandy soils to support this species.	**Not Present.** No further actions are recommended 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.	**No Potential.** The Study Area does not contain serpentine soils to support this species.	**Not Present.** No further actions are recommended 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.	**No Potential.** The Study Area does not contain serpentine soils to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
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.	**No Potential.** The Study Area does not contain serpentine soils to support this species.	**Not Present.** No further actions are recommended for this species.
Cryptantha dissita serpentine cryptantha	Rank 1B	Chaparral; located on serpentine outcrops. Elevation range: 1280 – 1885 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine soils to support this species.	**Not Present.** No further actions are recommended for this species.
Delphinium uliginosum swamp larkspur	Rank 4	Chaparral, valley and foothill grassland; located in seeps and wet meadows underlain by serpentine substrate. Elevation range: 1105 – 1985 feet. Blooms: May – June.	**No Potential.** The Study Area does not contain serpentine soils to support this species.	**Not Present.** No further actions are recommended for this species.
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.	**No Potential.** The Study Areas do not contain vernal pool and/or other seasonal wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended 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.	**Moderate Potential.** The Study Area contains rocky sites in woodland habitat that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Erigeron greenei Greene's narrow-leaved daisy	Rank 1B	Chaparral; located on volcanic or serpentine substrate. Elevation range: 260 – 3270 feet. Blooms: May – September.	**Moderate Potential.** The Study Area contains volcanic rocky areas in shrubby habitat and chaparral that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
Eryngium jepsonii Jepson's coyote thistle	Rank 1B	Valley and foothill grassland, vernal pools; situated on clay substrate that is vernally saturated. Elevation range: 10 – 975 feet. Blooms: April – August.	**Unlikely.** The Study Area lacks seasonal wetlands and vernal pools.	**Not Present.** No further actions are recommended for this species.
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.	**No Potential.** The Study Area does not contain alkali grasslands or other alkali habitats to support this species.	**Not Present.** No further actions are recommended for this species.
Gilia capitata ssp. *tomentosa* woolly-headed gilia	Ran 1B	Coastal bluff scrub; rocky outcrops on the coast. Elevation range: 15 – 155 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain coastal bluff scrub to support this species.	**Not Present.** No further actions are recommended 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.	**High Potential.** The Study Area contains grassland and woodland habitat underlain by volcanic substrate that may support this species. The Study Area is situated in the center of this species regional distribution.	**Present.** This species was observed during the protocol-level survey. See Section 6.2 of the report for discussion of recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
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 Study Area contains grassland habitat that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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 Study Area does not contain serpentine soils to support this species.	**Not Present.** No further actions are recommended for this species.
Hesperolinon breweri Brewer's western flax	Rank 1B	Chaparral, cismontane woodland, valley and foothill grassland; typically located in serpentine grassland and serpentine chaparral underlain by rocky substrates. Elevation range: 95 – 2925 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain serpentine soils to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Hesperolinon sharsmithiae Sharsmith's western flax	Rank 1B	Chaparral; located on serpentine substrate. Elevation range: 875 – 975 feet. Blooms: May – July.	**High Potential.** The Study Areas contain chaparral habitat underlain by volcanic substrate. While the Study Areas lack serpentine substrate, known occurrences of this species are located on volcanic soils within Napa County. Previous surveys identified Napa dwarf flax (*H. serpentinum*) within the Study Area. This species is no longer a valid taxon and has subsequently been reassigned into *H. bicarpellatum*, *H. sharsmithiae,* or *H. tehamense*, all of which are considered rare.	**Present.** This species was observed during the protocol-level survey. See Section 6.2 of the report for discussion of recommendations.
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.** Although the Study Area contains grassland and chaparral, acidic sands are lacking to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Juglans hindsii North California black walnut	Rank 1B	Riparian forest, riparian woodland. Only native stands are considered special-status by CNPS and CDFW. Elevation range: 0 – 1430 feet. Blooms: April – May.	Changed from 1B.1 to CBR: Too common. Formerly recognized from only 5 natural occurrences and thought to be widely naturalized, cultivated, and hybridized with orchard trees and with J. regia. See Madroño 63(3):131-140 (2018) for study indicating that genetically pure representatives of J. hindsii are common throughout CA and southern OR.	**Not Present.** No further actions are recommended for this species.
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.	**No Potential.** The Study Area does not contain alkaline soils underlying seasonal wetlands or vernal pools.	**Not Present.** No further actions are recommended 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 Study Area does not contain coastal brackish marsh necessary to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Layia septentrionalis Colusa layia	Rank 1B	Chaparral, cismontane woodland, valley and foothill grassland; on sandy, serpentine substrate; typically occurs in fields, grassy slopes. Elevation range: 330 – 3595 feet. Blooms: April – May.	**Unlikely.** Although the Study Area contains grasslands, this species is typically situated on serpentine substrate.	**Not Present.** No further actions are recommended for this species.
Leptosiphon acicularis bristly leptosiphon	Rank 4, LR	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; often located on shallow, rocky substrate in foothill positions. Elevation range: 175 – 4875 feet. Blooms: April – July.	**Unlikely.** While the Study Areas contain chaparral and grassland habitat, the dominance of non-native grasses likely precludes this diminutive annual species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**Moderate Potential.** The Study Area contains woodland underlain by volcanic soils that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
Leptosiphon latisectus broad-lobed leptosiphon	Rank 4	Broadleaf upland forest, cismontane woodland; frequently situated on serpentine substrate. Elevation range: 550 – 4875 feet. Blooms: April – June.	**Unlikely.** The Study Area does not contain serpentine substrate to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Lessingia hololeuca woolly-headed lessingia	Rank 3, LR	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 Study Area does not contain clay or serpentine soils.	**Not Present.** No further actions are recommended for this species.
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 Study Area does not contain coastal brackish marsh necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Lilium rubescens redwood lily	Rank 4, LR	Broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, North Coast coniferous forest; often located on serpentine substrates, and along roadcuts. Elevation range: 95 – 6210 feet. Blooms: April – September.	**Moderate Potential.** The Study Area contains forest and chaparral habitat suitable for this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**No Potential.** The Study Area does not contain vernal pool habitat underlain by clay soils necessary to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Lomatium repostum Napa Lomatium	Rank 4	Chaparral, cismontane woodland; located on serpentine or volcanic substrates. Elevation range: 290 – 2700 feet. Blooms: March – June.	**Moderate Potential.** The Study Area contains woodland and shrubby areas underlain by volcanic substrates that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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 typically derived from volcanics, sometimes serpentine. Elevation range: 890 – 4960 feet. Blooms: March – June.	**Moderate Potential.** The Study Area contains woodland and shrubby areas underlain by volcanic substrates that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
Malacothamnus helleri Heller's bush-mallow	Rank 4	Chaparral; situated on soils derived from sandstone. Elevation range: 1000 – 2085 feet. Blooms: June – August.	**Unlikely.** The Study Area does not contain sandstone chaparral habitat to support this species.	**Not Present.** No further actions are recommended 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.	**Moderate Potential.** The Study Area contains thin, rocky soils that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Monardella viridis green monardella	Rank 4	Broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 325 – 3285 feet. Blooms: June – September.	**High Potential.** The Study Area contains shrubby areas that may support this species.	**Present.** This species was observed during the protocol-level survey. See Section 6.2 of the report for discussion of recommendations.
Navarretia cotulifolia cotula navarretia	Rank 4, LR	Chaparral, cismontane woodland, valley and foothill grassland; located on adobe substrate. Elevation range: 10 – 5950 feet. Blooms: May – June.	**Unlikely.** The Study Area does not support thick adobe clay soils to support this species.	**Not Present.** No further actions are recommended for this species.
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.	**No Potential.** The Study Areas do not contain vernal pool and/or other seasonal wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended 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 Study Areas do not contain vernal pool and/or other seasonal wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended 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 Study Areas do not contain vernal pool and/or other seasonal wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Navarretia rosulata Marin County navarretia	Rank 1B	Closed-cone coniferous forest, chaparral; located on dry, rocky sites often formed from serpentine. Elevation range: 650 – 2065 feet. Blooms: May – July.	**Unlikely.** The Study Area does not contain serpentine substrate to support this species.	**Not Present.** No further actions are recommended for this species.
Penstemon newberryi var. *sonomensis* Sonoma beardtongue	Rank 1B	Chaparral; crevices in rock outcrops and talus slopes on ridgelines and mountain peaks. Elevation range: 2295 – 4495 feet. Blooms: April – August.	**No Potential.** The Study Area does not contain large rock outcrops, nor is it located on steep ridgelines or mountain peaks.	**Not Present.** No further actions are recommended 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.	**No Potential.** The Study Areas do not contain vernal pool and/or other seasonal wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Rhynchospora californica California beaked-rush	Rank 1B	Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps. Elevation range: 145 – 3315 feet. Blooms: May – July.	**No Potential.** The Study Area does not contain perennial wetlands necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Sagittaria sanfordii Sanford's arrowhead	Rank 1B	Marshes and swamps; located in assorted shallow freshwater habitats including canals and perennial drainage ditches. Elevation range: 0 – 2115 feet. Blooms: May – October, sometimes November.	**No Potential.** The Study Area does not contain perennial wetlands necessary to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Senecio clevelandii var. *clevelandii* Cleveland's ragwort	Rank 4	Chaparral; situated on serpentine seeps. Elevation range: 1185 – 2925 feet. Blooms: June – July.	**No Potential.** The Study Area does not contain serpentine seep habitat necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Sidalcea hickmanii ssp. *napensis* Napa checkerbloom	Rank 1B	Chaparral; located on rhyolitic substrates. Elevation range: 1345 – 1985 feet. Blooms: April – June.	**Unlikely.** The Study Area does not contain rhyolitic soils to support this species.	**Not Present.** No further actions are recommended for this species.
Sidalcea hickmanii ssp. *viridis* Marin checkerbloom	Rank 1B	Chaparral; located on serpentine or volcanic substrate, often located in burns. Elevation range: 160 – 1400 feet. Blooms: May – June.	**Moderate Potential.** The Study Area contains shrubby areas underlain by volcanic soils which have recently burned.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
Sidalcea keckii Keck's checkerbloom	FE; Rank 1B	Cismontane woodland, valley and foothill grassland; located in grassy areas in blue oak woodland underlain by serpentine substrate. Elevation range: 240 – 2115 feet. Blooms: April – June.	**No Potential.** The Study Area does not contain serpentine substrate necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Sidalcea oregana ssp. *hydrophila* marsh checkerbloom	Rank 1B	Meadows and seeps, riparian forest; located on wet soils along streambanks and meadows. Elevation range: 3575 – 7475 feet. Blooms: July – August.	**No Potential.** The Study Area does not contain perennial wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
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 Study Area does not contain serpentine substrate to support this species.	**Not Present.** No further actions are recommended 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 Study Area does not contain coastal brackish marsh necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Toxicoscordion fontanum marsh zigzag	Rank 4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps; located in vernally mesic sites underlain by serpentine. Elevation range: 45 – 3250 feet. Blooms: April – July.	**No Potential.** The Study Area does not contain serpentine seeps or meadows necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Trichostema ruygtii Napa bluecurls	Rank 1B, LR	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools, lower montane coniferous forest; located in open, sunny locations, and dried vernal pools. Elevation range: 95 – 2210 feet. Blooms: June – October.	**Moderate Potential.** The Study Area contains open rocky volcanic areas that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
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.	**Moderate Potential.** The Study Area contains grassland that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.
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.	**No Potential.** The Study Areas do not contain vernal pool and/or other seasonal wetland habitat necessary to support this species.	**Not Present.** No further actions are recommended for this species.
Triteleia lugens dark-mouthed triteleia	Rank 4, LR	Broadleaf upland forest, chaparral, lower montane coniferous forest, coastal scrub. Elevation range: 325 – 3250 feet. Blooms: April – June.	**Moderate Potential.** The Study Area contains shrubby areas that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended 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.	**Moderate Potential.** The Study Area contains shrubby areas and woodland habitat that may support this species.	**Not Observed.** This species was not observed during the protocol-level survey. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
WILDLIFE				
Mammals				
Antrozous pallidus pallid bat	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Unlikely.** There are CNDDB occurrences in the greater vicinity (CDFW 2019a),and the Study Area contains oak woodland. However, a targeted bat habitat assessment was performed (i.e., close inspection of trees scheduled for removal) and found arboreal roosting substrates to be absent.	**Presumed Absent.** No further actions are recommended for this species.
Bassariscus astutus ringtail (ringtail cat)	SFP	Widely distributed throughout much of California. Found in a variety of habitats including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 4,600 ft. elevation. Typically uses cliffs or large trees for shelter.	**Unlikely.** The Study Area lacks cliffs and large tree cavities/hollows typical of dens for this species.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY 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 2019a).	**Presumed Absent.** No further actions are recommended for this species.
Eumops perotis californicus western mastiff bat	SSC, WBWG High	Found in a wide variety of open, arid and semi-arid habitats. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**Unlikely.** The Study Area lacks large rock structures that are suitable for roosting. There are no CNDDB occurrences of this species in Napa County.	**Presumed Absent.** No further actions are recommended for this species.
Lasiurus blossevillii western red bat	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	**Unlikely.** The Study Area lacks large, broadleaved trees of the type typically used for roosting (maples, sycamores, etc.).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Myotis thysanodes fringed myotis	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Building, mines, and large trees and snags are important day and night roosts.	**Unlikely.** There are CNDDB occurrences in the greater vicinity (CDFW 2019a),and the Study Area contains oak woodland. However, a targeted bat habitat assessment was performed (i.e., close inspection of trees scheduled for removal) and found arboreal roosting substrates to be absent.	**Presumed Absent.** No further actions are recommended for this species.
Myotis volans long-legged myotis	WBWG High	Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices, buildings, mines, and caves are important day roosts.	**Unlikely.** The Study Area lacks caves, buildings or similar refugia and does not contain coniferous forest.	**Presumed Absent.** No further actions are recommended for this species.
Reithrodontomys raviventris salt marsh harvest mouse	FE, SE, SFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for dryland refugia during high tides.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Sorex ornatus sinuosus Suisun shrew	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Require dense low-lying vegetation cover, driftwood, and other litter above the mean high tide line for nesting and foraging.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	**Not Present.** No further actions are recommended for this species.
Taxidea taxus American badger	SSC	Most abundant in drier open stages of most shrub, woodland, and herbaceous vegetation types. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Unlikely.** The Study Area provides grassland and woodland with some suitable habitat elements, but there are no occurrences within the eastern portion of Napa County (CDFW 2019a).	**Presumed Absent.** No further actions are recommended for this species.
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.	**Unlikely.** The reservoir/pond within the Study Area lacks emergent marsh suitable for nesting.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Ammodramus savannarum grasshopper sparrow	SSC, LR	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	**Unlikely.** Suitable grassland cover is relatively limited within most of the Study Area, and this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2019).	**Presumed Absent.** No further actions are recommended for this species.
Aquila chrysaetos golden eagle	BGEPA, SFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**Unlikely.** The Study Area does not provide large cliffs or typical large trees for nesting; may forage in the vicinity.	**Presumed Absent.** No further actions are recommended for this species.
Ardea alba great egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further actions are recommended for this species.

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

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Asio otus long-eared owl	SSC	Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding.	**Unlikely.** Rare in Napa County, with the nearest observations located on the Napa Valley floor (eBird 2019).	**Presumed Absent.** No further actions are recommended 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 2019a).	**Presumed Absent.** No further actions are recommended for this species.
Buteo swainsoni Swainson's hawk	ST	Summer resident in Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**Unlikely.** Napa County's very small breeding population is restricted to the Napa Valley floor in association with the Napa River and baylands (CDFW 2019a).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Charadrius alexandrines nivosus western snowy plover	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**No Potential.** The Study Area does not contain beaches or other suitable barren habitat near water.	**Not Present.** No further actions are recommended for this species.
Circus cyaneus northern harrier	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Unlikely.** Open grassland within the Study Area is limited in area; this species is not known to nest in this portion of Napa County as per Smith (2003).	**Presumed Absent.** No further actions are recommended for this species.
Contopus cooperi olive-sided flycatcher	SSC	Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.	**Unlikely.** The Study Area does not contain forest or woodland stands of the type typically used by this species.	**Presumed Absent.** No further actions are recommended for this species.
Coturnicops noveboracensis yellow rail	SSC	Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.	**No Potential.** The Study Area lacks wetland or moist meadow habitat suitable for this species; there are no nesting records from Napa County (Smith 2003, CDFW 2019a).	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Cypseloides niger black swift	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas. No modern nesting records in Napa County.	**No Potential.** The Study Area lacks waterfalls or analogous sheer-walled habitats; there are no nesting records from Napa County (Smith 2003, CDFW 2019a).	**Not Present.** No further actions are recommended for this species.
Egretta thula snowy egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees, at times in sequestered beds of dense emergent vegetation (e.g., tules). Rookery sites usually situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Unlikely.** The Study Area is not within close proximity to suitable waters to support a breeding colony.	**Presumed Absent.** No further actions are recommended for this species.
Elanus leucurus white-tailed kite	SFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Moderate Potential.** Woodland within the Study Area provides suitable nesting trees, and there are some open areas nearby 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. See Section 6.0 for details.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY 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 large cliffs or suitable man-made structures for nesting.	**Presumed Absent.** No further actions are recommended for this species.
Geothlypis trichas sinuosa San Francisco (saltmarsh) common yellowthroat	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Unlikely.** No suitable marsh vegetation is present within the Study Area.	**Presumed Absent.** No further actions are recommended for this species.
Haliaeetus leucocephalus bald eagle	BGEPA, SE, SFP	Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Unlikely.** Larger water bodies are not within or in close proximity to the Study Area. As per Smith (2003) and CDFW (2019a), nesting within Napa County is known only from the immediate vicinity of Lake Berryessa.	**Presumed Absent.** No further actions are recommended for this species.
Icteria virens yellow-breasted chat	SSC, LR	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow (*Salix* ssp.), blackberry (*Rubus* spp.), and wild grape (*Vitis californicus*).	**Unlikely.** The Study Area does not contain stands of dense riparian understory favored by this species for nesting.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Lanius ludovicianus loggerhead shrike	SSC, LR	Year-round resident in open woodland, grasslands, savannah, and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	**Unlikely.** Open, relatively flat areas are effectively absent within the Study Area, and this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2019).	**Presumed Absent.** No further actions are recommended for this species.
Laterallus jamaicensis coturniculus California black rail	ST, SFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	**No Potential.** The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	**Not Present.** No further actions are recommended for this species.
Melospiza melodia samuelis San Pablo song sparrow	SSC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed, with gumplant and other shrubs present in the upper zone for nesting. May forage in areas adjacent to marshes.	**No Potential.** The Study Area contains no tidal or brackish marsh and is outside of this species' limited Napa County range.	**Not Present.** No further actions are recommended for this species.
Nycticorax nycticorax black-crowned night heron	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	**No Potential.** The Study Area and adjacent lands lack suitable aquatic foraging habitat.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Passerculus sandwichensis alaudinus Bryant's savannah sparrow	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas, including grasslands. Also uses drier, more upland coastal grasslands. Nests near the ground in taller vegetation, including along levees and canals.	**Unlikely.** Grassland cover within the Study Area is relatively arid, and this species has not been documented in this portion of the County as per available sources (Smith 2003, eBird 2019a).	**Presumed Absent.** No further actions are recommended for this species.
Progne subis purple martin	SSC, LR	Summer resident. Inhabits woodlands and low-elevation coniferous forests. Nests in old woodpecker cavities and man-made structures (bridges, utility towers). Nest is often located in tall, isolated tree or snag.	**Unlikely.** Typical mixed or coniferous forest habitat is not present, and this species' Napa County range is restricted to the forested, northwestern portion of the County (Smith 2003, CDFW 2019a).	**Presumed Absent.** No further actions are recommended for this species.
Rallus obsoletus obsoletus California Ridgway's (clapper) rail	FE, SE, SFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on mollusks and crustaceans.	**No Potential.** The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY 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. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**No Potential.** The Study Area does not contain cliffs or cuts with fine-textured soils or any other potentially suitable nesting substrate. Not known to nest in Napa County as per Smith (2003).	**Not Present.** No further actions are recommended for this species.
Setophaga petechia brewsteri (Brewster's) yellow warbler	SSC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting is variable, but dense willow growth is typical. Occurs widely on migration.	**Unlikely.** The Study Area does not contain dense riparian thickets (e.g., willow cover) favored by this species for breeding. Individuals presumably occur during migration.	**Presumed Absent.** No further actions are recommended for this species.
Spizella atrogularis black-chinned sparrow	LR	Summer resident. Typically occurs on arid, rocky slopes with brushy vegetation, e.g. mixed chaparral, and sagebrush.	**Moderate Potential.** Stands of dense, mature chaparral within the Study Area provide suitable habitat.	**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. See Section 6.0 for details.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Strix occidentalis caurina northern spotted owl	FT,ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with stands of mature conifers. In Napa County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	**No Potential.** The Study Area does not contain conifer or mixed broadleaf-conifer forest nor is any present in the immediate vicinity.	**Not Present.** No further actions are recommended for this species.
Xanthocephalus xanthocephalus yellow-headed blackbird	SSC, LR	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	**Unlikely.** The reservoir/pond within the Study Area lacks emergent marsh suitable for nesting.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
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 Study Area lacks moist forest, and its stream courses lack deeper perennial pools and other habitat elements for this species. The nearest documented occurrences in CNDDB are a minimum distance of 7.3 miles to the north and west (the latter all west of Napa Valley; CDFW 2019).	**Presumed Absent.** No further recommendations for this species.
Emys marmorata western pond turtle	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	**Unlikely.** Potential habitat is restricted to the on-site pond/reservoir, and the nearest documented occurrences are greater than 6.7 miles away, and within lower-elevation areas with reduced topography.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Rana boylii foothill yellow-legged frog	SC (T), SSC	Found in or near rocky streams in a variety of habitats; highly aquatic. Prefers partially-sunlit, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on invertebrates (aquatic and terrestrial).	**Moderate Potential.** Portions of on-site stream courses contain rocky substrates that may support foraging individuals; however, frogs would migrate downstream during the spring/early summer draw-down of the streams. Therefore, breeding is unlikely, but seasonal presence may occur.	**Presence Unknown.** If ground disturbance occurs after the stream has ceased flowing for the year, there are no further recommendations for this species. If ground disturbance during stream flows, a preconstruction survey by a qualified biologist should be performed. See Section 6.0 for details.
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/backwaters. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	**Unlikely.** Potential habitat is restricted to the on-site pond/reservoir, and the nearest documented occurrences are greater than 6.7 miles away, and within lower-elevation areas with reduced topography.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY 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.	**No Potential.** 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.	**Not Present.** No further actions are recommended for this species.
Taricha rivularis red-bellied newt	SSC	Inhabits coastal forests from southern Sonoma County northward, with an isolated population in Santa Clara County. Redwood forest provides typical habitat, though other forest types (e.g., hardwood) are also occupied. Adults are terrestrial and fossorial. Breeding occurs in streams, usually with relatively strong flows.	**No Potential.** The Study Area does not contain mesic forest habitat to support this species; this species known range does not include Napa County (Thomson et al. 2016, CDFW 2019).	**Not Present.** No further actions are recommended for this species.

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

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY 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 actions are recommended for this species.
Oncorhynchus mykiss irideus steelhead - central CA coast DPS	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further actions are recommended for this species.
Oncorhynchus tshawytscha Chinook salmon - California coastal ESU	FT	This ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	**No Potential.** The Study Area does not contain suitable anadromous or estuarine waters.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY 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 actions are recommended 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 actions are recommended for this species.
Invertebrates				
Bombus crotchii Crotch bumblebee	SC	Range largely restricted to California. Favors grassland and scrub habitats. Typical of bumble bees, nests are usually constructed underground. Visits a variety of plants.	**Unlikely.** As per the Xerces Society (2018), there are no known extant populations of this species in the San Francisco Bay area.	**Assumed Absent.** No further actions are recommended.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Bombus occidentalis western bumble bee	SC	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared. Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	**Unlikely.** As per the Xerces Society (2018), there are no known extant populations of this species in the San Francisco Bay area.	**Assumed Absent.** No further actions are recommended.
Branchinecta lynchi vernal pool fairy shrimps	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**No Potential.** The Study Area does not contain vernal pools or other suitable seasonal aquatic features (e.g., swales deep and ponded enough to support this species).	**Not Present.** No further actions are recommended for this species.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT	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; in Napa County, CNDDB occurrences are restricted to its southeastern-most portion (CDFW 2019a).	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Speyeria callippe callippe Callippe silverspot butterfly	FE	Two populations are recognized, on San Bruno Mountain and the Cordelia Hills. Host plant is Johnny jump-up (*Viola pedunculata*), which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	**No Potential.** Although *Viola* was observed within the Study Area during the site visit, this species' known range with Napa County is restricted to the immediate vicinity of the Cordelia Hills.	**Not Present.** No further actions are recommended 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.** Although the Study Area contains stream courses, this species is known only from strongly perennial streams. Additionally, the only documented occurrence in Napa County is from Huichica Creek in the southwest portion of the county (Marin and Wicksten 2004, CDFW 2019).	**Not Present.** No further actions are recommended for this species.

***Key to status codes:**

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

Potential to Occur:

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

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

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

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

Results and Recommendations:

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

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

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

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

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

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

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

Appendix D

Site Photographs

Photo 1. Chamise chaparral within the eastern parcel of the Study Area.

Photo 2. Non-native grassland in the western parcel of the Study Area.

Photo 3. Common manzanita chaparral within the Study Area.

Photo 4. Leather oak scrub within the Study Area.

Photo 5. Upper reaches of the Study Area's intermittent stream.

Photo 6. Lower reaches of the intermittent stream.

Photo 7. The Study Area's disturbed fire break.

Photo 8. Chamise chaparral in the foreground, and coast live oak-California bay scrub in the background.

Appendix E

Tree Survey Data

Table E. Tree Survey Data

Species	Total DBH (in.)	Block
California bay	46	A
blue oak	18	A
California bay	15	A
coast live oak	17	A
blue oak	16	A
coast live oak	16	A
California bay	17	A
California bay	38	A
coast live oak	38	A
California bay	96	A
California bay	54	A
California bay	9	A
California bay	14	A
blue oak	17	A
California bay	12	A
California bay	15	A
California bay	48	A
California bay	23	A
California bay	26	A
blue oak	11	A
coast live oak	17	A
California bay	10	A
blue oak	21	A
blue oak	18	A
California bay	10	A
California bay	12	A
blue oak	13	A
California bay	16	A
California bay	18	A
California bay	52	A
coast live oak	18	A
coast live oak	23	A
California bay	18	A
blue oak	28	A
coast live oak	22	A
coast live oak	12	A
blue oak	16	A
blue oak	22	A
blue oak	20	A
coast live oak	22	A
California bay	18	A
blue oak	108	A
California bay	10	A
coast live oak	94	A
blue oak	48	A
California bay	14	A
blue oak	16	A
blue oak	10	A
blue oak	46	A
blue oak	32	A
blue oak	28	A
blue oak	28	A
California bay	28	A
blue oak	30	A
blue oak	28	A
blue oak	64	A
blue oak	34	A

Species	Total DBH (in.)	Block
blue oak	22	A
blue oak	26	A
blue oak	28	A
blue oak	30	A
blue oak	36	A
blue oak	35	A
blue oak	43	A
coast live oak	34	A
coast live oak	32	A
coast live oak	38	A
coast live oak	58	A
coast live oak	66	A
coast live oak	60	A
California bay	28	A
California bay	36	A
coast live oak	52	A
California bay	68	A
coast live oak	74	A
California bay	26	A
coast live oak	62	A
California bay	10	A
coast live oak	30	A
coast live oak	46	A
coast live oak	34	A
coast live oak	26	A
coast live oak	9	A
coast live oak	8	A
coast live oak	29	A
coast live oak	12	A
California bay	6	A
coast live oak	6	A
coast live oak	22	A
California bay	18	A
California bay	8	A
coast live oak	17	A
coast live oak	15	A
coast live oak	30	A
coast live oak	17	A
coast live oak	15	A
California bay	9	A
California bay	6	A
coast live oak	11	A
coast live oak	12	A
coast live oak	12	A
California bay	24	A
coast live oak	23	A
California bay	10	A
California bay	8	A
coast live oak	49	A
California bay	29	A
coast live oak	9	A
California bay	20	A
coast live oak	10	A
coast live oak	20	A
coast live oak	28	A
California bay	20	A
California bay	22	A
coast live oak	7	A
coast live oak	13	A

Species	Total DBH (in.)	Block
coast live oak	11	A
California bay	6	A
California bay	18	A
coast live oak	12	A
California bay	12	A
coast live oak	26	A
coast live oak	30	A
California bay	19	A
coast live oak	18	A
coast live oak	19	A
coast live oak	23	A
California bay	25	A
coast live oak	37	A
California bay	15	A
California bay	20	A
coast live oak	10	A
coast live oak	12	A
coast live oak	10	A
California bay	13	A
coast live oak	6	A
coast live oak	7	A
California bay	10	A
California bay	9	A
coast live oak	20	A
coast live oak	20	A
coast live oak	22	A
coast live oak	24	A
California bay	7	A
coast live oak	14	A
coast live oak	24	A
coast live oak	20	A
California bay	12	A
coast live oak	16	A
blue oak	36	A
blue oak	35	A
blue oak	28	A
blue oak	30	A
blue oak	29	A
blue oak	12	A
blue oak	31	A
blue oak	30	A
coast live oak	49	A
coast live oak	8.5	A
coast live oak	12	A
coast live oak	29	A
coast live oak	30	A
coast live oak	26	A
coast live oak	23	A
coast live oak	52	A
coast live oak	20	A
coast live oak	18	A
blue oak	31	A
coast live oak	14	A
California bay	22	A
coast live oak	34	A
coast live oak	15	A
coast live oak	31	A
coast live oak	51	A
coast live oak	48	A

Species	Total DBH (in.)	Block
coast live oak	16	A
California bay	23	A
coast live oak	30	A
blue oak	15	A
California bay	16	B
California bay	12	B
California bay	14	B
California bay	146	B
coast live oak	32	B
coast live oak	42	B
California bay	46	B
coast live oak	34	B
coast live oak	36	B
California bay	24	B
coast live oak	18	B
coast live oak	22	B
California bay	96	B
coast live oak	96	B
coast live oak	22	B
California bay	44	B
California bay	32	B
coast live oak	78	B
California bay	63	B
coast live oak	14	B
California bay	14	B
California bay	11	B
coast live oak	18	B
California bay	52	B
California bay	46	B
coast live oak	8	B
California bay	19	B
California bay	12	B
California bay	12	B
California bay	7	B
California bay	7	B
California bay	8	B
California bay	10	B
coast live oak	8.5	B
coast live oak	14	B
coast live oak	17	B
coast live oak	18	B
coast live oak	26	B
coast live oak	8	B
coast live oak	6	B
coast live oak	8	B
coast live oak	7	B
California bay	15	B
California bay	24	B
California bay	8	B
California bay	12	B
California bay	16	B
California bay	20	B
California bay	24	B
California bay	12	B
blue oak	66	C
blue oak	58	C
California bay	38	C
coast live oak	66	C
coast live oak	48	C

Species	Total DBH (in.)	Block
coast live oak	16	C
coast live oak	14	C
blue oak	38	C
coast live oak	56	C
coast live oak	163	C
coast live oak	136	C
coast live oak	98	C
California bay	48	C
coast live oak	48	C
coast live oak	38	C
coast live oak	43	C
California bay	26	C
coast live oak	44	C
coast live oak	49	C
California bay	18	C
blue oak	12	C
coast live oak	14	C
blue oak	20	C
blue oak	23	C
blue oak	19	C
coast live oak	34	C
coast live oak	29	C
coast live oak	18	C
coast live oak	18	C
coast live oak	31	C
coast live oak	31	C
coast live oak	9	C
coast live oak	6	D
coast live oak	8	D
coast live oak	12	D
coast live oak	14	D
California bay	16	D
California bay	22	D
California bay	20	D
California bay	24	D
California bay	26	D
California bay	14	D
California bay	14	D
coast live oak	16	D
California bay	22	D
California bay	26	D
California bay	26	D
California bay	22	D
California bay	28	D
coast live oak	22	D
California bay	10	D
California bay	11	D
California bay	11	D
California bay	10	D
coast live oak	12	D
coast live oak	10	D
California bay	10	D
California bay	11	D
California bay	22	E
California bay	24	E
California bay	18	E
coast live oak	12	E
California bay	16	E
California bay	18	E

Species	Total DBH (in.)	Block
California bay	20	E
California bay	28	E
California bay	24	E
California bay	16	E
California bay	17	E
California bay	22	E
California bay	24	E
coast live oak	24	E
California bay	22	E
California bay	24	E
California bay	32	E
California bay	32	E
California bay	22	E
California bay	36	E
California bay	36	E
California bay	24	E
California bay	30	E
California bay	22	E
California bay	24	E
coast live oak	38	E
California bay	24	E
California bay	22	E
California bay	10	E
California bay	12	E
California bay	14	E
California bay	14	E
California bay	6	E
California bay	8	E
California bay	12	E
California bay	10	E
California bay	10	E
California bay	12	E
California bay	20	E
California bay	22	E
California bay	21	E

Appendix F

Statement of Qualifications

Appendix F. Statement of Qualifications

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

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

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

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