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Biological Resources Reconnaissance Survey

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1225 Howell Mountain Road (018-120-016, 018-120-027)

Napa County, California



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WRA Project # 27268/330023

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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 facilities to provide for a natural burial site located at 1225 Howell Mountain Road, Napa County. These facilities include the construction and update of new and existing roads and parking areas; construction of 10-foot-wide gravel walking paths; construction of a new office and conference building with public bathrooms; update to existing buildings; and excavation of a waterline and electrical line and construction of a 10,000-gallon water tank and pump. The Project Area is composed of California black oak woodland, tanoak forest, Douglas fir forest, and ephemeral streams.

The Study Area (entire parcel, 112 acres) contains 27.7 acres, 17.45 acres, and 64.51 acres of California black oak woodland, tanoak forest, and Douglas fir forest, respectively. The proposed Project will incur 0.95 acre, 0.64 acre, and 1.26 acres to these land cover types, respectively; these represent 3.4 percent, 3.6 percent, and 1.9 percent of the total cover, respectively. Importantly, these impacts are entirely on the forest/woodland floor, with only nine trees scheduled for removal. Napa County requires a ratio of 3:1 preservation of similar canopy; therefore, the project is in compliance.

A protocol-level rare plant survey resulted in the detection of four special-status plants: narrow-anthered brodiaea (*Brodiaea leptandra*, CRPR 1B), redwood lily (*Lilium rubescens*, CRPR 4), Cobb Mountain lupine (*Lupinus sericatus*, CRPR 1B), green monardella (*Monardella viridis*, CRPR 4), and dark-mouthed Tritoleia (*Triteleia lugens*, CRPR 4). Only a small portion of the dark-mouthed triteleia population will be permanently impacted by the Project, but recommendations are provided herein to minimize these impacts.

Three special-status bats and five 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 potential impacts to these resources from the removal of nine trees.

Contents

1.0 INTRODUCTION	1
2.0 REGULATORY BACKGROUND	2
2.1 Federal and State Regulatory Setting	2
2.1.1 Sensitive Land Cover Types	2
2.1.2 Special-status Species	3
2.2 Napa County Regulatory Setting	5
3.0 ENVIRONMENTAL SETTING	9
3.1 Topography and Soils	9
3.2 Climate and Hydrology	10
3.3 Land Cover and Land Use	10
4.0 ASSESSMENT METHODS	11
4.1 Land Cover Types	12
4.1.1 Terrestrial Land Cover Types	12
4.1.2 Aquatic Resources	12
4.2 Special-status Species	13
4.2.1 General Assessment	13
4.2.2 Special-status Plants	13
4.2.3 Special-status Wildlife	14
4.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors	14
5.0 ASSESSMENT RESULTS	14
5.1 Land Cover Types	14
5.1.1 Terrestrial Land Cover Types	14
5.1.2 Aquatic Resources	17
5.2 Special-status Species	17
5.2.1 Special-status Plant Species	17
5.2.2 Special-status Wildlife Species	20
5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors	22
6.0 PROJECT ANALYSIS AND RECOMMENDATIONS	22
6.1 Land Cover Types	22
6.1.1 Terrestrial Land Cover Types	22
6.1.2 Aquatic Resources	24
6.2 Special-status Species	24
6.2.1 Special-status Plants	24
6.2.2 Special-status Wildlife	25
6.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors	26
7.0 REFERENCES	27

List of Tables

Table 1. Napa County Stream Setbacks	8
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List of Appendices

Appendix A – Figures	
Appendix B – Species Observed in the Study Area	
Appendix C – Potential for Special-status Species to Occur in the Study Area	
Appendix D – Representative Photographs	
Appendix E – Statement of Qualifications	

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Definitions

Study Area: The area composing the two adjoining parcels of APN: 018-120-016 and 018-120-027, totaling 112.23 acres.

Project Area: The area encompassing the proposed project (internment areas, access, infrastructure); the area evaluated for potential impacts to sensitive biological resources, totaling approximately 23.85 (includes both temporary and permanent impacts)

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
CECP	California Essential Connectivity Project
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
County	Napa County
Corps	U.S. Army Corps of Engineers
CRPR	California Rare Plant Ranks
CSRL	California Soils Resources Lab
CWA	Clean Water Act
EFH	Essential Fish Habitat
ESA (Federal)	Endangered Species Act
MBTA	Migratory Bird Treaty Act
NCBDR	Napa County Baseline Data Report
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
SFP	State Fully Protected Species
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 August 25, 2017, April 26 and June 22, 2018; and April 14, May 18, and June 29, 2023, WRA, Inc. (WRA) performed an assessment of biological resources and protocol-level rare plant surveys at 1225 Howell Mountain, Napa County (hereafter Study Area) (Figure 1, Appendix A). The purpose of this study was to gather the information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA) to meet the guidelines outlined by Napa County in *Guidelines for Preparing Biological Resources Reconnaissance Surveys* (Napa County 2016a) and *Guidelines for Preparing Special-status Plant Studies* (Napa County 2016b).

A biological resources reconnaissance survey (BRRS) provides general information on the presence, or potential presence, of sensitive species and habitats. These survey(s) contain the results of a focused protocol-level survey for listed plant species 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 overall proposed project (Project) is to create Howell Mountain Cemetery, a green burial cemetery and managed as a conservation property. Project activities are two-fold: (1) construction activities to build out infrastructure and buildings and (2) on-going, intermittent internments.

Construction activities include:

- Update of existing dirt roads
- Construction of a new paved road and parking areas
- Update of two existing buildings (storage, maintenance garage)
- Construction of a new building (office/conference room)
- Construction of 10-foot-wide gravel walking paths
- Installation of a sign at the public roadway
- Installation of 10,000-gallon water tank; buried waterline from existing well to the proposed tank and buried waterline from proposed water tank to existing and proposed buildings
- Installation of buried electrical line to power the waterline

2.0 REGULATORY BACKGROUND

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

2.1 Federal and State Regulatory Setting

2.1.1 Sensitive Land Cover Types

Land cover types are herein defined as those areas of a particular vegetation type, soil or bedrock formation, aquatic features, and/or other distinct phenomena. 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 (CNDDB; CDFW 2018a). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe’s (2018) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). The Napa County Baseline Data Report (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 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 drainages¹ where new development is required to retain between 40 and 60 percent of the existing (as of June 16, 1993) vegetation onsite, the vegetation selected for retention should be in areas designed to maximize habitat value and connectivity.
- b) Outside of sensitive domestic water supply drainages, streamlined permitting procedures should be instituted for new vineyard projects that voluntarily retain valuable habitat and connectivity, including generous setbacks from streams and buffers around ecologically sensitive areas.
- c) Preservation of habitat and connectivity of adequate size, quality and configuration to support special-status species should be required within the project area. The size of habitat and connectivity to be preserved shall be determined based on the specific needs of the species.
- d) The County shall require discretionary projects to retain movement corridors of adequate size and habitat quality to allow for continued wildlife use based on the needs of the species occupying the habitat.
- e) The County shall require new vineyard development to be designed to minimize the reduction of wildlife movement to the maximum extent feasible. In the event the County concludes that such development will have a significant impact on wildlife movement, the County may require the applicant to relocate or remove existing perimeter fencing installed on or after February 16, 2007 to offset the impact caused by the new vineyard development.

Policy CON-19: The County shall encourage the preservation of critical habitat areas and habitat connectivity through the use of conservation easements or other methods as well as through

¹ Sensitive Domestic Water Supply Drainages: (1) Kimball Reservoir; (2) Rector Reservoir; (3) Milliken Reservoir; (4) Bell Canyon Reservoir; (5) Lake Hennessey and Friesen Lakes; (6) Lake Curry; (7) Lake Madigan

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

Policy CON-48: Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution prevention plans) that maintain pre-development sediment erosion conditions or at a minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County's sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site-specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

Policy CON-50(c): The County shall require discretionary projects to meet performance standards designed to ensure peak runoff in 2-, 10-, 50-, and 100-year events following development is not greater than predevelopment conditions.

Soil loss and Hydrologic Studies are required to demonstrate a given project meets the County's no net increase in erosion and runoff standards are met. The Universal Soil Loss Equation (USLE) is the model used to measure and quantify pre- and post-project soil loss rates. Similarly, pre- and post-project changes in runoff are measured using Technical Release 55 (TR-55). The procedures related to the application of hydrologic modeling are fairly standard. Guidance documents for the preparation of these analyses are currently being drafted.

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.

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):

- a) 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.

- b) 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.
- c) Trees to be retained or designated for retention shall be protected through the use of barricades or other appropriate 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. However, Properties zoned Agricultural Preservation are exempt from these requirements. 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 112-acre Study Area is set across a portion of two parcels (Appendix A). It is in northwestern Napa County, approximately eight aerial miles east of downtown Calistoga and two aerial miles north of Angwin. It is situated on an overall north slope of the northern extent of the Howell Mountains, located near the ridgeline between the Napa Valley and Pope Valley. Detailed descriptions of the local setting are below.

3.1 Topography and Soils

The overall topography of the Study Area gently- to steeply sloped (5 to 75 percent), ranging from approximately 1,100 to 1,900 feet above sea level. According to the *Soil Survey of Napa County* (USDA 1978), the Study Area is underlain by four soil mapping units: Forward gravelly loam, 2 to 9 percent slopes; Forward gravelly loam, 9 to 30 percent slopes; Forward gravelly loam, 30 to 75

percent slopes; and Aiken loam, 30 to 50 percent slopes. The parent soil series of all the Study Area's mapping units are summarized below.

Aiken Series: This series consists of very deep loamy soils that formed in residuum weathered from volcanic rock situated on upland hillsides at elevations ranging from 1,200 to 5,000 feet (CSRL 2020, USDA 1978). These soils are not hydric, and are well drained with slow to rapid runoff, and moderately slow permeability (USDA 2014, USDA 1978). Native and naturalized vegetation associated with this series consists of coniferous and hardwood forests of ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), California black oak (*Quercus kelloggii*), and Pacific madrone (*Arbutus menziesii*). Typical land uses are timber, orchards, watershed protection, and open space (USDA 1978).

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 2020, 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).

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 Angwin is 86.4 degrees Fahrenheit, while the average monthly minimum temperature is 52.8 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with an annual average of 41.06 inches. Precipitation-bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March, with a combined average of 34.45 inches (USDA 2020).

The local watershed is Maxwell Creek (HUC 12: 180201620203) and the regional watershed is Pope Creek (HUC 8: 180201620203). There are no mapped blue-line streams on the USGS 7.5-minute quadrangle within the Study Area (USGS 2012), or other aquatic resources mapped in the National Wetland Inventory (NWI; USFWS 2020a) and California Aquatic Resources Inventory (CARI; SFEI 2020). There are seven ephemeral-intermittent drainages that run through the Study Area, which are detailed in Section 5.1.2 below.

3.3 Land Cover and Land Use

The vegetation of the Study Area is typical of the middle elevations of the northern Howell Mountains of Napa County. The property is dominated by a conifer forest and broadleaf forest, with patches of chaparral. The high summer temperatures, moderate winter temperatures, and winter precipitation/summer drought regime supports a preponderance of xerophytes. Section 5 provides detailed descriptions of the vegetation and flora, as well as those special-status plant and wildlife species with the potential to occur within the Study Area.

Historically, the Study Area was logged for conifer timber; however, there is no evidence of recent timber activities. Contemporary regional uses include open space, recreation, private hunting, vineyards, and expansive rural residential. Currently, the property contains only minimal infrastructure (e.g., gravel/dirt roads, border fencing, cabins, wellhead), and modern, intensive development is lacking (e.g., residences, paved roads). There is no evidence of historic residences, orchards, vineyards, quarrying, or mining anywhere on the investigated property; however, the property has evidence of historic timbering (e.g., old conifer stumps).

4.0 ASSESSMENT METHODS

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

- *Soil Survey of Napa County, California* (USDA 1978)
- Yountville 7.5-minute quadrangle (USGS 2015)
- Contemporary aerial photographs (Google Earth 2024)
- Historical aerial photographs (Historical Aerials 2024)
- National Wetlands Inventory (NWI; USFWS 2024a)
- California Aquatic Resources Inventory (CARI; SFEI 2024)
- California Natural Diversity Database (CNDDDB; CDFW 2024a)
- California Native Plant Society Electronic Inventory (CNPS 2024a)
- Consortium of California Herbaria (CCH 2024)
- USFWS Information for Planning and Consultation (USFWS 2024b)
- eBird Online Database (eBird 2024)
- 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 2024b)
- *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 Detert Reservoir, Aetna Springs, Walter Springs, Calistoga, St. Helena, Chiles Valley, Kenwood, Rutherford, and Yountville 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.

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 and evaluated across the entire 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 2024b). 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 OHWM 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*

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).

Alteration Agreements, Section 1600-1607, California Fish and Game Code (CDFG 1994). Finally, all streams were 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 August 25, 2017 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 August 25, 2017; April 26 and June 22, 2018; April 14, May 18, and June 29, 2023. 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 2024), to the taxonomic level necessary to determine if they were sensitive. Plant names follow those of Jepson Flora Project (eFlora 2024), unless otherwise noted.

4.2.3 Special-status Wildlife

An initial general wildlife assessment was performed on August 25, 2017, with incidental observations and continued assessment throughout the survey period. This assessment consisted of traversing the entirety of the Study Area. Habitat elements required or associated with certain species (e.g., California red-legged frog) 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.

4.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2024c) and the NMFS Essential Fish Habitat Mapper (NMFS 2024) 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 (CECP) by Caltrans (2010) and CDFW's Biogeographic Information and Observation System (BIOS) (CDFW 2024b), as well as the NCBDR (Napa County 2005). The CECP maps both 1) "Natural Landscape Blocks," or discrete areas of mostly natural land covers that support biodiversity, and 2) "Essential Connectivity Areas" that provide ecological connectivity between the former. Additionally, aerial imagery (Google 2024) 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 Study Area are shown in Figure A-3 (Appendix A). Five land cover types are present: common manzanita chaparral, California black oak forest, tanoak forest, Douglas fir forest, and ephemeral streams.

5.1.1 Terrestrial Land Cover Types

Stanford's Manzanita Chaparral (*Arctostaphylos stanfordiana* Provisional Shrubland Alliance). CDFW Rank: G3 S3. Stanford's manzanita chaparrals, or something similar, have been documented from Napa County (Thorne et al. 2014). These chaparrals typically occur on south-facing slopes on volcanic substrates, including rhyolites. Presumably, these chaparrals are restricted to the North

Coast Range in Mendocino, Sonoma, Lake, and Napa counties (Calflora 2024, eFlora 2024). There are no recommended membership rules; however, presumably, these provisional stands are dominated by Stanford's manzanita (*Arctostaphylos stanfordiana* ssp. *stanfordiana*) in the shrub layer (Sawyer et al. 2009, CNPS 2024b).

Within the Study Area, the tree cover of this community is less than 20 percent absolute cover and composed of individual ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), California black oak (*Quercus kelloggii*), and Pacific madrone (*Arbutus menziesii*). The dominant layer is the shrub layer, which is dominated by a combination of Stanford's manzanita (*A. stanfordiana* ssp. *stanfordiana*), chamise (*Adenostoma fasciculatum*), common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), and wedge-leaf ceanothus (*Ceanothus cuneatus*). The herbaceous layer is sparse and situated entirely in the openings between shrubs. Species include Idaho fescues (*Festuca idahoensis*), annual fescue (*F. microstachys*), Eastwood's bellflower (*Campanula angustiflora*), dogtail grass (*Cynosurus echinatus*), nit grass (*Gastridium phleoides*), and gold wire (*Hypericum concinnum*).

The Study Area contains 2.57 acres of Stanford's manzanita chaparral, and it is entirely outside of the Project Area. This land cover type is synonymous with the Mixed Manzanita (Interior Live Oak-California Bay-Chamise) West County NFD Alliance biotic community in the NCLC (Sawyer et al. 2009, Thorne et al. 2004). These chaparrals provide habitat for numerous common native plants and wildlife, as well as have the potential to support several special-status species associated with volcanic substrate scrubs. The CDFW and Napa County consider these chaparrals as sensitive natural communities.

California Black Oak Woodland (*Quercus kelloggii* Woodland Alliance). CDFW Rank: G4 S4. California black oak woodlands are known from the Coast Ranges, Transverse Range, Peninsular Ranges, Klamath Range, Cascade Range, west and east slopes of the Sierra Nevada, and Modoc Plateau. These woodlands typically occur on all aspects and topographic gradients with sites underlain by moderately to excessively drained soils. To meet the membership of California black oak woodland, the cover of black oak (*Quercus kelloggii*) constitutes 50 percent or greater in the canopy without substantial cover of conifers, particularly ponderosa pine (*Pinus ponderosa*) (Sawyer et al. 2009).

Within the Study Area, the canopy of this community is dominated (greater than 50 percent relative cover) of California black oak (*Quercus kelloggii*). Secondary tree species are intermittent, constitute less than 20 percent cover per species, and include Oregon white oak (*Quercus garryana*), blue oak (*Quercus douglasii*), Douglas fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), gray pine (*Pinus sabiniana*), and Pacific madrone (*Arbutus menziesii*). The understory is interspersed with dense thickets of native shrubs and an open herbaceous layer. Understory shrubs include common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), toyon (*Heteromeles arbutifolia*), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer is dominated by a mix of grasses and forbs, including California fescue (*Festuca californica*), Idaho fescue (*F. idahoensis*), dogtail grass (*Cynosurus echinatus*), blue dicks (*Dichelostemma capitatum*), common yarrow (*Achillea millefolium*), purple Chinese houses (*Collinsia heterophylla* var. *heterophylla*), and Pacific pea (*Lathyrus vestitus*).

The Study Area contains 27.7 acres of California black oak woodland, of which 8.73 acres is within the Project Area, including 0.95 acres of permanently impacted area. This land cover type is synonymous with the California Black 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 oak woodlands. Napa County considers these woodlands to be sensitive natural communities.

Tanoak Forest (*Notholithocarpus densiflorus* Forest Alliance). CDFW Rank: G4 S3. Tanoak forests are known from the Coast Ranges, western Klamath Mountains, and the western slope of the Sierra Nevada. These forests typically occur on raised stream benches, terraces, slopes, and ridges of all aspects underlain by deep, well-drained soils derived from a variety of parent materials. To meet the membership rule, the cover of tanoak (*Notholithocarpus densiflorus*) constitutes 50 to 60 percent of relative cover in the canopy (Sawyer et al. 2009).

Within the Study Area, the canopy of this community is dominated (greater than 60 percent cover) by tanoak (*Notholithocarpus densiflorus*). Secondary tree species are infrequent, typically constituting less than 20 percent relative cover, and include Douglas fir (*Pseudotsuga menziesii*), Pacific madrone (*Arbutus menziesii*), coast redwood (*Sequoia sempervirens*), and ponderosa pine (*Pinus ponderosa*). The stand is even-aged with notable regeneration of tanoak (*Notholithocarpus densiflorus*) in the understory. Consequently, the understory is depauperate with few species, but those include poison oak (*Toxicodendron diversilobum*), western sword fern (*Polystichum munitum*), and common bedstraw (*Galium aparine*).

The Study Area contains 17.45 acres of tanoak forest, of which 6.31 acres is within the Project Area, including 0.64 acres of permanently impacted area. This land cover type is synonymous with the Tanbark Oak Alliance biotic community in the NCLC (Thorne et al. 2004). These forests provide habitat for some native plants and wildlife, including a few special-status species closely associated with broadleaf forests. Napa County considers these forests to be sensitive natural communities.

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 2024b). These forests occur on all topographic positions and aspects, and variety of substrates including volcanics and serpentine (CNPS 2024b, Sawyer et al. 2009). To meet the membership rule, the cover of Douglas fir (*Pseudotsuga menziesii*) constitutes 50 percent of relative cover in the canopy (Sawyer et al. 2009).

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 constituting less than 50 percent relative cover collectively, and include coast redwood (*Sequoia sempervirens*), Pacific madrone (*Arbutus menziesii*), tanoak (*Notholithocarpus densiflorus*) and ponderosa pine (*Pinus ponderosa*). The stand is even-aged with a few older trees in the overstory and notable regeneration of Douglas fir (*Pseudotsuga menziesii*) and tanoak (*Notholithocarpus densiflorus*) 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*).

The Study Area contains 64.51 acres of Douglas fir forest, of which 8.81 acres is within the Project Area, including 1.26 acres of permanently impacted area. This land cover type is synonymous with the Douglas Fir Alliance biotic community in the NCLC (Thorne et al. 2004). These forests provide habitat for numerous common native plants and wildlife, including several special-status species.

5.1.2 Aquatic Resources

Ephemeral Streams. CWA Section 404/401. CDFW Rank: None. The Study Area contains seven drainages. The flows in these streams are ephemeral, which means they only run during and immediately following substantial precipitation. The bed-and-banks are a mix of finer sediments, with large cobble and occasional bedrock, and the banks are of fine sediments (clays, loams). The banks are vegetated and shaded, but the vegetation is composed of not composed of characteristically riparian species. All the streams are likely jurisdictional under Section 404/401 of the CWA and Section 1602 of the CFGC; therefore, it is considered a sensitive aquatic resource. These drainages do not meet the Napa County stream definition pursuant to Napa County Code 18.108.030.

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, 105 special-status plant species have been documented in the vicinity of the Study Area. As outlined in Appendix C, twenty-eight of these plants have the potential to occur in the Study Area.⁵ The remaining 77 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 28 special-status plant species with the potential to occur within the Study Area. Five special-status plants were observed within the Study Area: narrow-anthered brodiaea (*Brodiaea leptandra*; CRPR 1B), redwood lily (*Lilium rubescens*; CRPR 4), Cobb Mountain lupine (*Lupinus sericatus*; CRPR 1B), green monardella (*Monardella viridis*; CRPR 4), and dark-mouthed triteleia (*Triteleia lugens*; CRPR 4, LR). All species with the potential to occur are listed below and described in Appendix C.

The following five special-status plants were observed within the Study Area during the 2017, 2018, and 2023 surveys.

Narrow-anthered brodiaea (*Brodiaea leptandra*) CRPR 1B. High Potential (Present). Narrow-anthered California Brodiaea is a perennial herb in the brodiaea family (Themidaceae) that blooms from May to July. It typically occurs in broadleaf upland forest, chaparral, and lower montane coniferous forest habitat at elevations ranging from 360 to 3,000 feet (CDFW 2020a, CNPS 2020a). Soil survey data from documented locations suggest this species is closely associated with gravelly loam and clay loam substrates derived from rhyolites, metavolcanics, and serpentine (CSRL 2020, CDFW 2020a). This species has a serpentine affinity rank of weak indicator (2.0) (Safford et al. 2005). One hundred fifty-six individuals were observed in 2023 within the chaparral in the southern portion of the Study Area; this is an increase of nine individuals between 2018 and 2023. These individuals were located interstitial to shrubs in the chaparral.

Redwood lily (*Lilium rubescens*). CRPR 4. High Potential (Present). Redwood lily is a bulbiferous perennial forb in the lily family (Liliaceae) that blooms from April through September. It typically occurs in openings, roadsides, and trails, often on serpentine and volcanic substrates in broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, and North Coast coniferous forest habitat at elevations ranging from 95 to 6,210 feet (CNPS 2020a, Baldwin et al. 2012, Best et al. 1996). This species has a serpentine affinity rank of weak indicator (2.0) (Safford et al. 2005). Twenty-seven individuals were observed in 2023 on the central-western edge of the Study Area in tanoak forest; this is an increase of six individuals between 2018 and 2023. These individuals were located on a rocky gentle to moderate slope in a relatively open understory.

Cobb Mountain lupine (*Lupinus sericatus*). CRPR 1B. High Potential (Present). Cobb Mountain lupine is a perennial forb in the pea family (Fabaceae) that blooms from March through July. It typically occurs in openings in wooded slopes underlain by gravelly, often serpentine or volcanic, substrate in chaparral, cismontane woodland (knobcone pine woodland, blue oak woodland), and lower montane coniferous forest at elevations ranging from 890 to 4,960 feet (CDFW 2024a, CNPS 2024a). Seventy-one individuals were observed in 2023 in the central portion of the Study Area on a fire break that was installed during the 2020 Glass Fire; this species was not observed in 2018 likely because of the closed canopy of the site.

Green Monardella (*Monardella viridis*). CRPR 4. Moderate Potential (Present). 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 2020a). This species has a serpentine affinity rank of broad endemic/strict indicator (4.3) (Safford et al. 2005). Twenty-seven individuals were observed in both 2018 and 2023 in the southern portion of the Study Area. These individuals were located interstitial and beneath the canopy of large shrubs.

Dark-mouthed Tritoleia (*Triteleia lugens*). CRPR 4. Moderate Potential (Present). Dark-mouthed Tritoleia is a perennial bulbiferous forb in the brodiaea family (Themidaceae) that blooms from April through June. It typically occurs in chaparral, coastal scrub, broadleaf upland forest, and lower montane coniferous forest habitat at elevations ranging from 325 to 3,250 feet (CNPS 2020a). An estimated (and partially counted) 721 individuals were observed in 2023 within the California black oak and Douglas fir forests in the central and northern portions of the Study Area; this is an estimated increase of 121 individuals between 2018 and 2023. Generally, populations were situated in the understory with low cover of shrubs and higher cover of herbaceous species.

The following 23 special-status plants have the potential to occur within the Study Area but were not observed during protocol-level rare plant surveys conducted in 2018 and 2023:

- Franciscan onion (*Allium peninsulare* var. *franciscanum*); CRPR 1B
- Napa false indigo (*Amorpha californica* var. *napensis*); CRPR 1B
- Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*); CRPR 1B
- Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*); CRPR 1B
- Small-flowered calycadenia (*Calycadenia micrantha*); CRPR 1B
- Rincon ridge ceanothus (*Ceanothus confuses*); CRPR 1B
- Calistoga ceanothus (*Ceanothus divergens*); CRPR 1B
- Point Reyes ceanothus (*Ceanothus gloriosus* var. *exaltatus*); CRPR 1B
- Holly-leaved ceanothus (*Ceanothus purpureus*); CRPR 1B
- Sonoma ceanothus (*Ceanothus sonomensis*); CRPR 1B
- Beaked cryptantha (*Cryptantha rostellata*); CRPR 4
- Mountain lady's-slipper (*Cypripedium montanum*); CRPR 4
- Streamside daisy (*Erigeron biolettii*); CRPR 3
- Green's narrow-leaved daisy (*Erigeron greenei*); CRPR 1B
- St. Helena fawn lily (*Erythronium helenae*); CRPR 4
- Nodding harmonia (*Harmonia nutans*); CRPR 4
- Bristly leptosiphon (*Leptosiphon aureus*); CRPR 4
- Jepson's leptosiphon (*Leptosiphon jepsonii*); CRPR 1B
- Broad-lobed leptosiphon (*Leptosiphon latisectus*); CRPR 4
- Napa lomatium (*Lomatium repostum*); CRPR 4
- Mt. Diablo cottonweed (*Micropus amphibolus*); CRPR 3
- Napa checkerbloom (*Sidalcea hickmanii* ssp. *napensis*); CRPR 1B
- Oval-leaved viburnum (*Viburnum ellipticum*); CRPR 2B

5.2.2 Special-status Wildlife Species

A total of 60 special-status wildlife species have been documented in Napa County (CDFW 2024a, Napa County 2005). As outlined in Appendix C none of these species were observed during WRA's site visits to the Study Area, though eight 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, ponds) necessary to support the special-status wildlife species are not present in the Study Area.
- Vegetation habitats (e.g., coast redwood forest, coastal prairie, emergent marsh) 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.

The following eight special-status wildlife species have the potential to occur within the Study Area; the presence of each of these species within the Study Area is unknown.

Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential (Presence Unknown). Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented within snags and basal hollows of conifers, and within bole cavities in oak trees. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2024). Trees within the Study Area (primarily oaks) may contain cavities or snags suitable for roosting by this species, and there are CNDDDB occurrences in the vicinity (CDFW 2024a). A targeted bat habitat assessment was not performed under this biological assessment.

Fringed myotis (*Myotis thysanodes*). WBWG High Priority. Moderate Potential (Presence Unknown). The fringed myotis ranges through much of western North America from southern British Columbia, Canada, south to Chiapas, Mexico and from Santa Cruz Island in California, east to the Black Hills of South Dakota. This species is found in desert scrubland, grassland, sage-grass steppe, old-growth forest, and subalpine coniferous and mixed deciduous forest. These bats most frequently utilize oak and pinyon-juniper woodlands. 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

2024). The 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. (Presence Unknown). The long-legged myotis ranges across western North America from southeastern Alaska to Baja California and east to the Great Plains and central Texas. This species is usually found in coniferous forests, but also occurs seasonally in riparian and desert habitats. They use 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. Long-legged myotis forage in and around the forest canopy and feed on moths and other soft-bodied insects (WBWG 2024). A targeted bat habitat assessment was not performed under this biological assessment.

Golden eagle (*Aquila chrysaetos*). Bald & Gold Eagle Protection Act Species, CDFW Fully Protected Species. Moderate Potential (Presence Unknown). This species ranges throughout western North America, from British Columbia to the central Mexico. They are typically associated with caves, but are also found in man-made structures, including mines and buildings. While many bats wedge themselves into tight cracks and crevices, big-eared bats hang from walls and ceilings in the open. Males roost singly during the spring and summer months while females aggregate in the spring at maternity roosts to give birth. Females roost with their young until late summer or early fall, until young become independent, flying and foraging on their own. Hibernation roosts tend to be made up of small aggregations of individuals in central and southern California (Pierson and Rainey 1998). A general nesting bird survey was not performed under this biological assessment.

Olive-sided flycatcher (*Contopus cooperi*). CDFW Species of Special Concern. High Potential (Presence Unknown). This passerine bird is known from across Canada into the West Coast, Rocky Mountains, and Great Lake Area. They typically nest in coniferous or mixed forests, particularly lower montane forest. These birds forage for flying insects in forest openings, burns, edges, and other mixed open area in greater forest habitats. Nests are well-hidden in dense branches of large trees, preferentially conifer trees (Altman 2000). The trees within the Study Area may contain cavities or exfoliating bark suitable for roosting. A general nesting bird survey was not performed under this biological assessment.

Purple martin (*Progne subis*). CDFW Species of Special Concern. Moderate Potential (Presence Unknown). Purple martin is an uncommon summer resident in California, occurring in woodlands and low-elevation hardwood and coniferous forest. It usually feeds on insects captured in flight approximately 100 to 200 feet above ground. These birds nest in cavities of tall, old, isolated trees or snags in open forest or woodland. The trees within the Study Area may contain cavities or exfoliating bark suitable for roosting. A general nesting bird survey was not performed under this biological assessment.

Black-chinned sparrow (*Spizella atrogularis*). Local Rare. Moderate Potential (Presence Unknown). The black-chinned sparrow is a locally common summer resident in dry brushlands and mountain slopes up to 8800 feet in elevation. This species breeds in California in the inner north and south Coast Ranges, Transverse Range, Peninsular Range, the western slopes of the

Sierra Nevada from Kern to Mariposa Counties, irregularly in Tehama County, and locally on mountains of southeastern California (Tenney 1997). This species inhabits scrub, chaparral, and sagebrush habitats and prefers sloping, dense, xeric environments, often with ceanothus, manzanita, sagebrush, and chamise. Pairs nest in the interior of dense shrubs (Tenney 1997). A general nesting bird survey was not performed under this biological assessment.

Northern Spotted Owl (NSO; *Strix occidentalis caurina*). Federal Threatened, CDFW Species of Special Concern. High Potential (Presence Unknown). NSO is a subspecies of spotted owl (*Strix occidentalis*) found in Western North America. It is a medium-sized (16 to 20 inches) dark brown owl with a wingspan of approximately forty inches; females are larger than males. It nests in cavities or on platforms in large trees, preferentially inhabiting old growth forests, though it can be found in mixed primary- and secondary-growth forests in the southern part of its range (southern Oregon and California); however, trees are old and contain structures suitable for nesting (e.g., epicormics branching, large cavities, platforms). NSO is primarily nocturnal; its diet consists mainly of wood rats (*Neotoma* sp.) and squirrels, as well as other small mammals, reptiles, birds and insects. It is intolerant of habitat disturbance and highly territorial; each nesting pair requires a large territory for hunting and raising young. No surveys were conducted for NSO by WRA.

5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Study Area does not contain any designated Critical Habitat (USFWS 2024b, NMFS 2024) or Essential Fish Habitat (NMFS 2024). As per mapping by the CECP, the Study Area is not within either a Natural Landscape Block or an Essential Connectivity Area. The Study Area's streams have an ephemeral hydro-period, are high gradient, are very narrow and shallow, and do not have run-riffle-pool complexes; therefore, anadromous fish will not utilize these streams. Likewise, amphibians are unlikely to utilize these streams extensively. 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 forest and very lightly developed land within a rural portion of Napa County. While common wildlife species presumably utilize the site to some degree for movement at a local scale, the 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

California Black Oak Woodlands and Tanoak Forests

California black oak woodlands are considered sensitive by CDFW or included as sensitive in the NCBDR; however, the Napa County General Plan Conservation Element Policy CON-24 requires that oak woodland be maintained and/or improved to the extent feasible to provide for oak woodland and wildlife habitat, slope stabilization, soil protection, and species diversity. Tanoak

forest is considered sensitive by CDFW, and likewise is protected under the Conservation Element Policy CON-24. Policy CON-24c specifically calls for the preservation of oak woodland (on an acreage basis) at a 2:1 ratio. 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. The project was designed to be in compliance with both the 70 percent retention and the 3:1 tree preservation requirements, and therefore no further recommendations are needed to ensure compliance with the County Code.

The Study Area contains 27.7 acres of California black oak woodland and 17.45 acres of tanoak forest; in order to ensure that a 3:1 ratio is maintained of 3 acres of oak woodland preserved for each 1 acre impacted, only 6.93 acres and 4.36 acres can be converted, respectively. The Project Area currently contains 8.73 acres of California black oak woodland and 6.31 acres of tanoak forest; however, only 0.95 acre and 0.64 acre will be permanently impacted, respectively. This permanent impact is entirely on the woodland/forest floor with no trees, within these mapped land cover types, scheduled for removal.

The remaining 7.78 acres of California black oak woodland and 5.67 acres of tanoak forest within the Project Area are within internment areas that will receive only temporary impacts (installation of waterlines, excavation of burial plots). These plots should revert to the understory vegetation within a few years. Therefore, the Project complies with the 3:1 preservation ratio. The following recommendation is made to protect California black oak woodland and tanoak forest:

Recommendation 1: Where feasible avoid excavation of internment plots near the boles of trees. Excavation should be with hand tools and small power tools, whenever feasible. Topsoil, including the root wads of any large perennial herbs and small shrubs, should be diligently set aside to resurface the internment plot. All tools, quads, and other equipment should be regularly cleaned and decontaminated to prevent the spread of invasive plants and soil borne pathogens.

Douglas Fir Forests

Douglas fir forest is neither considered sensitive by CDFW nor included as sensitive in the NCBDR; 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 comply with both the 70 percent retention and the 3:1 tree preservation requirement, and therefore no further recommendations are needed to ensure compliance with the County Code.

The Study Area contains 64.51 acres of Douglas fir forest; to ensure that a 3:1 ratio is maintained of 3 acres of oak woodland preserved for each 1 acre impacted, only 16.13 acres can be converted. The Project Area currently contains 8.81 acres; however, only 1.26 acres will be permanently impacted. This impact is primarily on the forest floor with only nine trees total scheduled for removal to install the proposed paved access road.

The remaining 7.55 acres of Douglas fir forest within the Project Area is within internment areas that will receive only temporary impacts (digging of burial plots). These plots should revert to the understory vegetation within a few years. Therefore, the Project complies with the 3:1 preservation ratio. The preservation of the remainder of Douglas fir forest will offset the loss of the nine trees removed. The following recommendation is made to protect Douglas fir forest:

Recommendation 2: Same as Recommendation 1

6.1.2 Aquatic Resources

The site's streams will be entirely avoided by the Project, except for three minor stream crossings of the gravel access paths. Ground-breaking occurring during the dry season and protective setbacks will buffer effects to the on-site aquatic resources. The following recommendations are put forward to protect aquatic resources.

Recommendation 3: The Applicant shall obtain all required permits for the impacts of Waters of the U.S. and Waters of the State prior to construction of the crossing of the ephemeral stream.

Setbacks of 35 feet are provided in compliance with Napa County Code 18.108.025 for streams not meeting the County's definition. 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 feature. Fence posts shall be located above the top-of-bank of the Study Area's streams.

Construction personnel should be informed of the location of the site's aquatic resources with high visibility flagging or staking prior to construction. No materials or equipment shall be 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

Five special-status plants occur within the Study Area, with two, situated in the Project Area. Dark-mouthed triteleia (*Triteleia lugens*) is known from 24 Calflora records in Napa County, and 15 records and three records in neighboring Sonoma and Lake counties, respectively (Calflora 2024). Napa County is the center of distribution of this species. This plant was estimated to occupy approximately 11.26 acres in roughly four populations, with approximately 2.94 acres within the Project Area of which 0.35 acre will be permanently impacted (three percent of total population

area). The diffuse nature of the on-going project (i.e., internment plots) over such a sizable area, is unlikely to pose a significant impact to this species in the immediate and long term.

Similarly, Cobb Mountain lupine (*Lupinus sericatus*) is known from 23 CNDDDB records in Napa County, and 11 and 13 records in neighboring Sonoma and Lake counties, respectively (CDFW 2024a). Approximately five of a total of 71 individuals (seven percent of total population) of this species are situated in a proposed internment area; due to the diffuse nature of the project, this species can be avoided.

The following recommendation is forwarded regarding these special-status plants:

Recommendation 4: As part of the management and conservation of the property, periodic surveys (every five to ten years) for this (and other) special-status plant to determine an estimated census, distribution, and management effects. Provide informative materials (photographs, descriptions) of all on-site special-status plants to internment staff to avoid direct impacts to such to the greatest extent feasible.

6.2.2 Special-status Wildlife

The Project Area has the potential to support eight special-status wildlife species (three bats and five 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. On-going activities (i.e., ground maintenance, internments) will not pose a significant risk to roosting bats. Because a targeted bat habitat assessment was not conducted as part of this biological assessment, pre-construction surveys for bat habitat and recommendations for tree removal to avoid impacts to bat species are provided below.

Recommendation 5: WRA recommends that any tree removal be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, it is recommended that a bat habitat assessment and survey effort (the latter if needed) be performed by a qualified biologist 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. On-going activities (i.e., ground maintenance, internments) will not pose a significant risk to nesting birds. Pre-construction surveys are recommended to ensure that the implementation of the Proposed Project would not impact any nesting birds.

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

6.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Study Area's streams and most of the terrestrial land cover types will remain intact, which will allow for continued wildlife movement. The minimal development and internment use within the Study Area are in and of themselves unlikely to result in any significant impacts to local wildlife movement. Preservation of most of the Study Area's woodlands and forest will also allow for continued localized movement of wildlife. There are no fences or other barriers proposed as part of the project to substantively alter localized wildlife movement; therefore, there are no further recommendations for wildlife movement.

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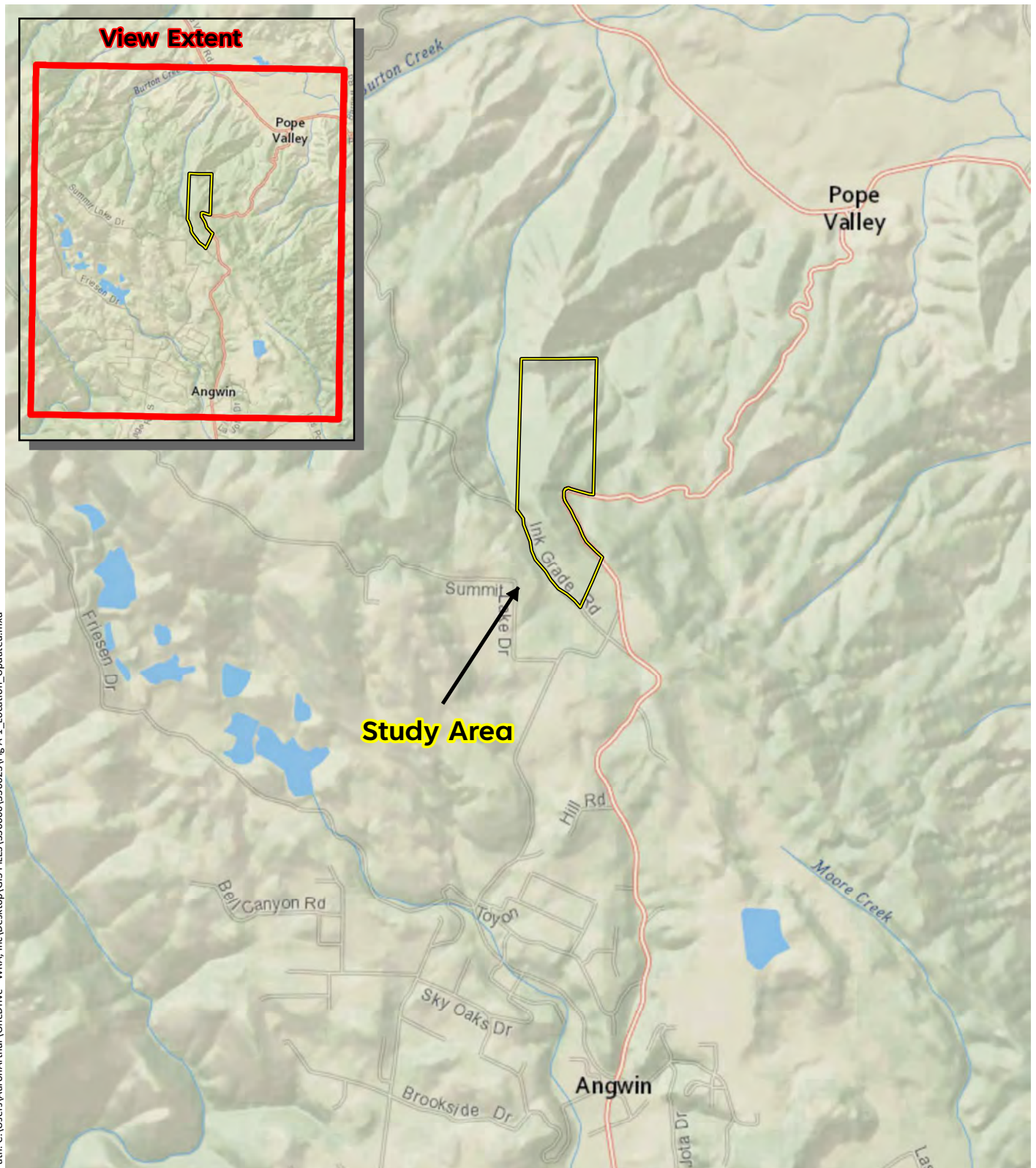
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Appendix A

Figures

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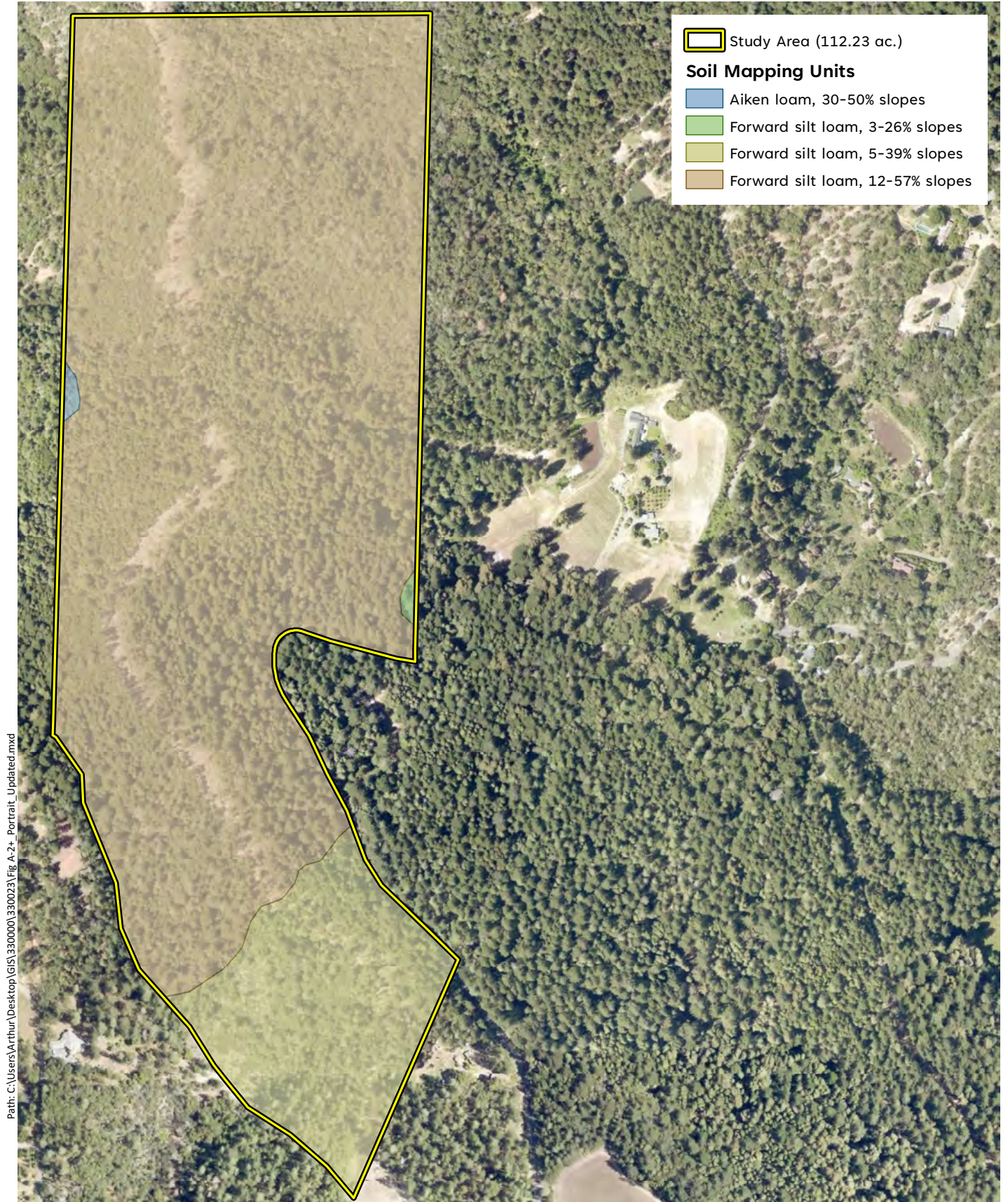
Sources: National Geographic, WRA | Prepared By: AaronArthur, 7/31/2023

Figure A-1. Study Area Location

Howell Mtn. Cemetery
Napa County, CA

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Miles





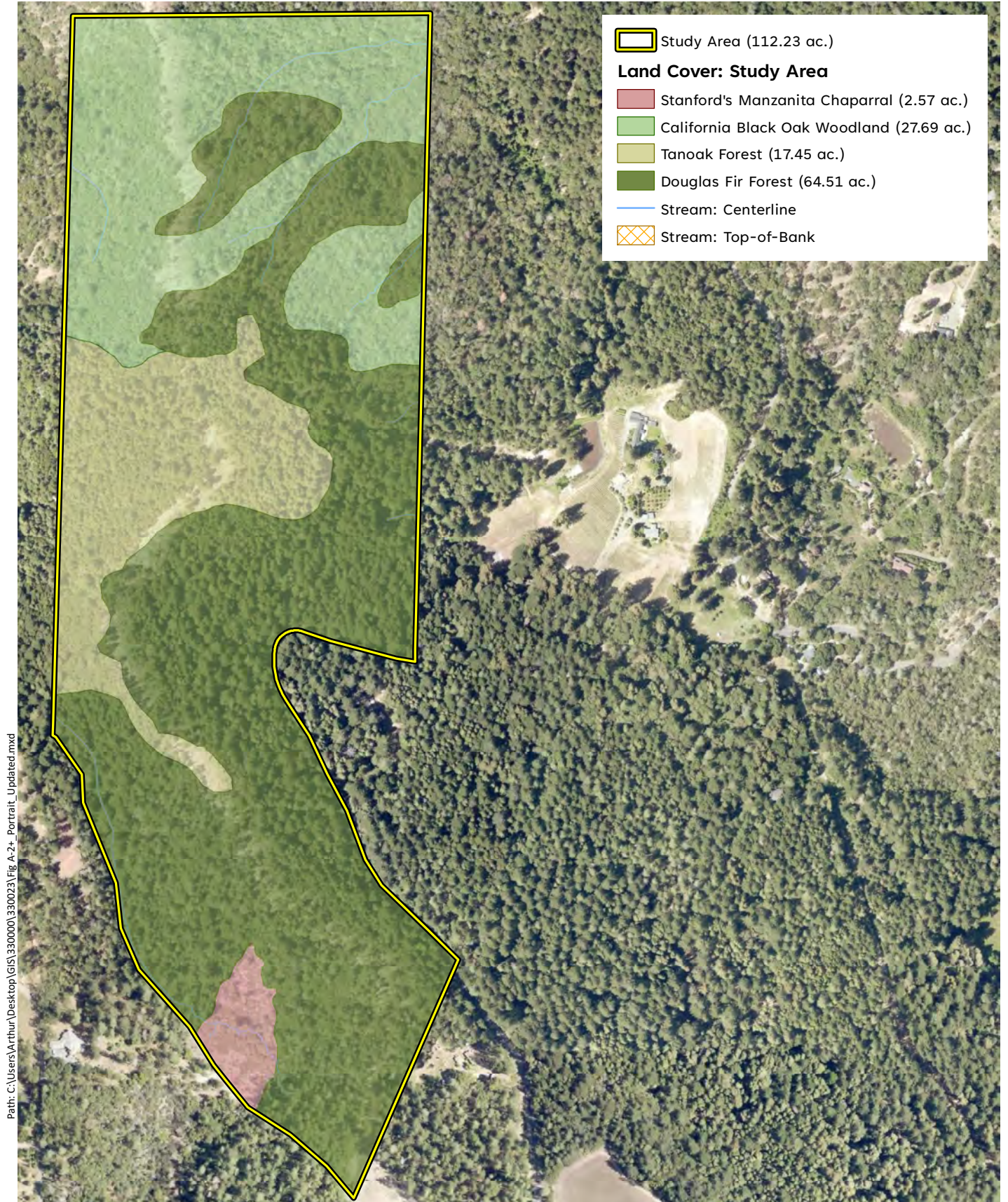
Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: Arthur, 8/3/2023

Figure A-2. Soil Mapping Units

Howell Mtn. Cemetery
Napa County, CA

0 100 200
Feet





Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: Arthur, 8/3/2023

Figure A-3. Land Cover: Study Area

Howell Mtn. Cemetery
Napa County, CA

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Feet



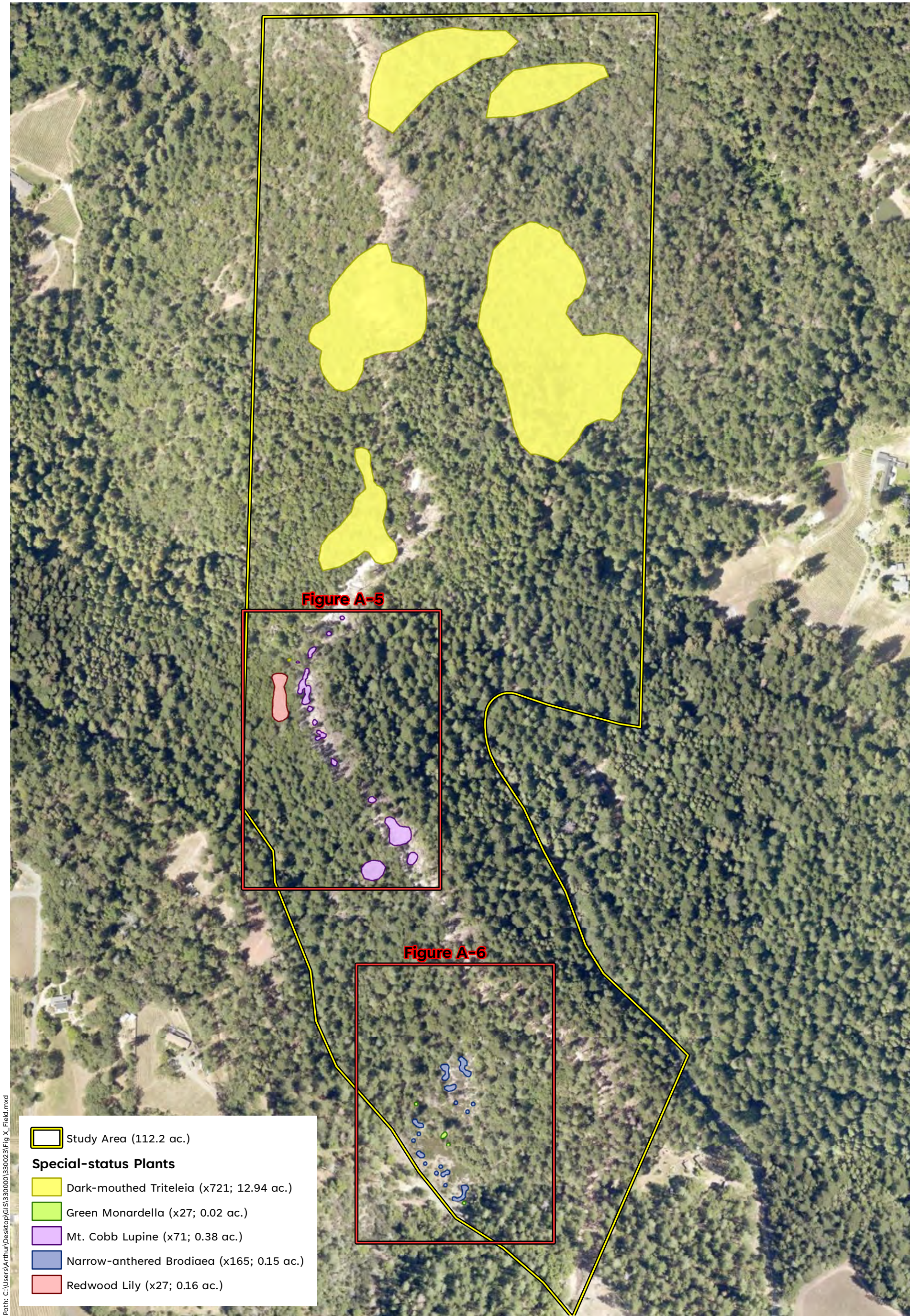
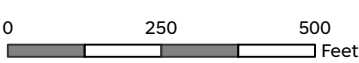
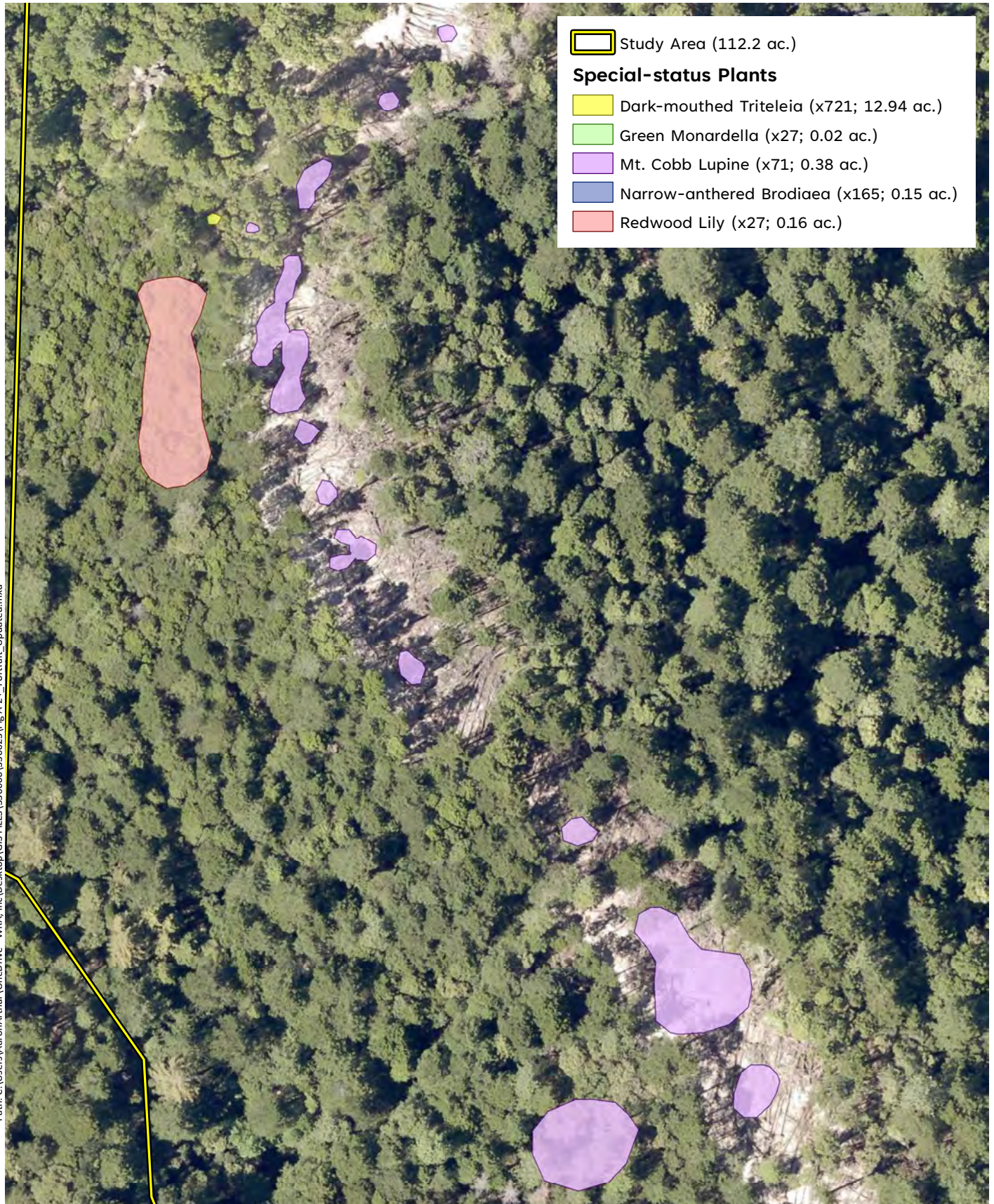


Figure A-4. Special-status Plants: Overview

Howell Mtn. Cemetery
Napa County, CA



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Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: AaronArthur, 7/11/2023

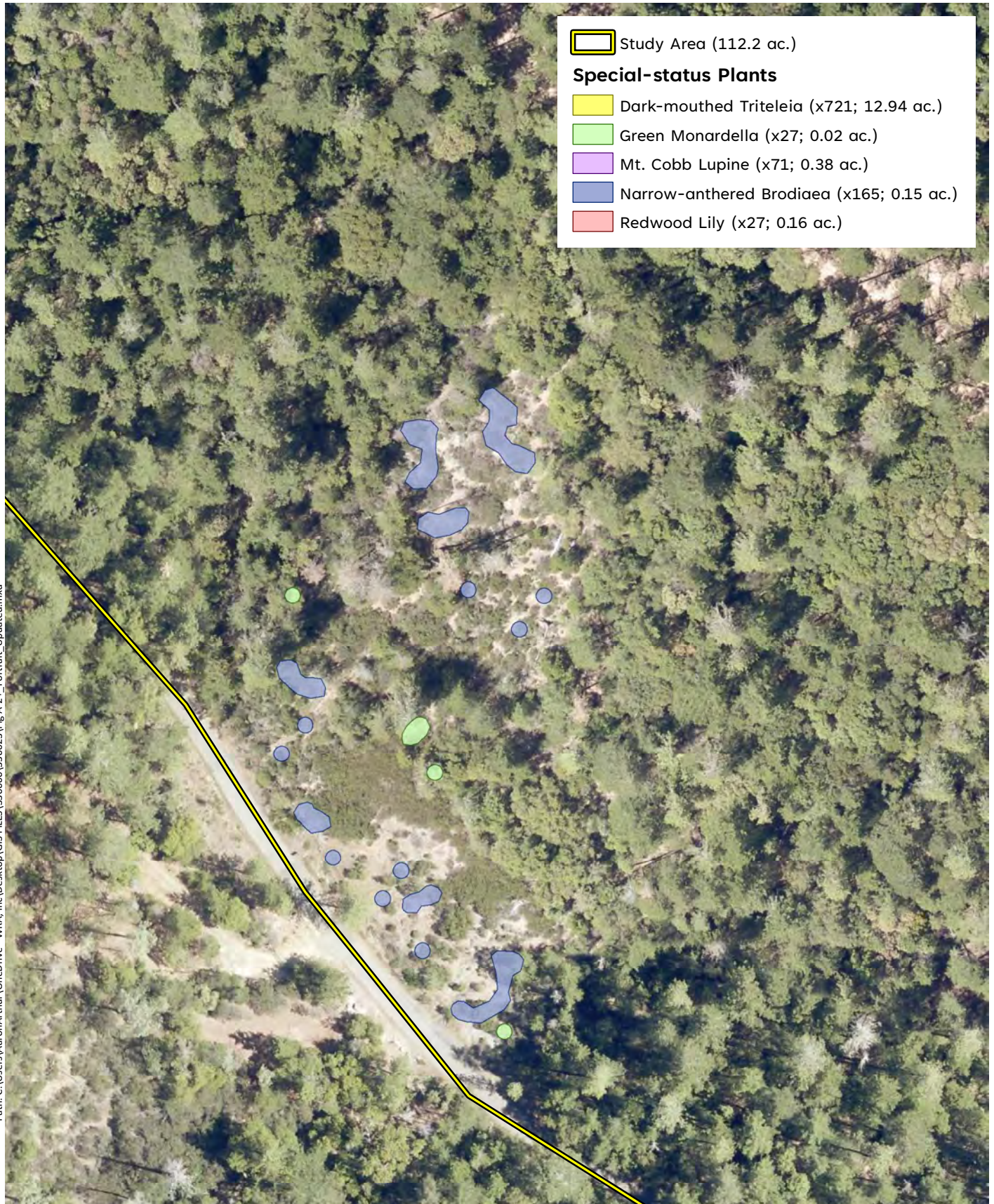
Figure A-5. Special-status Plants: Close-up

Howell Mtn. Cemetery
Napa County, CA

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Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: AaronArthur, 7/11/2023

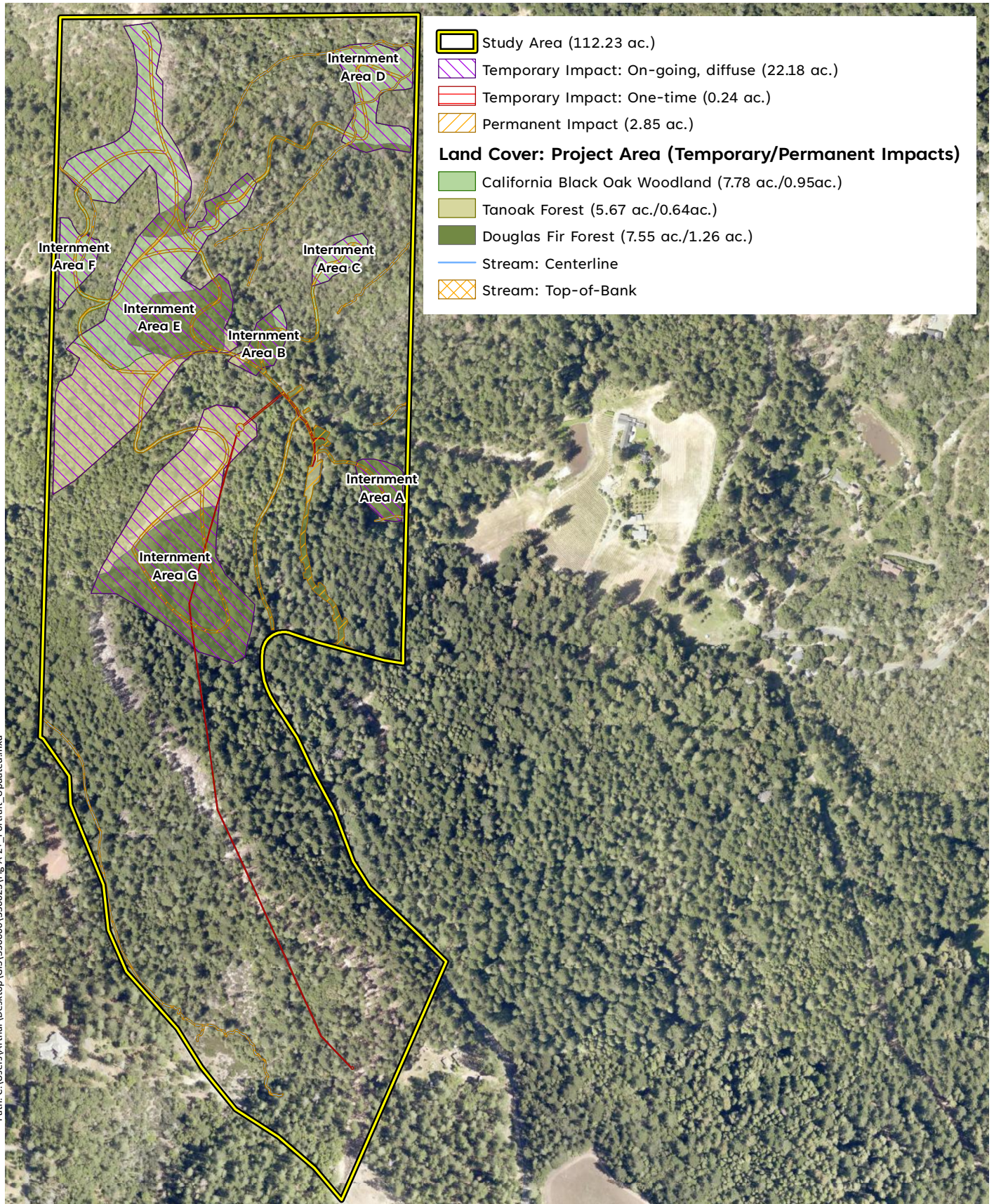
Figure A-4. Special-status Plants: Close-up

Howell Mtn. Cemetery
Napa County, CA

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Feet



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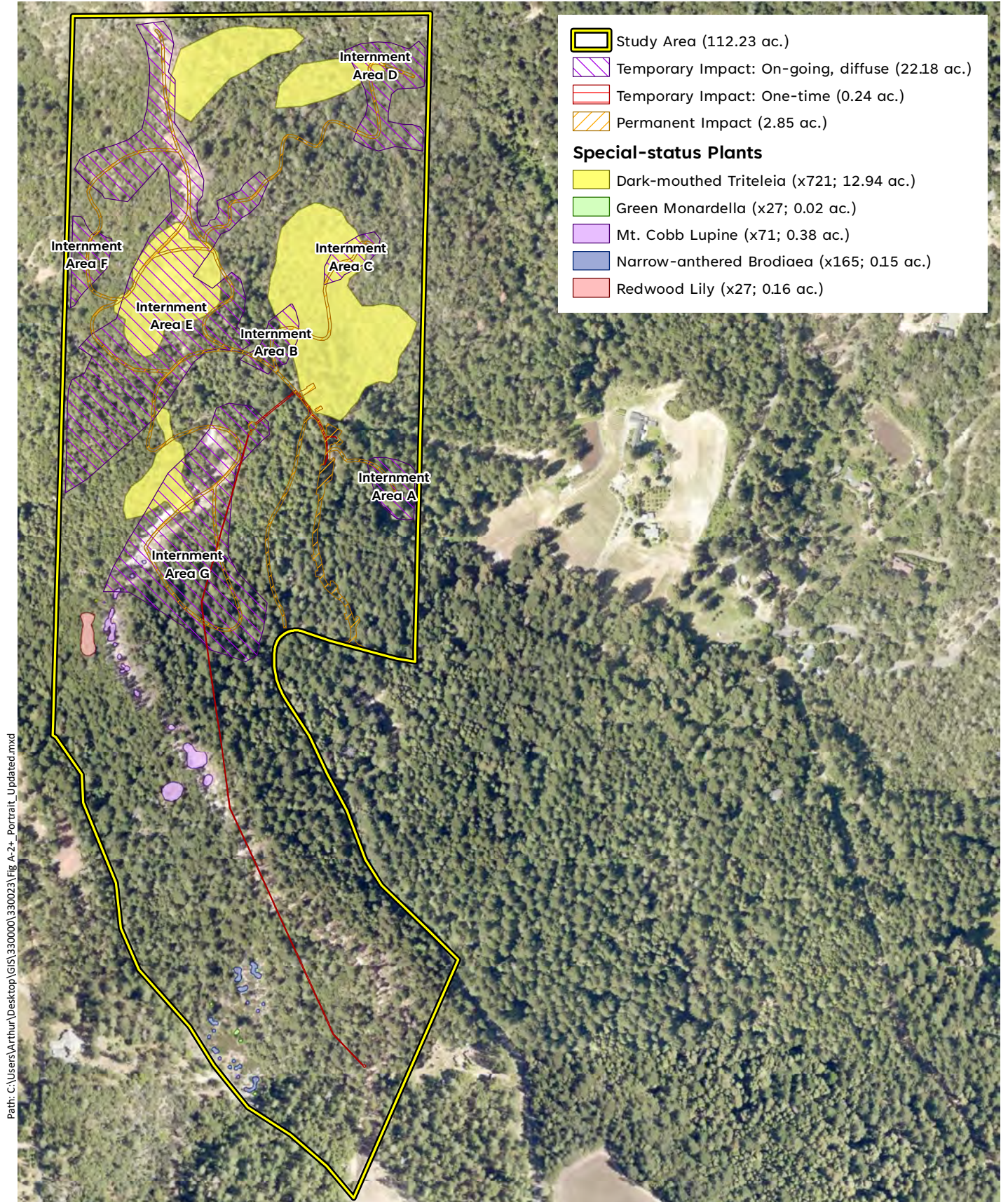
Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: Arthur, 8/3/2023

Figure A-7. Land Cover: Project Area

Howell Mtn. Cemetery
Napa County, CA

0 100 200
Feet





Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: Arthur, 8/3/2023

Figure A-8. Special-status Plants: Project Area

Howell Mtn. Cemetery
Napa County, CA

0 100 200
Feet



Appendix B

Species Observed in the Study Area

Table B-1. Plant species observed in the Study Area: August 25, 2017; April 26 and June 22, 2018; April 14, May 18, and June 29, 2023

FAMILY	SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS ¹	INVASIVE STATUS ²	WETLAND INDICATOR ³
Agavaceae	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	common soap plant	perennial forb	native	--	--	NL
Alliaceae	<i>Allium serra</i>	jeweled onion	perennial forb	native	--	--	NL
Anacardiaceae	<i>Toxicodendron diversilobum</i>	poison oak	deciduous shrub	native	--	--	FACU
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
Asteraceae	<i>Achillea millefolium</i>	common yarrow	perennial forb	native	--	--	FACU
Asteraceae	<i>Agoseris grandiflora</i> var. <i>grandiflora</i>	large-flowered agoseris	perennial forb	native	--	--	NL
Asteraceae	<i>Agoseris retrorsa</i>	spearleaf agoseris	perennial forb	native	--	--	NL
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>Eurybia radulina</i>	rough aster	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>Leontodon saxatilis</i> ssp. <i>longirostris</i>	hawkbit	annual forb	non-native	--	--	FACU
Asteraceae	<i>Logfia gallica</i>	narrowleaf cottonrose	annual forb	non-native	--	--	NL
Asteraceae	<i>Madia exigua</i>	meager tarweed	annual forb	native	--	--	NL
Asteraceae	<i>Microseris douglasii</i>	Douglas' silverpuffs	annual forb	native	--	--	FACU
Asteraceae	<i>Pseudognaphalium californicum</i>	ladies' tobacco	perennial forb	native	--	--	NL
Asteraceae	<i>Senecio vulgaris</i>	old-man-of-spring	annual forb	non-native	--	--	FACU
Asteraceae	<i>Sonchus asper</i>	prickly sow thistle	annual forb	non-native	--	assessed	FAC
Asteraceae	<i>Sonchus oleraceus</i>	common sow thistle	annual forb	non-native	--	--	NL
Boraginaceae	<i>Adelinia grandis</i>	Pacific hound's tongue	perennial forb	native	--	--	NL

FAMILY	SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS ¹	INVASIVE STATUS ²	WETLAND INDICATOR ³
Boraginaceae	<i>Nemophila heterophylla</i>	white baby blue eyes	annual forb	native	--	--	NL
Boraginaceae	<i>Nemophila parviflora</i>	small-flower nemophila	annual forb	native	--	--	NL
Brassicaceae	<i>Barbarea orthoceras</i>	erect-pod wintercress	perennial forb	native	--	--	FACW
Brassicaceae	<i>Brassica nigra</i>	black mustard	annual forb	non-native	--	moderate	NL
Brassicaceae	<i>Cardamine californica</i>	milk maids	perennial forb	native	--	--	NL
Calycanthaceae	<i>Calycanthus occidentalis</i>	spice bush	evergreen shrub	native	--	--	FAC
Campanulaceae	<i>Campanula angustiflora</i>	Eastwood's bellflower	annual forb	native	--	--	NL
Caprifoliaceae	<i>Lonicera hispidula</i>	pink honeysuckle	evergreen shrub	native	--	--	FACU
Caprifoliaceae	<i>Lonicera interrupta</i>	chaparral honeysuckle	evergreen shrub	native	--	--	NL
Caprifoliaceae	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	upright snowberry	deciduous shrub	native	--	--	FACU
Cornaceae	<i>Cornus nuttallii</i>	Pacific dogwood	evergreen shrub	native	--	--	FACU
Cupressaceae	<i>Sequoia sempervirens</i>	coast redwood	evergreen tree	native	--	--	NL
Cyperaceae	<i>Carex multicaulis</i>	forest sedge	perennial graminoid	native	--	--	NL
Cyperaceae	<i>Cyperus eragrostis</i>	tall flat-sedge	perennial graminoid	native	--	--	FACW
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>Allotropa virgata</i>	candy-striped allotropa	perennial forb	native	--	--	NL
Ericaceae	<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	common manzanita	evergreen shrub	native	--	--	NL
Ericaceae	<i>Arctostaphylos stanfordiana</i> ssp. <i>stanfordiana</i>	Stanford's manzanita	evergreen shrub	native	--	--	NL
Ericaceae	<i>Pyrola picta</i>	wintergreen	perennial forb	native	--	--	NL
Euphorbiaceae	<i>Croton setiger</i>	turkey mullein	annual forb	native	--	--	NL
Fabaceae	<i>Acmispon brachycarpus</i>	hairy lotus	annual forb	native	--	--	NL
Fabaceae	<i>Acmispon parviflorus</i>	small flowered lotus	annual forb	native	--	--	NL
Fabaceae	<i>Genista monspessulana</i>	French broom	evergreen shrub	non-native	--	high	NL
Fabaceae	<i>Lathyrus vestitus</i> var. <i>vestitus</i>	common Pacific pea	perennial forb	native	--	--	NL

FAMILY	SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS ¹	INVASIVE STATUS ²	WETLAND INDICATOR ³
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 sericatus</i>	Cobb Mountain lupine	perennial forb	native	CRPR 1B	--	NL
Fabaceae	<i>Pickeringia montana</i> var. <i>montana</i>	chaparral pea	evergreen shrub	native	--	--	NL
Fabaceae	<i>Trifolium bifidum</i>	notch leaf clover	annual forb	native	--	--	NL
Fabaceae	<i>Trifolium ciliolatum</i>	tree clover	annual forb	native	--	--	NL
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 microcephalum</i>	maiden clover	annual forb	native	--	--	FAC
Fabaceae	<i>Trifolium microdon</i>	thimble clover	annual forb	native	--	--	NL
Fabaceae	<i>Trifolium subterraneum</i>	subterranean clover	annual forb	non-native	--	--	NL
Fabaceae	<i>Trifolium willdenovii</i>	tomcat clover	annual forb	native	--	--	FACW
Fabaceae	<i>Vicia sativa</i>	garden vetch	annual forb	non-native	--	--	FACU
Fabaceae	<i>Vicia villosa</i>	woolly-pod vetch	annual forb	non-native	--	--	NL
Fagaceae	<i>Notholithocarpus densiflorus</i>	tanoak	evergreen tree	native	--	--	NL
Fagaceae	<i>Quercus chrysolepis</i>	canyon live oak	evergreen tree	native	--	--	NL
Fagaceae	<i>Quercus douglasii</i>	blue oak	deciduous tree	native	--	--	NL
Fagaceae	<i>Quercus garryana</i>	Oregon white oak	deciduous tree	native	--	--	UPL
Fagaceae	<i>Quercus kelloggii</i>	California black oak	deciduous tree	native	--	--	NL
Fagaceae	<i>Quercus wislizeni</i> var. <i>wislizeni</i>	interior live oak	evergreen tree	native	--	--	NL
Hypericaceae	<i>Hypericum concinnum</i>	goldwire	perennial forb	native	--	--	NL
Hypericaceae	<i>Hypericum perforatum</i>	Klamath weed	perennial forb	non-native	--	moderate	FACU
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 effusus</i> ssp. <i>pacificus</i>	Pacific rush	perennial graminoid	native	--	--	FACW
Juncaceae	<i>Juncus occidentalis</i>	western rush	perennial graminoid	native	--	--	FACW
Juncaceae	<i>Juncus patens</i>	common rush	perennial graminoid	native	--	--	FACW

FAMILY	SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS ¹	INVASIVE STATUS ²	WETLAND INDICATOR ³
Juncaceae	<i>Luzula comosa</i>	Pacific woodrush	perennial graminoid	native	--	--	FAC
Lamiaceae	<i>Monardella villosa</i> ssp. <i>franciscana</i>	coyote mint	perennial forb	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 globelily	perennial forb	native	--	--	NL
Liliaceae	<i>Lilium rubescens</i>	redwood lily	perennial forb	native	CRPR 4	--	NL
Liliaceae	<i>Prosartes hookeri</i>	drops of gold	perennial forb	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
Orchidaceae	<i>Piperia elongata</i>	dense-flower rein orchid	perennial forb	native	--	--	NL
Orchidaceae	<i>Piperia transversa</i>	royal rein orchid	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>	digger pine	evergreen tree	native	--	--	NL
Pinaceae	<i>Pseudotsuga menziesii</i>	Douglas fir	evergreen tree	native	--	--	FACU
Plantaginaceae	<i>Collinsia heterophylla</i>	purple Chinese houses	annual forb	native	--	--	NL
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 carinatus</i>	California brome	perennial graminoid	native	--	--	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>Cynosurus echinatus</i>	dogtail grass	annual graminoid	non-native	--	moderate	NL
Poaceae	<i>Danthonia californica</i>	California oat grass	perennial graminoid	native	--	--	FAC

FAMILY	SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS ¹	INVASIVE STATUS ²	WETLAND INDICATOR ³
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	--	--	FACU
Poaceae	<i>Festuca idahoensis</i>	Idaho fescue	perennial graminoid	native	--	--	NL
Poaceae	<i>Festuca microstachys</i>	Pacific fescue	annual graminoid	native	--	--	NL
Poaceae	<i>Festuca myuros</i>	rattail fescue	perennial graminoid	non-native	--	moderate	FACU
Poaceae	<i>Festuca perennis</i>	Italian rye grass	annual graminoid	non-native	--	moderate	FAC
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
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>Poa bulbosa</i>	bulbous bluegrass	perennial graminoid	non-native	--	--	NL
Poaceae	<i>Poa secunda</i>	one-sided bluegrass	perennial graminoid	native	--	--	FACU
Polemoniaceae	<i>Collomia heterophylla</i>	variable leaf collomia	annual forb	native	--	--	NL
Polemoniaceae	<i>Leptosiphon androsaceus</i>	false babystars	annual forb	native	--	--	NL
Polemoniaceae	<i>Leptosiphon parviflorus</i>	variable linanthus	annual forb	native	--	--	NL
Polygalaceae	<i>Polygala californica</i>	California milkwort	perennial forb	native	--	--	NL
Polypodiaceae	<i>Polypodium californicum</i>	California polypody	perennial fern	native	--	--	NL
Pteridaceae	<i>Adiantum jordanii</i>	maidenhair fern	perennial fern	native	--	--	FAC
Pteridaceae	<i>Pellaea mucronata</i>	bird's foot fern	perennial fern	native	--	--	NL
Pteridaceae	<i>Pentagramma triangularis</i>	gold back fern	perennial fern	native	--	--	NL
Rhamnaceae	<i>Ceanothus foliosus</i> var. <i>foliosus</i>	wavy-leaf ceanothus	evergreen shrub	native	--	--	NL
Rhamnaceae	<i>Ceanothus oliganthus</i> var. <i>oliganthus</i>	hairy ceanothus	evergreen shrub	native	--	--	NL
Rosaceae	<i>Adenostoma fasciculatum</i>	chamise	evergreen shrub	native	--	--	NL
Rosaceae	<i>Drymocallis glandulosa</i>	sticky cinquefoil	perennial forb	native	--	--	FAC

FAMILY	SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS ¹	INVASIVE STATUS ²	WETLAND INDICATOR ³
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon	evergreen shrub	native	--	--	NL
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 porrigens</i>	graceful bedstraw	perennial forb	native	--	--	NL
Rubiaceae	<i>Sherardia arvensis</i>	blue fieldmadder	annual forb	non-native	--	--	NL
Sapindaceae	<i>Acer macrophyllum</i>	big leaf maple	deciduous tree	native	--	--	FAC
Sapindaceae	<i>Aesculus californica</i>	California buckeye	deciduous tree	native	--	--	NL
Saxifragaceae	<i>Lithophragma heterophyllum</i>	hillside woodland star	perennial forb	native	--	--	NL
Scrophulariaceae	<i>Verbascum thapsus</i>	woolly mullein	perennial forb	non-native	--	limited	FACU
Taxaceae	<i>Torreya californica</i>	California torreyia	evergreen tree	native	--	--	NL
Themidaceae	<i>Brodiaea elegans</i> ssp. <i>elegans</i>	harvest brodiaea	perennial forb	native	--	--	FACU
Themidaceae	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	perennial forb	native	CRPR 1B	--	NL
Themidaceae	<i>Dichelostemma congestum</i>	ookow	perennial forb	native	--	--	NL
Themidaceae	<i>Dipterostemon capitatum</i>	blue dicks	perennial forb	native	--	--	FACU
Themidaceae	<i>Triteleia lugens</i>	Coast Range triteleia	perennial forb	native	CRPR 4	--	NL
Violaceae	<i>Viola lobata</i> ssp. <i>lobata</i>	pine violet	perennial forb	native	--	--	NL

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2012), *The Jepson Flora Project* (eFlora 2024), and *A Flora of Napa County* (Ruygt 2020); nomenclature follows *The Jepson Flora Project* (eFlora 2024) 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 2024a)

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare
LR	Locally 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 2022)

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 and around the Study Area: August 25, 2017; April 26 and June 22, 2018; April 14, May 18, and June 29, 2023

SCIENTIFIC NAME	COMMON NAME
Mammals	
<i>Odocoileus hemionus columbianus</i>	black-tailed deer
<i>Sciurus griseus</i>	western gray squirrel
Birds	
<i>Baeolophus inornatus</i>	oak titmouse
<i>Buteo lineatus</i>	red-shouldered hawk
<i>Cathartes aura</i>	turkey vulture
<i>Certhia americana</i>	brown creeper
<i>Colaptes auratus</i>	northern flicker
<i>Corvus corax</i>	common raven
<i>Cyanocitta stelleri</i>	Steller's jay
<i>Dryocopus pileatus</i>	pileated woodpecker
<i>Empidonax difficilis</i>	Pacific-slope flycatcher
<i>Falco peregrinus</i>	peregrine falcon
<i>Junco hyemalis</i>	dark-eyed junco
<i>Melanerpes formicivorus</i>	acorn woodpecker
<i>Pheucticus melanocephalus</i>	black-headed grosbeak
<i>Pipilo maculatus</i>	spotted towhee
<i>Polioptila caerulea</i>	blue-gray gnatcatcher
<i>Sayornis nigricans</i>	black phoebe
<i>Setophaga coronata</i>	yellow-rumped warbler
<i>Sitta carolinensis</i>	white-breasted nuthatch
<i>Turdus migratorius</i>	American robin
Reptiles and Amphibians	
<i>Sceloporus occidentalis</i>	western fence lizard

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 CDFW BIOS database (CDFW 2024a), USFWS IPaC Report (USFWS 2024b), and CNPS Electronic Inventory (CNPS 2024a) searches. For plants, the Detert Reservoir, Aetna Springs, Walter Springs, Calistoga, St. Helena, Chiles Valley, Kenwood, Rutherford, and Yountville 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: WI. Elevation range: 170 – 985 feet. Blooms: May – June.	Moderate Potential. The Study Area contains rocky woodland that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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.	No Potential. The Study Area does not contain riparian, marsh, or other wetlands to support this species.	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 forest and shrubby areas that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 coastal scrub, grasslands, or open oak woodland 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: SI. Elevation range: 325 – 6550 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.
<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 (rhyolitic) substrate and scrubby areas that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 (rhyolitic) substrate and scrubby areas that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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: SI. Elevation range: 290 – 2375 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>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.	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 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>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.	High Potential. The Study Area contains volcanic (rhyolitic) substrate and scrubby areas that may support this species.	Present. One hundred fifty-six individuals were observed within the southern portion of the Study Area in chaparral. See Section 6.0 for further actions regarding this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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.	Unlikely. Although the Study Area contains chaparral, the substrate is gravelly loamy and clayey soils.	Not Present. 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.	Unlikely. Although the Study Area contains forested habitat, this species is closely associated with open (grassland or meadow), mesic areas.	Not Present. No further actions are recommended for this species.
<i>Calycadenia micrantha</i> small-flowered Calycadenia	CRPR 1B	Chaparral, meadows and seeps, valley and foothill grassland; located on volcanic or serpentine substrate in sparsely vegetated rocky, talus, or scree areas. Elevation range: 15 – 4875 feet. Blooms: June – September.	Moderate Potential. The Study Area contains chaparral that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.
<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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Calystegia collina</i> ssp. <i>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</i> ssp. <i>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. The Study Area does not contain serpentine substrate to support this species. Reported occurrences from Napa County are widely regarded as erroneous.	Not Present. No further actions are recommended for this species.
<i>Castilleja ambigua</i> var. <i>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 open, herbaceous habitats (grasslands, meadows, marshes) to support this species.	Not Present. No further actions are recommended for this species.
<i>Castilleja ambigua</i> var. <i>meadii</i> mead's owl's-clover	CRPR 1B	Meadows and seeps, vernal pools; located in mesic areas or wetlands underlain by gravelly clay soils derived from volcanics. Elevation range: 1460 – 1545 feet. Blooms: April – May.	No Potential. The Study Area does not contain open, herbaceous habitats (grasslands, meadows, marshes) 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 chaparral that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Ceanothus divergens</i> <i>Calistoga ceanothus</i>	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 chaparral that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 chaparral that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 chaparral that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 chaparral that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.
<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 marsh, grassland, or other herbaceous dominated habitats 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>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.
<i>Cryptantha rostellata</i> red-stemmed cryptantha	CRPR 4	Cismontane woodland, valley and foothill grassland; found on gravelly, volcanic soils in openings and roadsides. Elevation range: 120 – 2400 feet. Blooms: April-June.	Moderate Potential. The Study Area contains gravelly volcanic opens that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Cuscuta howelliana</i> Boggs Lake dodder	LR	Vernal pool; situated on the margins; hosts on <i>Eryngium</i> spp., <i>Navarretia</i> spp., <i>Polygonum polygaloides</i> , and <i>Epilobium campestre</i> . Elevation range: 455 – 5365 feet. Blooms: August – September.	No Potential. The Study Area does not contain vernal pools or other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<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 forest habitat that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Eleocharis parvula</i> small spikerush	CRPR 4	Marshes and swamps. Elevation range: 5 – 9815 feet. Blooms: sometimes April, June – August, sometimes September.	No Potential. The Study Area does not contain riparian, marsh, or other 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>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 forest habitat that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 rare plant surveys. No further actions for 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/SI. 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 other 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 vernaly saturated. Elevation range: 10 – 975 feet. Blooms: April – August.	No Potential. The Study Area does not contain vernal pools or other 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>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 habitat that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.
<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. The Study Area does not contain clay substrate and open grassland or woodland habitat to support this species.	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. The Study Area does not contain clay substrate and open grassland or woodland habitat to support this species.	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.	Unlikely. The Study Area does not contain serpentine substrate 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.	High Potential. The Study Area contains openings in volcanic chaparral that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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>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 substrate; serpentine indicator: SE. Elevation range: 875 – 975 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>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.	Unlikely. Although the Study Area contains forest, this species is typically near the coast in fog-prone areas.	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 other 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>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 other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE, CRPR 1B	Valley and foothill grassland, vernal pools, cismontane woodland; located in pools, swales, and depressions in mesic grassy sites underlain by alkaline substrate. Elevation range: 0 – 1530 feet. Blooms: March – June.	No Potential. The Study Area does not contain vernal pools or other 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: SI. 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.
<i>Leptosiphon aureus</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 habitat that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for 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 habitat that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Leptosiphon latisectus</i> broad-lobed leptosiphon	CRPR 4	Broadleaf upland forest, cismontane woodland; frequently situated on serpentine substrate; serpentine indicator: WI. Elevation range: 550 – 4875 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 rare plant surveys. No further actions for recommended for this species.
<i>Lessingia arachnoidea</i> Crystal Springs lessingia	CRPR 1B	Coastal sage scrub, valley and foothill grassland, cismontane woodland; typically on grassy serpentine slopes; serpentine indicator: SE. Elevation range: 60 – 200 feet. Blooms: July – October.	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>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.
<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.	High Potential. The Study Area contains conifer forest habitat that may support this species.	Present. Twenty-seven individuals were observed within the central portion of the Study Area in tanoak forest. See Section 6.0 for further actions regarding this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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 other 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 other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Lomatium repostum</i> Napa Lomatium	CRPR 4	Chaparral, cismontane woodland; located on serpentine or volcanic substrates; serpentine indicator: SI. Elevation range: 290 – 2700 feet. Blooms: March – 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 rare plant surveys. No further actions for recommended for this species.
<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.	High Potential. The Study Area contains chaparral and woodland habitat that may support this species. Documented occurrences from adjacent property.	Present. Seventy-one individuals were observed within the central portion of the Study Area in tanoak forest. See Section 6.0 for further actions regarding this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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 (e.g., riparian wetland, marsh) habitat to support this species.	Not Present. No further actions are recommended for this species.
<i>Micropus amphibolus</i> Mt. Diablo cottonweed	CRPR 3	Broadleaf upland forest, chaparral, cismontane woodland, valley and foothill grassland; typically on thin, rocky soils; serpentine indicator: WI. Elevation range: 145 – 2710 feet. Blooms: March – May.	Moderate Potential. The Study Area contains some open, bare ground in the chaparral habitat that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.
<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.	Moderate Potential. The Study Area contains volcanic chaparral that may support this species.	Present. Twenty-seven individuals were observed within the southern portion of the Study Area in chaparral habitat. See Section 6.0 for further actions regarding this species.
<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.	No Potential. The Study Area does not contain adobe clay substrate to support this species.	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 other 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 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 other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> few-flowered navarretia	FE, ST, CRPR 1B	Vernal pools; located on volcanic ash flow and volcanic substrate pools. Elevation range: 1300 – 2780 feet. Blooms: May – June.	No Potential. The Study Area does not contain vernal pools or other 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 other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<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 other 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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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. The Study Area does not contain large outcrops within chaparral habitat to support this species.	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 or other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<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 or other wetlands 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 other 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>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 or other wetlands 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.	No Potential. The Study Area does not contain vernal pools or other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<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.	No Potential. The Study Area does not contain perennial wetland (e.g., riparian wetland, marsh) habitat to support this species.	Not Present. No further actions are recommended for this species.
<i>Senecio clelandii</i> var. <i>clelandii</i> Cleveland's ragwort	CRPR 4	Chaparral; situated on serpentine seeps; serpentine indicator: SE. Elevation range: 1185 – 2925 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.
<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 volcanic (rhyolitic) substrate and scrubby areas that may support this species.	Not Observed. This species was not observed during protocol-level rare plant surveys. No further actions for recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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.	No Potential. The Study Area does not contain perennial wetland (e.g., riparian wetland, marsh) habitat to support this species.	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.	No Potential. The Study Area does not contain perennial wetland (e.g., riparian wetland, marsh) habitat to support this species.	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 or other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<i>Streptanthus barbiger</i> bearded jewel-flower	CRPR 4, LR	Chaparral; located on serpentine substrate; serpentine indicator: SE. Elevation range: 485 – 3480 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 batrachopus</i> Tamalpais jewel-flower	CRPR 1B	Closed-cone coniferous forest, chaparral; located on serpentine talus slopes; serpentine indicator: SE. Elevation range: 990 – 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>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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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>Toxicoscordion fontanum</i> marsh zigzag	CRPR 4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps; located in vernally 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.	Unlikely. The Study Area does not contain open flats that are seasonally inundated 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>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 grassland habitat to support 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 other wetlands to support this species.	Not Present. No further actions are recommended for this species.
<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 shrubby areas that may support this species.	Present. Seven hundred twenty-one individuals were observed within the northern portion of the Study Area in California black oak woodland and Douglas fir forest. See Section 6.0 for further actions regarding 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 shrubby areas and woodland habitat that may support this species.	Not Observed. This species was not observed during the protocol-level survey. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
WILDLIFE				
Mammals				
<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. Oak woodland within the Study Area provides trees suitable for roosting; there are several CNDDB occurrences in the greater vicinity (CDFW 2024a). Targeted bat assessment (i.e., close inspection of trees) was not performed.	Presence Unknown. Any 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.	Presumed Absent. No further actions are recommended 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. Roosts 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	Moderate Potential. The Study Area contains buildings (cabins) that may be suitable for roosting. CNDDB occurrences in Napa County are all located in the northern portion of the County (CDFW 2024a).	Presence Unknown. Any 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>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.	Presumed Absent. No further actions are recommended 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.).	Presumed Absent. No further actions are recommended 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. Oak woodland within the Study Area provides trees suitable for roosting. Targeted bat assessment (i.e., close inspection of trees) was not performed.	Presence Unknown. Any 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.	Unlikely. The Study Area lacks caves, buildings or similar refugia and does not contain coniferous forest.	Presumed Absent. No further actions are recommended for this species.

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 actions are recommended 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 actions are recommended 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.	No Potential. The Study Area does not contain open scrub and grassland to support this species. Not documented from this part of Napa County (CDFW 2024a).	Not Present. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Birds				
<i>Agelaius tricolor</i> tricolored blackbird	ST, SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	No Potential. The Study Area does not provide vegetated ponds or emergent marsh suitable for nesting.	Not Present. No further actions are recommended 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.	No Potential. The Study Area does not contain grasslands to support this species.	Not Present. No further actions are recommended 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, usually within otherwise open areas.	Moderate Potential. The Study Area contains large trees that could provide nesting substrate.	Presence Unknown. Any tree/vegetation removal and initial ground disturbance should occur outside of nesting season or conduct pre-construction surveys and avoid any active nests found. See Section 6.0 for details.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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 are usually near foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	Unlikely. The Study Area is not within close proximity to suitable waters to support a breeding colony.	Presumed Absent. No further actions are recommended for this species.
<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 are typically near foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	Unlikely. The Study Area is not within close proximity to suitable waters to support a breeding colony.	Presumed Absent. No further actions are recommended for this species.
<i>Asio flammeus</i> short-eared owl	SSC	Occurs year-round, but primarily as a winter visitor; breeding is highly restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	Unlikely. Known distribution (wintering) is restricted to the Napa Baylands; breeding in the County has never been documented (Smith 2003).	Presumed Absent. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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 2024).	Presumed Absent. No further actions are recommended 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.	No Potential. Breeding and wintering distribution within Napa County are restricted to the vicinity of Lake Berryessa and southern Baylands (Smith 2003, CDFW 2024a).	Presumed Absent. No further actions are recommended for this species.
<i>Buteo swainsoni</i> Swainson's hawk	ST	Summer resident in Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	No Potential. Napa County's very small breeding population is restricted to the Napa Valley floor in association with the Napa River and Baylands (CDFW 2024a).	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>Charadrius nivosus 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 actions are recommended for this species.
<i>Circus hudsonius</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.	No Potential. The Study Area does not contain open grassland or other herbaceous habitats to support this species.	Not Present. No further actions are recommended 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.	High Potential. The Study Area contains coniferous forest habitat. There are numerous reports in the immediate vicinity of the Study Area (eBird 2024).	Presence Unknown. Any tree/vegetation removal and initial ground disturbance should occur outside of nesting season or conduct pre-construction surveys and avoid any active nests found. See Section 6.0 for details.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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.	Unlikely. The Study Area does not contain large cliffs or bluff faces to provide nesting for this species.	Presumed Absent. No further recommendations for this species.
<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.	Unlikely. The Study Area does not contain open areas for foraging.	Presumed Absent. No further recommendations for this species.
<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.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Geothlypis trichas sinuosa</i> San Francisco (saltmarsh) common yellowthroat	SSC	Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	No Potential. No marsh vegetation or other open, herbaceous habitat is present within the Study Area.	Not Present. No further recommendations for this species.
<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 (2024a), 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>).	No Potential. 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 2024).	Not Present. 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 foliated shrubs or trees.	Unlikely. The Study Area does not contain open woodlands, grasslands, or other open habitats to support this species.	Presumed Absent. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Laterallus jamaicensis coturniculus</i> California black rail	ST, SFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	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.
<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.	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. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	No Potential. The Study Area and adjacent lands lack aquatic foraging habitat.	Not Present. 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.	No Potential. The Study Area does not contain grassland habitat to support this species.	Not Present. 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. Mixed or coniferous forest habitat is present. Likewise, this species' Napa County range is restricted to the forested, northwestern portion of the County such as the Angwin and Calistoga areas (Smith 2003, CDFW 2024a).	Presence Unknown. Any 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.	Not Present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Riparia riparia</i> bank swallow	ST	Summer resident in riparian and other lowland habitats near rivers, lakes, and the Pacific Ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting ranges in southern and central areas of California have been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen counties; portions of the North Coast; and along the Sacramento River.	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.
<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.	No Potential. The Study Area does not contain riparian habitat with dense, mature thickets of willows.	Not Present. 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.	Moderate Potential. The Study Area contains chaparral that may support this species. There are several documented occurrences from the Howell Mountain area (eBird 2024).	Presence Unknown. Any tree/vegetation removal and initial ground disturbance should occur outside of nesting season or conduct pre-construction surveys and avoid any active nests found. See Section 6.0 for details.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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.	High Potential. The Study Area contains conifer forest with numerous trees of the size and characteristic to providing nesting for this species. There are documented activity centers immediately adjacent to the Study Area (CDFW 2024a).	Presence Unknown. Any 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>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 does not provide vegetated ponds or emergent marsh suitable for nesting.	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's ephemeral stream courses lack perennial pools and other necessary habitat elements.	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.	No Potential. The Study Area does not contain lakes, ponds, or other perennial aquatic features to support this species.	Not Present. No further recommendations for this species.
<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 streams on-site are ephemeral without a hydro-period sufficient to support this species. The nearest occurrence in CNDDDB is three miles south of the Study Area (CDFW 2024a).	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. The Study Area does not contain aquatic features sufficient to support this species. The nearest occurrence in CNDDDB is one mile north of the Study Area (CDFW 2024a).	Presumed Absent. No further recommendations for this species.
<i>Taricha rivularis</i> red-bellied newt	SSC	Inhabits coastal forests from southern Sonoma County northward, with an isolated population in Santa Clara County. Redwood forest provides typical habitat, though other forest types (e.g., hardwood) are also occupied. Adults are terrestrial and fossorial. Breeding occurs in streams, usually with relatively strong flows.	No Potential. The Study Area does not contain perennial streams 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
Fishes				
<i>Acipenser medirostris</i> green sturgeon	FT, SSC	Spawns in the Sacramento River and Klamath Rivers, at temperatures between 8 and 14 degrees Celsius. Preferred spawning substrate is large cobble but can range from clean sand to bedrock.	No Potential. The Study Area does not contain riverine or estuarine waters.	Not Present. No further actions are recommended 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 still but not stagnant water and high oxygen levels.	No Potential. The Study Area does not contain brackish or estuarine waters.	Not Present. No further actions are recommended 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 actions are recommended for this species.
<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 less than 25 degrees Celsius.	No Potential. The Study Area does not contain suitable anadromous or estuarine waters.	Not Present. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<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 riverine waters.	Not Present. No further actions are recommended 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 actions are recommended for this species.
<i>Oncorhynchus tshawytscha</i> Chinook salmon – Central Valley Fall/Late Fall Run and Central Coastal Chinook Salmon ESUs	FT	These ESUs includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive), as well as Napa River. Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	No Potential. The Study Area does not contain suitable anadromous or estuarine waters.	Not Present. No further actions are recommended for this species.
<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 actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Invertebrates				
<i>Bombus crotchii</i> Crotch bumblebee	SC	Range largely restricted to California. Favors grassland and scrub habitats. Typical of bumblebees, nests are usually constructed underground. Visits a variety of plants.	Unlikely. The Study Area does not contain grasslands with abundant floral resources.	Presumed Absent. No further actions are recommended for this species.
<i>Bombus occidentalis</i> western bumblebee	SC	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2015). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g., mammal burrows). Many plants are visited and pollinated.	Unlikely. The Study Area does not contain grasslands with abundant floral resources.	Presumed Absent. No further actions are recommended for this species.
<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 actions are recommended 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. Elderberry (<i>Sambucus</i> spp.) was not observed within the Study Area. Likewise, this species is known only from the southeastern portion of Napa County (CDFW 2024a).	Presumed Absent. No further actions are recommended 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. Johnny jump-up (<i>Viola pedunculata</i>) or other violets (<i>Viola</i> sp.) was not observed in the Study Area during the site visits. This species' known range with Napa County is restricted to the immediate vicinity of the Cordelia Hills (CDFW 2024a).	Not Present. No further actions are recommended 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.	No Potential. Although the Study Area contains ephemeral streams; this species is known from perennial streams only. Additionally, the only documented occurrence in Napa County is from Huichica Creek in the southwest portion of the county (Marin and Wicksten 2004, CDFW 2024a).	Not Present. No further actions are recommended for this species.

***Key to status codes:**

FC Federal Candidate for Listing

FE Federal Endangered

BGEPA Bald and Golden Eagle Protection Act Species

FT Federal Threatened

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

LR Locally Rare as per Napa County Baseline Report

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



Existing cabins in the Study Area within Douglas fir forest in the central portions of the Study Area



Existing cabins in the Study Area within the Douglas fir forest in the central portion of the Study Area



Informal patch within Douglas fir forest and tanoak forest in the central-southern portion of the Study Area



Understory of tanoak forest in the central portion of the Study Area



California black oak woodland understory in the northern portion of the Study Area



California black oak woodland understory in the northern portion of the Study Area



Ephemeral stream in the northern portion of the Study Area



Stanford's manzanita chaparral in the southern portion of the Study Area



Cobb Mountain lupine (*Lupinus sericatus*; CRPR 1B); on a firebreak in Douglas fir forest



Redwood lily (*Lilium rubescens*; CRPR 4); in tanoak forest



Narrow-anthered brodiaea (*Brodiaea leptandra*; CRPR 1B); in Stanford's manzanita chaparral



Dark-mouthed triteleia (*Triteleia lugens*; CRPR 4); in California black oak woodland

Appendix E

Statement of Qualifications



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.

Aaron Arthur, MS, Associate Plant Biologist with WRA, has nearly 20 years performing vegetation & habitat mapping, rare plant surveys, botanical assessments, vegetation change analysis, and wetland delineations. His project focus is vineyard development, timber resources, coastal development permits, habitat mitigation and monitoring plans, conservation and mitigation banking, and long-term management plans in Sonoma, Marin, Napa, and Mendocino counties. Mr. Arthur's technical training includes the flora of Northern California, the flora of the Pacific Northwest, agrostology, aquatic botany, plant ecology, forest ecology, and soil science. Additionally, he has completed the 40-hour Corps wetland delineation course, holds 2081(a) Plant Voucher Permit, and is Certified California Consulting Botanist #0016 from the California Native Plant Society. Mr. Arthur received his Bachelor of Arts in Geography and received his Master of Science in Physical Geography from Oregon State University, where his research focused on forest floristics and vegetation change.

Jason Yakich, MS, Associate Wildlife Biologist with WRA, has nearly 20 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.

Rhiannon Korhummel, BS, Biologist with WRA, has nearly ten years of experience performing special-status plant surveys, land cover mapping, aquatic resource delineation, wildlife habitat assessments, biological monitoring for special-status wildlife species, and nesting bird surveys. She prepares a variety of biological assessments and technical reports and supports project management staff at WRA for a variety of public and private projects. Ms. Korhummel received his Bachelor of Arts in Biology from Humboldt State University with a focus in botany and vegetation ecology.