

BIOLOGICAL RESOURCES RECONNAISSANCE SURVEY REPORT

432 DUTCH HENRY CANYON ROAD

CALISTOGA, NAPA COUNTY, CALIFORNIA (APN: 018-050-072)



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EXECUTIVE SUMMARY

This report details the regulatory background, methods, results, and recommendations of a Biological Resources Reconnaissance Survey (BRRS) for the proposed development of one vineyard block comprising 2.5 net acres of vines within 3.4 acres of clearing limit (Project Area) located at 432 Dutch Henry Canyon Road in Napa County, California. WRA, Inc. performed field surveys in May 2018 and March, April and June 2021. The Project Area is composed of Douglas fir forest and mixed forest/chaparral land cover.

Approximately 2.9 acres of Douglas fir forest, of a total 42.8 acres of coniferous forest land cover across the property (approximately 7 percent), are proposed to be converted to vineyard and associated infrastructure. This total is well within the 75 percent retention (3:1 ratio) required by County code. The remainder of the vineyard development area is situated in the non-sensitive biological community of non-native grassland.

The Project Area is intentionally sited to avoid the on-site pond and ephemeral stream courses. A protocol-level rare plant survey resulted in the detection of two special-status plants: Napa lomatium (*Lomatium repostum*, CRPR 4) and green monardella (*Monardella viridis*, CRPR 4). Both of the respective on-site populations will be avoided by at least 100 feet.

Western pond turtle (*Emys marmorata*) was observed within the Study Area. Additionally, three special-status bats and three special-status birds, as well as non-status birds with baseline legal protections, have the potential to occur in the Project Area. Mitigation measures and best management practices have been developed and provided herein to avoid impacts to these resources.

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DEFINITIONS

Subject Parcel: The area composing the two adjoining parcels of APN: 018-050-072, totaling 57.6 acres.

Study Area: The area throughout which the assessment was performed, the location of the proposed vineyard block and surrounding areas, totaling 35.0 acres.

Project Area: The area encompassing the proposed project (vineyard blocks grading limit); the area evaluated for potential impacts to sensitive biological resources, totaling 3.4 acres.

LIST OF ABBREVIATIONS & ACRONYMS

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

1.0 INTRODUCTION

On May 14, 2018 and March 26, April 15, and June 29, 2021, WRA, Inc. (WRA) performed an assessment of biological resources and several species-specific surveys at 432 Dutch Henry Canyon Road, Calistoga, Napa County (hereafter Study Area) (Figure A-1, Appendix A).¹ The purpose of this study was to gather the information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA) to meet the guidelines outlined by Napa County in *Guidelines for Preparing Biological Resources Reconnaissance Surveys* (Napa County 2016a) and *Guidelines for Preparing Special-status Plant Studies* (Napa County 2016b).

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

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

The proposed project (Project) involves the installation of one vineyard block totaling approximately 2.5 net acres (3.4 gross acres). Associated with the installation of the grape vines will be vineyard avenues, irrigation lines, etc. Site preparation (ripping, installation of erosion control measures, seeding cover crop, and installation of irrigation pipelines and trellis) will occur during the grading window of April 1 through October 15. By October 15, the site will be winterized with placement of straw wattles, seeding of vineyard avenues and planting areas, and straw mulch spread over disturbed areas as required by the ECP prepared for the Project.

2.0 REGULATORY BACKGROUND

This report is intended to facilitate conformance of the Project with the standards outlined in the Napa County Code and General Plan. In addition to the requirements of Napa County, the Project may also be

¹ WRA performed a single site visit in 2018 to review discrete portions of the subject parcel (when it was under different ownership). While the focal areas were unrelated to the current project, they informed components of the assessment.

subject to several federal and state regulations designed to protect sensitive natural resources. Full analysis of these requirements in the context of the Project is addressed herein.

2.1 Federal and State Regulatory Setting

2.1.1 Sensitive Land Cover Types

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

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

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

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

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

2.1.2 *Special-status Species*

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

Wildlife: As with plants, special-status wildlife includes species/taxa that have been listed or are formal candidates for such under ESA and/or CESA. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by ESA. The CFGC designates some species as Fully Protected (SFP), which indicates that take of that species cannot be authorized through a state permit. Additionally, CDFW Species of Special Concern (species that face extirpation in California if current population and habitat trends continue) are given special consideration

under CEQA, and are therefore considered special-status species. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA. Finally, wildlife species/taxa named as “locally rare” in the NCBDR (Napa County 2005) are also treated as special-status for purposes of this assessment.

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

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

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

2.2 Napa County Regulatory Setting

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

Napa County Baseline Data Report

Specific sensitive Land Cover Types are identified in the NCBDR (Napa County 2005). In addition to those Land Cover Types identified by CDFW, the NCBDR also identifies biotic communities of limited distribution

that “encompass less than 500 acres of cover within the County and are considered by local biological experts to be worthy of conservation” (Napa County 2005).

Natural Resource Goals and Policies

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

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

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

- a) Prevent removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species.
- b) In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible.
- c) Promote protection from overgrazing and other destructive activities.
- d) Encourage scientific study and require monitoring and active management where biotic communities and habitats of limited distribution or sensitive natural plant communities are threatened by the spread of invasive non-native species.
- e) Require no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Where avoidance, restoration, or

replacement is not feasible, preserve like habitat at a 2:1 ratio or greater within Napa County to avoid significant cumulative loss of valuable habitats.

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

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

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

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

- a) Preserve, to the extent feasible, oak trees and other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agriculture projects.
- b) Comply with the Oak Woodlands Preservation Act regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of the residential, commercial, and industrial approvals.
- c) Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio [effectively 3:1 ratio²] 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.

² Amendments to Napa County Ordinance 18.108 require a 3:1 ratio for preservation/replacement; see “Water Quality and Tree Protection Ordinance” on page 8.

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

General Provisions – Stream and Wetland Setbacks

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

Table 1. Napa County Stream Setbacks

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

In 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. Ordinance No. 1438 adopted by the Board of Supervisors allowed for a one-time exemption from the Ordinance (and therefore the updated stream and wetland setbacks) for projects that are less than 15 percent slope and less than 5 acres.

Vegetation Preservation and Replacement

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

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

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

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

Water Quality and Tree Protection Ordinance

In 2019, the Napa County Board of Supervisors adopted the Water Quality and Tree Protection Ordinance (WQTPO) modifying Chapter 18.108 Conservation Regulations to provide additional protections to trees and water quality. As noted above, additional setbacks were added for ephemeral and intermittent drainages and wetlands (Chapters 18.108.025 and 18.108.026). In addition, the tree retention required by Chapter 18.108.027 in sensitive domestic water supply drainages was increased from 60 percent to 70 percent based on vegetation that existed within the parcel in 1993. For areas within the Agricultural Watershed zoning district (outside of sensitive water supply drainages), Chapter 18.108.020 subsections C and D were added that require a minimum of 70 percent canopy retention based on vegetation that existed within the parcel in 2016, and the preservation or mitigation of trees (within oak woodland/forest and/or coniferous forest land covers) at a minimum 3:1 ratio. Ordinance No. 1438 allowed for a one-time exemption from the Ordinance (and therefore the updated stream setbacks, wetland setbacks, and vegetation retention requirements) for projects that are less than 30 percent slope and less than 5 acres.

3.0 ENVIRONMENTAL SETTING

The approximately 35-acre Study Area is set across a portion of a single parcel (Appendix A). It is located in northwestern Napa County, approximately three aerial miles east of downtown Calistoga and seven miles north of St. Helena. It is situated in the Mayacama Mountains of Napa County on the southern flank of Mount St. Helena and the Palisades, leading into Napa Valley. Detailed descriptions of the local setting are below.

3.1 Topography and Soils

The overall topography of the Study Area moderately- to steeply-sloped, ranging from approximately 1,050 to 1,450 feet above sea level. According to the *Soil Survey of Napa County* (USDA 1978) and as

shown in Figure A-2 (Appendix A), the Study Area is underlain by two soil mapping units: Forward silt loam, 12 to 57 percent slopes and Rock outcrop-Kidd complex, 50 to 75 percent slopes. The parent soil series of all the Study Area's mapping units are summarized below.

Forward Series: This series consists of moderately deep sandy loam soils of residuum weathered from rhyolitic tuff on hillslopes at elevations ranging from 400 to 4,500 feet (CSRL 2021, USDA 1978). These soils are not considered hydric, and are well drained, with medium runoff and moderately rapid permeability above the tuff bedrock (USDA 2014, USDA 1978). Native vegetation consists of coniferous forest composed of ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), incense cedar (*Calocedrus decurrens*), California black oak (*Quercus kelloggii*), manzanitas (*Arctostaphylos* spp.), and pine mat (*Ceanothus prostratus*). Typical land uses include timbering, watershed protection, and open space (USDA 1978).

Kidd Series: This series consists of very shallow gravelly loam soils formed from weathered rhyolitic tuff and rhyolite situated on upland hillslopes at elevations ranging from 500 to 4,300 feet (CSRL 2021, USDA 1978). These soils are not considered hydric, and are well- to excessively drained with medium to very rapid runoff, and moderately rapid to rapid permeability (USDA 2014, USDA 1972). Native and naturalized vegetation include hoary manzanita (*Arctostaphylos canescens*), chamise (*Adenostoma fasciculatum*), ceanothus (*Ceanothus* spp.), scrub oak (*Quercus berberidifolia*), knobcone pine (*Pinus attenuata*), ponderosa pine (*P. ponderosa*), and mixed herbs. Typical land use is for watershed, recreation, and limited grazing (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 Calistoga (Station ID: 041312) is 92.5 degrees Fahrenheit, while the average monthly minimum temperature is 36.2 degrees Fahrenheit. Precipitation falls as rain with an annual average of 37.55 inches. Precipitation-bearing weather systems are predominantly from the west and south with the majority of rainfalls between November and March, with a combined average of 31.52 inches (USDA 2021).

The local watershed is Upper Napa Valley (HUC 12: 180500020201) and the regional watershed is Napa River (HUC 8: 18050002). The Study Area is situated in the Napa County Planning Watershed of Ritchie Creek. There is a one unnamed dashed blue line stream and a man-made pond mapped on the Calistoga 7.5-minute quadrangle (USGS 2015). Likewise, this stream is mapped in the National Wetlands Inventory (NWI; USFWS 2021a) and the California Aquatic Resources Inventory (CARI; SFEI 2020), while several over streams and the pond are mapped in CARI, but not in the NWI. The primary hydrologic sources are direct precipitation and consequent surface sheet flow and subsurface flow into channels (streams). Precipitation in the majority of the Study Area infiltrates quickly due to rocky loam soils. Detailed descriptions of aquatic resources are in Section 5.1 below.

3.3 Land Cover and Land Use

The Study Area is predominantly undeveloped forest, with a portion of existing development and openings in the canopy. The developed areas in the Subject Parcel include one residence and associated infrastructure and landscaping. The Study Area is a 35-acre portion of the Subject Parcel. Detailed plant

community descriptions are included in Section 5.1 below, and all observed plants are included in Appendix B. Regional land uses include rural residential, wineries, and vineyards (Google Earth 2021). Historically, land uses in the region were open rangeland of larger ranches, rural residential, vineyards, and orchards. There is no history of intensive agriculture, quarrying, or mining, in the Study Area; however, timbering was likely in the late 19th or early 20th Century (Historic Aerials 2021).

4.0 ASSESSMENT METHODS

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

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

Database searches (i.e., CNDDDB, CNPS) focused on the Mount Saint Helena, Detert Reservoir, Aetna Springs, Mark West Springs, Calistoga, Saint Helena, Santa Rosa, Kenwood, and Rutherford USGS 7.5-minute quadrangles for special-status plants. The special-status wildlife evaluation was based on database searches for the entirety of Napa County. Appendix A contains observations of special-status species documented within a five-mile radius of the Study Area.

Following the remote assessment, a botanist with 40-hour Corps wetland delineation and wildlife biologist training traversed the entire Study Area on foot to document: (1) land cover types (e.g., terrestrial

communities, aquatic resources), (2) if and what type of aquatic natural communities (e.g., wetlands) are present, (3) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, and (4) if special-status species are present³.

4.1 Land Cover Types

4.1.1 Terrestrial Land Cover Types

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

Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled (S1/G1), imperiled (S2/G2), or vulnerable (S3/G3), were evaluated as sensitive as part of this evaluation.⁴ Additionally, any sensitive natural communities as described in the Napa County Baseline Data Report (NCBDR; Napa County 2005) or General Plan (Napa County 2008) were considered.

4.1.2 Aquatic Resources

Aquatic resources include Waters of the U.S., Waters of the State, and Streams, Lakes, and Riparian Habitat as defined in the CWA, Porter-Cologne Act, and CFGC, respectively. Napa County mandates setbacks from these aquatic resources, and therefore requires mapping of the outward extent of such features. This site assessment does not constitute a formal wetland delineation; however, the surveys looked for superficial indicators of wetlands such as hydrophytic vegetation (i.e., plant communities dominated by wetland species), evidence of inundation or flowing water, saturated soils and seepage, and topographic depressions/swales. If sample points were taken, WRA followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008).

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

³ Due to the timing of the assessment, it may or may not constitute protocol-level species surveys; see Section 4.2 if the site assessment would constitute a formal or protocol-level species survey.

⁴ Ranking of CDFW List of Vegetation Alliances is based on NatureServe Rankings (NatureServe 2018)

assessed to determine if they meet the Napa County definition of “stream” pursuant to Napa County Code 18.108.030.

4.2 Special-status Species

4.2.1 General Assessment

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

A preliminary site visit was made on March 26, 2021 to evaluate the presence of suitable habitat for special-status species. Suitable habitat conditions are based on physical and biological conditions of the site, as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

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

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

4.2.2 Special-status Plants

To determine the presence or absence of special-status plant species, focused surveys were conducted within Study Area on March 26, April 15, and June 29, 2021. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. The field surveys were conducted by botanists familiar with the flora of Napa and surrounding counties. The surveys were performed in accordance with those outlined by Napa County (2016b), which follow those described by resource experts and agencies (CNPS 2001, CDFW 2018b, USFWS 1996). Plants were identified using *The Jepson Manual, 2nd Edition* (Baldwin et. al. 2012) and Jepson Flora Project (eFlora

2020), to the taxonomic level necessary to determine whether or not they were sensitive. Plant names follow those of Jepson Flora Project (eFlora 2020), unless otherwise noted.

4.2.3 *Special-status Wildlife*

A general wildlife assessment was performed on March 26, 2021. This assessment consisted of traversing the entirety of the Study Area as well as substantial portions of the Subject Parcel. Habitat elements required or associated with certain species (e.g., northern spotted owl) or species groups (e.g., bats, anadromous fish) were searched for and noted. Such habitat elements include, but are not limited to: plant assemblages and vegetation structure; stream depth, width, hydro-period, slope, and bed-and-bank structure; rock outcrops, caves, cliffs, overhangs, and substrate texture and rock content; history of site alteration and contemporary disturbances; etc.

To conform to standards associated with tree removal (conifers) on the scale proposed for the Study Area, protocol-level surveys for the federal and state listed northern spotted owl (NSO; *Strix occidentalis caurina*) were performed by Forest Ecosystem Management from mid-March to early June 2021; see Appendix D.

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

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2021b) and the NMFS Essential Fish Habitat Mapper (NMFS 2021) 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 2021a), and the NCBDR (Napa County 2005). Additionally, aerial imagery (Google 2021) 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

Land cover types observed by WRA within the Subject Parcel are shown in Figure A-3, and land covers overlain with the Project's limits of disturbance in Figure A-4 (Appendix A). Nine land cover types are present, with only seven occurring in the Study Area: developed, non-native grassland, chamise chaparral, coast live oak woodland, Pacific madrone forest, foothill pine woodland, Douglas fir forest, man-made pond, and ephemeral streams. The Project Area (vineyards and clearing limits) have been intentionally sited to avoid all aquatic resources and reduce the impacts to forest/woodland habitat.

5.1.1 *Terrestrial Land Cover Types*

Developed Area (no vegetation alliance). CDFW Rank: None. Within the Study Area, developed portions are composed of a single residence, outbuildings, associated infrastructure, and access roads. The

vegetation and soils are highly altered, consisting of overhanging native trees, landscape species, and disturbance tolerant herbs. Species include Douglas fir (*Pseudotsuga menziesii*), California bay (*Umbellularia californica*), English ivy (*Hedera helix*), bur medic (*Medicago polymorpha*), and yellow bedstraw (*Galium murale*). Developed areas total 3.1 acres in the Subject Parcel and less than 0.3 acre in the Project Area (approximately 10 percent of the total land cover type in the Subject Parcel). This community is synonymous with the Urban/Built-up biotic community in the NCLC (Thorne et al. 2004). This community is not considered sensitive by Napa County, CDFW, or any other regulatory entity.

Non-native Annual Grassland – Wild Oat Grassland (*Avena barbata* Semi-Natural Herbaceous Stands). CDFW Rank: None: Non-native grasslands occur throughout cismontane California, particularly in the Sierra Foothills, Coast Range, Transverse Range, and Peninsular Ranges (Sawyer et al. 2009, CNPS 2021b). These grasslands situated on a variety of landscapes including coastal terraces, valley bottoms, and foothills underlain by a variety of soil types. The Subject Parcel contains 3.8 acres of this community type, of which 0.3 acre is situated in the Project Area (eight percent percent of the total land cover type in the Subject Parcel).

The dominant cover is the herbaceous layer, but there are scattered trees and shrubs including coast live oak (*Quercus agrifolia*), coyote brush (*Baccharis pilularis*), and common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*). The herbaceous layer is dominated by non-native grasses of wild oat (*Avena barbata*), soft chess (*Bromus hordeaceus*), dogtail grass (*Cynosurus echinatus*), and Italian rye grass (*Festuca perennis*). Native wildflowers are not uncommon in portions of the grassland including miniature lupine (*Lupinus bicolor*), sky lupine (*Lupinus nanus*), California poppy (*Eschscholzia californica*), common soap plant (*Chlorogalum pomeridianum*), purple sanicle (*Sanicula bipinnatifida*).

This community is synonymous with the California Annual Grasslands Alliance biotic community in the NCLC (Thorne et al. 2004). These grasslands provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with grasslands. These grasslands are not considered sensitive by the CDFW or Napa County.

Chamise Chaparral (*Adenostoma fasciculatum* Shrubland Alliance). CDFW Rank: G5 S5: Chamise chaparral occurs in the Coast Ranges, Transverse Ranges, Sierra Nevada Foothills, and Peninsular Range from Humboldt County south to San Diego County (Sawyer et al. 2009, CNPS 2021b). These shrublands are situated on varied topography, rarely flats underlain by shallow colluvial soils derived from a variety of parent materials (Sawyer et al. 2009). The Subject Parcel contains 0.5 acre of this community type, none of which is situated in the Project Area.

The dominant cover type is shrubs with scattered trees. The woody layer is dominated by chamise (*Adenostoma fasciculatum*), with other woody species that include coast live oak (*Quercus agrifolia*), Pacific madrone (*Arbutus menziesii*), toyon (*Heteromeles arbutifolia*), sticky monkey (*Diplacus aurantiacus*), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer is dominated by native perennial forbs including common soap plant (*Chlorogalum pomeridianum*), golden globe lily (*Calochortus amabilis*), common woolly sunflower (*Eriophyllum lanatum*), California helianthella (*Helianthella californica* var. *californica*), Napa biscuitroot (*Lomatium repostum*), and blue dicks (*Dichelostemma capitatum*).

This community is synonymous with the Chamise Alliance biotic community in the NCLC (Thorne et al. 2004). Some associations of these shrublands are considered sensitive by the CDFW and Napa County; however, the association within the Study Area is common throughout Napa County and California and is therefore not afforded protection.

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance). CDFW Rank: G5 S4: Coast live oak woodlands occur in the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County (Sawyer et al. 2009, CNPS 2021b). These woodlands are typically situated on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). The Subject Parcel contains 1.9 acres of this community type, none of which is situated in the Study Area or Project Area.

The dominant tree is coast live oak (*Quercus agrifolia*), with scattered cover of California black oak (*Quercus kelloggii*), Pacific madrone (*Arbutus menziesii*), and California bay (*Umbellularia californica*). Predominant understory species include poison oak (*Toxicodendron diversilobum*), common bedstraw (*Galium aparine*), Italian thistle (*Carduus pycnocephalus*), and numerous non-native annual grasses.

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).

Pacific Madrone Forest (*Arbutus menziesii* Forest Alliance). CDFW Rank: G4 S3: Pacific madrone forests occur in the Coast Ranges, Klamath Mountains, Cascade Range, and Sierra Nevada Foothills from Del Norte County south to Santa Barbara County (Sawyer et al. 2009, CNPS 2021b). These forests typically occur along stream terraces, on upland slopes with productive soils, as well as steep slopes underlain by shallow, rocky, infertile soils (Sawyer et al. 2009). The Subject Parcel contains 3.2 acres of this community type, none of which is situated in the Project Area.

The dominant tree is Pacific madrone (*Arbutus menziesii*), with scattered cover of coast live oak (*Quercus agrifolia*) and Douglas fir (*Pseudotsuga menziesii*). Understory species include common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), poison oak (*Toxicodendron diversilobum*), common soap plant (*Chlorogalum pomeridianum* var. *pomeridianum*), Pacific sanicle (*Sanicula crassicaulis*), spring beauty (*Claytonia parviflora*), miner's lettuce (*Claytonia perfoliata*), common bedstraw (*Galium aparine*), golden globe lily (*Calochortus amabilis*), California wood fern (*Dryopteris arguta*), and numerous non-native annual grasses.

This community falls in the California Bay-Madrone-Coast Live Oak (Black Oak-Big Leaf Maple) NFD Super Alliance biotic community in the NCLC (Thorne et al. 2004). These forests 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 considers Pacific madrone forests a sensitive natural community. Conversely, these forests are not listed as sensitive in the NCBDR (Napa County 2005), nor are they specifically addressed in the General Plan or County Ordinances.

Foothill Pine Woodland (*Pinus sabiniana* Woodland Alliance). CDFW Rank: G4 S4. Foothill pine woodlands are known from Klamath Mountains, southern Cascade Range, Coast Range, Transverse Range, and Sierra Nevada Foothills (CNPS 2021b). These woodlands occur along streamsides, valleys, and ridgelines on shallow, rocky, well-drained soils that are frequently infertile including ultramafic (CNPS 2021b, Sawyer et al. 2009). The Subject Parcel contains 0.8 acre of this community type, none of which is situated in the Study Area or Project Area.

Within the Subject Parcel, the canopy of this community is dominated by foothill pine (*Pinus sabiniana*). Secondary tree species include California black oak (*Quercus kelloggii*), coast live oak (*Quercus agrifolia*), and Pacific madrone (*Arbutus menziesii*). The understory is a mix of shrubs and herbs including common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), chamise (*Adenostoma fasciculatum*), toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), soap plant (*Chlorogalum pomeridianum* var. *pomeridianum*), blue dicks (*Dichelostemma capitatum*), purple needlegrass (*Stipa pulchra*), blue wildrye (*Elymus glaucus*), and California fescue (*Festuca californica*).

This community falls in the Foothill Pine 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 and chaparrals. The CDFW does not consider foothill pine woodland a sensitive natural community, nor is it listed as sensitive in the NCBDR (Napa County 2005).

Douglas Fir Forest (*Pseudotsuga menziesii* Forest Alliance). CDFW Rank: G5 S4. Douglas fir forests are known from the Coast Ranges, Klamath Mountains, Cascade Range, and the western slope of the Sierra Nevada (CNPS 2021b). These forests occur on all topographic positions and aspects, and variety of substrates including volcanics and serpentine (CNPS 2021b, Sawyer et al. 2009). The Subject Area contains 42.0 acres of this community type, of which 2.9 acres is situated in the Project Area (6.9 percent of the total land cover type in the Subject Parcel).

Within the Study Area, the canopy of this community is dominated (greater than 50 percent cover) Douglas fir (*Pseudotsuga menziesii*). Secondary tree species are frequent, but collectively constitute less than 50 percent relative cover, and include coast redwood (*Sequoia sempervirens*), Pacific madrone (*Arbutus menziesii*), and California black oak (*Quercus kelloggii*). The stand is even-aged with a few older trees in the overstory and notable regeneration of Douglas fir (*Pseudotsuga menziesii*) and other trees in the understory. Other understory species include poison oak (*Toxicodendron diversilobum*), sweet cicely (*Osmorhiza berteroi*), common bedstraw (*Galium aparine*), western sword fern (*Polystichum munitum*), and California wood fern (*Dryopteris arguta*).

This community falls in the Douglas Fir Alliance biotic community in the NCLC (Thorne et al. 2004). These forests provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with woodlands and chaparrals. The CDFW does not consider Douglas fir forest a sensitive natural community, nor is it listed as sensitive in the NCBDR (Napa County 2005).

5.1.2 Aquatic Resources

Ephemeral Stream. CWA Section 404/401, Non-County Defined. Rank: None. The Subject Parcel contains two reaches of a single ephemeral drainage. This drainage is in-line with the man-made pond (see below). The flow is ephemeral only running during and immediately following substantial precipitation. The bed-and-banks are a mix of finer sediments, with intermittent large cobble. They are shallow, with narrow banks of fine sediments (clays, loams). There is no distinctly riparian vegetation along this drainage. It is likely jurisdictional under Section 404/401 of the CWA and Section 1602 of the CFGC; therefore, it is considered a sensitive aquatic resource. However, this drainage does not meet the Napa County stream definition pursuant to Napa County Code 18.108.025.

Pond. CWA Section 404/401. Rank: None. The Subject Parcel contains a pond which is in-line with a natural ephemeral stream. The pond contains a clear OHWM. The edge contains some emergent wetland vegetation, but this fringe is neither contiguous nor wider than two or three feet. Species in this fringe include arroyo willow (*Salix lasiolepis*), fringed willowherb (*Epilobium ciliatum*), and spotted lady's-thumb (*Persicaria maculosa*). This feature is likely to be considered jurisdictional under Section 404/401 of the CWA, the Porter Cologne Act, and Section 1600 of the CFGC; therefore, it is considered a sensitive aquatic resource.

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, 108 special-status plant species have been documented in the vicinity of the Study Area. Thirty-seven of these plants have the potential to occur in the Study Area.⁵ The remaining 71 special-status plants documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

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

⁵ As per these databases, there are no documented occurrences of special-status mosses, bryophytes or lichens in Napa County.

WRA biologists conducted several site visits during a period sufficient to identify all 37 special-status plant species with the potential to occur within the Study Area. Two such plants were located in the Study Area during protocol-level surveys: Napa lomatium (*Lomatium repostum*) and green monardella (*Monardella viridis*), they are discussed below. Additionally, all species with the potential to occur are listed below and described in Appendix C.

Special-status Plants Present in the Study Area

As shown in Figure A-5 (Appendix A), the following two special-status plants were observed within the Study Area during the 2020 surveys.

Napa Lomatium (*Lomatium repostum*). CRPR 4. High Potential. Napa Lomatium is a perennial forb in the carrot family (Apiaceae) that blooms from March through June. It typically occurs on serpentine substrate in chaparral and cismontane woodland habitat at elevations ranging from 290 to 2,700 feet (CNPS 2021a). This species has a serpentine affinity rank of strong indicator (3.2) (Safford et al. 2005). Associated species include hoary manzanita (*Arctostaphylos canescens*), Rincon Ridge ceanothus (*Ceanothus confusus*), toyon (*Heteromeles arbutifolia*), chamise (*Adenostoma fasciculatum*), California coffeeberry (*Frangula californica*), bush poppy (*Dendromecon rigida*), Sonoma sage (*Salvia sonomensis*), purple needlegrass (*Stipa pulchra*), Idaho fescue (*Festuca idahoensis*), and small fescue (*F. microstachys*) (personal observation 2013-2021). There are 30 individuals of Napa lomatium covering approximately 920 square feet within the Study Area; this singular population is entirely confined to the chamise chaparral land cover type north of, and entirely outside of, the Project Area.

Green Monardella (*Monardella viridis*). CRPR 4. High Potential. Green Monardella is a perennial forb in the mint family (Lamiaceae) that blooms from June through September. It typically occurs on serpentine substrates in chaparral, cismontane woodland, and broadleaf upland forest habitat at elevations ranging from 325 to 3,285 feet (CNPS 2021a). This species has a serpentine affinity rank of broad endemic/strict indicator (4.3) (Safford et al. 2005). Associated species include silk tassel (*Garrya elliptica*), Napa ceanothus (*Ceanothus purpureus*), mountain mahogany (*Cercocarpus betuloides*), chamise (*Adenostoma fasciculatum*), sticky monkey (*Mimulus aurantiacus*), and Stanford's manzanita (*Arctostaphylos stanfordiana*) (CCH 2017, personal observation 2017-2021). There are 50 individuals of green monardella covering approximately 12,825 square feet within the Study Area; this singular population is entirely confined to the chamise chaparral land cover type north of, and entirely outside of, the Project Area.

Special-status Plants Not Observed in the Study Area

The following 26 special-status plants have the potential to occur within the Study Area but were not observed during protocol-level rare plant surveys conducted in April and May 2018.

- Franciscan onion (*Allium peninsulare* var. *franciscanum*); CRPR 1B
- Napa false indigo (*Amorpha californica* var. *napensis*); CRPR 1B
- Twig-like snapdragon (*Antirrhinum virga*); CRPR 4
- Koenocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*); CRPR 1B
- Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*); CRPR 1B

- Brewer's milk-vetch (*Astragalus breweri*); CRPR 4
- Clara Hunt's milk-vetch (*Astragalus claranus*); FE, ST, CRPR 1B
- Big-scale balsamorhiza (*Balsamorhiza macrolepis*); CRPR 1B
- Narrow-anthered Brodiaea (*Brodiaea leptandra*); CRPR 1B
- Brewer's calandrinia (*Calandrinia breweri*); CRPR 4
- Large-flowered mariposa lily (*Calochortus uniflorus*); CRPR 4, LR
- Rincon Ridge ceanothus (*Ceanothus confusus*); CRPR 1B
- Calistoga ceanothus (*Ceanothus divergens*); CRPR 1B
- Point Reyes ceanothus (*Ceanothus gloriosus* var. *exaltatus*); CRPR 4
- Holly-leaved ceanothus (*Ceanothus purpureus*); CRPR 1B
- Sonoma ceanothus (*Ceanothus sonomensis*); CRPR 1B
- Mountain lady's-slipper (*Cypripedium montanum*); CRPR 4
- Streamside daisy (*Erigeron biolettii*); CRPR 3
- Greene's narrow-leaved daisy (*Erigeron greenei*); CRPR 1B
- St. Helena fawn lily (*Erythronium helenae*); CRPR 4
- Nodding harmonia (*Harmonia nutans*); CRPR 4
- Sharsmith's western flax (*Hesperolinon sharsmithiae*); CRPR 1B
- Bristly leptosiphon (*Leptosiphon acicularis*); CRPR 4
- Jepson's leptosiphon (*Leptosiphon jepsonii*); CRPR 1B
- Broad-lobed leptosiphon (*Leptosiphon latisectus*); CRPR 4
- Redwood lily (*Lilium rubescens*); CRPR 4, LR
- Hoover's lomatium (*Lomatium hooveri*); CRPR, LR
- Cobb Mountain lupine (*Lupinus sericatus*); CRPR 1B
- Lobb's aquatic buttercup (*Ranunculus lobbii*); CRPR 4
- Victor's gooseberry (*Ribes victoris*); CRPR 4
- Sanford's arrowhead (*Sagittaria sanfordii*); CRPR 1B
- Napa checkerbloom (*Sidalcea hickmanii* ssp. *napensis*); CRPR 1B
- Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*); CRPR 2B
- Dark-mouthed Triteleia (*Triteleia lugens*); CRPR 4, LR
- Oval-leaved viburnum (*Viburnum ellipticum*); CRPR 2B

5.2.2 Special-status Wildlife Species

A total of 58 special-status wildlife species have been documented in Napa County (CDFW 2021a, Napa County 2005). One of these species was observed within the Study Area during site visits, and six additional species have the potential to occur there. The remaining 52 species are unlikely or have no potential to occur due to one or more of the following reasons:

- Aquatic habitats (e.g., rivers, estuaries) necessary to support the special-status wildlife species are not present in the 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, riparian forest) necessary to provide nesting, cover, and/or foraging habitat to support the special-status wildlife species are not present in the Study Area
- Host plants (e.g., dog violet, harlequin lotus) necessary to provide larval and nectar resources for the special-status wildlife species are not present in the Study Area
- The Study Area is outside (e.g., north of, west of) of the special-status wildlife species documented nesting range

Special-status Wildlife Present in the Study Area

Western pond turtle (*Emys marmorata*). CDFW Species of Special Concern. Moderate Potential. The western pond turtle is the only freshwater turtle native to most of California. This species is highly aquatic, typically inhabiting perennial waters including lakes, ponds/reservoirs, rivers, streams, and canals that provide submerged cover and suitable exposed basking structures such as rocks, logs and mats of emergent vegetation. Nesting usually occurs in spring to early summer, with eggs hatching in the fall; nests are excavated in upland areas with friable soil, usually on unshaded slopes within approximately 300 feet of water (Thomson et al. 2016). Hatchlings require shallow water with relatively dense emergent and aquatic vegetation to provide forage, usually aquatic invertebrates (Thomson et al. 2016).

Two adult western pond turtles were observed within the on-site pond during WRA's site visits in March and June 2021. During the second (June) visit, the inundation in the pond had substantially receded, and given that no meaningful precipitation event occurred in the region until October 2021, the pond may have dried down completely during the interim period; a dry-down would have very likely resulted in the turtles vacating the Study Area. At the time of the site visits, the pond appeared to provide moderate quality habitat, with some basking substrates (exposed shoreline, logs and rocks). There is potential for upland nesting within the Study Area, specifically in open (sunlit) upland areas adjacent to the pond.

Special-status Wildlife with Potential to Occur

Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential. The pallid bat is widely distributed throughout western North America, and occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented within snags and basal hollows of conifers, and within bole cavities in oak trees. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2021). Trees within the Study Area (conifers and oaks) may contain cavities or snags suitable for roosting by this species, and there are CNDDDB occurrences in the vicinity (CDFW 2021a). A targeted bat habitat assessment was not performed under this biological assessment.

Fringed myotis (*Myotis thysanodes*). WBWG High Priority. Moderate Potential. The fringed myotis ranges throughout much of western North America. This species is found in desert scrubland, grassland, sage-grass steppe, old-growth forest, and subalpine coniferous and mixed deciduous

forest. Oak and pinyon-juniper woodlands are most commonly used. The fringed myotis roosts in colonies from 10 to 2,000 individuals, although large colonies are rare. Caves, buildings, underground mines, rock crevices in cliff faces, and bridges are used for maternity and night roosts, while hibernation has only been documented in buildings and underground mines. Tree-roosting has also been documented in Oregon, New Mexico, and California (WBWG 2021). Trees within the Study Area may contain cavities or exfoliating bark suitable for roosting. A targeted bat habitat assessment was not performed under this biological assessment.

Long-legged myotis (*Myotis volans*). WBWG High Priority. Moderate Potential. The long-legged myotis ranges across western North America from southeastern Alaska to Baja California and east to the Great Plains. This species is usually found in coniferous forests, but also occurs seasonally in riparian areas and deserts. Preferred roost sites include abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags as summer day roosts. Caves and mines are used as hibernation roosts. Foraging occurs in and around the forest canopy and feed on moths and other soft-bodied insects (WBWG 2021). Trees within the Study Area may contain snags and hollows suitable for roosting. A targeted bat habitat assessment was not performed under this biological assessment.

Olive-sided flycatcher (*Contopus cooperi*). CDFW Species of Special Concern. Moderate Potential. The olive-sided flycatcher is a summer resident in California, wintering in Latin America. It breeds in a variety of forested habitats, typically coniferous forests at higher elevations, but also in mixed forest and woodlands at lower elevations. Breeding habitat is often associated with forest openings and edges, both natural (e.g., meadows, canyons) and man-made (e.g., logged areas) (Shuford and Gardali 2008). Nests are usually in conifers, and placed at variable height on the outer portions of branches. This species forages for insects, usually from prominent tree snags. The Study Area provide coniferous forest with tall snags and hard edges (e.g., clearings), and is suitable for nesting.

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 open areas in close proximity for foraging. This species was not observed; however, a bird survey was not performed during this assessment.

Purple martin (*Progne subis*). CDFW Species of Special Concern. Moderate Potential. The purple martin is an uncommon summer resident in California, breeding in forest and woodlands at low- to mid- elevations throughout much of the state. Nesting occurs primarily in tree cavities; trees selected are usually taller or isolated, with low canopy cover at the nest height, and situated on the upper portions of slopes and/or near bodies of water where large aerial insects (favored prey) are abundant (Shuford and Gardali 2008). Conifers are the most frequently used tree type in

northern California. Man-made structures with suitable cavities such as bridges or utility poles are also used. Taller tree snags within the Study Area ostensibly provide suitable nesting substrates for this species; there are two documented nesting occurrences in CNDDDB within 0.8 mile of the Project Areas (CDFW 2021a).

Listed Wildlife Unlikely to Occur

Northern Spotted Owl. Federal Threatened, State Threatened CDFW Species of Special Concern. Unlikely (Not Observed). The NSO is the resident spotted owl subspecies found in cool temperate forests in the coastal portion of California, from Marin County northward. The natural history of this subspecies is summarized by the USFWS (2011) and Gutiérrez et al. (1995). Typical habitats consist of old-growth or otherwise mature coniferous forest and mixed coniferous-hardwood forest; younger (second-growth) forest with stands of large/mature trees may also be occupied.

The Study Area is unlikely to be occupied by NSO. According to CDFW's Spotted Owl Database, the nearest documented nesting occurrence is located greater than 3.8 miles to the south (across Napa Valley), and the nearest activity center otherwise greater than 3.1 miles to the northeast (CDFW 2021b). While forested predominantly with conifers, the Study Area lacks a dense, structurally-complex canopy in comparison to occupied forest stands in the greater vicinity, and impacts from the Glass Fire further reduced the suitability of the site. The protocol-level surveys performed in 2021 yielded negative results; see Appendix D for a detailed summary of the methods and results of these surveys.

5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Study Area does not contain any designated Critical Habitat (USFWS 2021b, NMFS 2021) or Essential Fish Habitat (NMFS 2021). The Study Area's streams have limited hydroperiods, are high gradient, are very narrow and shallow, and do not have run-riffle-pool complexes; therefore, anadromous fish will not utilize these streams. The Study Area is not within a designated wildlife corridor (CalTrans 2010, Napa County 2005). The site is located within a much larger tract of predominantly forested land within a rural portion of Napa County. While common wildlife species presumably utilize the site for movement at a local scale, the Study Area itself does not provide corridor functions beyond connecting similar forested and heavily wooded land parcels in surrounding areas.

6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

6.1 Land Cover Types

6.1.1 Terrestrial Land Cover Types

Douglas Fir Forest

Douglas fir forest is not considered sensitive by CDFW nor is it included as sensitive in the NCBD; however, the General Provisions of Napa County Code (18.108.020) requires varying levels of canopy retention and preservation. Code Section 18.108.020(C) requires that 70 percent of canopy cover be retained based on the on-site canopy present on June 16, 2016. Code Section 18.108.020(D) requires that the removal of tree canopy on an acreage basis be mitigated at a 3:1 ratio (which is equivalent to 75 percent retention) where the areas to be preserved must generally occur on slopes less than 50 percent and outside of stream and wetland setbacks. There has been no appreciable change in canopy cover since 2016; therefore, the use of Napa County's 2016 GIS Vegetation Public Habitat Mapping is appropriate for both analyses. The project was designed to be in compliance with both the 70 percent retention and the 3:1 tree preservation requirements. Of the 42.8 total acres of coniferous forest (Douglas fir forest and foothill pine woodland combined) within the Subject Parcel, 2.9 acres of Douglas fir forest are within the Project Area, resulting in the retention of 39.9 acres (approximately 93 percent). Therefore, no further recommendations are needed to ensure compliance with the County Code.

The Douglas fir forest is presumed to be timberland falling under the jurisdiction of CAL FIRE. It is WRA's understanding that a registered professional forester obtained emergency authorization for tree removal within the Project Area from CAL FIRE in August 2021, and that a Timber Harvest Plan and Timber Conversion Permit will not be required. As such, no recommendations regarding removal of Douglas fir forest within the Project Area are warranted.

6.1.2 Aquatic Resources

The Study Area contains ephemeral streams and a man-made pond. These features will be completely avoided by the project, with the project footprint at least 35 feet from the ephemeral stream and 35 feet from the man-made pond. These distances meet the County standards. The following recommendations are forwarded to protect these aquatic resources.

Recommendation 1: Setbacks of 35 feet are provided in compliance with Napa County Code 18.108.025 for county non-definitional streams. Grading shall occur during the dry season (April 1 through October 15) and should be suspended during unseasonable rainfalls of greater than one-half inch over a 24-hour period. If rainfall is in the forecast, standard erosion control measures (e.g., straw wattles, bales) should be deployed on the vineyard block edge paralleling the aquatic features.

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 laid 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

Two special-status plants occur within the Study Area; however, both are at least 100 feet outside of the Project Area. The project will not impact special-status plants; therefore, there are no further actions recommended for such.

6.2.2 Special-status Wildlife

One special-status wildlife species (western pond turtle) was observed within the Study Area, and the Project Area has the potential to support six additional special-status wildlife species (three bats and three birds), as well as non-status birds protected under the MBTA. The following measures are recommended to avoid or otherwise minimize potential impacts to these species.

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

Recommendation 2: WRA recommends that any tree removal be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, it is recommended that a bat habitat assessment and survey effort (the latter if needed) be performed by a qualified biologist prior to tree removal to determine if bats are present in the trees. If no suitable roosting habitat for bats is found, then no further study is warranted. If special-status bat species or bat maternity roosts are detected, then roost trees should be avoided until the end of the maternity roosting season. If this avoidance is not feasible, appropriate species- and roost-specific mitigation measures should be developed in consultation with CDFW. Irrespective of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.

All Bird Species (including non-special-status): In addition to the two special-status bird species discussed above (olive-sided flycatcher and purple martin), a variety of non-status bird species with baseline protections under the MBTA and CFGC may use vegetation within the Project Areas for nesting. Pre-construction surveys are recommended to ensure that the implementation of the Proposed Project would not impact any nesting birds.

Recommendation 3: WRA recommends that tree/vegetation removal and initial ground disturbance occur from August 16 to January 31, outside of the general bird nesting season. If tree/vegetation removal during this time is not feasible, a pre-construction nesting bird survey should be performed by a qualified biologist no more than 14 days prior to the initiation of tree removal or ground disturbance is recommended. The survey should cover the Project Area (including tree removal areas) and surrounding areas within 500 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer should be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest

otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer.

Western Pond Turtle: Western pond turtles were observed in the on-site pond during site visits and may remain present there. Proposed project activities will avoid the pond and its immediate shoreline (including basking substrates), reducing the risk of harm to adult pond turtles. However, ground disturbance within the proposed vineyard block and associated developed east of the pond has the potential to impact turtle nests in the substrate, and also adult turtles and/or hatchlings moving to/from the pond to upland areas. To avoid any potential impacts to nesting activities of this species, the following measures are provided.

Recommendation 4: Because the on-site pond (aquatic habitat) may have dried down completely during the latter portion of 2021, western pond turtles may no longer be present there. Thus, an updated presence/absence survey for the site is recommended prior to April 1 (see below) in the year when ground disturbance is planned. The survey should be performed by a qualified biologist using suitable methods, i.e., surveying the pond and its shorelines on a sunny day from suitable distant vantage points as to limit potential disturbance to turtles and increase the chances of detection of any are present. Alternately, presence of the species within the pond may simply be assumed with no survey performed.

If the species is observed on-site or presence is assumed, exclusion fence should be installed during the wet season (prior to April 1) around the northwestern boundary of the disturbance area in such a manner as to preclude turtles from entering ground disturbance areas with suitable nesting habitat, i.e., open grassland to the east of the pond. The fencing should have a minimum height above ground of 24 inches, the bottom of the fence buried to a minimum depth of 4 inches. Erosion control fencing (silt fencing) may serve as the exclusion fence provided that it meets the requirements above. The location of the fencing should be approved by a qualified biologist prior to installation, and inspected by the biologist subsequent to installation to ensure that it is effective. The fencing should remain installed until on-site mechanized ground disturbance is completed.

Prior to the initiation of work, a biological education program should be provided by the qualified biologist to all personnel that will be present at the site during ground disturbance and related activities. The worker education program should include information regarding the identification and identification of western pond turtle (including photographs), the potential for occurrence within work areas, the purpose of the exclusion fencing and importance of maintaining it, and specific measures being implemented to avoid impacts (which will include halting all ground disturbance and immediately alerting the qualified biologist if western pond turtle is observed in work areas over the course of the work).

6.2.3 *Wildlife Movement*

As stated in Section 5.2.3 above, the Study Area's streams and a majority of the terrestrial land cover types will remain intact, including areas north and south of the proposed vineyard block, allowing for continued wildlife movement at a local scale. This movement will not be impacted by immediate

perimeter fencing around the proposed development area. Therefore, the Project will not result in a significant impact to wildlife movement.

7.0 REFERENCES

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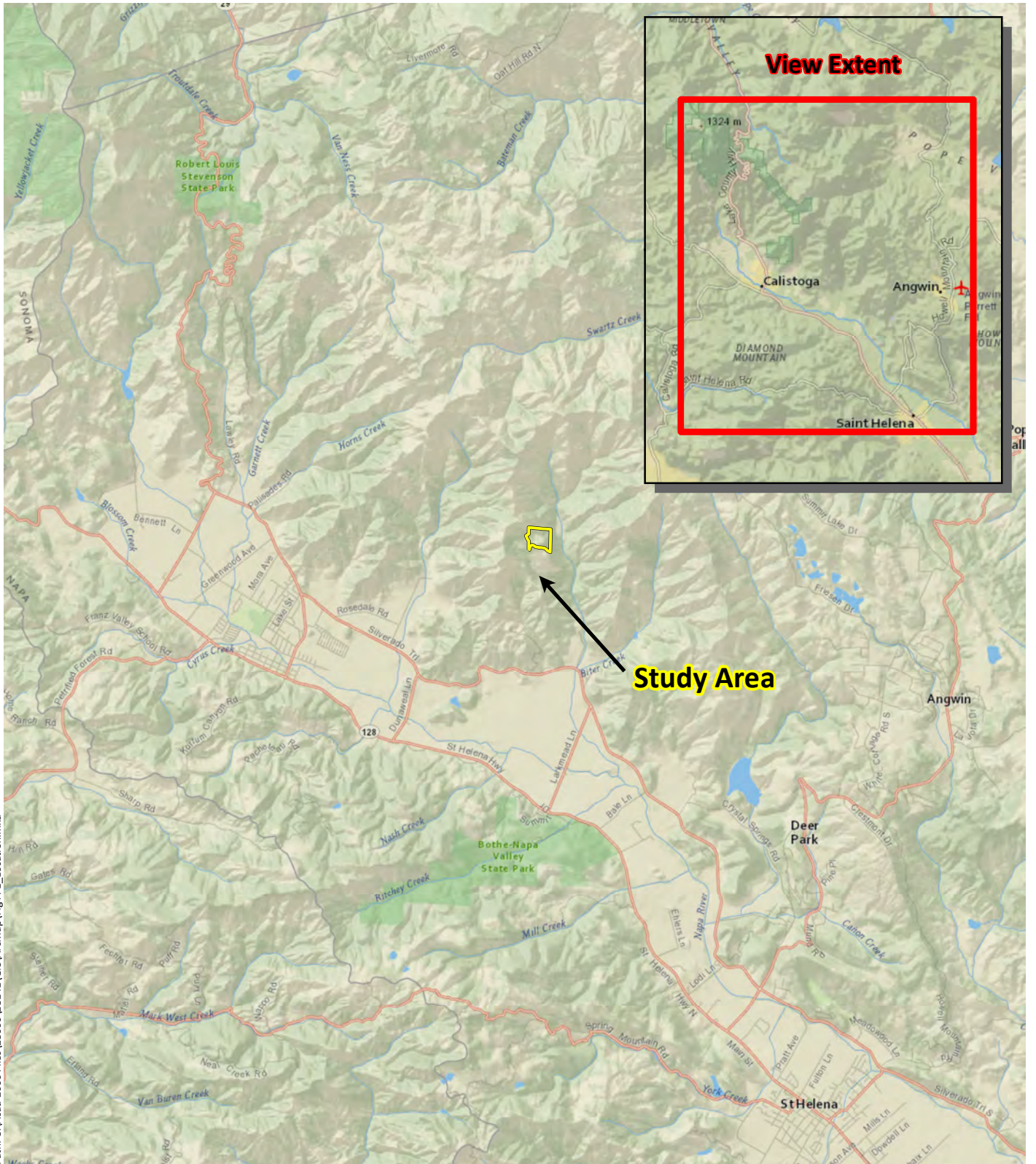
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Appendix A

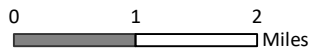
Figures



Sources: National Geographic, WRA | Prepared By: aarthur, 1/11/2022

Figure A-1. Study Area Location

Nikolau Property
Napa County, CA



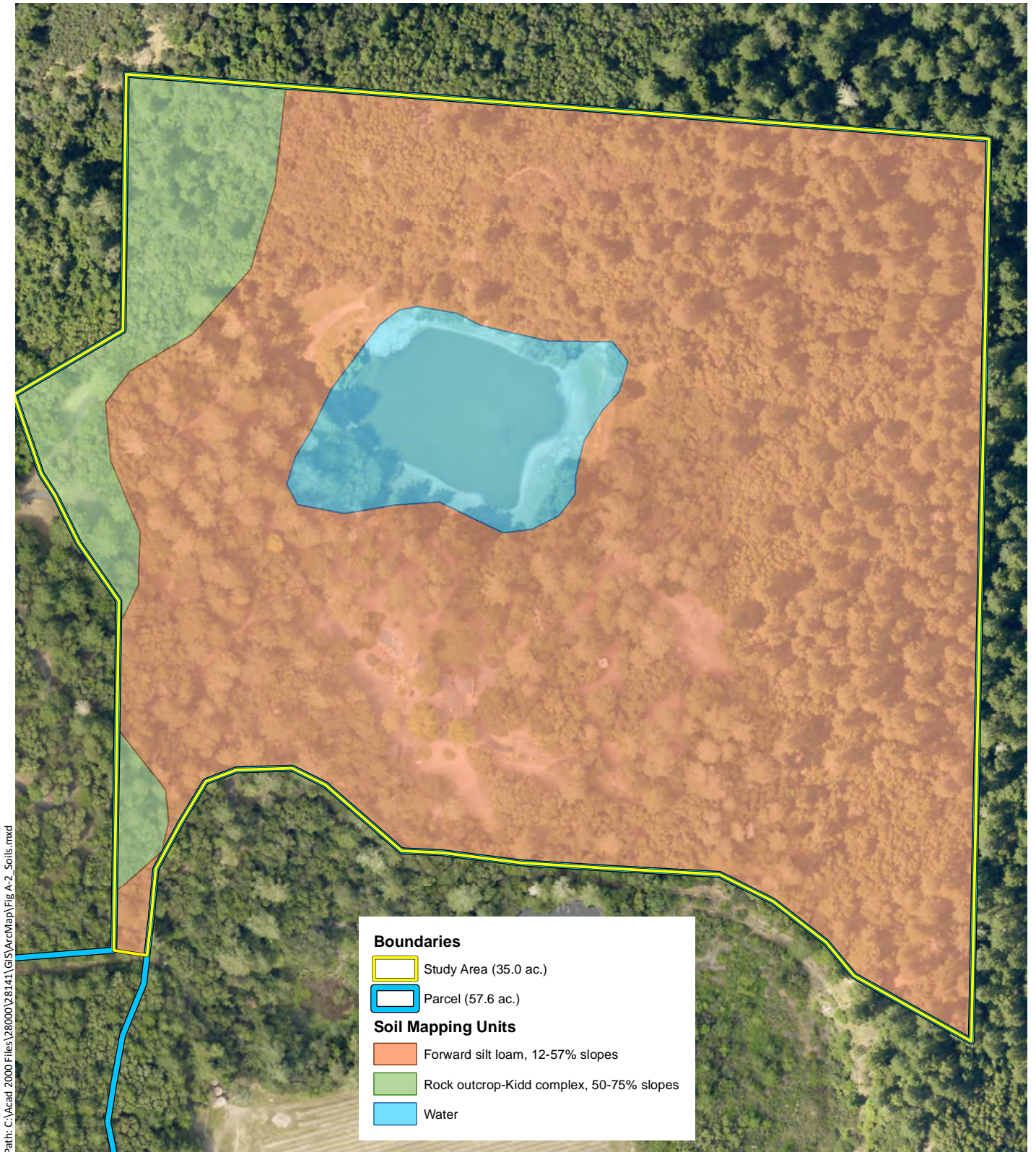
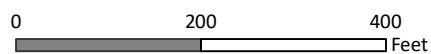


Figure A-2. Soil Mapping Units

Nikolau Property
Napa County, CA





**Figure A-3.
Land Cover**











Nikolau Property
Napa County, CA

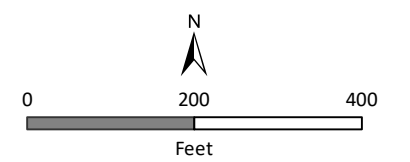


Boundaries

-  Subject Parcel (57.6 ac.)
-  Study Area (35.0 ac.)

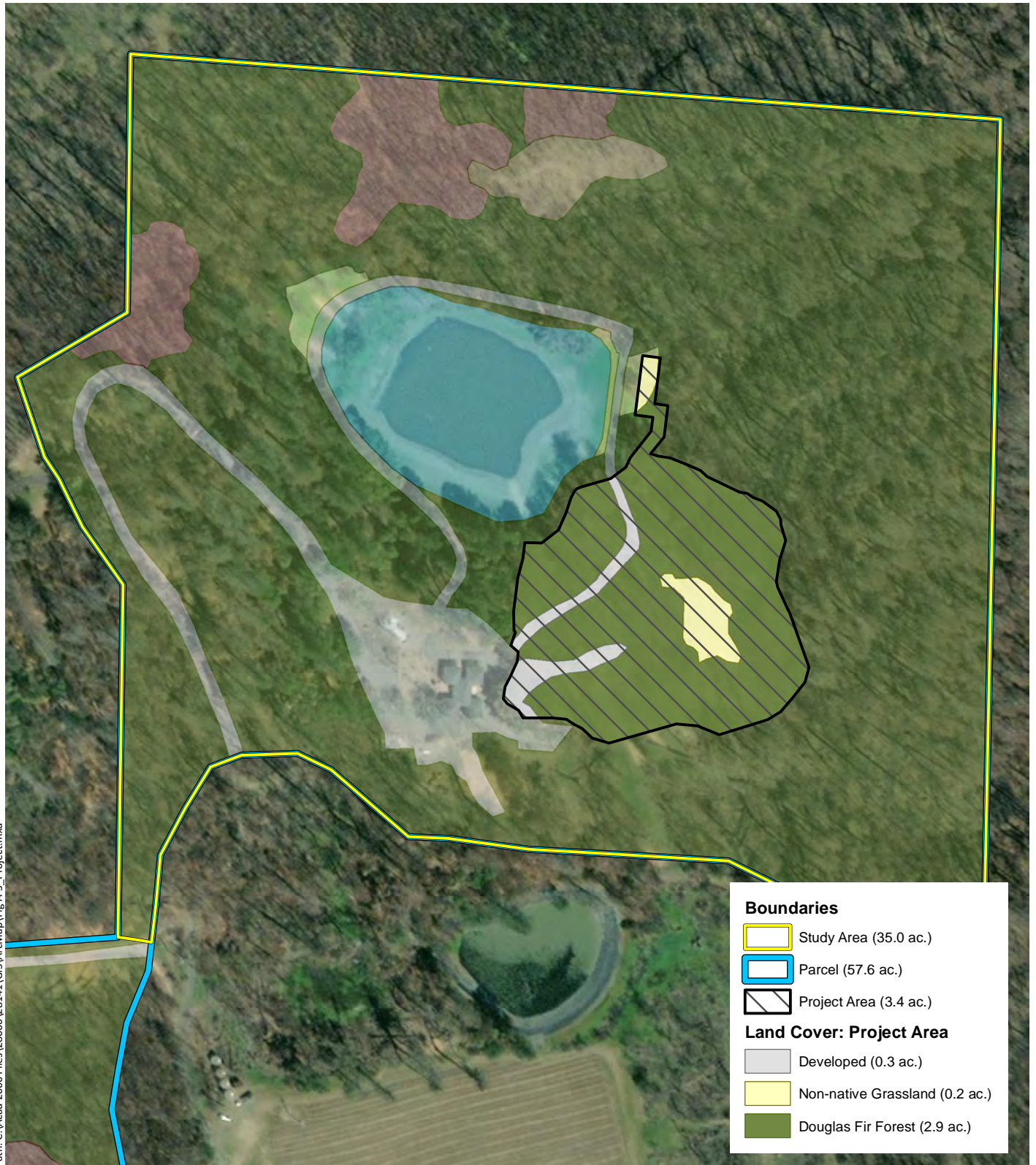
Land Cover (Study Area/Subject Parcel)

-  Developed (2.7 ac./3.1 ac.)
-  Non-native Grassland (0.5 ac./3.8 ac.)
-  Chamise Chaparral (0.5 ac./0.5 ac.)
-  Coast Live Oak Woodland (0.0 ac./1.9 ac.)
-  Pacific Madrone Forest (1.7 ac./3.2 ac.)
-  Foothill Pine Woodland (0.0 ac./0.8 ac.)
-  Douglas Fir Forest (27.2 ac./42.0 ac.)
-  Pond (2.4 ac./2.4 ac.)
-  Stream Centerline
-  Top-of-Bank



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Path: C:\Acad 2000 Files\28000\28141\GIS\ArcMap\Fig A-5_Project.mxd



Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 2/1/2022

Figure A-4. Project Area

Nikolau Property
Napa County, CA

0 200 400
Feet



Path: C:\Acad 2000 Files\28000\28141\GIS\ArcMap\Fig A-4_Species.mxd



Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 9/7/2021

Figure A-5. Special-status Species

Nikolau Property
Napa County, CA

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Feet



Appendix B

Species Observed in the Study Area

Table B-1. Plant species observed in the Study Area, May 14, 2018, and March 26, April 15, and June 29, 2021

Family	Scientific name	Common name	Life form	Origin	Rare Status ¹	Invasive Status ²	Wetland indicator ³
Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	deciduous shrub	native	--	--	FAC
Agavaceae	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	common soap plant	perennial forb	native	--	--	NL
Amaryllidaceae	<i>Narcissus pseudonarcissus</i>	daffodil	perennial forb	non-native	--	--	NL
Anacardiaceae	<i>Toxicodendron diversilobum</i>	poison oak	deciduous shrub	native	--	--	FACU
Apiaceae	<i>Lomatium repostum</i>	Napa biscuitroot	perennial forb	native	CRPR 1B	--	NL
Apiaceae	<i>Osmorhiza berteroi</i>	sweet cicely	perennial forb	native	--	--	FACU
Apiaceae	<i>Sanicula bipinnatifida</i>	purple sanicle	perennial forb	native	--	--	NL
Apiaceae	<i>Sanicula crassicaulis</i>	Pacific sanicle	perennial forb	native	--	--	NL
Apiaceae	<i>Torilis arvensis</i>	hedge parsley	annual forb	non-native	--	moderate	NL
Araceae	<i>Lemna minor</i>	common duckweed	perennial forb	native	--	--	OBL
Asteraceae	<i>Anisocarpus madioides</i>	woodland madia	perennial forb	native	--	--	NL
Asteraceae	<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	coyote brush	evergreen shrub	native	--	--	NL
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle	annual forb	non-native	--	moderate	NL
Asteraceae	<i>Centaurea solstitialis</i>	yellow star thistle	annual forb	non-native	--	high	NL
Asteraceae	<i>Cirsium vulgare</i>	bull thistle	perennial forb	non-native	--	moderate	FACU
Asteraceae	<i>Dittrichia graveolens</i>	stinkwort	annual forb	non-native	--	moderate	NL
Asteraceae	<i>Erigeron canadensis</i>	Canadian horseweed	annual forb	native	--	--	FACU
Asteraceae	<i>Eriophyllum lanatum</i>	common woolly sunflower	perennial forb	native	--	--	NL
Asteraceae	<i>Eurybia radulina</i>	roughleaf aster	perennial forb	native	--	--	NL
Asteraceae	<i>Helianthella californica</i> var. <i>californica</i>	California helianthella	perennial forb	native	--	--	NL
Asteraceae	<i>Hieracium albiflorum</i>	white hawkweed	perennial forb	native	--	--	NL
Asteraceae	<i>Hypochaeris radicata</i>	rough cat's-ear	perennial forb	non-native	--	moderate	FACU
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	annual forb	non-native	--	assessed	FACU
Asteraceae	<i>Leontodon saxatilis</i> ssp. <i>longirostris</i>	hawkbit	annual forb	non-native	--	--	FACU
Asteraceae	<i>Madia gracilis</i>	gumweed tarweed	annual forb	native	--	--	NL
Asteraceae	<i>Pseudognaphalium californicum</i>	ladies' tobacco	perennial forb	native	--	--	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status ¹	Invasive Status ²	Wetland indicator ³
Asteraceae	<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	annual forb	non-native	--	--	FAC
Asteraceae	<i>Senecio vulgaris</i>	old-man-of-spring	annual forb	non-native	--	--	FACU
Asteraceae	<i>Sonchus asper</i> ssp. <i>asper</i>	prickly sow thistle	annual forb	non-native	--	assessed	FAC
Asteraceae	<i>Sonchus oleraceus</i>	common sow thistle	annual forb	non-native	--	--	NL
Asteraceae	<i>Uropappus lindleyi</i>	silver puffs	annual forb	native	--	--	NL
Athyriaceae	<i>Athyrium filix-femina</i>	lady fern	perennial fern	native	--	--	FAC
Betulaceae	<i>Corylus cornuta</i> ssp. <i>californica</i>	California hazelnut	deciduous shrub	native	--	--	FACU
Boraginaceae	<i>Cynoglossum grande</i>	Pacific hound's tongue	perennial forb	native	--	--	NL
Boraginaceae	<i>Emmenanthe penduliflora</i>	whispering bells	annual forb	native	--	--	NL
Boraginaceae	<i>Nemophila heterophylla</i>	white baby blue eyes	annual forb	native	--	--	NL
Brassicaceae	<i>Brassica nigra</i>	black mustard	annual forb	non-native	--	moderate	NL
Brassicaceae	<i>Capsella bursa-pastoris</i>	shepherd's purse	annual forb	non-native	--	--	FACU
Brassicaceae	<i>Cardamine hirsuta</i>	hairy bittercress	annual forb	non-native	--	--	NL
Brassicaceae	<i>Hirschfeldia incana</i>	short podded mustard	perennial forb	non-native	--	moderate	NL
Caprifoliaceae	<i>Lonicera hispidula</i>	pink honeysuckle	evergreen shrub	native	--	--	FACU
Caryophyllaceae	<i>Cerastium glomeratum</i>	mouse-ear chickweed	annual forb	non-native	--	--	UPL
Cistaceae	<i>Crocanthemum scoparium</i>	Bisbee Peak rushrose	evergreen shrub	native	--	--	NL
Convolvulaceae	<i>Calystegia occidentalis</i>	chaparral false bindweed	perennial forb	native	--	--	NL
Crassulaceae	<i>Crassula connata</i>	sand pygmyweed	annual forb	native	--	--	FAC
Cupressaceae	<i>Sequoia sempervirens</i>	coast redwood	evergreen tree	native	--	--	NL
Cyperaceae	<i>Carex multicaulis</i>	forest sedge	perennial graminoid	native	--	--	NL
Dennstaedtiaceae	<i>Pteridium aquilinum</i> var. <i>pubescens</i>	bracken fern	perennial fern	native	--	--	FACU
Dryopteridaceae	<i>Dryopteris arguta</i>	California wood fern	perennial fern	native	--	--	NL
Dryopteridaceae	<i>Polystichum munitum</i>	western swordfern	perennial fern	native	--	--	FACU
Ericaceae	<i>Arbutus menziesii</i>	Pacific madrone	evergreen tree	native	--	--	NL
Ericaceae	<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	common manzanita	evergreen shrub	native	--	--	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status ¹	Invasive Status ²	Wetland indicator ³
Euphorbiaceae	<i>Croton setiger</i>	turkey mullein	annual forb	native	--	--	NL
Fabaceae	<i>Acmispon americanus</i> var. <i>americanus</i>	American lotus	annual forb	native	--	--	NL
Fabaceae	<i>Acmispon brachycarpus</i>	hairy lotus	annual forb	native	--	--	NL
Fabaceae	<i>Acmispon glaber</i>	deer vetch	evergreen shrub	native	--	--	NL
Fabaceae	<i>Acmispon parviflorus</i>	small flowered lotus	annual forb	native	--	--	NL
Fabaceae	<i>Acmispon wrangelianus</i>	Wrangel's lotus	annual forb	native	--	--	NL
Fabaceae	<i>Genista monspessulana</i>	French broom	evergreen shrub	non-native	--	high	NL
Fabaceae	<i>Lathyrus latifolius</i>	perennial pea	perennial forb	non-native	--	--	NL
Fabaceae	<i>Lathyrus vestitus</i> var. <i>vestitus</i>	common Pacific pea	perennial forb	native	--	--	NL
Fabaceae	<i>Lupinus bicolor</i>	miniature lupine	annual forb	native	--	--	NL
Fabaceae	<i>Lupinus nanus</i>	sky lupine	annual forb	native	--	--	NL
Fabaceae	<i>Lupinus succulentus</i>	succulent lupine	annual forb	native	--	--	NL
Fabaceae	<i>Medicago polymorpha</i>	bur medic	annual forb	non-native	--	limited	FACU
Fabaceae	<i>Robinia pseudoacacia</i>	black locust	deciduous tree	non-native	--	limited	FACU
Fabaceae	<i>Rupertia physodes</i>	California tea	perennial forb	native	--	--	NL
Fabaceae	<i>Trifolium campestre</i>	hop clover	annual forb	non-native	--	--	NL
Fabaceae	<i>Trifolium cernuum</i>	nodding clover	annual forb	non-native	--	--	NL
Fabaceae	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	cowbag clover	annual forb	native	--	--	FAC
Fabaceae	<i>Trifolium dubium</i>	shamrock clover	annual forb	non-native	--	--	UPL
Fabaceae	<i>Trifolium glomeratum</i>	clustered clover	annual forb	non-native	--	--	NL
Fabaceae	<i>Trifolium hirtum</i>	rose clover	annual forb	non-native	--	moderate	NL
Fabaceae	<i>Trifolium microcephalum</i>	maiden clover	annual forb	native	--	--	FAC
Fabaceae	<i>Trifolium striatum</i>	knotted clover	annual forb	non-native	--	--	NL
Fabaceae	<i>Trifolium subterraneum</i>	subterranean clover	annual forb	non-native	--	--	NL
Fabaceae	<i>Vicia sativa</i> ssp. <i>sativa</i>	common vetch	annual forb	non-native	--	--	FACU
Fabaceae	<i>Vicia villosa</i>	winter vetch	annual forb	non-native	--	assessed	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status ¹	Invasive Status ²	Wetland indicator ³
Fagaceae	<i>Quercus agrifolia</i>	coast live oak	evergreen tree	native	--	--	NL
Fagaceae	<i>Quercus kelloggii</i>	California black oak	deciduous tree	native	--	--	NL
Geraniaceae	<i>Erodium cicutarium</i>	redstem stork's bill	annual forb	non-native	--	limited	NL
Geraniaceae	<i>Geranium dissectum</i>	cutleaf geranium	annual forb	non-native	--	moderate	NL
Geraniaceae	<i>Geranium molle</i>	woodland geranium	perennial forb	non-native	--	assessed	NL
Hypericaceae	<i>Hypericum calycinum</i>	Aaron's beard	evergreen shrub	non-native	--	--	NL
Hypericaceae	<i>Hypericum concinnum</i>	goldwire	perennial forb	native	--	--	NL
Iridaceae	<i>Iris macrosiphon</i>	long-tube iris	perennial forb	native	--	--	NL
Iridaceae	<i>Sisyrinchium bellum</i>	blue-eyed grass	perennial forb	native	--	--	FACW
Juncaceae	<i>Juncus bufonius</i> var. <i>bufonius</i>	toad rush	annual graminoid	native	--	--	FACW
Juncaceae	<i>Juncus effusus</i> ssp. <i>pacificus</i>	Pacific rush	perennial graminoid	native	--	--	FACW
Juncaceae	<i>Juncus patens</i>	common rush	perennial graminoid	native	--	--	FACW
Lamiaceae	<i>Lamium amplexicaule</i>	henbit deadnettle	annual forb	non-native	--	--	NL
Lamiaceae	<i>Monardella viridis</i>	green monardella	perennial forb	native	CRPR 4	--	NL
Lamiaceae	<i>Stachys rigida</i> var. <i>quercetorum</i>	rough hedgenettle	perennial forb	native	--	--	FACW
Lauraceae	<i>Umbellularia californica</i>	California bay	evergreen tree	native	--	--	FAC
Liliaceae	<i>Calochortus amabilis</i>	golden globe lily	perennial forb	native	--	--	NL
Liliaceae	<i>Fritillaria affinis</i>	checker lily	perennial forb	native	--	--	NL
Malvaceae	<i>Malva nicaeensis</i>	bull mallow	annual forb	non-native	--	--	NL
Montiaceae	<i>Claytonia parviflora</i>	spring beauty	annual forb	native	--	--	FACU
Montiaceae	<i>Claytonia perfoliata</i>	miner's lettuce	annual forb	native	--	--	FAC
Myrsinaceae	<i>Lysimachia arvensis</i>	scarlet pimpernel	annual forb	non-native	--	--	NL
Myrsinaceae	<i>Lysimachia latifolia</i>	woodland star	perennial forb	native	--	--	NL
Oleaceae	<i>Olea europaea</i>	olive	evergreen tree	non-native	--	limited	NL
Onagraceae	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	winecup clarkia	annual forb	native	--	--	NL
Onagraceae	<i>Epilobium brachycarpum</i>	annual willowherb	annual forb	native	--	--	FAC
Onagraceae	<i>Epilobium ciliatum</i>	fringed willowherb	perennial forb	native	--	--	FACW

Family	Scientific name	Common name	Life form	Origin	Rare Status ¹	Invasive Status ²	Wetland indicator ³
Orobanchaceae	<i>Castilleja foliolosa</i>	woolly Indian paintbrush	perennial forb	native	--	--	NL
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	perennial forb	native	--	--	NL
Phrymaceae	<i>Diplacus aurantiacus</i>	sticky monkey	evergreen shrub	native	--	--	NL
Pinaceae	<i>Pinus ponderosa</i>	ponderosa pine	evergreen tree	native	--	--	FACU
Pinaceae	<i>Pinus sabiniana</i>	gray pine	evergreen tree	native	--	--	NL
Pinaceae	<i>Pseudotsuga menziesii</i>	Douglas fir	evergreen tree	native	--	--	FACU
Plantaginaceae	<i>Antirrhinum vexillocalyculatum</i> ssp. <i>vexillocalyculatum</i>	wiry snapdragon	annual forb	native	--	--	NL
Plantaginaceae	<i>Collinsia heterophylla</i>	purple Chinese houses	annual forb	native	--	--	NL
Plantaginaceae	<i>Kickxia elatine</i>	sharpleaf cancerwort	perennial forb	non-native	--	--	UPL
Plantaginaceae	<i>Nuttallanthus texanus</i>	blue toadflax	perennial forb	native	--	--	NL
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain	perennial forb	non-native	--	limited	FAC
Poaceae	<i>Aira caryophyllea</i>	silver hairgrass	annual graminoid	non-native	--	assessed	FACU
Poaceae	<i>Avena barbata</i>	wild oat	annual graminoid	non-native	--	moderate	NL
Poaceae	<i>Brachypodium distachyon</i>	false brome	perennial graminoid	non-native	--	moderate	NL
Poaceae	<i>Bromus catharticus</i>	Chilean brome	perennial graminoid	non-native	--	--	NL
Poaceae	<i>Bromus diandrus</i>	rip-gut brome	annual graminoid	non-native	--	moderate	NL
Poaceae	<i>Bromus hordeaceus</i>	soft chess	annual graminoid	non-native	--	limited	FACU
Poaceae	<i>Bromus laevipes</i>	Chinook brome	perennial graminoid	native	--	--	NL
Poaceae	<i>Bromus madritensis</i>	red brome	annual graminoid	non-native	--	high	NL
Poaceae	<i>Cynodon dactylon</i>	Bermuda grass	perennial graminoid	non-native	--	moderate	FACU
Poaceae	<i>Cynosurus echinatus</i>	dogtail grass	annual graminoid	non-native	--	moderate	NL
Poaceae	<i>Elymus glaucus</i>	blue wildrye	perennial graminoid	native	--	--	FACU
Poaceae	<i>Festuca bromoides</i>	brome fescue	perennial graminoid	non-native	--	--	FACU
Poaceae	<i>Festuca californica</i>	California fescue	perennial graminoid	native	--	--	NL
Poaceae	<i>Gastridium phleoides</i>	nit grass	annual graminoid	non-native	--	--	FACU
Poaceae	<i>Hordeum marinum</i>	Mediterranean barley	annual graminoid	non-native	--	moderate	FAC

Family	Scientific name	Common name	Life form	Origin	Rare Status ¹	Invasive Status ²	Wetland indicator ³
Poaceae	<i>Hordeum murinum</i>	mouse barley	annual graminoid	non-native	--	moderate	FACU
Poaceae	<i>Melica californica</i>	California onion grass	perennial graminoid	native	--	--	NL
Poaceae	<i>Melica geyeri</i>	Geyer's onion grass	perennial graminoid	native	--	--	NL
Poaceae	<i>Melica torreyana</i>	Torrey's onion grass	perennial graminoid	native	--	--	NL
Poaceae	<i>Polypogon monspeliensis</i>	rabbit's-foot grass	annual graminoid	non-native	--	limited	FACW
Poaceae	<i>Stipa pulchra</i>	purple needlegrass	perennial graminoid	native	--	--	NL
Polemoniaceae	<i>Navarretia squarrosa</i>	skunkbush	annual forb	native	--	--	FACU
Polygalaceae	<i>Polygala californica</i>	California milkwort	perennial forb	native	--	--	NL
Polygonaceae	<i>Persicaria maculosa</i>	spotted lady's-thumb	annual forb	non-native	--	--	FACW
Polygonaceae	<i>Rumex crispus</i>	curly dock	perennial forb	non-native	--	limited	FAC
Polypodiaceae	<i>Polypodium californicum</i>	California polypody	perennial fern	native	--	--	NL
Rosaceae	<i>Adenostoma fasciculatum</i>	chamise	evergreen shrub	native	--	--	NL
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon	evergreen shrub	native	--	--	NL
Rosaceae	<i>Holodiscus discolor</i>	ocean spray	deciduous shrub	native	--	--	FACU
Rosaceae	<i>Rosa gymnocarpa</i>	dwarf rose	evergreen shrub	native	--	--	FACU
Rubiaceae	<i>Galium aparine</i>	common bedstraw	annual forb	native	--	--	FACU
Rubiaceae	<i>Galium californicum</i>	California bedstraw	perennial forb	native	--	--	NL
Rubiaceae	<i>Galium murale</i>	yellow wall bedstraw	annual forb	non-native	--	--	NL
Rubiaceae	<i>Sherardia arvensis</i>	blue fieldmadder	annual forb	non-native	--	--	NL
Salicaceae	<i>Salix laevigata</i>	red willow	deciduous tree	native	--	--	FACW
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow	deciduous tree	native	--	--	FACW
Sapindaceae	<i>Acer macrophyllum</i>	big leaf maple	deciduous tree	native	--	--	FAC
Scrophulariaceae	<i>Verbascum thapsus</i>	woolly mullein	perennial forb	non-native	--	limited	FACU
Solanaceae	<i>Solanum xanti</i>	purple nightshade	perennial forb	native	--	--	NL
Themidaceae	<i>Dichelostemma capitatum</i>	blue dicks	perennial forb	native	--	--	FACU
Themidaceae	<i>Dichelostemma congestum</i>	ookow	perennial forb	native	--	--	NL

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

Sp.: “species”, intended to indicate that the observer was confident in the identity of the genus but uncertain which species

Cf.: “confer” or “compared with”, intended to indicate a species appeared to the observer to be specific, but was not identified based on diagnostic characters

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

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

²Invasive 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

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

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

Table B-2. Wildlife species observed in the Study Area during 2021 site visits

Scientific Name	Common Name
Birds	
<i>Anas americana</i>	American wigeon
<i>Anas platyrhynchos</i>	mallard
<i>Cathartes aura</i>	turkey vulture
<i>Colaptes auratus</i>	northern flicker
<i>Cyanocitta stelleri</i>	Steller's jay
<i>Empidonax difficilis</i>	Pacific-slope flycatcher
<i>Junco hyemalis</i>	dark-eyed junco
<i>Pheucticus melanocephalus</i>	black-headed grosbeak
<i>Pipilo maculatus</i>	spotted towhee
<i>Sayornis nigricans</i>	black phoebe
<i>Setophaga coronata</i>	yellow-rumped warbler
<i>Sitta carolinensis</i>	white-breasted nuthatch
<i>Tachycineta bicolor</i>	tree swallow
<i>Turdus migratorius</i>	American robin
Reptiles and Amphibians	
<i>Emys marmorata</i>	western pond turtle
<i>Sceloporus occidentalis</i>	western fence lizard
<i>Taricha torosa</i>	California newt

Appendix C

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

Table C. Potential for Special-status Species to Occur in the Study Area. List compiled from the Napa County Baseline Data Report (NCBDR; Napa County 2005), CDFW BIOS database (CDFW 2021a), USFWS IPaC Report (USFWS 2021), and CNPS Electronic Inventory (CNPS 2021a) searches. For plants, the Mount St. Helena, Detert Reservoir, Aetna Springs, Mark West Springs, Calistoga, St. Helena, Santa Rosa, Kenwood, and Rutherford 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				
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	CRPR 1B	Cismontane woodland, valley and foothill grassland; on clay substrate, often derived from volcanics or serpentine; serpentine indicator: Wl. Elevation range 170 – 985 feet. Blooms: May – June.	Moderate Potential. The Study Area contains volcanic rocky woodland that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	FE, CRPR 1B	Freshwater marshes and swamps, riparian scrub; closely associated with other wetland species; wetland indicator: OBL/OBL. Elevation range: 15 – 1200 feet. Blooms: May – July.	Unlikely. Although there is a man-made pond with a fringe of perennial wetland vegetation, this species is closely associated with extensive marshes and riparian habitat.	Not Present. No further actions are recommended for this species.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	CRPR 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July.	High Potential. The Study Area contains woodland and chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	CRPR 1B	Cismontane woodland, valley and foothill grassland, coastal bluff scrub; situated on rocky soils. Elevation range: 10 – 1625 feet. Blooms: March – June.	No Potential. The Study Area does not contain woodland or extensive grassland habitat of the type 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
<i>Antirrhinum virga</i> twig-like snapdragon	CRPR 4	Chaparral, lower montane coniferous forest; located on rocky openings often derived from serpentine; serpentine indicator: Sl. Elevation range: 325 – 6550 feet. Blooms: June – July.	Moderate Potential. The Study Area contains chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i> Konocti manzanita	CRPR 1B	Chaparral, cismontane woodland, lower montane coniferous forest; located on volcanic substrates. Elevation range: 1280 – 5250 feet. Blooms: March – July.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon manzanita	CRPR 1B	Chaparral, cismontane woodland; highly restricted to red rhyolite soils. Elevation range: 245 – 1215 feet. Blooms: February – April.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Asclepias solanoana</i> serpentine milkweed	CRPR 4, LR	Chaparral, cismontane woodland, lower montane coniferous forest; located on serpentine substrate; serpentine indicator: SE. Elevation range: 745 – 6045 feet. Blooms: May – August.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Astragalus breweri</i> Brewer's milk-vetch	CRPR 4	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland; located on open, gravelly serpentine or volcanic substrate; serpentine indicator: Sl. Elevation range: 290 – 2375 feet. Blooms: April – June.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	FE; ST; CRPR 1B	Cismontane woodland, valley and foothill grassland, chaparral; on open grassy hillsides, especially exposed shoulders with thin, volcanic or serpentine clay soils; serpentine indicator: SI. Elevation range: 245 – 900 feet. Blooms: March – May.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Astragalus clevelandii</i> Cleveland's milk-vetch	CRPR 4	Chaparral, cismontane woodland, riparian forest; located on serpentine seeps; serpentine indicator: SE. Elevation range: 650 – 4875 feet. Blooms: June – September.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Astragalus rattanii</i> var. <i>jepsonianus</i> Jepson's milk-vetch	CRPR 1B	Chaparral, cismontane woodland, valley and foothill grassland; typically situated on serpentine substrate in openings or grasslands; often on roadsides; serpentine indicator: BE/SI. Elevation range: 955 – 2275 feet. Blooms: March – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	CRPR 1B	Valley and foothill grassland, cismontane woodland; situated on rocky substrates, typically derived from metavolcanics, sometimes on serpentine substrate; serpentine indicator: SI. Elevation range: 295 – 3100 feet. Blooms: March – June.	Moderate Potential. The Study Area contains volcanic habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE, SE, CRPR 1B	Vernal pools, vernal swales, and mesic areas in valley grassland; highly restricted to the Santa Rosa Plain and Valley of the Moon. Elevation range: 35 – 360 feet. Blooms: March – April.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands 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
<i>Brodiaea leptandra</i> narrow-anthered brodiaea	CRPR 1B	Broadleaf upland forest, chaparral, lower montane coniferous forest; situated on gravelly soils derived from volcanics, particularly rhyolitic tuff, sometimes serpentine; serpentine indicator: WI. Elevation range: 360 – 3000 feet. Blooms: May – July.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Calamagrostis ophitidis</i> serpentine reed grass	CRPR 4	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; located in openings, often north-facing, underlain by rocky serpentine substrate; serpentine indicator: SE. 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.
<i>Calandrinia breweri</i> Brewer's Calandrinia	CRPR 4	Chaparral, coastal scrub; located on sandy or loamy substrate in areas often recently disturbed or burned. Elevation range: 30 – 3965 feet. Blooms: March – June.	Moderate Potential. The Study Area contains chaparral habitat, which was burned, that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Calochortus uniflorus</i> large-flowered mariposa lily	CRPR 4, LR	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest; infrequently situated on serpentine substrate; serpentine indicator: WI. Elevation range: 30 – 3480 feet. Blooms: April – June.	Moderate Potential. The Study Area contains coniferous forest that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Calyptridium quadripetalum</i> four-petaled pussypaws	CRPR 4	Chaparral, lower montane coniferous forest; located on sandy or gravelly substrate, typically derived from serpentine; serpentine indicator: BE. Elevation range: 1020 – 6630 feet. Blooms: April – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Calystegia collina ssp. oxyphylla</i> Mt. Saint Helena morning-glory	CRPR 4	Chaparral; located on serpentine barrens, slopes, and hillsides; serpentine indicator: SE. Elevation range: 815 – 3315 feet. Blooms: April – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Calystegia collina ssp. venusta</i> South Coast Range morning-glory	CRPR 4	Chaparral, cismontane woodland, valley and foothill grassland; typically on serpentine or sedimentary substrate. Elevation range: 1380 – 4845 feet. Blooms: April – June.	No Potential. Although the Study Area contains chaparral habitat, this species is known only from the South Coast; reports from Napa County are likely erroneous.	Not Present. No further actions are recommended for this species.
<i>Castilleja ambigua ssp. ambigua</i> Johnny-nip	CRPR 4	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pool margins. Elevation range: 0 – 1415 feet. Blooms: March – August.	No Potential. The Study Area does not contain mesic grassland or similar habitats to support this species.	Not Present. No further actions are recommended for this species.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	CRPR 1B	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically situated on dry shrubby slopes; serpentine indicator: WI/IN. Elevation range: 245 – 3495 feet. Blooms: February – April.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Ceanothus divergens</i> Calistoga ceanothus	CRPR 1B	Chaparral, cismontane woodland; on rocky, serpentine sites; serpentine indicator: WI. Elevation range: 560 – 3115 feet. Blooms: February – March.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i> Point Reyes ceanothus	CRPR 4	Chaparral. Elevation range: 95 – 1985 feet. Blooms: March – June, sometimes August.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Ceanothus pinetorum</i> Kern ceanothus	CRPR 4	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest; situated on rocky, granitic substrates. Elevation range: 2745 – 9005 feet. Blooms: May – July.	No Potential. Although the Study Area contains coniferous forest, this species is confined to the Sierra Nevada; reports from Napa County are almost certainly erroneous.	Not Present. No further actions are recommended for this species.
<i>Ceanothus purpureus</i> holly-leaved ceanothus	CRPR 1B	Chaparral, cismontane woodland; located on rocky, volcanic slopes. Elevation range: 395 – 3000 feet. Blooms: February – June.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	CRPR 1B	Chaparral; located on sandy serpentine or volcanic substrates; serpentine indicator: WI/IN. Elevation range: 705 – 2625 feet. Blooms: February – April.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant	CRPR 1B	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland; in vernal mesic sites, often with alkali substrate. Elevation range: 5 – 1380 feet. Blooms: May – November.	No Potential. The Study Area does not contain alkali grassland or wetland to support this species.	Not Present. No further actions are recommended for this species.
<i>Clarkia breweri</i> Brewer's clarkia	CRPR 4	Chaparral, cismontane woodland, coastal scrub; frequently on serpentine substrate; serpentine indicator: BE/SI. Elevation range: 695 – 3625 feet. Blooms: April – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Clarkia gracilis</i> ssp. <i>tracyi</i> Tracy's clarkia	CRPR 4	Chaparral; located in openings and situated on substrates often derived from serpentine; serpentine indicator: BE. Elevation range: 210 – 2115 feet. Blooms: April – July.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Collomia diversifolia</i> serpentine collomia	CRPR 4	Chaparral, cismontane woodland; situated on rocky to gravelly serpentine substrates; serpentine indicator: SE. Elevation range: 975 – 1950 feet. Blooms: May – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i> serpentine bird's-beak	CRPR 4	Closed-cone coniferous forest, chaparral, cismontane woodland; typically located serpentine substrate; serpentine indicator: BE. Elevation range: 1540 – 2975 feet. Blooms: July – August.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Cryptantha dissita</i> serpentine cryptantha	CRPR 1B	Chaparral; located on serpentine outcrops; serpentine indicator: BE/SI. Elevation range: 1280 – 1885 feet. Blooms: April – June.	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
<i>Cypripedium montanum</i> mountain lady's-slipper	CRPR 4	Broadleaf upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest. Elevation range: 600 – 7235 feet. Blooms: March – August.	Moderate Potential. The Study Area contains coniferous forest that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Delphinium uliginosum</i> swamp larkspur	CRPR 4	Chaparral, valley and foothill grassland; located in seeps and wet meadows underlain by serpentine substrate; serpentine indicator: SE. Elevation range: 1105 – 1985 feet. Blooms: May – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Downingia pusilla</i> dwarf downingia	CRPR 2B	Valley and foothill grassland, vernal pools; located in mesic grassy sites, pool and lake margins. Elevation range: 3 – 1450 feet. Blooms: March – May.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Erigeron biolettii</i> Streamside daisy	CRPR 3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest; on rocky, mesic. Elevation range: 95 – 3610 feet. Blooms: June – October.	Moderate Potential. The Study Area contains coniferous forest that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	CRPR 1B	Chaparral; located on volcanic or serpentine substrate. Elevation range: 260 – 3270 feet. Blooms: May – September.	Moderate Potential. The Study Area contains volcanic chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Eriogonum nervulosum</i> Snow Mountain buckwheat	CRPR 1B	Chaparral; located on serpentine substrate; serpentine indicator: SE. Elevation range: 975 – 6845 feet. Blooms: June – September.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Eriogonum umbellatum</i> var. <i>bahiiforme</i> bay buckwheat	CRPR 4	Cismontane woodland, lower montane coniferous forest; situated on rocky substrates often derived from serpentine; serpentine indicator: BE/Sl. Elevation range: 2275 – 7150 feet. Blooms: July – September.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Eryngium constancei</i> Loch Lomond coyote thistle	FE; SE; CRPR 1B	Vernal pools; located on volcanic ash flow vernal pools. Elevation range: 1495 – 2780 feet. Blooms: April – June.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Eryngium jepsonii</i> Jepson's coyote thistle	CRPR 1B	Valley and foothill grassland, vernal pools; situated on clay substrate that is vernal saturated. Elevation range: 10 – 975 feet. Blooms: April – August.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Erythranthe nudata</i> bare monkeyflower	CRPR 4	Chaparral, cismontane woodland; located on serpentine seeps in brushy or wooded sites; serpentine indicator: SE. Elevation range: 810 – 2275 feet. Blooms: May – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Erythronium helenae</i> St. Helena fawn lily	CRPR 4	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; located on volcanic or serpentine substrate; serpentine indicator: BE. Elevation range: 1135 – 3965 feet. Blooms: March – May.	Moderate Potential. The Study Area contains volcanic chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Fritillaria liliacea</i> fragrant fritillary	CRPR 1B	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland; located in grassy sites underlain by clay, typically derived from volcanics or serpentine; serpentine indicator: WI. Elevation range: 10 – 1335 feet. Blooms: February – April.	No Potential. This species is known from open grassland-woodland habitats underlain by rocky clay substrate not present in the Study Area.	Not Present. No further actions are recommended for this species.
<i>Fritillaria pluriflora</i> adobe lily	CRPR 1B	Chaparral, cismontane woodland, valley and foothill grassland; typically located on adobe clays, often derived from serpentine; serpentine indicator: WI. Elevation range: 195 – 2295 feet. Blooms: February – April.	No Potential. This species is known from open grassland-woodland habitats underlain by rocky clay substrate not present in the Study Area.	Not Present. No further actions are recommended for this species.
<i>Fritillaria purdyi</i> Purdy's fritillary	CRPR 4	Chaparral, cismontane woodland, lower montane coniferous forest; usually situated on serpentine substrates; serpentine indicator: BE. Elevation range: 565 – 7330 feet. Blooms: March – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Gratiola heterosepala</i> Boggs Lake hedge hyssop	SE, CRPR 1B	Marshes and swamps, vernal pools; situated on vernal saturated clay soil, often lake margins. Elevation range: 30 – 7720 feet. Blooms: April – August.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Harmonia hallii</i> Hall's harmonia	CRPR 1B	Chaparral, rock outcrops; situated on rocky serpentine substrates; often roadsides and roadcuts; serpentine indicator: SE. Elevation range: 1625 – 3170 feet. Blooms: April – June.	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
<i>Harmonia nutans</i> nodding harmonia	CRPR 4	Chaparral, cismontane woodland; located on rocky to gravelly substrates derived from volcanics. Elevation range: 240 – 3170 feet. Blooms: March – May.	Moderate Potential. The Study Area contains volcanic chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Helianthus exilis</i> serpentine sunflower	CRPR 4	Chaparral, cismontane woodland; located along serpentine seeps; serpentine indicator: SE. Elevation range: 485 – 4960 feet. Blooms: June – November.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Hemizonia congesta ssp. congesta</i> Hayfield tarplant	CRPR 1B	Coastal scrub, valley and foothill grassland; serpentine indicator: WI/IN. Elevation range: 65 – 1840 feet. Blooms: April – October.	No Potential. This species is known from open grassland-woodland habitats not present in the Study Area.	Not Present. No further actions are recommended for this species.
<i>Hesperolinon bicarpellatum</i> Two-carpellate western flax	CRPR 1B	Chaparral; located on serpentine substrate; serpentine indicator: SE. Elevation range: 195 – 3270 feet. Blooms: May – July.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Hesperolinon sharsmithiae</i> Sharsmith's western flax	CRPR 1B	Chaparral; located on serpentine or volcanic substrate; serpentine indicator: ?. Elevation range: 875 – 975 feet. Blooms: May – July.	High Potential. The Study Area contains volcanic chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Horkelia parryi</i> Parry's horkelia	CRPR 1B	Chaparral, cismontane woodland; situated on lone formation soils. Elevation range: 260 – 3510 feet. Blooms: April – September.	No Potential. Although the Study Area contains chaparral, this species is confined to the Sierra Nevada; reports from Napa County are almost certainly erroneous.	Not Present. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Hosackia gracilis</i> harlequin lotus	CRPR 4	Broadleaf upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest, valley and foothill grassland; located in wetlands and roadside ditches. Elevation range: 0 – 2275 feet. Blooms: March – July.	No Potential. The Study Area does not contain seasonal wetland or mesic grassland habitat to support this species.	Not Present. No further actions are recommended for this species.
<i>Iris longipetala</i> coast iris	CRPR 4	Coastal prairie, lower montane coniferous forest, meadows and seeps; located on mesic sites. Elevation range: 0 – 1950 feet. Blooms: March – May.	No Potential. The Study Area does not contain coastal prairie or coastal forest habitat to support this species.	Not Present. No further actions are recommended for this species.
<i>Juncus luciensis</i> Santa Lucia dwarf rush	CRPR 1B	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Elevation range: 975 – 6630 feet. Blooms: April – July.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Lasthenia burkei</i> Burke's goldfields	FE; SE; CRPR 1B	Vernal pools, meadows and seeps; typically located in pools and swales. Elevation range: 45 – 1950 feet. Blooms: April – June.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Layia septentrionalis</i> Colusa layia	CRPR 1B	Chaparral, cismontane woodland, valley and foothill grassland; on sandy, serpentine substrate; typically occurs in fields, grassy slopes; serpentine indicator: Sl. Elevation range: 330 – 3595 feet. Blooms: April – May.	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
<i>Leptosiphon acicularis</i> bristly leptosiphon	CRPR 4, LR	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; often located on shallow, rocky substrate in foothill positions. Elevation range: 175 – 4875 feet. Blooms: April – July.	Moderate Potential. The Study Area contains volcanic chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	CRPR 1B	Chaparral, cismontane woodland; on open to partially shaded grassy slopes on volcanic or the periphery of serpentine substrate. Elevation range: 330 – 1640 feet. Blooms: April – May.	Moderate Potential. The Study Area contains volcanic chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Leptosiphon latisectus</i> broad-lobed leptosiphon	CRPR 4	Broadleaf upland forest, cismontane woodland; frequently situated on serpentine or volcanic substrate; serpentine indicator: WI. Elevation range: 550 – 4875 feet. Blooms: April – June.	Moderate Potential. The Study Area contains volcanic chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Lessingia hololeuca</i> woolly-headed lessingia	CRPR 3, LR	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; typically on clay, serpentine substrate; serpentine indicator: SI. Elevation range: 3 – 2885 feet. Blooms: April – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Lilium bolanderi</i> Bolander's lily	CRPR 4	Chaparral, lower montane coniferous forest; typically situated on serpentine substrate; serpentine indicator: SE. Elevation range: 95 – 5200 feet. Blooms: June – 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
<i>Lilium rubescens</i> redwood lily	CRPR 4, LR	Broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, North Coast coniferous forest; often located on serpentine substrates, and along roadcuts; serpentine indicator: WI. Elevation range: 95 – 6210 feet. Blooms: April – September.	Moderate Potential. The Study Area contains volcanic chaparral and coniferous forest that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Limnanthes floccosa</i> ssp. <i>floccosa</i> woolly meadowfoam	CRPR 4	Chaparral, cismontane woodland, valley and foothill grassland, vernal pools; situated in vernal mesic settings. Elevation range: 195 – 4340 feet. Blooms: March – June.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	FE, SE, CRPR 1B	Mesic meadows, valley and foothill grassland, vernal pools; located in swales, wet meadows, depressions, and pools in the oak savanna of the Santa Rosa Plain on heavy adobe clay substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Lomatium hooveri</i> Hoover's Lomatium	CRPR 4, LR	Chaparral, cismontane woodland; situated on soils derived from serpentine, and rarely volcanic; serpentine indicator: SE. Elevation range: 975 – 2880 feet. Blooms: April – July.	Moderate Potential. The Study Area contains volcanic chaparral and coniferous forest that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Lomatium repostum</i> Napa Lomatium	CRPR 1B	Chaparral, cismontane woodland; located on serpentine or volcanic substrates; serpentine indicator: Sl. Elevation range: 290 – 2700 feet. Blooms: March – June.	High Potential. The Study Area contains volcanic chaparral and coniferous forest that may support this species.	Present. Thirty individuals were observed across approximately 920 square feet in the northern portion of the Study Area. See Section 6 for further recommendations.
<i>Lupinus sericatus</i> Cobb Mountain lupine	CRPR 1B	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest; typically located in stands of knobcone pine-oak woodland, on open wooded slopes in gravelly substrate typically derived from volcanics, sometimes serpentine. Elevation range: 890 – 4960 feet. Blooms: March – June.	Moderate Potential. The Study Area contains volcanic chaparral and coniferous forest that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Lythrum californicum</i> California loosestrife	LR	Yellow pine forest, cismontane woodland, chaparral, valley and foothill grassland, meadows and seeps; located in wetlands. Elevation range: 0 – 7150 feet. Blooms: April – September.	No Potential. The Study Area does not contain perennial wetland habitat to support this species.	Not Present. No further actions are recommended for this species.
<i>Microseris paludosa</i> marsh microseris	CRPR 1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation range: 5 – 300 feet. Blooms: April – June.	No Potential. The Study Area does not contain closed-cone coniferous forest, coastal scrub, grassland, or woodland habitat to support this species.	Not Present. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Monardella viridis</i> green monardella	CRPR 4	Broadleaf upland forest, chaparral, cismontane woodland; situated on serpentine or volcanic soils; serpentine indicator: BE/SI. Elevation range: 325 – 3285 feet. Blooms: June – September.	High Potential. The Study Area contains volcanic chaparral and coniferous forest that may support this species.	Present. Approximately 50 individuals were observed across approximately 12,825 square feet in the northern portion of the Study Area. See Section 6 for further recommendations.
<i>Navarretia cotulifolia</i> cotula navarretia	CRPR 4, LR	Chaparral, cismontane woodland, valley and foothill grassland; located on adobe substrate. Elevation range: 10 – 5950 feet. Blooms: May – June.	Unlikely. Although the Study Area contains chaparral, this species is closely associated with shrink-swell (adobe) clay soils.	Not Present. No further actions are recommended for this species.
<i>Navarretia heterandra</i> Tehama navarretia	CRPR 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 Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Navarretia jepsonii</i> Jepson's navarretia	CRPR 4	Chaparral, cismontane woodland, valley and foothill grassland; situated on serpentine substrates; serpentine indicator: SE. Elevation range: 565 – 2780 feet. Blooms: April – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	CRPR 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 Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i> many-flowered navarretia	FE, SE, CRPR 1B	Vernal pools underlain by substrate derived from volcanic ash flows. Elevation range: 95 – 3120 feet. Blooms: May – June.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands 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
<i>Navarretia myersii</i> ssp. <i>deminuta</i> Myer's navarretia	CRPR 1B	Vernal pool; underlying substrate is clay loam. Elevation range: undocumented. Blooms: April – May.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Navarretia paradoxinota</i> Porter's navarretia	CRPR 1B	Meadow and seep; typically situated in vernal mesic openings underlain by serpentine substrate; serpentine indicator: SE. Elevation range: 535 – 2730 feet. Blooms: May – June, sometimes 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.
<i>Navarretia rosulata</i> Marin County navarretia	CRPR 1B	Closed-cone coniferous forest, chaparral; located on dry, rocky sites often formed from serpentine; serpentine indicator: SE. Elevation range: 650 – 2065 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.
<i>Penstemon newberryi</i> var. <i>sonomensis</i> Sonoma beardtongue	CRPR 1B	Chaparral; crevices in rock outcrops and talus slopes on ridgelines and mountain peaks. Elevation range: 2295 – 4495 feet. Blooms: April – August.	Unlikely. Although the Study Area contains a rocky chaparral area, this species is closely associated with large rock outcrops which are not present in the Study Area.	Not Present. No further actions are recommended for this species.
<i>Plagiobothrys strictus</i> Calistoga popcornflower	FE; ST; CRPR 1B	Broadleaf upland forest, meadows and seeps, valley and foothill grassland, vernal pools; located on heavy dark adobe alkali clay substrate near hot springs and vernal pools. Elevation range: 290 – 520 feet. Blooms: March – June.	No Potential. The Study Area does not contain alkali grassland or wetland 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
<i>Poa napensis</i> Napa bluegrass	FE; SE; CRPR 1B	Meadows and seeps, valley and foothill grassland; located in moist alkaline substrate near hot springs. Elevation range: 325 – 650 feet. Blooms: May – August.	No Potential. The Study Area does not contain alkali grassland or wetland to support this species.	Not Present. No further actions are recommended for this species.
<i>Pogogyne douglasii</i> Douglas' mesamint	LR	Valley and foothill grassland, cismontane woodland, yellow pine forest, mixed evergreen forest, vernal pool; situated in vernal pools, swales, and similar seasonal wetlands. Elevation range: 0 – 2925 feet. Blooms: March – July.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Puccinellia simplex</i> California alkali grass	CRPR 1B	Chenopod scrub, meadow and seep, valley and foothill grassland, vernal pool; situated vernal mesic alkaline substrate in sinks, flats, and lake margins. Elevation range: 5 – 3025 feet. Blooms: March – May.	No Potential. The Study Area does not contain alkali grassland or wetland to support this species.	Not Present. No further actions are recommended for this species.
<i>Ranunculus lobbii</i> Lobb's buttercup	CRPR 4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; located in mesic, vernal wet areas. Elevation range: 45 – 1530 feet. Blooms: February – May.	Moderate Potential. The Study Area contains a man-made pond that may provide habitat for this species.	Not Present. No further actions are recommended for this species.
<i>Ribes victoris</i> Victor's gooseberry	CRPR 4	Broadleaf upland forest, chaparral; located in shady, mesic sites. Elevation range: 325 – 2440 feet. Blooms: March – April.	Moderate Potential. The Study Area contains chaparral habitat that may 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
<i>Sagittaria sanfordii</i> Sanford's arrowhead	CRPR 1B	Marshes and swamps; located in assorted shallow freshwater habitats including canals and perennial drainage ditches. Elevation range: 0 – 2115 feet. Blooms: May – October, sometimes November.	Moderate Potential. The Study Area contains a man-made pond that may provide habitat for this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Sidalcea hickmanii</i> ssp. <i>napensis</i> Napa checkerbloom	CRPR 1B	Chaparral; located on rhyolitic substrates. Elevation range: 1345 – 1985 feet. Blooms: April – June.	Moderate Potential. The Study Area contains chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i> marsh checkerbloom	CRPR 1B	Meadows and seeps, riparian forest; located on wet soils along streambanks and meadows. Elevation range: 3575 – 7475 feet. Blooms: July – August.	Unlikely. Although the Study Area contains a man-made pond, this species is closely associated with intact, extensive perennial wetlands not present in the Study Area.	Not Present. No further actions are recommended for this species.
<i>Sidalcea oregana</i> ssp. <i>valida</i> Kenwood Marsh checkerbloom	FE; SE; CRPR 1B	Freshwater marshes and swamps, on the edges of marshes. Elevation range: 375 – 495 feet. Blooms: June – September.	Unlikely. Although the Study Area contains a man-made pond, this species is closely associated with intact, extensive perennial wetlands not present in the Study Area.	Not Present. No further actions are recommended for this species.
<i>Spergularia macrotheca</i> var. <i>longistyla</i> long-styled sand-spurry	CRPR 1B	Meadow and seep, marshes and swamps; located in alkaline marshes, pools, mud flats, meadows, and hot springs. Elevation range: 0 – 830 feet. Blooms: February – March.	No Potential. The Study Area does not contain alkali grassland or wetland 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
<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i> Socrates Mine jewel-flower	CRPR 1B	Chaparral, closed-cone coniferous forest; located on serpentine substrates; serpentine indicator: SE. Elevation range: 1770 – 3250 feet. Blooms: May – June.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i> Freed's jewel-flower	FSC; CRPR 1B	Chaparral, cismontane woodland; located on serpentine outcrops, primarily in geothermal areas; serpentine indicator: SE. Elevation range: 1590 – 3965 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.
<i>Streptanthus hesperidis</i> green jewelflower	CRPR 1B	Chaparral, cismontane woodland; located in openings in brushy/wooded sites on rocky serpentine substrate; serpentine indicator: SE. Elevation range: 420 – 2470 feet. Blooms: May – July.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Streptanthus morrisonii</i> ssp. <i>elatus</i> Three Peaks jewel-flower	CRPR 1B	Serpentine chaparral; serpentine indicator: SE. Elevation range: 90 – 815 feet. Blooms: June – September.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Streptanthus vernalis</i> early jewel-flower	CRPR 1B	Closed-cone coniferous forest, chaparral; situated on serpentine; serpentine indicator: ?. Elevation range: undocumented. Blooms: March – May.	No Potential. The Study Area does not contain serpentine substrate to support this species.	Not Present. No further actions are recommended for this species.
<i>Stuckenia filiformis</i> ssp. <i>alpina</i> slender-leaved pondweed	CRPR 2B	Marshes and swamps; located in shallow freshwater. Elevation range: 975 – 6990 feet. Blooms: May – July.	Moderate Potential. The Study Area contains a man-made pond that may provide habitat for this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Toxicoscordion fontanum</i> marsh zigzag	CRPR 4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps; located in vernal mesic sites underlain by serpentine; serpentine indicator: BE/SI. Elevation range: 45 – 3250 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.
<i>Trichostema ruygtii</i> Napa bluecurls	CRPR 1B, LR	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools, lower montane coniferous forest; located in open, sunny locations, and dried vernal pools. Elevation range: 95 – 2210 feet. Blooms: June – October.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Trifolium amoenum</i> showy rancheria clover	FE, CRPR 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine; serpentine indicator: WI/IN. Elevation range: 15 – 1365 feet. Blooms: April – June.	No Potential. The Study Area does not contain coastal scrub or extensive native grassland to support this species.	Not Present. No further actions are recommended for this species.
<i>Trifolium buckwestiorum</i> Santa Cruz clover	CRPR 1B	Broadleaf upland forest, cismontane woodland, coastal prairie endangered margins. Elevation range: 105 – 610 feet. Blooms: April – October.	Unlikely. The Study Area does not contain open woodland or grassland habitat that supports this species.	Not Present. No further actions are recommended for this species.
<i>Trifolium hydrophilum</i> saline clover	CRPR 1B	Marshes and swamps, mesic portions of alkali vernal pools; mesic, alkali valley and foothill grassland. Elevation range: 0 – 985 feet. Blooms: April – June.	No Potential. The Study Area does not contain vernal pools or similar seasonal wetlands 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
<i>Triteleia lugens</i> dark-mouthed triteleia	CRPR 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 conifer forest and chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.
<i>Viburnum ellipticum</i> oval-leaved viburnum	CRPR 2B	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation range: 705 – 4595 feet. Blooms: May – June.	Moderate Potential. The Study Area contains conifer forest and chaparral that may support this species.	Not Observed. This species was not observed during protocol-level surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
WILDLIFE				
Mammals				
<i>Antrozous pallidus</i> pallid bat	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Moderate Potential. Woodland and forest within the Study Area provides trees suitable for roosting; there are several CNDDDB occurrences within 5 miles (CDFW 2021a). Targeted bat assessment (i.e., close inspection of trees) was not performed.	Presence Unknown. Tree removal outside of maternity roosting season, or conduct pre-construction roost habitat assessment. See Section 6.0 for details.
<i>Bassariscus astutus</i> ringtail (ringtail cat)	SFP	Widely distributed throughout much of California. Found in a variety of habitats including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests usually under 4,600 ft. elevation. Typically uses cliffs or large trees for shelter.	Unlikely. The Study Area lacks cliffs and large tree cavities/hollows typical of dens for this species; no known occurrences in the vicinity.	Presumed Absent. No further recommendations for this species.
<i>Corynorhinus townsendii</i> <i>townsendii</i> Townsend's western big-eared bat	SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance	Unlikely. The Study Area does not contain caves, mines, or buildings suitable for roosting.	Presumed Absent. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Eumops perotis californicus</i> western mastiff bat	SSC, WBWG High	Found in a wide variety of open, arid and semi-arid habitats. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	Unlikely. The Study Area lacks large rock structures that are suitable for roosting. There are no CNDDDB occurrences of this species in Napa County (CDFW 2021a).	Presumed Absent. No further recommendations for this species.
<i>Lasiurus blossevillii</i> western red bat	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	Unlikely. The Study Area lacks large, broadleaved trees of the type typically used for roosting (maples, sycamores, etc.); there are no documented occurrences in the vicinity.	Presumed Absent. No further recommendations for this species.
<i>Myotis thysanodes</i> fringed myotis	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Building, mines, and large trees and snags are important day and night roosts.	Moderate Potential. Forest within the Study Area provides trees potentially suitable for roosting. Targeted bat assessment (i.e., close inspection of trees) was not performed.	Presence Unknown. Tree removal outside of maternity roosting season, or conduct pre-construction roost habitat assessment. See Section 6.0 for details.
<i>Myotis volans</i> long-legged myotis	WBWG High	Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices, buildings, mines, and caves are important day roosts.	Moderate Potential. Coniferous forest within the Study Area provides trees potentially suitable for roosting. Targeted bat assessment (i.e., close inspection of trees) was not performed.	Presence Unknown. Tree removal outside of maternity roosting season, or conduct pre-construction roost habitat assessment. See Section 6.0 for details.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	FE, SE, SFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for dryland refugia during high tides.	No Potential. The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	Not Present. No further recommendations for this species.
<i>Sorex ornatus sinuosus</i> Suisun shrew	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Require dense low-lying vegetation cover, driftwood, and other litter above the mean high tide line for nesting and foraging.	No Potential. The Study Area contains no tidal or brackish marsh and is outside of this species' Napa County range.	Not Present. No further recommendations for this species.
<i>Taxidea taxus</i> 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 contains areas of grassland and woodland with some suitable habitat elements, but there are no occurrences within the northern portion of Napa County (CDFW 2021a). Additionally, large burrows were not observed during the site visits.	Presumed Absent. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Birds				
<i>Agelaius tricolor</i> tricolored blackbird	SC (E), SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	Unlikely. The on-site pond lacks dense emergent marsh vegetation.	Presumed Absent. No further recommendations for this species.
<i>Ammodramus savannarum</i> grasshopper sparrow	SSC, LR	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	Unlikely. Grassland cover within the Study Area is generally limited in area; larger contiguous and undisturbed areas are absent.	Presumed Absent. No further recommendations for this species.
<i>Aquila chrysaetos</i> golden eagle	BGEPA, SFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees and on taller, manmade structures, usually within otherwise open areas.	Unlikely. The Study Area does not provide large cliffs, and lacks typical nest trees. No indication of presence observed during site visits. May forage in the vicinity.	Presumed Absent. No further recommendations for this species.
<i>Ardea alba</i> great egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	Unlikely. The on-site pond is insufficient to support a breeding colony; no indication of nesting observed during site visits.	Presumed Absent. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Ardea herodias</i> great blue heron	LR (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	Unlikely. The on-site pond is insufficient to support a breeding colony; no indication of nesting observed during site visits.	Presumed Absent. No further recommendations for this species.
<i>Asio flammeus</i> short-eared owl	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	Unlikely. Known distribution (wintering) is restricted to the Napa baylands; breeding in the County has never been documented (Smith 2003).	Presumed Absent. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Asio otus</i> long-eared owl	SSC	Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding.	Unlikely. Rare in Napa County, with the nearest observations located on the Napa Valley floor (eBird 2021).	Presumed Absent. No further recommendations for this species.
<i>Athene cunicularia</i> burrowing owl	SSC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	Unlikely. Breeding and wintering distribution within Napa County are restricted to the vicinity of Lake Berryessa and southern baylands (Smith 2003, CDFW 2021a).	Presumed Absent. No further recommendations for this species.
<i>Buteo swainsoni</i> Swainson's hawk	ST	Summer resident in the Central Valley and sparingly in some coastal valleys. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	Unlikely. Napa County's small breeding population is restricted to the Napa Valley floor in association with the Napa River and southern baylands (CDFW 2021a).	Presumed Absent. No further recommendations for this species.
<i>Charadrius alexandrinus nivosus</i> western snowy plover	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	No Potential. The Study Area does not contain beaches or other suitable barren habitat near water.	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Circus cyaneus</i> northern harrier	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	Unlikely. The Study Area lacks open grassland or similar habitat.	Presumed Absent. No further recommendations for this species.
<i>Contopus cooperi</i> olive-sided flycatcher	SSC	Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.	Moderate Potential. The Study Area contains stands of coniferous and mixed forest, with edge habitats and arboreal snags.	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.
<i>Coturnicops noveboracensis</i> yellow rail	SSC	Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.	No Potential. The Study Area does not provide any suitable marsh/wetland habitat.	Not Present. No further recommendations for this species.
<i>Cypseloides niger</i> black swift	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas. No modern nesting records in Napa County.	No Potential. The Study Area does not contain waterfalls; there are no modern breeding records for Napa County (Smith 2003, Shuford and Gardali 2008).	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Egretta thula</i> snowy egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees, at times in sequestered beds of dense emergent vegetation (e.g., tules). Rookery sites usually situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Unlikely. The Study Area is not within close proximity to suitable waters to support a breeding colony.	Presumed Absent. No further recommendations for this species.
<i>Elanus leucurus</i> white-tailed kite	SFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	Moderate Potential. Woodland areas within the Study Area provides suitable nesting trees, with adjacent scrub and open areas for foraging.	Presence Unknown. Tree/vegetation removal and initial ground disturbance should occur outside of nesting season, or conduct pre-construction surveys and avoid any active nests found. See Section 6.0 for details.
<i>Falco peregrinus anatum</i> American peregrine falcon	SE, SFP	Year-round resident and winter visitor. Occurs near water, including coastal areas, wetlands, lakes and rivers. Usually nests on sheltered cliffs or tall man-made structures. Preys primarily on waterbirds.	Unlikely. The Study Area does not contain large cliffs or suitable man-made structures for nesting.	Presumed Absent. No further recommendations for this species.
<i>Geothlypis trichas sinuosa</i> San Francisco (saltmarsh) common yellowthroat	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	No Potential. No marsh vegetation is present within the Study Area, and this species' Napa County distribution is restricted to baylands (Shuford and Gardali 2008).	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Haliaeetus leucocephalus</i> bald eagle	BGEPA, SE, SFP	Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	Unlikely. Larger water bodies are not within or in close proximity to the Study Area. As per Smith (2003) and CDFW (2021a), nesting within Napa County is known only from the immediate vicinity of Lake Berryessa.	Presumed Absent. No further recommendations for this species.
<i>Icteria virens</i> yellow-breasted chat	SSC, LR	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow (<i>Salix</i> spp.), blackberry (<i>Rubus</i> spp.), and wild grape (<i>Vitis californicus</i>).	Unlikely. The Study Area does not contain stands of dense riparian understory favored by this species for nesting. There are no recent observations in the vicinity (eBird 2021).	Presumed Absent. No further recommendations for this species.
<i>Lanius ludovicianus</i> loggerhead shrike	SSC, LR	Year-round resident in open woodland, grasslands, savannah, and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	Unlikely. Open areas are limited within the Study Area; nearest observations are in association with grassland and/or agriculture near Angwin (eBird 2021).	Presumed Absent. No further recommendations for this species.
<i>Laterallus jamaicensis coturniculus</i> California black rail	ST, SFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	No Potential. The Study Area does not contain tidal or brackish marsh. Within Napa County, this species is restricted to baylands and the lower Napa River.	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	SSC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed, with gumplant and other shrubs present in the upper zone for nesting. May forage in areas adjacent to marshes.	No Potential. The Study Area contains no tidal or brackish marsh and is outside of this species' limited Napa County range (Shuford and Gardali 2008).	Not Present. No further recommendations for this species.
<i>Nycticorax nycticorax</i> black-crowned night heron	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation or shrubbery. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	Unlikely. The Study Area's pond provides only limited foraging habitat and no typical nesting substrates; no indication of presence observed during site visits.	Presumed Absent. No further recommendations for this species.
<i>Passerculus sandwichensis alaudinus</i> Bryant's savannah sparrow	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas, including grasslands. Also uses drier, more upland coastal grasslands. Nests near the ground in taller vegetation, including along levees and canals.	Unlikely. The Study Area lacks open grassland, and this species' Napa County breeding range is restricted to southwestern baylands (Shuford and Gardali 2008).	Presumed Absent. No further recommendations for this species.

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

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Setophaga petechia brewsteri</i> (Brewster's) yellow warbler	SSC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting is variable, but dense willow growth is typical. Occurs widely on migration.	Unlikely. The Study Area does not contain perennial streams and associated dense willow cover favored by this species for breeding. Individuals presumably occur during migration.	Presumed Absent. No further recommendations for this species.
<i>Spizella atrogularis</i> black-chinned sparrow	LR	Summer resident. Typically occurs on arid, rocky slopes with brushy vegetation, e.g. mixed chaparral, and sagebrush.	Unlikely. The Study Area does not contain expansive chaparral or similar brushy habitats.	Presumed Absent. No further recommendations for this species.
<i>Strix occidentalis caurina</i> northern spotted owl	FT,ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with stands of mature conifers. In Napa County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	Unlikely. On-site forest lacks typical canopy complexity, and Glass Fire impacts further reduced suitability. Nearest documented nesting territory is greater than 3.8 miles to the south (CDFW 2021b).	Not Observed. Protocol-level surveys in 2021 by Forest Ecosystem Management had negative results; see Appendix E. No further recommendations for this species.
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	SSC, LR	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	No Potential. The Study Area's pond lacks dense marsh vegetation.	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Reptiles and Amphibians				
<i>Dicamptodon ensatus</i> California giant salamander	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	Unlikely. The Study Area lacks perennial or near-perennial streams.	Presumed Absent. No further recommendations for this species.
<i>Emys marmorata</i> 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.	Moderate Potential. The on-site pond provides suitable aquatic habitat for this species, and surrounding upland areas have some potential to be used for nesting.	Present. Two western pond turtles were observed within the on-site pond during site visits. See Section 6.0.
<i>Rana boylei</i> foothill yellow-legged frog	SSC	Found in or near rocky streams in a variety of habitats; highly aquatic. Prefers partially-sunlit, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on invertebrates (aquatic and terrestrial).	Unlikely. The Study Area lacks perennial or near-perennial rocky streams.	Presumed Absent. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Rana draytonii</i> California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, marshes, and stream pools. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	Unlikely. While a pond is present within the Study Area, there are no modern CNDDDB records within 5 miles of the site (CDFW 2021a). One occurrence located approximately 3 miles to the southwest is historic, and the species is considered extirpated there (CDFW 2021a).	Presumed Absent. No further recommendations for this species.
Fishes				
<i>Acipenser medirostris</i> green sturgeon	FT, SSC	Spawns in the Sacramento River and Klamath Rivers, at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	No Potential. The Study Area does not contain suitable anadromous or estuarine waters.	Not Present. No further recommendations for this species.
<i>Eucyclogobius newberryi</i> tidewater goby	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches. Requires fairly still but not stagnant water and high oxygen levels.	No Potential. The Study Area does not contain brackish or ore estuarine waters.	Not Present. No further recommendations for this species.
<i>Hypomesus transpacificus</i> Delta smelt	FT, ST	Endemic to the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt; most often at salinities < 2 ppt.	No Potential. The Study Area does not contain estuarine waters.	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Lampetra ayresi</i> river lamprey	SSC	Lower Sacramento River, San Joaquin River and Russian River. May occur in coastal streams north of San Francisco Bay. Adults need clean, gravelly riffles, Ammocoetes need sandy backwaters or stream edges, good water quality and temps < 25 degrees C.	No Potential. The Study Area does not contain suitable anadromous or estuarine waters.	Not Present. No further recommendations for this species.
<i>Mylopharodon conocephalus</i> hardhead	SSC	Known from mid-elevation streams in the Sacramento, San Joaquin, Napa River, and Russian River drainages. Prefer clear, deep pools with sand-gravel-boulder bottoms and slow water velocity.	No Potential. The Study Area does not contain suitable anadromous or estuarine waters.	Not Present. No further recommendations for this species.
<i>Oncorhynchus mykiss irideus</i> steelhead - central CA coast DPS	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	No Potential. The Study Area does not contain suitable anadromous or estuarine waters.	Not Present. No further recommendations for this species.
<i>Oncorhynchus tshawytscha</i> Chinook salmon - California coastal ESU	FT	This ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	No Potential. The Study Area does not contain suitable anadromous or estuarine waters.	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	SSC	Formerly endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young. A freshwater species, but tolerant of moderate salinity (10-18 parts per thousand).	No Potential. The Study Area does not contain riverine or estuarine waters.	Not Present. No further recommendations for this species.
<i>Spirinchus thaleichthys</i> longfin smelt	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	No Potential. The Study Area does not contain riverine or estuarine waters.	Not Present. No further recommendations for this species.
Invertebrates				
<i>Branchinecta lynchi</i> vernal pool fairy shrimps	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	No Potential. The Study Area does not contain vernal pools or other suitable seasonal aquatic features (e.g., swales deep and ponded enough to support this species).	Not Present. No further recommendations for this species.
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT	Known from the Central Valley and adjacent foothills, in riparian and oak savannah where elderberry (<i>Sambucus</i> sp.), the host plant, is present.	No Potential. Although blue elderberry is present in the Study Area, documented occurrences are restricted to Napa County's southeastern-most portion (CDFW 2021a).	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Speyeria callippe callippe</i> Callippe silverspot butterfly	FE	Two populations are recognized, on San Bruno Mountain and the Cordelia Hills. Host plant is Johnny jump-up (<i>Viola pedunculata</i>), which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	No Potential. Violet was not observed within the Study Area during the site visit. Additionally, this species' known range with Napa County is restricted to the immediate vicinity of the Cordelia Hills.	Not Present. No further recommendations for this species.
<i>Syncaris pacifica</i> California freshwater shrimp	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	Unlikely. Although the Study Area contains an intermittent stream, this species is known from 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 2021a).	Presumed Absent. No further recommendations for this species.

***Key to status codes:**

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

Potential to Occur:

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

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

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

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

Results and Recommendations:

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

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

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

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

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

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

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

Appendix D
Representative Photographs



Man-made pond adjacent to the Project Area



Pacific madrone forest, burned in 2020 Glass Fire



Ephemeral stream, prior to 2020 Glass Fire



Douglas fir forest, prior to 2020 Glass Fire

Appendix E

Northern Spotted Owl Survey Report



Forest Ecosystem Management

1692 East Road * Deary, ID 83823
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Northern Spotted Owl Assessment

Nikalou Project

Napa County

Report Completed by: Pamela Town, Consulting
Wildlife Biologist on December 28, 2021

Northern Spotted Owls (*Strix occidentalis caurina*)

Northern Spotted Owls (NSO) are listed as Threatened under both the Federal Endangered Species Act (ESA) and California State Endangered Species Act (CESA), as well as Sensitive under California Department of Forestry and Fire Protection (CalFire). They are a common to uncommon owl in the coniferous forest of the Pacific Northwest (PNW), ranging from southern British Columbia south to Marin County in northwestern California.

The northern spotted owl is a subspecies of spotted owl (*Strix occidentalis*) found in western North America. They are a medium-sized (16 to 20 inches) dark brown owl with a barred tail, white spots on their head and breast; and dark brown eyes surrounded by a prominent facial disk. The northern spotted owl is a permanent resident in suitable habitat residing in dense, old-growth, and multi-layered second-growth stands of mixed conifer, redwood, and Douglas-fir habitats.

Northern Spotted Owls are rodent specialists, primarily feeding on woodrats (*Neotoma fuscipes*), deer mice (*Peromyscus spp.*), Sonoma tree voles (*Arborimus pomo*), voles (*Microtus spp.*) and northern flying squirrels (*Glaucomys sabrinus*); but has been known to consume small birds, bats, amphibians, and large arthropods. Foraging is completed by searching for prey from a perch and swooping/pouncing on the prey. NSOs usually nest in stick nests (mistletoe clump, abandoned raptor or squirrel nest), in a cavity tree or snag, or in the broken top of a large tree. In the interior region of their range (as seen in Napa County), there appears to be a preference to well-shaded habitat in narrow, steep-sided canyons with north or east-facing slopes to assist in thermoregulatory needs, as they are intolerant of high temperatures.

Spotted owl life-history traits suggest coevolution with late-seral, old growth forests, and second growth forest with scattered late-seral characteristics. They are relatively long-lived and have high adult survival, low reproductive output, and high parental investment in offspring.

Threats to the northern spotted owl include increased competition, and perhaps predation, from the barred owl (*Strix varia*). In addition to the threats from the barred owls, spotted owl populations may also be negatively impacted by unregulated activities that modify habitat and introduce toxic substances into the environment and food chain (i.e. illegal logging, development, marijuana cultivation, etc.).

The Nikalou Project, located at 432 Dutch Henry Canyon Road in Calistoga, California; is located within the range of the Northern Spotted Owl. To reduce potential impact to NSOs, the standard survey methods and take-avoidance measures advocated by the trustee agencies for the spotted owl in California (CalFire 2008 and USFWS 2012 & 2019) were adapted for used for this Project.

Nikalou General Information

Project Location: 432 Dutch Henry Creek Road; Calistoga, California (Attachment #1)

Legal of Project Area: Portions of Section 28 T09N, R06W MDB&M

APN: 018-050-072

County: Napa County

Proposed Project: Less than 3-acre conversion (Attachment #2)

Known Northern Spotted Owl Territories

There are no known northern spotted owl territories within 1.3-miles of this Parcel (Attachment #3), with the closest known territory (NAP0003) over 3.5 miles northeast from the Project Area.

The 1.3-mile assessment area was created by USFWS for a Take Avoidance of northern spotted owls within the California Interior (outside the coastal redwood zone). Although the County does have redwoods, the environmental conditions in the area are hotter/drier than the coastal redwood zone; therefore, the 1.3-mile assessment area was used for this Project.

Northern Spotted Owl Habitat

The general attributes for northern spotted owl habitat include a forest with:

- Dense, multi-layered canopy of several tree species.
- Trees of varying sizes and ages.
- Abundant logs, snags/cavity trees, and trees with broken tops or platform-like substrates (i.e., broken tops, mistletoe, debris piles, or old raptor/squirrel nests).
- Open spaces among lower branches to allow flight under the canopy.

USFWS Northern Spotted Owl Take Avoidance Analysis – Interior (Attachment B) dated 27FEB08 further defines NSO habitat as follows:

- High Quality Nesting/Roosting Habitat: Mixed tree species with basal area of 210+ ft² and $\geq 15''$ quadratic mean diameter, and ≥ 8 trees per acre of trees $\geq 26''$ in diameter at breast height, and $\geq 60\%$ canopy closure.
- Suitable Nesting/Roosting Habitat: Mixed tree species with basal area ranging from 150 - 180+ ft² and $\geq 15''$ quadratic mean diameter, and ≥ 8 trees per acre of trees $\geq 26''$ in diameter at breast height, and $\geq 60\%$ canopy closure.

- Suitable Forging Habitat: Mixed tree species with basal area ranging from 120 - 180+ ft² and ≥ 13 " quadratic mean diameter, and ≥ 5 trees per acre of trees ≥ 26 " in diameter at breast height, and a mix of $\geq 40\%$ to 100% canopy closure.
- Low Quality Foraging Habitat: Mixed tree species with basal area ranging from 80 - 120+ ft² and ≥ 11 " quadratic mean diameter, and $\geq 40\%$ canopy closure.

Recent Wildfire (Last 10-Years): In the early fall of 2020, the Glass Wildfire occurred within Napa Valley and engulfed portions of Napa and Sonoma Counties, including this property. The property had the majority of the vegetation (trees, shrubs, and ground cover) burned. The soil was gray in some areas and there were a few spots where the fire was in the roots and burned holes in the ground. In 2021, there was good new grass growth in spots and hardwoods were stump sprouting.

Parcel & Project Area: Pre-Glass wildfire, portions of the parcel and Project Area could have been classified as northern spotted owl habitat (Attachment #4 & Table #1). The forest type is a mix of Douglas-fir, madrone, and oaks. The vegetation may have met USFWS definitions of nesting/roosting habitat; however, due to forest patch size (including adjacent similar forest type), topography (property is not within the deep canyons), and surrounding landscape (residential, vineyards, shrubs) it would be classified as foraging habitat. The landscape probably would not support a resident northern spotted owl due to lack of suitable habitat; however, they may be found foraging or using the area for dispersal (floater owls). The 2020 Glass wildfire burned the landscape removing a large portion of the overstory further degrading the northern spotted owl habitat.

Project Area: This 3.4-acre site (both non-commercial timbered area and commercial timberland) is a mix of unsuitable NSO habitat due to vegetation type (grass/forbs) and lack of canopy cover; and pre-wildfire suitable NSO habitat. The Glass wildfire burned the majority of overstory trees with a CalFire Emergency Notice of Timber Operations submitted in the fall of 2021 to remove the dead/dying trees within a portion of the parcel (near homesite, outbuildings, access roads, and within project area). It is anticipated that the majority, if not all, of the trees within this area will be removed (dead/dying).

Table #1: Northern Spotted Owl Habitat (by acres) within Project Area

NSO Habitat Type	Pre-Wildfire	Post Wildfire (Current Conditions)	Post Conversion
Nesting/Roosting	0	0	0
Foraging	1.08	0	0
Unsuitable	2.32	3.4	3.4
Total Project Acres	3.4	3.4	3.4

Suitable NSO Habitat within ¼ Mile: Pre-Glass Wildfire, there was suitable NSO foraging habitat within ¼ mile of the Project Area (Attachment #3) with some live forested patches (potentially suitable NSO habitat) present post wildfire.

Northern Spotted Owl Surveys

Prior to the 2020 Glass Wildfire, suitable NSO habitat was present within the Project Area. After the Glass wildfire, suitable NSO habitat is not present within the Project Area (lack of canopy cover), however, live forested stands still occur within ¼ mile of the Project Area. Due to the unprecedented wildfire event and the unknown impacts to northern spotted owl movement, the Project Area began northern spotted owl surveys in 2021.

A single survey station (STA #N4 – Attachment #5) was used to survey the Project Area and surrounding accessible northern spotted owl habitat within 0.25 mile. Two additional stations (STA #G1 and STA #G2 – Attachment #4) were being completed for another project and provides additional coverage for this Project. No northern spotted owls or barred owls were detected in 2021.

Table #2: Northern Spotted Owl Surveys for Nikalou Project Area

Date	Station Number	Survey Time	Results
17MAR21	G2	2052 – 2102	N/R
	G1	2107 – 2117	N/R
	N4	2124 – 2134	N/R – Lots Frogs
29MAR21	N4	2120 – 2200	N/R – Frogs, Full Moon
	G1	2210 – 2220	N/R – Saw-whet owl
	G2	2224 – 2234	N/R - Frogs
20APR21	G2	2143 – 2153	N/R
	G1	2156 – 2206	N/R - Frogs
	N4	2211 – 2224	N/R - Frogs
30APR21	G2	2120 – 2130	N/R - Crickets
	G1	2136 – 2146	N/R
	N4	2150 – 2200	N/R – Saw-whet Owl
10MAY21	G2	2152 – 2202	N/R - fox
	G1	2209 – 2219	N/R - frogs
	N4	2222 – 2232	N/R – Saw-whet Owl, frogs, dog
03JUN21	N4	2130 – 2145	N/R
	G1	2153 – 2203	N/R
	G2	2207 – 2217	N/R

Surveys Completed by: Scott Butler, RPF and Pam Town, Consulting Wildlife Biologist

Northern Spotted Owl Project Protection Measures

The following were considered for justification for protecting northern spotted owls and their habitat:

- Pre-glass wildfire there was suitable NSO habitat within the Project Area.
- Post glass wildfire, there is no suitable NSO habitat within the Project Area.
- Post glass wildfire, there is suitable NSO habitat within ¼ mile of the Project Area.
- Portions of the Project Area will be converted from commercial timberland to vineyard.
- The impacts of the recent large-scaled wildfire on northern spotted owl movement are unknown.

Therefore,

- Northern Spotted owl surveys are valid until the beginning of the following years' breeding season (2021 surveys are valid until 01FEB22).
- If timber operations are anticipated to occur in 2022, six (6) survey visits should occur prior to beginning timber operations.
- If timber operations are not completed prior to 01FEB23, three (3) spot check surveys should occur prior to beginning timber operations in 2023.
- No operations, other than the use and maintenance of existing roads, will occur within 1,000' of any occupied spotted owl activity center. ***At this time, there are no known NSO activity centers within 1.3 miles of this Project.***
- Seasonal disturbance buffers (1/4 mile) will be observed for occupied sites during the breeding season (01FEB – 31AUG) or at least until protocol surveys support probable absence, non-nesting, nest failure, or fledgling flight can be determined. ***At this time, there are no known NSO activity centers within 1.3 miles of this Project.***
- If Project Description changes from that listed within this Assessment or a northern spotted owl is identified within 1.3 miles of the Project Area, a new NSO Assessment may be required.

Attachments

Attachment #1 – Northern Spotted Owls within 1.3 miles/Vicinity Map (1 page)

Attachment #2 – Engineers Map (5 pages)

Attachment #3 - Report #1 – Spotted Owl Sites Found (1 page)

Attachment #4 – Aerial Photo of Project Area and NSO Habitat (pre-wildfire) (1 page)

Attachment #5 – Northern Spotted Owl Survey Station Map (1 page)

Northern Spotted Owl Contact Information

Questions or comments regarding this NSO information can be directed to:

Pamela Town
Consulting Wildlife Biologist & SOE
Forest Ecosystem Management, PLLC
(406) 490-7427
Pamtown30@gmail.com

Other Information

Definitions:

- Activity Center: Area of concentrated activity of either a pair of NSOs or a single territorial NSO, represented by a mapped location (usually a nest tree) that occurs within, but not necessarily in the exact center of, the core area. Where clusters of site centers exist in a core area a geographic centroid or nearest neighbor calculation may be used as a designated activity center for habitat analysis purposes. A single territory may also have more than one designated activity center.
- Territory: A spatial area of landscape that is defended by a single resident or pair of northern spotted owls. Specific NSO territories generally refer to a fixed geographic area. Over time, individual spotted owls may occupy different territories (i.e. breeding dispersal, interference competition with barred owls, changes in habitat or prey availability, etc.).
- Home Range: In the absence of site-specific data, the home range is a 1.3-mile radius circle centered on the activity center.
- Territory Identification Number (NAP0005): A number generated by the California Department of Fish & Wildlife assigned to a geographic area currently and/or historically occupied by northern spotted owls.
- Suitable Habitat: Areas meeting the criteria for high quality nesting/roosting habitat, suitable nesting/roosting habitat, suitable foraging habitat, and low-quality foraging habitat.
- Unsuitable Habitat: Areas not meeting the criteria for high quality nesting/roosting habitat, suitable nesting/roosting habitat, suitable foraging habitat, and low-quality foraging habitat.
- NSO Breeding Season: February 1 to August 31st within the inland ecotype.
- NSO Survey Season: March 15 to August 31st within the inland ecotype.
- Degrade Habitat: Signifies when treatments have a negative influence on the quality of habitat due to the removal or reduction of NSO habitat elements but not to the degree where the existing habitat function is changed.
- Downgrade Habitat: Treatments that reduce habitat elements to the degree the habitat will not function in the capacity that exists pre-treatment, but the activities will not remove habitat entirely.
- Assessment Area: The area used to address northern spotted owls includes 1) Project Footprint; 2) Area within ¼ mile of Project Footprint; 3) 1.3 miles from Project Footprint.

References:

CalFire FRAP Fire Perimeters. <https://frap.fire.ca.gov/frap-projects/fire-perimeters/> Website accessed 2021.

CalFire. 2008. Important Information for Timber Operations Proposed within the Range of the Northern Spotted Owl. California Department of Forestry & Fire Protection. February 2008.

Northern Spotted Owl Take Avoidance Analysis and Guidance for Private lands in California. Attachment B: Take Avoidance Analysis – Interior. United States Department of Interior Fish & Wildlife Service. February 2008.

Northern Spotted Owl Take Avoidance Analysis and Guidance for Private lands in California. Attachment B: Take Avoidance Analysis – Interior. United States Department of Interior Fish & Wildlife Service. Updated November 2019.

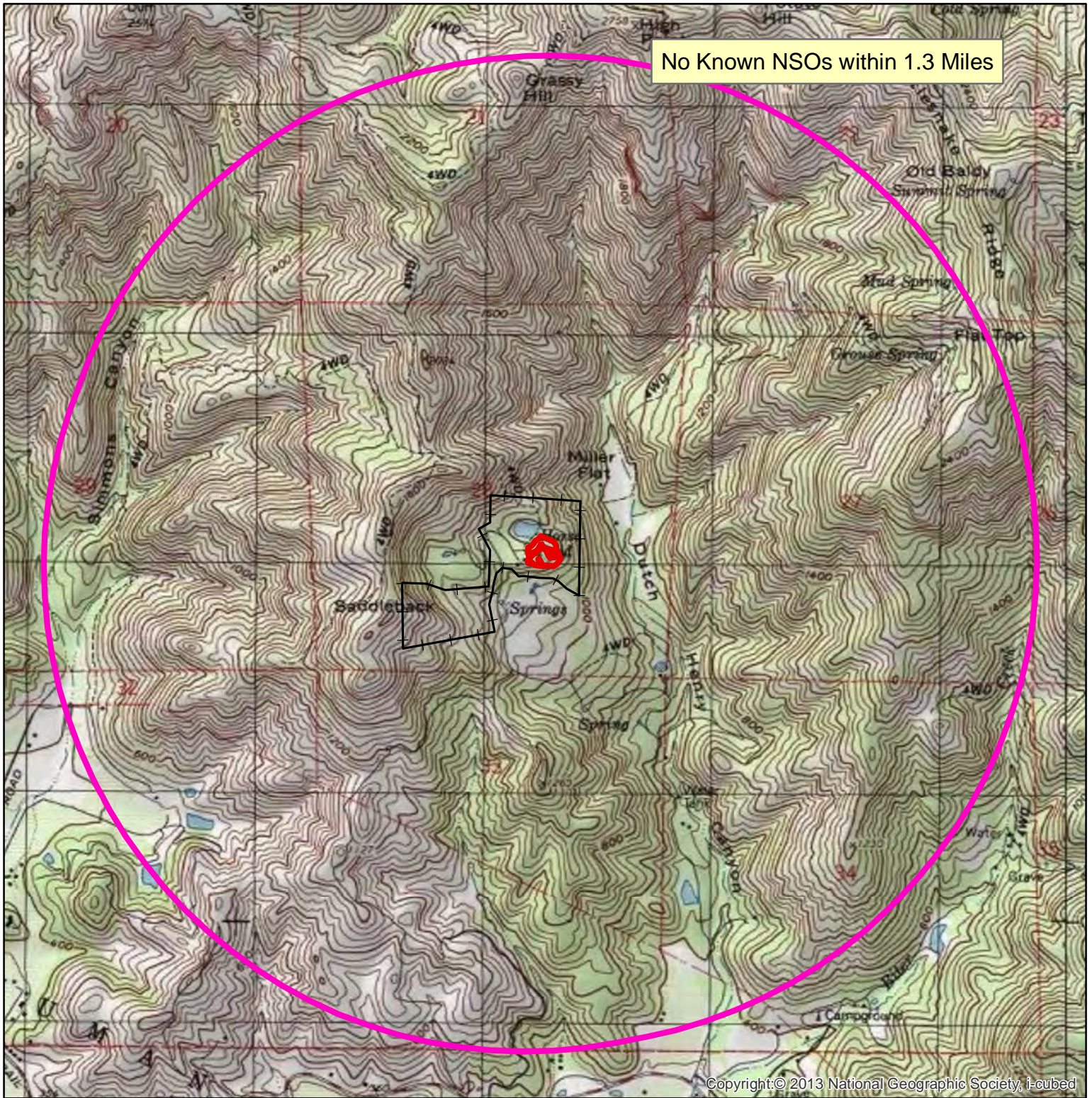
Northern Spotted Owl Viewer (BIOS CA Natural Diversity Database). Managed by California Department of Fish & Wildlife.

Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls. Endorsed by the U.S. Fish & Wildlife Service. February 2, 2011 and Revised January 9, 2012.

Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer, and M. White, eds. 1988 – 1990. California's Wildlife. Vol. I – III. California Department of Fish & Game, Sacramento, CA.




Northern Spotted Owls within 1.3 Miles - Nikalou

432 Dutch Henry Canyon Road BRS



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Legend

-  Nikalou Property Boundary
-  Project Area
-  1.3 Mile NSO Assessment Area

Section 28 T09N, R06W MDB&M
Parcel #018-050-072
Napa County



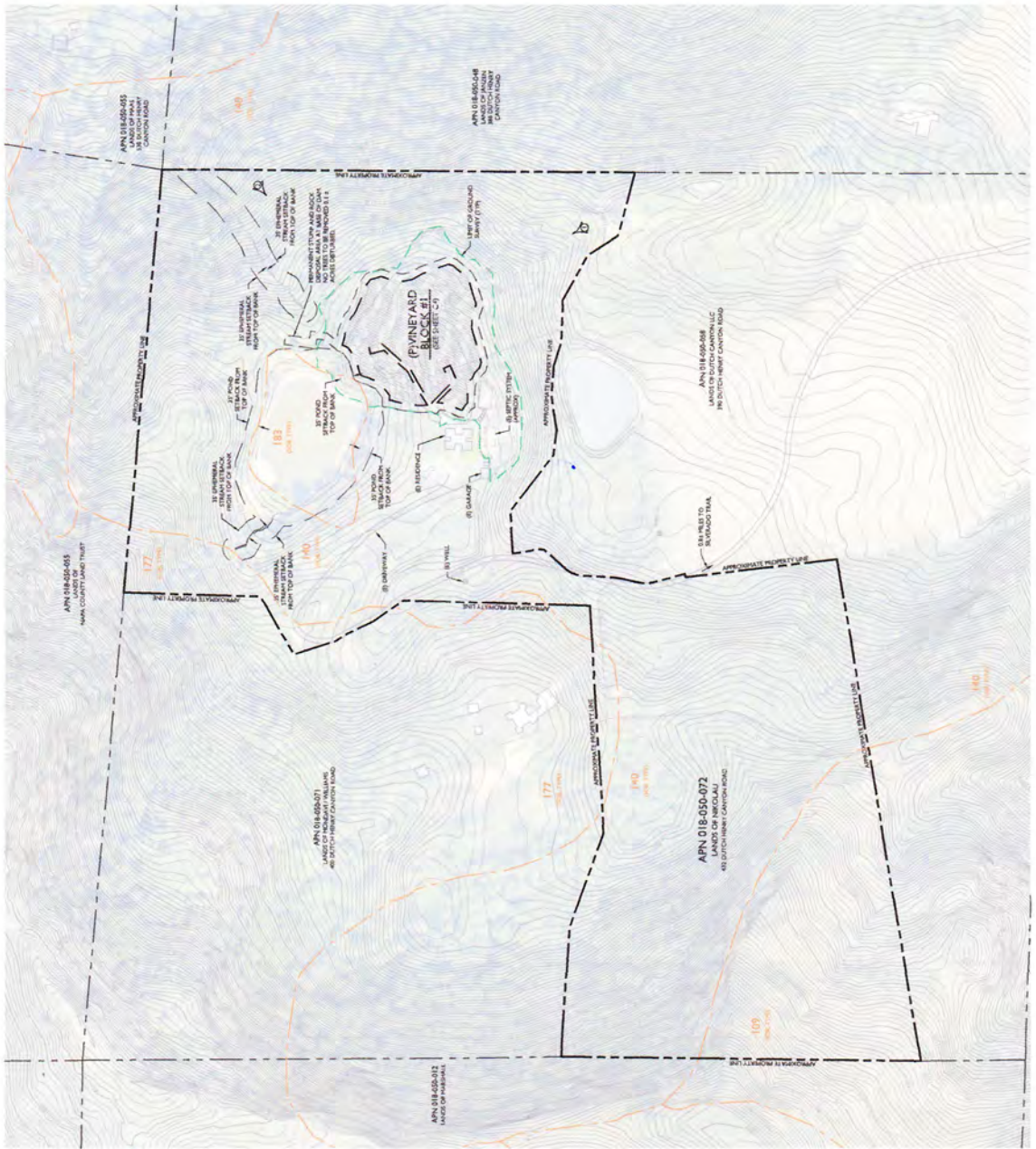
1 in = 2,500 ft

Forest Ecosystem Management

Date: 12/22/2021

NIKOLAU VINEYARDS

VINEYARD DEVELOPMENT EROSION CONTROL PLAN



LOCATION MAP
SCALE 1" = 1000'

PROJECT INFORMATION:
 PROPERTY OWNER & APPLICANT:
 PAUL AND JOYCE NIKOLAU
 3382 GILBERT DRIVE
 HUNTINGTON BEACH, CA 92649
 SITE ADDRESS:
 432 DUTCH HENRY CANYON ROAD
 CALISTOGA, CA 94515
 ASSESSOR'S PARCEL NUMBER:
 018-050-072
 PARCEL SIZE:
 60 ± ACRES
 PROJECT SIZE:
 3.4 ± ACRES TOTAL DISTURBED AREA
 2.5 ± ACRES PLANTED

Attachment #2

ZONING:
 AGRICULTURAL WATERSHED (AW)
 DOMESTIC AND IRRIGATION WATER SOURCE
 PRIVATE WELL

SHEET INDEX:
 C1 OVERALL SITE PLAN
 C2 NOTES, ABBREVIATIONS AND LEGEND
 C3 SLOPE DETERMINATION SECTIONS AND TREE REMOVAL PLAN
 C4 EROSION CONTROL PLAN
 C5 DETAILS

FLOOD HAZARD NOTE:
 ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 80603C01E EFFECTIVE SEPTEMBER 24, 2006, THE PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA.

LEGEND:

- APPROXIMATE PROPERTY LINE
- PROPOSED VINEYARD AVENUE
- PROPOSED VINEYARD BLOCK
- SOIL TYPE BOUNDARY
- PHOTOGRAPH DIRECTION

SOIL TYPE LEGEND:

- 109 SOOHER GRAVELLY LOAM, 10 TO 50 PERCENT SLOPE
- 146 FORWARD GRAVELLY LOAM, 10 TO 75 PERCENT SLOPE
- 177 ROCK OUTCROPPED CORRELX, 10 TO 75 PERCENT SLOPE
- 183 WATER

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAVA COUNTY SOIL SURVEY INFORMATION STATE DATA AND SHOULD BE CONSIDERED APPROXIMATE.

SITE PHOTOGRAPH NOTES:

○ REPRESENTS APPROXIMATE LOCATION AND DIRECTION OF PHOTOGRAPH VIEW. PHOTOGRAPHS WERE TAKEN ON 12/21/2011. PHOTOGRAPHIC COORDINATION OF EROSION CONTROL MEASURES FOR NIKOLAU VINEYARDS VINEYARD DEVELOPMENT EROSION CONTROL PLAN FOR PHOTOGRAPHS AND DESCRIPTIONS.



OVERALL DEVELOPMENT EROSION CONTROL PLAN

NIKOLAU VINEYARDS



DRAWN BY: Peter O'Dell LLC
 CHECKED BY: JRM
 DATE: DECEMBER 2011
 KEYWORD: 432 DUTCH HENRY CANYON ROAD
 PROJECT NUMBER: 1203-2011
 SHEET NUMBER: 018-050-072

4.2 Dutch Henry Canyon Road BRRS

CI
 OF 5

OVERALL SITE PLAN
 SCALE 1" = 150'

Attachment #3

Data Version Date:
12/01/2021
Report Generation Date:
12/16/2021

Report #1 - Spotted Owl Sites Found
Known Spotted Owl sites having observations
within the search area.



Meridian, Township, Range, Section (MTRS) searched:

M_09N_06W Sections(14,15,16,17,18,19,20,21,22,23,26,27,28,29,30,31,32,33,34,35);

M_08N_06W Sections(02,03,04,05,06);

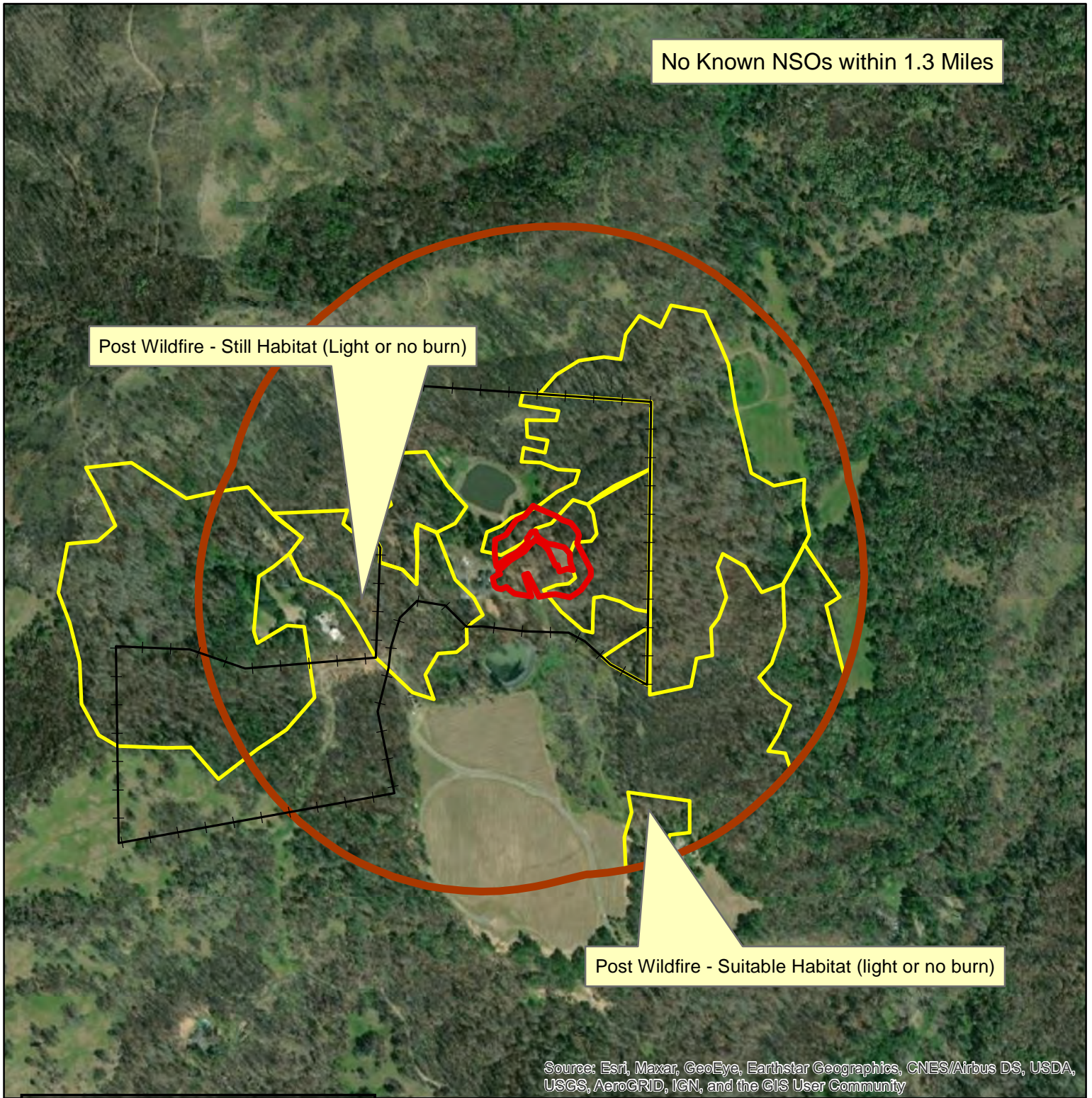
NOTES:

Nikalou

Masterowl	Subspecies	LatDD NAD83	LonDD NAD83	MTRS	AC Coordinate Source
NAP0003	NORTHERN	38.634933	-122.486966	M 09N 06W 14	Contributor 3 1/2+
NAP0007	NORTHERN	38.553044	-122.580998	M 08N 07W 12	Contributor 5+

No known
N50S
within
1.3 miles

Northern Spotted Owl Habitat - Nikalou



Legend

- Nikalou Property Boundary
- Project Area
- Prefire NSO Habitat
- 1/4 Mile Assessment Area

Section 28 T09N, R06W MDB&M
Parcel #018-050-072
Napa County

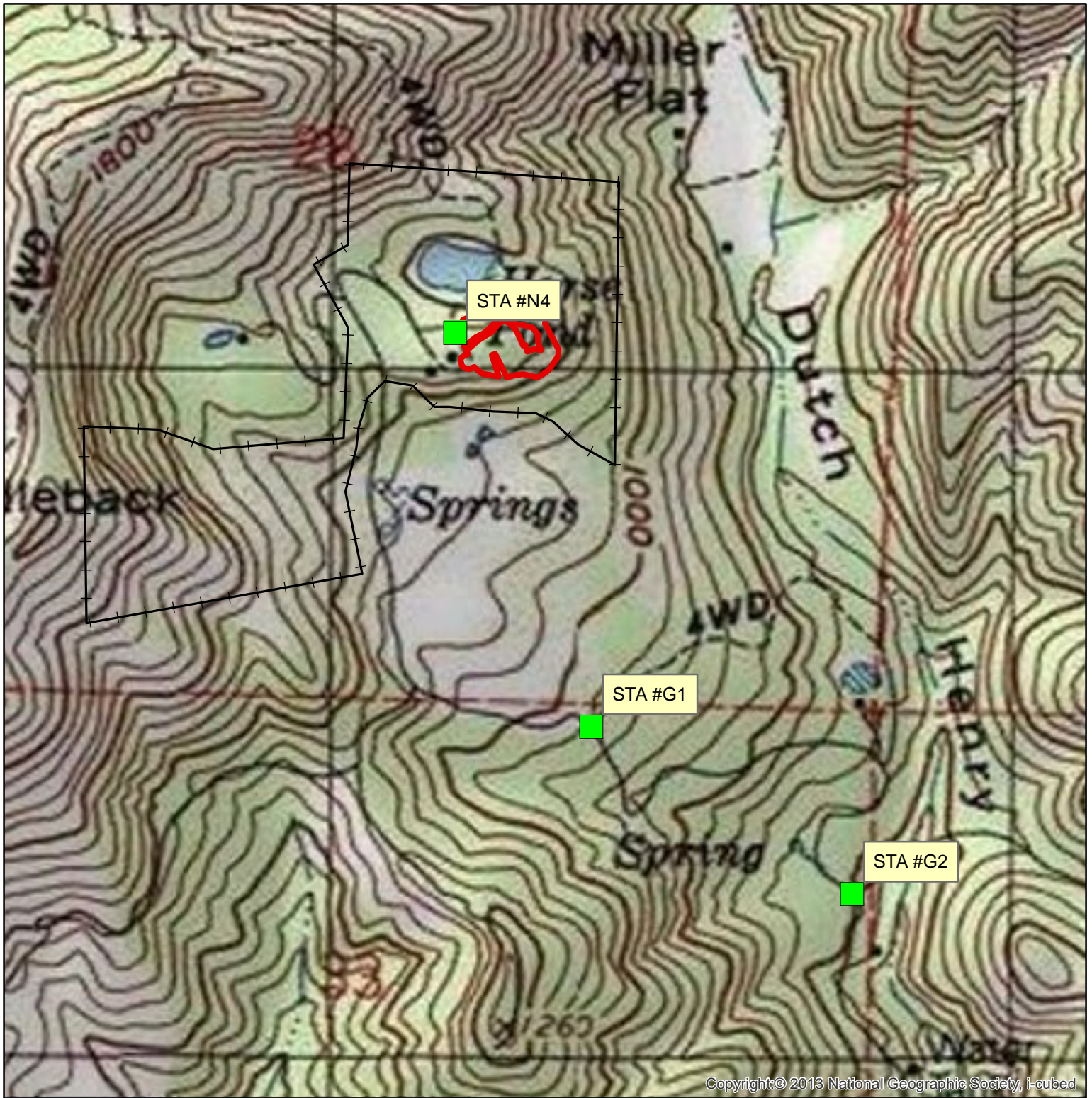


1 in = 833 ft

Forest Ecosystem Management

Date: 12/22/2021

Northern Spotted Owl Survey Stations - Nikalou



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Section 28 T09N, R06W MDB&M
Parcel #018-050-072
Napa County



1 in = 833 ft

Date: 12/22/2021

Forest Ecosystem Management

Legend

- Nikalou Property Boundary
- Project Area
- NSO Stations

Appendix F

Statement of Qualifications

Appendix E. Statement of Qualifications

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

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

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

Jason Yakich, MS, Senior 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.