Biological Resource Reconnaissance Survey

Report for: 1510 Acquisition LLC
< 3-acre Conversion; Calistoga, California
Napa County APN: 020-400-013

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MAPS:

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PREPARERS:

Pamela Town – Consulting Wildlife Biologist: Pam received a BS in Wildlife Management from University of Vermont in 1993 and a MS in Forest Resources from University of Idaho in 1996. Pam has over 20-years of experience using interdisciplinary approaches to natural resource and land use management projects in northern California (Mendocino, Sonoma, Lake, and Napa Counties). She has experience working with a diversity of nongame wildlife species and their habitat including, but not limited to: song birds, hawks, owls, turtles, amphibians, bats, small mammals, and listed species. She has worked with a variety of partners including state and federal regulatory agencies (CDFW, CalFire, USFWS), private and industrial landowners, small and large business owners, and natural resource professionals; to provide technical leadership and guidance in dealing with the effects of various land use projects on listed/sensitive wildlife species and their habitat.

Heather Morrison – Consulting Botanist and Forester: Heather received a B.S. in Forestry and Watershed Management from Humboldt State University in 1996. She is a Certified Consulting Botanist (#31) and a Registered Professional Forester (#2681) with over 20 years of professional forestry and environmental planning experience. Ms. Morrison provides botanical assessments for large and small projects requiring compliance with the California Environmental Quality Act (CEQA). Ms. Morrison's experience includes conducting state and federal protocol Special Status Plant Species Surveys since 2014 in the counties of Mendocino, Lake, Sonoma and Napa. She has experience with wetland delineations, as per the Army Corps of Engineers Technical Report (#Y-8701). She is a current member of the California Native Plant Society, the California Botanical Society and California Invasive Plant Council.

ASSESSMENT DEFINITIONS:

Biological Resources Evaluation Area (BREA): An area that includes all lands within 1-mile of the boundaries of the parcel involved, as well as the CalFire-defined drainage (which includes the County defined drainage) upstream and including the subject parcel.

Study Area: The area in which a field evaluation was performed, including the Project Area. For this Project, the Study Area is the Project Area.

Project Area: The area of the proposed project (vineyard conversion) evaluated for potential direct impacts to sensitive biological resources.

Special Note: This Report, dated 13JUN23, updates and replaces all previous reports for this Project. Updates include adjustment of Project Footprint and acres impacted. The cnddb was revisited to assure no new species turned up within the Project area and BREA, with the addition and review of Bombus species (bumble bees) included under the Wildlife Scoping in Attachment #4.

I. EXECUTIVE SUMMARY

Biological Resource Studies and Assessments are conducted to determine the presence or absence of listed animal and plant species, and the effects of a proposed vineyard or orchard site development on those species.

This report details the regulatory background, methods, results, and recommendations of a Biological Resources Reconnaissance Survey (BRRS) for the conversion of 2.4-acres of forest to a vineyard. The Project Area is located in the 35.8-acre parcel (APN 020-400-013) at 1510 Diamond Mountain Road; Calistoga, California (Map #1). The property ownership occurs within Napa County.

The Project Area is considered Timberland as defined by the California Forest Practice Rules, with approximately 2.4-acres of forest (2.3 acres of Douglas-fir and .1 acre of coastal mixed hardwood or Live oak) to be converted to grapes (Map #2). The entire Project Area is outside recent (last 5 years) large wildfire perimeters.

The Project Area is intentionally situated to avoid watercourses within the parcel. There will be no impacts to wetlands or watercourses within the Project Area as a result of this project. A Hydrological Study and Report will be completed to address concerns regarding distance to Napa River and other major creeks.

A protocol-level rare plant survey identified no special status plants within the Study Area. A total of 0.1 acres of Coastal Live Oak Woodland Alliance will be removed due to this project; which falls under Napa County Resource Goals & Policy CON-24.

There is one special-status bird (Northern Spotted Owl) with marginal habitat present; and non-status species with baseline legal protections (Sharp-Shinned Hawk, Olive-Sided Flycatcher, Purple Martin, Pallid Bat, Western Red Bat, and Long-Eared Myotis (a Bat) that might be found residing on or immediately adjacent to the Study Area.

Mitigation measures, in the form of additional bird and bat surveys prior to tree removal and groundbreaking operations as outlined within the Project Recommendation Section; and best management practices throughout the permitting process, have been developed and provided herein to avoid impacts to these species and their habitat.

II. INTRODUCTION

Throughout the spring and summer of 2022 (20MAR22, 07APR22, 17APR22, 28APR22, 22MAY22, 25MAY22, and 04JUN22 for biological; and 11APR22, 18MAY22, 20JUN22, and 02JUN23 for botanical), an assessment of biological resources and several species-specific surveys were completed within the Project Area (Map #3) located at 1510 Diamond Mountain Road; Calistoga, California by Pamela Town and Heather Morrison. The 2.4-acre Study Area is 2.3 acres of Douglas-fir Forest & Woodland Alliance and 0.1 acre of coastal mixed hardwood (or Live Oak Alliance). Immediately adjacent to the Study Area are vineyards, residential structures in a highly developed area to the north (Calistoga Hills Community), individual residential structures, and mixed forest types (Map #4). During the spring and summer of 2022, an assessment of biological resources and surveys were completed. The purpose of these surveys were to gather the information necessary to complete a review of the 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", and to analyze potential environmental effects of a vineyard development for a Napa County Erosion Control Plan (ECP) Application and California Department of Forestry and Fire Protection (CalFire) less than 3-acre Conversion.

A Biological Resource Reconnaissance Report provides general information on the presence, or potential presence of sensitive species and habitats. The site visits contain protocol-level surveys for listed plant species in Block 1 of the Study Area, protocol-level surveys for northern spotted owls, as well as survey visits to assess habitat, and record all identified plant and wildlife species observed or inferred (through animal sign).

This report describes the results of the site visits, which assessed the Project and Study Area for:

- The presence of sensitive natural plant communities
- The potential for land cover types on the site to support special status plant and wildlife species.
- The presence of sensitive natural resources protected by local, state, or federal laws and regulations.

All plant and animal species, and habitat identified during the assessment were documented and their presence is discussed within this report. Specific findings on the habitat suitability or presence of special status species or sensitive habitats may require further protocol-level surveys or other studies to be conducted.

The proposed project involves the conversion of 2.4-acres of mixed forest to vineyard. Associated with the installation of the grape vines will be vineyard avenues, and irrigation lines. Site preparation including removal of trees, ripping, installation of erosion control measures, seeding cover crop, and installation of irrigation pipelines could occur during the grading window of April 1 through October 15. By October 15, the site will be winterized with placement of straw wattles, seeding of vineyard avenues and planting areas, and straw mulch spread over disturbed areas as required by the ECP prepared for the Project.

III. REGULATORY SETTING

This report is intended to facilitate conformance of the Project with the standards outlined in the Napa County Guidelines for Preparing Biological Resources Reconnaissance Surveys and support permitting by the California Department of Forestry and Fire Protection THP/Conversion. The Project may also be subject to federal and state regulations designed to protect sensitive natural resources.

Land Cover Types: Sensitive Land Cover Types are those areas of a particular vegetation type, soil or bedrock formation, aquatic features and/or another distinct phenomenon. Typically Land Cover Types have identifiable boundaries that can be delineated based on changes in plant assemblages, soil or rock type, soil surface or near-surface hydroperiod, anthropogenic or natural disturbance, topography, or elevation. Many Land Cover Types are not considered sensitive or otherwise protected under the environmental regulations discussed in this report; however, these land cover types might provide essential ecological and biological functions for special status plants and wildlife. Those land cover types that are considered or protected under one or more environmental regulations are listed below.

Waters of the United States: Waters of the United States is regulated by the United States Army Corps of Engineers (Corps) 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. The Corps Wetlands Delineation Manual uses three criteria to delineate wetlands including the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. 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: 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. 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 of fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian: Streams and lakes, as habitat for wildlife and fisheries are subject to jurisdiction by California Department of Fish & Wildlife (CDFW) under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream" 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". The term "stream" can also 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. Riparian is defined as on or pertaining to the banks of the stream, with riparian vegetation as vegetation which occurs in and/or adjacent to a stream and is dependent on and occurs because of the stream itself. Removal of riparian vegetation requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Sensitive Natural Communities: Sensitive Natural Communities are those that are listed to the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) due to the rarity of the community in the state or throughout its entire range (globally). Currently the CNDDB uses Holland vegetation community names and has not added any new sensitive natural community records to the CNDDB since the 1990's, because the CDFW is switching to using *A Manual of California Vegetation, 2nd Edition* as the standard classification system for California. CDFW maintains a list of Sensitive Natural Communities. This CDFW list was utilized to define the Natural Communities within the Survey Area. In addition to the CDFW list, these communities can also be identified in local or regional plans, policies, and regulations. Impacts to Sensitive Natural Communities must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chapter 3, Appendix G). In addition, Napa County has designated a number of communities as sensitive in their Napa County Baseline Data Report.

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 plants and prevents take, with few exceptions of these species. California Native Plant Society (CNPS) Rare and Endangered Plant inventory with California Rare Plant Ranks 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 or are otherwise considered locally rare. In addition, any plant species listed as sensitive within a County General Plan are considered sensitive.

Special Status Species - Wildlife: Special status wildlife species include species that have been listed or are formal candidates for such under ESA or CESA. The Federal Bald and Golden Eagle Protection Act (BGEPA) provides broad protections to both of North America's eagle species that are similar to those under the ESA. The CFGC designates some species are Fully Protection (FP), which indicates that take of that species cannot be authorized through a state permit. Additionally, CDFW and CalFire Species of Special Concern (SSC) are given special consideration under CEQA and are therefore considered special status species. In addition to regulations for special status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act (MBTA) of 1918 and CFGC. Under these laws/codes (sections 3503, 3503.5 and 3513), 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 bat species and those with a high or medium-high priority are typically given special consideration under CEQA. In addition, any animal species listed as sensitive within a County General Plan are considered sensitive.

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 United States Fish & Wildlife Service (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.

The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the US. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conversation, and facilitate long term protection through the establishment of Essential Fish Habitat (EFH). Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with National Marine Fisheries Service (NMFS).

Movement and migratory corridors for native wildlife, including aquatic corridors, as well as wildlife nursery sites are given special consideration under CEQA.

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

Napa County Baseline Data Report: Specific sensitive Land Cover Types are identified in the Napa County Baseline Data Report (Napa County 2005). In addition to those Land Cover Types identified by California Department of Fish & Wildlife, the report 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.

Natural Resource Goals & Policies:

- Policy CON-13: The County shall require that all discretionary residential, commercial, industrial, recreational, 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:
    - Maintain the following essential for fish and wildlife resources
        - Sufficient dissolved oxygen in the water
        - Adequate amounts of proper food
        - Adequate amounts of feeding, escaping, and nesting habitat
        - Proper temperature through maintenance and enhancement of streamside vegetation, volume flows, and water velocity
    - 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 stream-side areas, in good condition.

- Provide protection for habitat supporting special status species through buffering or other means.
- Provide replacement habitat of like quantity and quality on or off-site for special-status species to mitigate impacts to special status species.
- 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.
- 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.
- 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:
  - Prevent removal or disturbance of sensitive natural plant communities that contain special status plants or provide critical habitat to special status species.
  - In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible.
  - Promote protection from overgrazing and other destructive activities.
  - 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.
  - 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:
  - In sensitive domestic water supply drainages where new development is required to retain between 40 to 60 percent of the existing vegetation onsite (as of 16JUN93), the vegetation selected for retention should be in areas designated to maximize habitat value and connectivity.
  - 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.
  - 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.

- 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.
- 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 16FEB07 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 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:
  - 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.
  - 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.
  - Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio (updated to 3:1 ratio) when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible.
  - Support hardwood cutting criteria that require retention of adequate stands of oak trees sufficient for wildlife, slope stabilization, soil production be left standing.
  - Maintain, the extent feasible, a mixture of oak species which is needed to ensure acorn production. Black, canyon, live, and Brewer oaks as well as blue, white, scrub and live oaks are common associations.

General Provisions – Stream and Wetland Setbacks: Napa County Code 18.108.025 requires stream setbacks for new land clearing for agricultural purposes. "Stream" is defined by Napa County (18.108.030) as:

- A watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey (USGS) maps most recently published, or any replacement to that symbol.
- 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 10' in height.

- Those watercourses listed in Resolution No. 94-19.

No clearing of land for new agricultural uses as defined by Section 18.08.040 shall take place within the following setbacks from streams:

- < 1% slope = 35' Required Setback
- 1 – 5% slopes = 45' Required Setback
- 5 – 15% slopes = 55' Required Setback
- 15 – 30% slopes = 65' Required Setback
- 30 – 40% slopes = 85' Required Setback
- 40 – 50% slopes = 105' Required Setback
- 50 – 60% slopes = 125' Required Setback
- 60 – 70% slopes = 150' Required Setback
- Ephemeral/Intermittent Streams = 35' Required Setback

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%).

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

Existing trees 6" in diameter or larger, measured at diameter breast height (dbh), or tree stands of trees 6" dbh or larger located on a site for which either an administrative or discretionary permit is required shall not be removed until the required permits have been approved by the decision-making body and tree removal has been specifically authorized.

Trees to be retained or designated for retention shall be protected through the use of barricades or other 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 modifying Chapter 18.108 Conservation Regulations to provide additional protections to trees and water quality. Additions to the Code includes:

- Code Section 18.108.025 is the requirement of a 35' setback for ephemeral or intermittent streams not meeting Napa County's criteria for a stream.
- Code Section 18.108.026 is the requirement of a 50' setback from the delineated edge of wetland boundaries.
- Code Section 18.108.027 is the requirement of tree retention in sensitive domestic water supply drainages was increased from 60% to 70% retention based on vegetation that existed within the parcel in 1993.

- Code Section 18.108.020 subsections C and D were added and require a minimum of 70% retention of canopy cover based on the vegetation that existed within the parcel in 2016, and the preservation or mitigation of trees at a minimum 3:1 ratio.

IV. PROJECT DESCRIPTION OVERVIEW

Project Location: 1510 Diamond Mountain Road; Calistoga, CA (Map #1)

County: Napa
Project Legal Description: Portions of Section 6 T08N, R06W MDB&M
Parcel Legal Description: Portions of Section 6 & 7 T08N R06W MDB&M
Project Parcel #: APN 021-400-013

General Project: The project proposes to convert 2.4-acres of forest (2.3 acres of Douglas-fir forest and 0.1 acres of coastal mixed hardwood/Coastal Live Oak) to vineyard (Map #5).

The Biological Resource Assessment Area includes all lands within 1 mile of the boundaries of the parcel involved as well as the CalFire defined drainage upstream and including the subject parcel utilizing a standard community classification scheme for identifying natural communities from species data (Map #6). Using the Calwater22 GIS dataset, a California Watershed Mapping layer that encompasses Napa County, the Project Area falls within the Simmons Canyon Watershed; which is part of the larger Napa River Watershed. The Biological Resource Assessment Area for this Project includes both Simmons Canyon Watershed (Calwater 2206.500102) and a small portion toward Napa Valley (an area outside the Simmons Canyon watershed but within 1 mile of the Parcel Boundary). The watershed used for this report is larger than the County GIS layers and the ECP narrative. Using a larger watershed for the Biological Report increased the size of the area scoped for listed plant and animal species. As animals move more freely than plants, the scoping area was further expanded to include 5-miles outside the Study Area.

V. ENVIRONMENTAL SETTING

The 2.4-acre Project Area (Maps #3 & #4) is located south, southeast of the town of Calistoga, California in Napa County.

V-1: Topography and Soils: The overall topography of the Study Area is relatively flat to less than 30% slopes, ranging from approximately 520 to 560 feet above sea level. According to the Soil Survey (USDA 2022), the Study Area is underlain by a single soil mapping unit: Boomer-Forward-Felta Complex (5% – 30% slopes) (Attachment #8).

Boomer Forward Felta: The parent material is residuum weathered from igneous rock. The drainage class is well drained with a medium runoff class. The depth to the water table is more than 80 inches. This is listed as not prime farmland.

V-2: Climate and Hydrology: The local watershed is characteristically Mediterranean with cool to warm, dry summers and cool, moist winters. Precipitation occurs exclusively as rainfall with the majority of the annual precipitation falling between October and March (U.S. Climate Data). The average annual high temperature for Calistoga is 75 degrees Fahrenheit, with a record high of 106 degrees Fahrenheit, with multiple days exceeding 100 degrees Fahrenheit in 2021 due to "heat domes" and drought conditions (Weather and Climate 2021). The average minimum monthly low temperature is 44 degrees Fahrenheit. Precipitation falls as rain with an annual average of 40.87 inches. Precipitation-bearing weather systems are usually from the west and south.

The primary hydrology for the Study Area is precipitation and surface runoff. During heavy winter/spring rainfall events, evidence of ephemeral directional flow is evident in the form of an ephemeral-intermittent stream, just outside the Project Area that flows into Diamond Mountain Creek (Map #8). No wetlands or other streams are mapped in the Study Area in USFWS National Wetlands Inventory (USFWS NWI 2018) or on the Calistoga 7.5-minute topographic quadrangle (USGS). The Napa River as well as Diamond Mountain Creek, Cyrus Creek, Simmons Canyon Creek, and numerous unnamed tributaries to the Napa river as well as agricultural ponds occur within the Biological Resources Evaluation Area.

V-3: Land Cover and Land Use: The landscape consists of a mosaic of different habitat types including conifers (Coastal Redwood/Douglas-fir, Douglas-fir/Ponderosa Pine, Douglas-fir, and Knobcone Pine), hardwoods (Blue Oak, California Bay/Madrone/Coast Live Oak, Coast Live Oak/Blue Oak, Coast Live Oak, California Bay/Chamise, Mixed Oak, Mixed Willow, Oregon White Oak, Valley Oak/Riparian, and Valley Oak), grassland (annual and upland annual grassland/forbs), chamise, urban, agricultural (mostly vineyard), rocky outcrop, and water (Map #6). Portions of the BREA occur within the 2020 Glass Wildfire that impacted a large portion of Sonoma and Napa Counties.

The Study Area is within 0.3-miles of the highly developed Napa Valley bottom with the gated/patrolled community of Calistoga Hills Resort between and immediately adjacent to the Project Area. The Project Area is a living forested stand (outside the 2020 Glass Wildfire perimeter) with an existing vineyard immediately adjacent to the southern boundary and the gated community of Calistoga Hills Resort immediately adjacent to the northern boundary (with a fence along the parcel line) (See Attachment #1 for photos).

VI. ASSESSMENT METHODOLOGY

Prior to surveys, the following literature and database searches were completed to assess the potential for sensitive natural communities and special status species*:*

Soil Survey of Napa County, California (USDA 2022)
Aerial photographs (Google Earth & GIS Datasets)
National Wetlands Inventory
California Aquatic Resources Inventory
California Natural Diversity Database, CNDDB (CDFW 2023)
California Natural Diversity Database, Special Animal List (CDFW 2023)
California Wildlife Habitat Relationships System (CWHR) (CDFW 2014)
California Native Plant Society Electronic Inventory (CNPS 2022)
Consortium of California Herbaria
A Manual of California Vegetation Online
Preliminary Descriptions of the Terrestrial Natural Communities (Holland 1986)
Napa County Checklist of Common Birds of Napa County (Napa-Solano Audubon)
Napa County Land Cover (NCLC) map (Thorne et al. 2004)
California Natural Community List (CDFW 2018)
California Department of Fish and Game, California Sensitive Natural Communities List (9/2020)
USFWS List of Federal Endangered and Threatened Species
California Bird Species of Special Concern (Shuford and Gardali 2008)
Spotted Owl Database (CDFW 2022)
USFWS Information for Planning and Consultation (IPaC USFWS 2022)
NMFS – Essential Fish Habitat Mapper (NMFS 2022)

With the exception of the NSO Database which focused on a 1.3-mile assessment area surrounding the Project Area per USFWS requirements for take avoidance, database searches (i.e., CNDDB, CNPS) focused on the Biological Resources Evaluation Area, and extended out 5 miles from the parcel boundary for wildlife species.

Following the remote assessment, Pamela Town, Consulting Wildlife Biologist and Heather Morrison, Consulting Botanist traversed the entire Study Area on foot (Map #7) to:

- Determine land cover type (terrestrial community, aquatic resources)
- Document existing conditions and determine if suitable habitat exists for any special status plant or wildlife species
- Determine if and what type of aquatic natural communities (wetlands) are present
- Determine if special status species are present
- Perform seasonally appropriate floristic surveys
- Coordinate and complete northern spotted owl surveys (USFWS 2012/2019)
- Determine if additional special status species surveys are required

VI – 1: Land Cover Types: Terrestrial land cover types were mapped across the Study Area and evaluated to determine if such areas have the potential to support special status plant or wildlife species. In most instances, communities are delineated based upon distinct shifts in plant assemblage

(vegetation) and follow the California Natural Community List (CDFW 2018). Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), and A Manual of California Vegetation, Online Edition (CNPS 2021). In some cases, it might be necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature.

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 report. Additionally, any sensitive natural communities as described in the Napa County Baseline Data Report or General Plan were considered. The potential for each sensitive natural community to occur in the Survey Area was ranked based on the following criteria:

- None. No geologic, hydrologic or meteorological components meeting the communities' requirements are present (such as serpentine rock, a stream or summer fog).
- Unlikely. Few to none of the geologic, hydrologic or meteorological requirements are present. The natural community is not likely to be found on the site.
- Moderate. Some of the habitat geologic, hydrologic or meteorological requirements are present. The natural community has a moderate probability of being found on the site.
- High. All of the geologic, hydrologic or meteorological components are present. The natural community has a high probability of being found on the site.
- Present. The natural community is observed on the site or has been recorded (database observation) on the site in the recent past.

VI-2: Aquatic Resources: Aquatic resources include Waters of the US; Waters of the State; and Streams, Lakes, and Riparian Habitat as defined in the CWA, Porter-Cologne Act, and CFGC.

This site assessment does not constitute a formal wetland delineation; however, the surveyors looked for superficial indicators of wetlands such as hydrophytic vegetation (plant communities dominated by wetland species), evidence of inundation or flowing water, saturated soils and seepage, and topographic depressions/swales.

If potentially jurisdictional waters under the CWA and/or the CFGC are noted on site, they are delineated using a mix of surveyed topography data and high-resolution aerial photographs. The ordinary high-water mark would be used to determine the extent of the 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 would be assessed to determine if these areas are considered riparian habitats by CDFW following A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607 (CDFG Code 1994).

VI-3: Special Status Species – Plants: Site visits evaluated the potential presence of suitable habitat for special status plant species as well as identification of specific species. Suitable habitat conditions are based on physical and biological conditions of the site, as well as the professional expertise of the surveyors. The potential for each special status species to occur in the Project Area was ranked based on the following criteria:

- None. No habitat components meeting the species requirements are present (such as coastal marsh or coastal dunes).
- Unlikely. Few to none 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. 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. 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 (database observation) on the site in the recent past.

If a more thorough assessment was warranted, focused surveys were conducted within the Study Area. 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 performed in accordance with those outlined by Napa County (2016), which follow those described by resource experts and agencies (CNPS 2021, CDFW 2018). Plants were identified using The Jepson Manual, 2nd Edition (Baldwin et. al 2012), and Jepson Flora Project (Jepson eFlora) to the taxonomic level necessary to determine whether or not they are sensitive plants. To the extent feasible, nearby accessible reference populations of target plant species with a moderate or high potential to occur in the project area were visited to ensure that the surveying botanist had an accurate search image for a species, and/or to determine whether the species was blooming at the expected time.

- Napa lomatium (*Lomatium repostum).* Non-blooming plants were observed in Calistoga area in June and July 2022. This species is readily distinguishable vegetatively from other members of the *Lomatium* genus due to its characteristic serrated leaves.
- White-flowered rein orchid (*Piperia candida*). Members of this genus have indistinguishable leaves and to identify to a species-level, plants must have flowers. None were blooming.
- Narrow-anthered brodiaea (*Brodiaea leptandra*). Blooming plants were viewed in the Calistoga area in June and July 2022.
- Napa false-indigo (*Amorpha californica var. napensis*). Viewed in May, June and July 2022 in the Calistoga area. This plant is readily distinguishable in the field outside of the bloom window.
- Calistoga ceanothus (*Ceanothus divergens*), Rincon Ridge ceanothus (*Ceanothus confusus*), Holly-leaved ceanothus (*Ceanothus purpureus*) and Sonoma ceanothus (*Ceanothus sonomensis*). Non-blooming plants of Calistoga ceanothus were observed in the Calistoga area in March, April, May and June 2022. This species along with rare Holly-leaved, Sonoma and Rincon Ridge ceanothus species, have characteristic sharply serrated leaves. Additionally, these plants are generally prostrate to low-mounding to arching and are more easily recognized vegetatively than when in bloom.

VI-4: Special Status Species - Wildlife: Site visit evaluated the presence of suitable habitat for special status wildlife species as well as observation of specific species. Suitable habitat conditions are based on physical and biological conditions of the site, as well as the professional expertise of the surveyors. The potential for each special status species to occur in the Survey Area was ranked based on the following criteria:

- None – Habitat is clearly unsuitable for the species requirements
- Unlikely - Few if any 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 (database observation) 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 at any time, its presence was recorded and is discussed within this report.

The wildlife assessment consisted of traversing the entire Study Area. Habitat elements required or associated with specific species or species groups were searched for and noted. Such habitat elements include, but are not limited to:

- Plant Composition (Shrubs, Grasslands, Oaks, Conifers, etc.)
- Vegetative Structure (trees, shrubs, ground cover)
- Aquatic or Riparian Structures (standing water availability, riparian vegetation, etc.)
- Topography and Elevation
- Special Features (rock outcrops, downed logs, cliffs, caves, overhangs, etc.)
- Existing Disturbance Issues (roads, houses, power lines, etc.)
- Potential Nesting/Roosting Structures (snags, cavity trees, mistletoe, stick structures, etc.)

Northern spotted owl surveys were conducted following Protocol for Surveying Proposed Management Activities that May Impact Northern Spotted Owls (USFWS 2012).

To account for potential impacts to wildlife movement and migratory corridors, maps from the California Essential Connectivity Project (Caltrans 2010), habitat connectivity data available through the CDFW BIOS (CDFW 2022), and aerial imagery (Google Earth) within the Biological Resource Assessment Area was referenced. This map review assessment was refined based upon observations of the on-site physical and/or biological conditions.

VII. ASSESSMENT RESULTS

Because the Survey Area is small, the entire area was surveyed at a high intensity level. A map of the area surveyed (Study Area) can be found in Map #7, with a list of survey dates within Table 1.

VII-1: Table 1: Survey Dates for Study Area

Date	Survey Hours	Surveyor(s)	Primary Survey Completed
20MAR22	1 ½ hour	Town	NSO Nocturnal Survey
07APR22	1 ¾ hour	Town	NSO Nocturnal Survey
11APR22	2	Morrison	Botanical Survey
17APR22	1 ½ hour	Town	NSO Nocturnal Survey
28APR22	1 ½ hour	Town	NSO Nocturnal Survey
18MAY22	2	Morrison	Botanical Survey
22MAY22	1 ½ hour	Town	NSO Nocturnal Survey
25MAY22	2 hours	Town	Wildlife Habitat Assessment
04JUN22	1 ½ hour	Town	NSO Nocturnal Survey
20JUN22	2	Morrison	Botanical Survey
02JUN23	½ hour	Morrison	Ground Truthing Veg. Alliance

Attachment #2 includes a tabled summary of the special status plant species that were documented within the initial review that could have the potential of occurring within the Project Area, Study Area, and Biological Resources Assessment Area. This summary discusses whether the special status species or their habitat was identified within the Study Area and includes the "ranking" of whether the species was likely to occur. All plant species identified within the Study Area were recorded and are summarized in Attachment #3.

Attachment #4 includes a tabled summary of the special status wildlife species that were documented within the initial review that could have the potential of occurring within the Project Area, Study Area, and Biological Resources Assessment Area. This summary discusses whether the special status species or their habitat was identified within the Study Area and includes the "ranking" of whether the species or their habitat was likely to occur. All animal species identified within the Study Area were recorded and are summarized in Attachment #5.

Attachment #6 includes a tabled summary of sensitive natural communities and the likelihood of occurring within the Project Site.

VII-2: Glass Wildfire: In the early fall of 2020, the Glass Wildfire occurred within Napa Valley and engulfed portions of Napa and Sonoma Counties, including portions of the BREA. The Project Area is outside the Glass Wildlife Perimeter and was not subjected to this or any other recent (within last 5 years) wildfires.

VII-3: Existing Disturbance Issues: On occasions when the biologist or botanist was on-site, people could be seen and heard working within existing vineyards. Due to the gated community to the north, occasionally a vehicle could be heard but in general it was quiet. The lower reach of Diamond Mountain Road is to the east, with light traffic.

VII-4: Land Cover Types: The Napa County Vegetation Map Layer version 5.1 was utilized to create a vegetation map for the Biological Resource Evaluation Area (BREA), the parcel, and the survey area (Map #5 & #6). This map layer was created by combining on the ground field data collection with modern semi-automated mapping techniques. The semi-automated approach uses machine learning algorithms to automate the mundane and laborious parts of vegetation mapping, such as delineating stand boundaries and labeling obvious features, saving valuable expert labor for the more subtle and difficult components of mapping. Within the survey area, vegetation was thoroughly detailed and updated by ground truthing at an appropriate scale, and in some portions of the area, were different than the Napa County Vegetation Map layer. This is likely since not every area was thoroughly ground verified after lidar and aerial imagery interpretation and is based upon the state of the landscape in 2013.

Sensitive Natural Communities: Attachment #6 lists those Sensitive Natural Communities that have the potential to occur within the Study Area. Out of the 84 Sensitive Natural Communities included in the scoping list (Attachment #6), 22 were determined to have moderate to high potential to exist within the Survey Area or the Biological Research and Evaluation Area. No sensitive natural communities were identified within the Study Area.

The following Natural Communities are found within the Project Area.

- *Pseudotsuga menziesii* (Douglas-fir) Forest & Woodland Alliance G5, S4
- *Quercus agrifolia* (Coast Live Oak Woodland Alliance*).* CDFW Rank: G5 S4

***Pseudotsuga menziesii* (Douglas-fir) Forest & Woodland Alliance** – Within this community, Douglas-fir has > 50% relative cover in the tree canopy and is reproducing successfully, though hardwoods may dominate or co-dominate in the subcanopy and regeneration layer. Trees are generally less than 75 meters in height and the canopy is intermittent to continuous and may be two tiered. Shrubs are infrequent or common. Herbaceous layer is sparse or abundant. Within the survey area this Alliance was dominated by Douglas-fir (65%) with co-dominant associates of black oak (20%) and madrone (15%).

***Quercus agrifolia* (Coast live oak) Woodland Alliance** – This community occurs in the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County. These woodlands are typically situated on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). The dominant tree is coast live oak (*Quercus agrifolia*), with scattered cover of blue oak (*Q. douglasii*) and California bay (*Umbellularia californica*). The CDFW does not consider coast live oak woodland a sensitive natural community. Conversely, these woodlands are considered sensitive by Napa County under the General Plan Conservation Element Policy CON-24 (oak woodland retention).

***Pseudotsuga menziesii* (Douglas-fir) Forest & Woodland Alliance in the Survey Area**

VII-5: Table #2: Plant Communities within 1510 Acquisition Vineyard Expansion Parcel

Vegetation Alliance	Parcel	Project Area
Douglas-fir Forest (*Pseudotsuga menziesii)* Forest Alliance	5.32 acres	2.3 acres
Coastal Mixed Hardwood – Coastal Live Oak Woodland Alliance	5.25 acres	0.1 acres
Oregon White Oak (*Quercus garryana)* Woodland Alliance	4.92 acres	0
Ruderal	2.09 acres	0
Agricultural (Vineyards)	16.92 acres	0
Willow (*Salix spp.)* Woodland Alliance	1.3 acres	0
TOTALS	**35.8 acres**	**2.4 Acres**

VII-6: Aquatic Resources: There were no aquatic resources that showed up within the Study Area during the initial administrative review. During the field surveys, an assessment of potential aquatic resources was conducted and only one aquatic resource (ephemeral stream or CalFire Class III Watercourse) was noted adjacent to the Study Area (Map #8). Flows within this watercourse would occur during and immediately following rain events but disappear quickly after a storm has subsided. This watercourse does not have the potential to support salmonids or other special status fish species. The Project Area has been established the appropriate distance to meet State and County Requirements.

VII-7: Special Status Species - Plants: Based upon a review of the resource databases (Attachment #2), there are twenty-six (26) special status plant species which have the potential to occur within the Biological Resources Evaluation area, with seventeen (17) of these species being documented in the Biological Resources Evaluation Area. The 17 plant species with a moderate to high potential to occur within the Study Area include:

- Napa false-indigo
- Rincon Ridge manzanita
- Brewer's milkvetch
- Clara Hunt's milkvetch
- Narrow-anthered brodiaea
- Rincon Ridge ceanothus
- Calistoga ceanothus
- Holly-leaved ceanothus
- Sonoma ceanothus
- Streamside daisy
- Leptosiphon jepsonii
- Redwood lily
- Napa lomatium
- Cobb Mountain lupine
- Green monardella
- Napa bluecurls
- Dark-mouthed triteleia

The following discusses these target species in greater detail.

VII-7a: Napa false-indigo (*Amorpha californica var. napensis*) – High Potential to Occur

This deciduous shrub in the pea family (Fabaceae) grows 2-6 ft. tall and is found along woodland edges and chaparral. It is endemic to the Sonoma and Napa County region. Intricate flowers are closely set on slender spikes and are made up of a tiny intense indigo-purple petal with protruding bright orange stamens. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Napa false-indigo was not identified within the Study Area.

VII-7b: Rincon Ridge manzanita (*Arctostaphylos stanfordiana ssp. decumbens*) – High Potential to Occur

This perennial shrub is known from scattered locations in Sonoma and Napa counties. It prefers rhyolitic soils, which are not located within the survey area. It is unusual in that it has a decumbent growth form, rarely exceeding 3 feet in height. It is very similar to *Arctostaphylos stanfordiana ssp. stanfordiana*, and differs only in height (the former shorter than latter). These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.1. Roncon Ridge manzanita was not identified within the Study Area.

VII-7c: Brewer's milkvetch *(Astragalus breweri*) – High Potential to Occur

This herbaceous annual is a member of the pea family (Fabaceae). It is commonly found in grassy places, fields, rocky soil and grassy/woody areas. Though commonly found on serpentine, it can also be found growing on non-serpentine soils. Flowers consists of creamy white corollas that are purplish-tipped. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 4.1. Brewer's milkvetch was not identified within the Study Area.

VII-7d: Clara Hunt's milkvetch (*Astragalus claranus*) – High Potential to Occur

Clara Hunt's milkvetch is endemic to northern California where it is known from only four or five occurrences along the border between Sonoma and Napa Counties. It is a low growing annual herb in the pea family (Fabaceae) with cream corollas that are tipped with purple . Historically it was found on thin, rocky clay soils within grasslands and opening of manzanita and blue oak woodlands. It has been found between elevations of 75 to 225 meters. It is a federally listed endangered species and listed by the California Native Plant Society as 1B.1. Clara Hunt's milkvetch was not identified within the Study Area.

VII-7e: Narrow-anthered brodiaea (*Brodiaea leptandra*) – High Potential to Occur

This perennial bulbiferous herb is restricted to lava and serpentine slopes where it grows in open mixed-evergreen forest or chaparral at 361 to 3002 feet in elevation within Napa, Lake, and Sonoma counties. This plant produces a solitary flower that blooms from May to July where it normally grows in mixed deciduous forest and light woodlands. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Narrow-anthered brodiaea was not identified within the Study Area.

VII-7f: Rincon Ridge ceanothus (*Ceanothus confusus*) – High Potential to Occur

Rincon Ridge ceanothus is an evergreen shrub in the buckthorn family (Rhamnaceae). It is found between 250 to 3,500 feet in elevation near Rincon Ridge in Sonoma County as well as adjacent areas, including the hills surrounding Calistoga. The plant's preferred habitat is on shrub-covered, rocky, volcanic slopes. It is a low-spreading shrub that prefers gravelly soils on slopes and ridges, as well as in forest openings among or under brush. The blue to lavender flowers bloom in February through April. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.1. Rincon Ridge ceanothus was not identified within the Study Area.

VII-7g: Calistoga ceanothus (*Ceanothus divergens*) – High Potential to Occur

Calistoga ceanothus is an evergreen shrub in the buckthorn family (Rhamnaceae). It is found between 350 to 3,120 feet in elevation and populations are confined to a small area in the hills surrounding Calistoga in Napa County. The plant's preferred habitat is on shrub-covered, rocky, volcanic slopes. The blue or purple flowers bloom in April and May. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 4.2. Calistoga ceanothus was not identified within the Study Area.

VII-7h: Holly-leaved ceanothus (*Ceanothus purpureus*) – High Potential to Occur

Holly-leaved ceanothus is an evergreen shrub in the buckthorn family (Rhamnaceae) that blooms from February to April but is typically identifiable by vegetative structures throughout the year. It typically occurs on rocky slopes underlain by volcanic substrate in chaparral and cismontane woodland habitat at elevations ranging from 390 to 2080 feet and ranges along the Mayacamas Range in Sonoma and Napa counties. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Holly-leaved ceanothus was not identified within the Study Area.

VII-7i: Sonoma ceanothus (*Ceanothus sonomensis*)

This rigid, evergreen shrub measures up to 4 feet in height and 2 feet across with spreading and upright branches. It is found in brushy places on volcanic substrates and is quite common after fires. It is found predominantly on the Mayacamas Range in Sonoma and Napa counties. Tiny blue-violet flowers adorn the plant from February through April. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Sonoma ceanothus was not identified within the Study Area.

VII-7j: Streamside daisy (*Erigeron bioletti*) – High Potential to Occur

The perennial and infrequent member of the sunflower flower (Asteraceae) is found on dry slopes, rock crevices, near streams, brushy and forested areas and on serpentine, shale and volcanic rock. It can be found growing in shade or sun. Flowerheads are yellow discoid and bloom from June through October. It is found along the north coast range, ranging from central Humboldt county to the north bay. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 3. Streamside daisy was not identified within the Study Area.

VII-7k: Jepson's leptosiphon (*Leptosiphon jepsonii*) – Moderate Potential to Occur

Jepson's leptosiphon is a spring annual in the phlox family (Polemoniaceae). It is found between 119 to 3,301 feet in elevation, predominantly in Napa county, and into neighboring counties. The plant's preferred habitat is valley and foothill grassland. The tiny white flowers bloom March through May. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Jepson's leptosiphon was not identified within the Study Area.

VII-7l: Redwood lily (*Lilium rubescens*) – High Potential to Occur

Redwood lily is a bulbaceous species in the Lily family (Liliaceae), found from Santa Cruz County to Del Norte County. In the Napa county area, it is frequently found in forested areas on steep slopes, openings and canyons in filtered sun. It is also found in the redwood regions along the coast. It prefers volcanic substrates. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 4.2. Redwood lily was not identified within the Study Area.

VII-7m: Napa lomatium (*Lomatium repostum*) – High Potential to Occur

This perennial member of the carrot family (Apiaceae) is commonly found on brushy and forested areas on all substrates from 600 to 3,300 feet. It can be found growing in both sun and partial shade. It's greenish-yellow inconspicuous flowers bloom April through May. It is endemic to California with populations centered in Napa as well as into bordering counties of Lake, Sonoma and Solano. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Napa lomatium was not identified within the Study Area.

VII-7n: Green monardella (*Monardella viridis*) – High Potenial to Occur

This perennial sub-shrub in the mint family (Lamiaceae) is endemic to California, located throughout many of the counties north of San Francisco within the inner coastal ranges. It prefers rocky places in brushy and wooded areas on all substrates. It blooms June through September. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 4.3. Green monardella was not identified within the Study Area.

VII-7o: Cobb Mountain lupine (*Lupinus sericatus*) – High Potential to Occur

This perennial member of the pea family (Fabaceae) is endemic to the Lake, Napa and Sonoma County region. Like other lupines, it has a whorl of leaves and are quite distinct from other lupines with spoon-shaped leaves. It prefers soils that are gravelly or thin, and generally is found on soils of volcanic origin. It readily colonizes disturbed places where canopy cover has been severely reduced. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Cobb Mountain lupine was not identified within the Study Area.

VII-7p: Napa bluecurls (*Trichostema ruygtii*) – High Potential to Occur

Napa bluecurls is an herbaceous annual with pungently aromatic leaves and pale blue-violet flowers which bloom June through October. It is a member of the mint family (Lamiaceae). It prefers grassy places, rocky meadows and even moist seeps on thin, volcanic soils. Populations are centered in Napa county, with few populations located in adjacent Lake and Sonoma counties. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 1B.2. Napa bluecurls was not identified within the Study Area.

VII-7q: Dark-mouthed triteleia (*Triteleia lugens*) – High Potential to Occur

Dark-mouthed triteleia is a member of the brodiaea family (Themidaceae). It is found in Lake, Napa, Solano, Monterey and San Benito counties. It is a perennial which grows from a corm. Flowers are dark yellow with purple-brown mid-ribs and can be seen blooming from May through July. It grows on rocky, shallow volcanic or sedimentary soils in partial shade or sun. It is common after fires. These plants do not have a State or Federal Listing but are listed by the California Native Plant Society as 4.3. Dark-mouthed triteleia was not identified within the Study Area.

VII-8: Impacts to mosses and lichens: No rare lichens or mosses were discovered within the Study Area. Moss and lichens would be adversely affected by vineyard development; however, plant succession will continue outside the Project Area and will continue to create suitable habitat for mosses and lichens.

All plant species identified within the Study Area are listed in Attachment #3. No special status plant species were identified within the Study Area.

VII-9: Special Status Species - Wildlife: Based upon a review of the resource databases, 80 special status wildlife species were identified to have the potential to occur within the Biological Resources Assessment Area (Attachment #4). Seven (7) of these wildlife species have the potential to occur in the Study Area. The remaining special status wildlife species documented within the Biological Resources Assessment Area are unlikely, or have no potential to occur for one or more of the following reasons:

- Aquatic Habitats Lacking (i.e. rivers, estuaries, marshes)
- Vegetation Habitat Inadequate or Missing (i.e. prairie, grassland, desert shrub, canopy cover)
- Physical Structures Inadequate or Missing (i.e. old-growth, mines, caves, cliffs)
- Topographic Conditions (i.e. elevation, flat ground)
- Associated Natural Communities (i.e. cliff near water, tidal marsh)
- Geographically Isolated – Study Area is isolated from the documented range
- Land Use
- Listing Status – The Study Area is Outside the Listed Species/Subspecies Range

The seven animal species with moderate to high potential to occur within the Study area include:

- Sharp-Shinned Hawk
- Olive-Sided Flycatcher
- Purple Martin
- Northern Spotted Owl
- Pallid Bat
- Western Red Bat
- Long-Eared Myotis (a Bat)

The following discusses these target species in greater detail and their sensitivity to habitat loss.

VII-9a: Sharp-Shinned Hawk (*Accipiter straitus*)

Migration & Movement: Sharp-Shinned Hawks are migrant and winter resident throughout California.

Habitat: Preferred nesting habitats include dense, pole and small-tree stands of conifers; within cool, moist, well shaded forests with little ground cover and often near water (often within 275' of water). Nest is a platform or cup in dense foliage against trunk or main crotch of tree. Use dense stands in close proximity to open areas. Eats mostly small birds (smaller than jays), but will also eat mammals, insects, reptiles, and amphibians. Often forages in openings at edges of woodlands, hedgerows, brushy pastures, and shorelines.

Breeding Season: Breeds April through August with peak late May to July. Sharp-shinned hawks are known to have nested in Napa County.

Potential Threats: The total breeding population within California is small and thus vulnerable to impact from falconry. Logging and competition with Cooper's Hawks are other potential hazards.

Study Area: Suitable Sharp-Shinned Hawk habitat is found within the Study Area and area immediately adjacent to the Study Area. The cnddb reports Sharp-Shinned Hawks within Cyrus Creek Drainage approximately 1 ½ mile to the west of the Project Area. No Sharp-Shinned hawks were observed within the study area.

VII-9b: Olive-Sided Flycatcher (*Contopus cooperi*)

Migration & Movement: Olive-Sided Flycatchers are summer residents in a wide variety of forest and woodland habitats below 9,000' throughout California.

Habitat: Preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine; usually along forest edges. Requires large, tall trees, usually conifers, for nesting and roosting sites; and often uses dead tips of uppermost branches of the tallest trees in the vicinity for singing posts and hunting perches. Nests are an open cup of grasses, mosses, lichens, rootlets, or pine needles 5' to 70' above the ground. These birds forage for flying insects in forest openings, burns, edges, and other mixed open area in forest habitats.

Breeding Season: Detailed life history information is lacking. Peak of egg-laying is in June. Olive-Sided Flycatchers are known to have nested in Napa County.

Potential Threats: Habitat degradation and loss is the most important threat.

Study Area: Suitable Olive-Sided Flycatcher habitat is found within the Study Area and area immediately adjacent to the Study Area. No Olive-Sided Flycatchers were observed within the study area.

VII-9c: Purple Martin *(Progne subis)*

Migration & Movement: Uncommon to rare local resident in a variety of wooded, low-elevation habitats throughout the state.

Habitat: Purple Martins frequent old-growth, multi-layer, open forests and woodlands with snags during the breeding season. They forage over riparian areas, forests, and woodlands. They also occur in coniferous habitats, including closed-cone pine-cypress, ponderosa pine, Douglas-fir, and redwood forests. Nests are in an old woodpecker cavity (often a tall, large cavity tree), but will use human-made structures such as nesting box, buildings, on utility poles, under bridges, or in a culvert. Purple martins forage on insects, especially large ones like dragonflies.

Breeding Season: Purple Martins breed April through August, with peak activity in June. Purple Martins are known to breed in Napa County.

Potential Threats: Populations have declined because of loss of large snags, fire suppression, and competition for nest cavities from European starlings and house sparrows.

Study Area: Suitable Purple Martin habitat is found within the Study Area. No purple martins were observed within the study area.

VII-9d: Pallid Bat (*Antrozous pallidus)*

Migration & Movement: A relatively common species of low elevations in California.

Habitat: Occurs in wide variety of habitats including grasslands, shrublands, woodlands, and forests; but most common in open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines and hollow trees or buildings. Roosts must protect bats from high temperatures. Night roosts may be in more open sites. Tree roosting has been documented within snags, basal hollows of conifers, and within bole cavities in oak trees. Prey items are primarily insects and arachnids, including beetles, orthopterans, homopterans, moths, spiders, scorpions, solpugids, and Jerusalem crickets.

Breeding Season: Mates from late October to February with maternity colonies forming in early April. Young are born April – July, with most in May and June. Young have been observed flying in July and August.

Potential Threats: Sensitive to disturbance of roosting sites.

Study Area: The Study Area does have habitat present for foraging and roosting (cavity trees). The CNDDB lists occurrences of Pallid Bats within both the BREA and 5-mile assessment area, primarily near the Napa River. No bats were observed within the Study Area during nocturnal NSO surveys; however, a targeted bat survey was not completed under this assessment.

VII-9e: Western Red Bat (*Lasiurus blossevillii*)

Migration & Movement: Western Red Bats are locally common in some areas in California. There is migration between summer and winter ranges, and migrants may be found outside the normal range.

Habitat: Foraging occurs over a wide variety of habitats including grassland, shrub lands, open woodlands, forests, and croplands. They roost primarily in trees, less often in shrubs. Roosts are often along the edges of habitats and are often adjacent to stream, fields, or urban areas. Family groups may roost together and nursery colonies are found with many females and their young. May be found foraging with many other bat species, but usually does not roost with other species.

Breeding Season: Western red bats mate in August and September. Births are from late May through early July, with young capable of flight between 3 to 6 weeks of age.

Potential Threats: Rabies incidence in western red bats is relatively high. A variety of animals including hawks, owls, opossums, cats, and jays' prey on them.

Project Area: The Study Area does have habitat present for foraging and roosting (tree cavities and snags). No bats were observed within the Study Area during nocturnal NSO surveys; however, a targeted bat survey was not completed under this assessment.

VII-9f: Long-Eared Myotis (Bat) (*Myotis evotis)*

Migration & Movement: The Long-Eared Myotis is widespread in California, but believed to be uncommon throughout its range.

Habitat: This species has been found in nearly all brush, woodland, and forest habitats, from sea level to 9,000' with coniferous woodlands and forests preferred. This species roost in buildings, crevices, spaces under bark, and snags. Caves are used as night roosts. Feeds primarily along edges, in open habitats often near water.

Breeding Season: Mating probably occurs in the fall. Young are born from May – July, with a peak in June. Most young are flying by early August.

Potential Threats: Impacts to cliff faces or rocky outcrops. Disturbance to roost sites.

Study Area: The Study Area does have habitat present for foraging and roosting sites. No bats were observed within the Study Area during nocturnal NSO surveys; however, a targeted bat survey was not completed under this assessment.

VII-9g: Northern Spotted Owl (*Strix occidentalis caurina)*

Migration & Movement: Resident within suitable habitat.

Habitat: Northern Spotted Owl's habitat includes a forest with dense, multi-layered canopy of several tree species; tree species of varying sizes and ages; abundant snags/cavity trees, broken tops, or platform-like structures; and open spaces among the lower branches to allow for flight. USFWS further defines NSO habitat as having at least 40% overstory canopy cover, with nesting/roosting habitat within stands exceeding 60% overstory canopy (with over 80% preferred). In this area, there appears to be a preference for narrow, steep-sided canyons with north and east-facing slopes. Feed primarily upon woodrats, but also known to eat squirrels, mice, voles, and rabbits.

Breeding Season: Northern Spotted Owls breed February through August, with peak activity in April and May. Northern Spotted Owls are known to breed in Napa County.

Potential Threats: Sensitive to habitat destruction and fragmentation. Invading barred owls displacing NSOs from their territories.

Study Area: The Study Area does have habitat present for northern spotted owls. No Northern Spotted Owls were detected within the Study Area, with nocturnal protocol surveys being completed.

VII-10: Unique Species that are Endemic, Rare or Atypical for the Area: Unique populations of organisms are associated with microclimates or specific habitats which are part of the diversity of the California landscape. This includes fringing populations of organisms at their limits geographically or associated with particular soils or geologic features. No unique or unusual populations were present within the study area.

VII-11: High-Value Wildlife Trees: High-value wildlife trees includes trees that would provide sufficient food sources (nectar, fruit, flowers, nuts, and foliage) for wildlife; draw in pollinators and seed dispersers; provide nesting/roosting sites for birds and bats (structural complexity); store large amounts of carbon; and could provide a stepping stone for birds and bats to different habitats. Some attributes to high-value wildlife trees includes:

- Large brooms present
- Active or recent wildlife use
- Large tree structures suitable for wildlife use (large debris structure, large limbs, goose pen)
- Large trees for the site (height and diameter)
- Locally important tree species
- Wolf Trees (tall forest tree with large girth and great spreading branches)

No high-value wildlife trees were noted within the study area.

VII-12: Trees Serving as Raptor Nests, Bird Rookeries, and Bat Roosts: Bats were not observed during nocturnal northern spotted owl surveys and no active raptor nests or bat roosts were identified within the study area. No nests, wash, nest droppings, feathers, young, guano, or pellets were identified.

A few small stick nests (probable squirrel nests) were identified within the Study Area. These structures could be altered and used by raptors as nest sites; however, are currently showing no signs of raptor use.

A few broken topped trees, snags, and cavity trees were identified throughout the Study Area. These structures could be used by nesting birds or roosting bats; however, are currently showing no visible signs of sensitive species use.

Roosting Bats: Foliage, deep fissures in bark, and trees with cavities could provide suitable temporary habitat for solitary tree-roosting bat species. Colonial roosting species may use trees with broken top, deep fissures in bark, chimney trees, and cavity trees (snags). Potential roost trees were identified within the study area. No current bat use was visible.

Rookery: A bird rookery is a large, clustered nesting bird colony. Each nest is typically independent, with nearby parent birds caring for only their nestling. No Rookeries have been identified within the study area.

VII-13: Cliffs, Caves, and Rocky Outcrops: Cliffs, caves, and rocky outcrops are unique habitats that can provide topographic diversity in otherwise homogeneous landscape. These unique habitats can provide wildlife species with protection from the elements and potential predators (denning and hibernation

sites), provide breeding or rearing young sites, and thermoregulation sites (basking). No cliffs, caves, or rocky outcrops were identified within the study area.

Cliffs: Cliffs are steep rocky outcrops with greater than 65 degrees in slope and at least 4' in height. No cliffs have been identified within or immediately adjacent to the study area.

Caves: Caves and/or rock shelters are associated with cliffs, canyons, and rock outcrops. A cave is any naturally occurring cavity, recess or system of interconnected passage ways beneath the surface of the earth or within a cliff or ledge. No natural caves have been identified within or immediately adjacent to the study area.

Rocky Outcrop: Rocky Outcrop is a visible exposure of bedrock or superficial deposits on the earths' surface where underlying rocks are exposed. Rocky outcrops come in all shapes and sizes, ranging from huge granite boulders strewn across hilltops, to small collections of scattered rocks. No rocky outcrops have been identified within or immediately adjacent to the study area.

VII-14: Wildlife Corridors: Natural areas interspersed with developed areas are important for increasing genetic variation in plant and animal populations, reduction of population fluctuations, retention of predators of agricultural pests, and for movement of wildlife and plant populations. Wildlife corridors have been demonstrated to not only increase the range of vertebrates including avifauna between patches of habitat but also facilitate two key plant-animal interactions: pollination and seed dispersal. Corridors also provide ecosystem services such as preservation of watershed connectivity. Corridor users can be grouped into two types: passage species and corridor dwellers. The data from various studies indicate that corridors should be at least 100 feet wide to provide adequate movement for passage of species and corridor dwellers in the landscape.

Currently the northern boundary of the study area is fenced, so movement of larger terrestrial wildlife species is partially prohibited.

Ephemeral Streams, even when dry, and associated vegetation presumably provide very localized movement and shelter habitat for common wildlife species. As such, avoidance of impacts to these water courses to the fullest extent feasible is recommended.

VII-15: Habitat Fragmentation: Habitat Fragmentation is a local and global concern. Habitat fragmentation can result in a net loss of habitat and genetic isolation. Small clearings can increase the edge habitat and can be beneficial for some wildlife and botanical resources, while detrimental to others. The proposed project is located adjacent to an existing vineyard and will not create an isolated opening within a forested landscape. The proposed change in land use will result in less than significant changes in avifauna and wildlife utilization in the area. The proposed project will not lead to significant impacts to habitat fragmentation in the region, significant species exclusion, or significant change in species composition in the region.

VIII. PROJECT RECOMMENDATIONS

The significant criteria of potential impacts are a function of the scope and scale of the proposed project within the existing Federal, State, and Local regulations and management practices. The Project must comply with Napa County requirements to ensure that best management practices are adopted in order to minimize the amount of sediment and other pollutants leaving the site during construction activities. Erosion Control Plan and CalFire Less than 3-acre conversion required setbacks and buffer zones are designed to provide protection for the watershed and resources.

The ephemeral stream outside the Study Area will be avoided as part of the vineyard design.

The proposed project will result in the loss of 2.4-acres of forest (2.3 acres of Douglas-fir woodland and 0.1 acre of Coastal mixed hardwood/live oak) and has the potential to impact biological resources without appropriate avoidance and protection measures. The following recommendations are proposed to reduce potential impacts to wildlife and botanical species and habitat both on and immediately off-site.

- **No special status plant species were identified.**

Recommendation: Additional botanical surveys will be required if the project footprint increases to include areas outside the surveyed area (Map #7).

- **A small portion of Coastal Live Oak Woodland Alliance will be Removed**.

Recommendation: A total of 0.1 acres of Coast Live Oak Woodland Community will be removed for this Project. Following the Napa County Natural Resource Goals and Policies, this woodland alliance falls under Policy CON-24; with provisions listed on page 11 of this report.

- **The Project could have the potential to impact nesting raptors by direct tree removal**.

Recommendation: If tree removal is anticipated during primary bird nesting season (15FEB – 15SEP), a preconstruction nesting bird survey will be necessary. The preconstruction survey shall consider all potential nesting habitat for birds within 500' of earthmoving activities and related project construction activities. A qualified surveyor shall conduct the surveys, which shall determine through field inspection whether occupied nests are present within the proximity of the Project site. Survey should focus primarily on nesting raptors, but also include nesting song birds (purple martins, olive-sided flycatchers).

Surveys for nesting birds should be conducted within 14 days prior to tree removal or ground breaking on the Project site. If an active nest is located near the Project Area or Project Area access routes, and there is the potential to affect breeding success; the biologist will establish an appropriate exclusion zone around the nest (often a 500' no disturbance buffer zone for raptors). This exclusion zone may be modified depending upon the species, nest location, disturbance history, and existing visual buffers. This no-disturbance buffer zone will be effective until the end of the breeding season or until it is determined by the biologist that all the young have fledged or the nest has failed.

If initial ground disturbance is delayed or there is a break in Project activities of more than 14 days within the breeding season, then a follow-up nesting bird survey should be performed to ensure no new nests have been established in the interim.

- **The Project has the potential to impact Purple Martins and Olive-Sided Flycatcher nesting habitat by direct tree removal.**

Recommendation: If tree removal is anticipated during primary bird nesting season (15FEB – 15AUG) a preconstruction survey will be necessary. The preconstruction survey can be combined with the nesting bird survey recommended above. To include the purple martin and olive-sided flycatcher, the nesting survey should be completed by a surveyor familiar with their vocalizations. Snags and cavity trees should be searched for evidence of potential nesting birds.

- **The Project will impact Northern Spotted Owl Habitat.**

Recommendation: Northern Spotted Owl surveys are required. The protocol survey requires a minimum of 2 years of surveys prior to tree removal when harvesting within northern spotted owl habitat, with surveys required in each year harvest activities are to occur. A separate northern spotted owl assessment report has been completed specifically for this Project and is within Attachment #7.

- **The Project has the potential to impact roosting bats.**

Recommendation: If initial ground disturbance occurs during the bat maternity roosting season (15MAR – 15SEP), a preconstruction potential bat roosting tree survey will be necessary. The preconstruction survey shall consider all potential bat roosting trees within 500’ of earthmoving activities and related project construction activities. The surveyor will flag and map trees that could potentially be used by roosting bats. If no suitable tree roosting habitat is detected, then no further surveys will be warranted.

If potential roosting trees are found and subject to removal as part of the proposed project, they should be removed over the course of two days. On the first day, as late in the day as possible, some limbs may be removed (if there are any) as well as other nearby trees not flagged as potential bat roosting habitat. This amount of disturbance should cause any roosting bats to find another roost during their nighttime foraging. As the potentially roosting bats will have left over the course of the night, the rest of the tree can be harvested on the second day, as late in the day as possible.

If a maternal roosting site is found within or immediately adjacent to the Project boundary, then those trees shall be removed between 15AUG – 15OCT or before evening temperatures fall below 45-degree Fahrenheit and/or more than 1” of rainfall within 24 hours occurs; OR remove trees between 28FEB and 15APR.

- **Wildlife Fencing:**

Recommendation: Per the landowner, the property is already fenced and no new fencing is proposed as a result of this project. If new fencing becomes necessary:

Fences should be limited to vineyard blocks to allow larger wildlife species to move freely through the rest of the property. Permanent exclusion fences for vineyards should be 7' to 8' high. Six-inch square mesh at the base should be used to allow smaller mammals and birds to move through the fence. Posts should be set at 8' to 20' intervals. Place gates at each corner, where accidentally trapped animals are more likely to find an escape. At a minimum, for the first year after construction, make the fence more visible by hanging flagging; and this will prevent fast moving animals from colliding into them.

IX. SUMMARY

This Report is provided as background information necessary for evaluating potential impacts of this Project on local wildlife, plant, and habitat resources.

The proposed project will not have a substantial adverse effect, either directly or through habitat modifications, on any special status species listed by United States Fish and Wildlife Service or California Department of Fish and Wildlife provided the Project Recommendations are followed.

The proposed project will not interfere substantially with the movement of any native resident or migratory wildlife or plant species provided the Project Recommendations are followed.

X. LIST OF ABBREVIATIONS & ACRONYMS

APN Assessor's Parcel Number
BGEPA Bald and Golden Eagle Protection Act
BREA Biological Resources Evaluation Area: includes all lands within 1 mile of the boundaries of the parcel(s) involved plus the CalFire-defined drainage upstream and including the subject parcel(s) utilizing a standard community classification scheme. Used interchangeably with BRAA (Biological Resources Assessment Area)
BRRS Biological Resources Reconnaissance Survey
CalFire California Department of Forestry and Fire Protection
CARI California Aquatic Resource Inventory
CDFW California Department of Fish & Wildlife
CCR California Code of Regulations
CESA California Endangered Species Act
CEQU California Environmental Quality Act
CFGC California Fish & Game Code
CFR Code of Federal Regulations
CNDDB California Natural Diversity Database
CRPR California Rare Plant Rankings
CNPPA California Native Plant Protection Act
CNPS California Native Plant Society
CWA Clean Water Act
ECP Erosion Control Plan
EFH Essential Fish Habitat
ESA Endangered Species Act
FESA Federal Endangered Species Act
FP Fully Protected
GIS Geographic Information System
IPaC Information Planning and Consultation System
MBTA Migratory Bird Treaty Act
MCV Manual of California Vegetation
NOAA National Oceanic and Atmospheric Administration
NMFS National Marine Fisheries Service
NEPA National Environmental Protection Act
NRCS Natural Resource Conservation Service
NWI National Wetland Inventory
RWQCB Regional Water Quality Control Board
SFP State Fully Protected Species
SSC Species of Special Concern
USFWS United States Fish & Wildlife Service
WBWG Western Bat Working Group
WHR Wildlife Habitat Relationship System

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Maps

Map #1 = Vicinity Map
Map #2 = Engineers Project Map(s)
Map #3 = Study Area (Includes Project Area) – Topographic
Map #4 = Study Area (Includes Project Area) – Aerial
Map #5 = Parcel Vegetation Map
Map #6 = BREA Vegetation Map (GIS source: Calveg)
Map #7 = Survey Routes
Map #8 = Location of Special Interest Areas Identified

Map #1

1510 Acquisition Expansion - Vicinity Map

Legend

- Parcel Boundary
- 1510 Conversion Area

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

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1 in = 2,000 ft

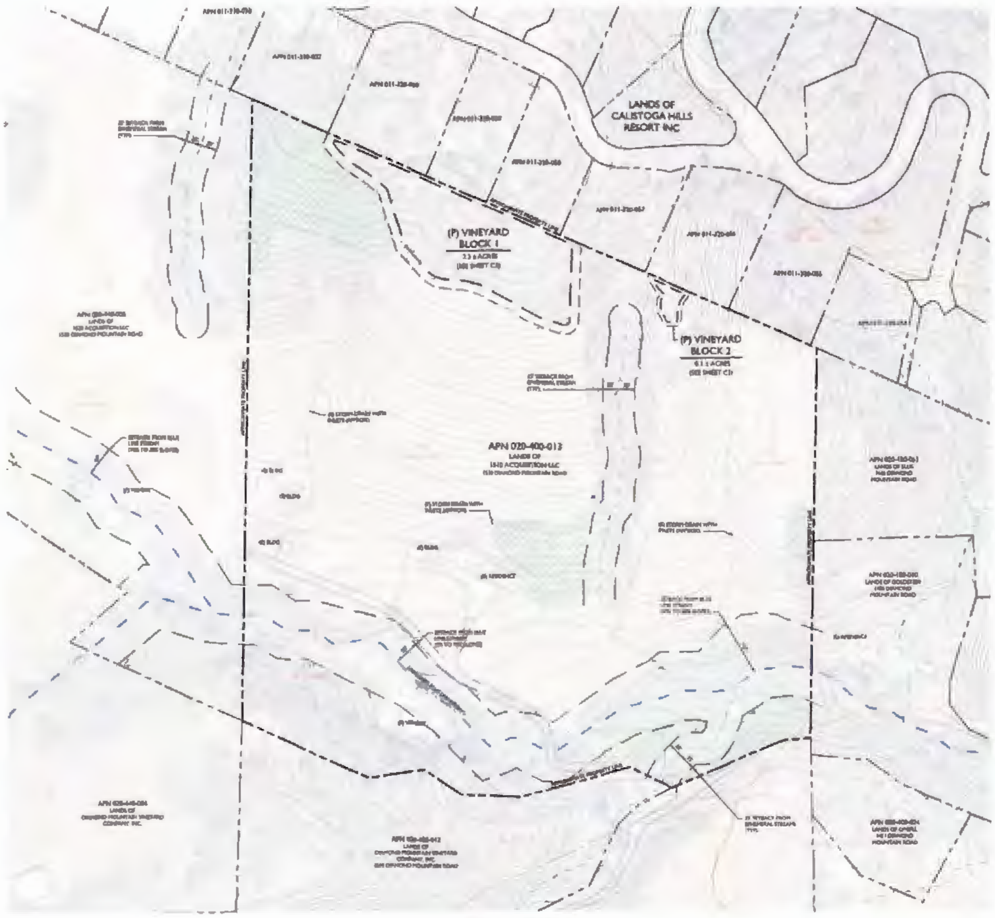
Forest Ecosystem Management

Date: 6/13/2023

1510 ACQUISITION LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN

Map #2



OVERALL SITE PLAN

LOCATION MAP

PROJECT INFORMATION:

PROPERTY OWNER & APPLICANT:
1510 ACQUISITION LLC
1155 CONNECTICUT AVENUE, SUITE 1200
WASHINGTON, DC 20036

SITE ADDRESS:
1510 DIAMOND MOUNTAIN ROAD
CALISTOGA, CA 94515

ASSESSOR'S PARCEL NUMBER:
020-400-013

PARCEL SIZE:
35.8 ± ACRES

PROJECT SIZE:
2.4 ± ACRES DISTURBED
1.9 ± ACRES PLANTED

ZONING:
AGRICULTURAL WATERSHED (AW)

SHEET INDEX:

- C1 COVER SHEET AND OVERALL SITE PLAN
- C2 NOTES AND ABBREVIATIONS
- C3 EROSION CONTROL PLAN
- C4 DETAILS

STREAM SETBACK NOTE:

STREAM LOCATIONS AND CLASSIFICATIONS ARE SHOWN FOR GENERAL REFERENCE ONLY. THOSE STREAMS / SETBACKS NOT IMMEDIATELY ADJACENT TO THE PROJECT AREA WERE NOT FIELD VERIFIED SINCE NO WORK IS PROPOSED NEAR THOSE FEATURES.

FLOOD HAZARD NOTE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER [illegible] EFFECTIVE DECEMBER 2, 2008, THE PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA.

SOIL TYPE LEGEND:

SOBRANTE-FORWARD-FELTA COMPLEX, 30 TO 50 PERCENT SLOPES
FORWARD GRAVELLY LOAM, 30 TO 75 PERCENT SLOPES

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

LEGEND:

APPROXIMATE PROPERTY LINE (SUBJECT PARCEL)
APPROXIMATE PROPERTY LINE (ADJACENT PARCEL)
VINEYARD CLEARING LIMITS / VINEYARD AVENUE
LIMITS OF VINEYARD BLOCK
BLUELINE STREAM
EPHEMERAL STREAM
SOIL TYPE BOUNDARY
TREE CANOPY PRESERVATION AREA

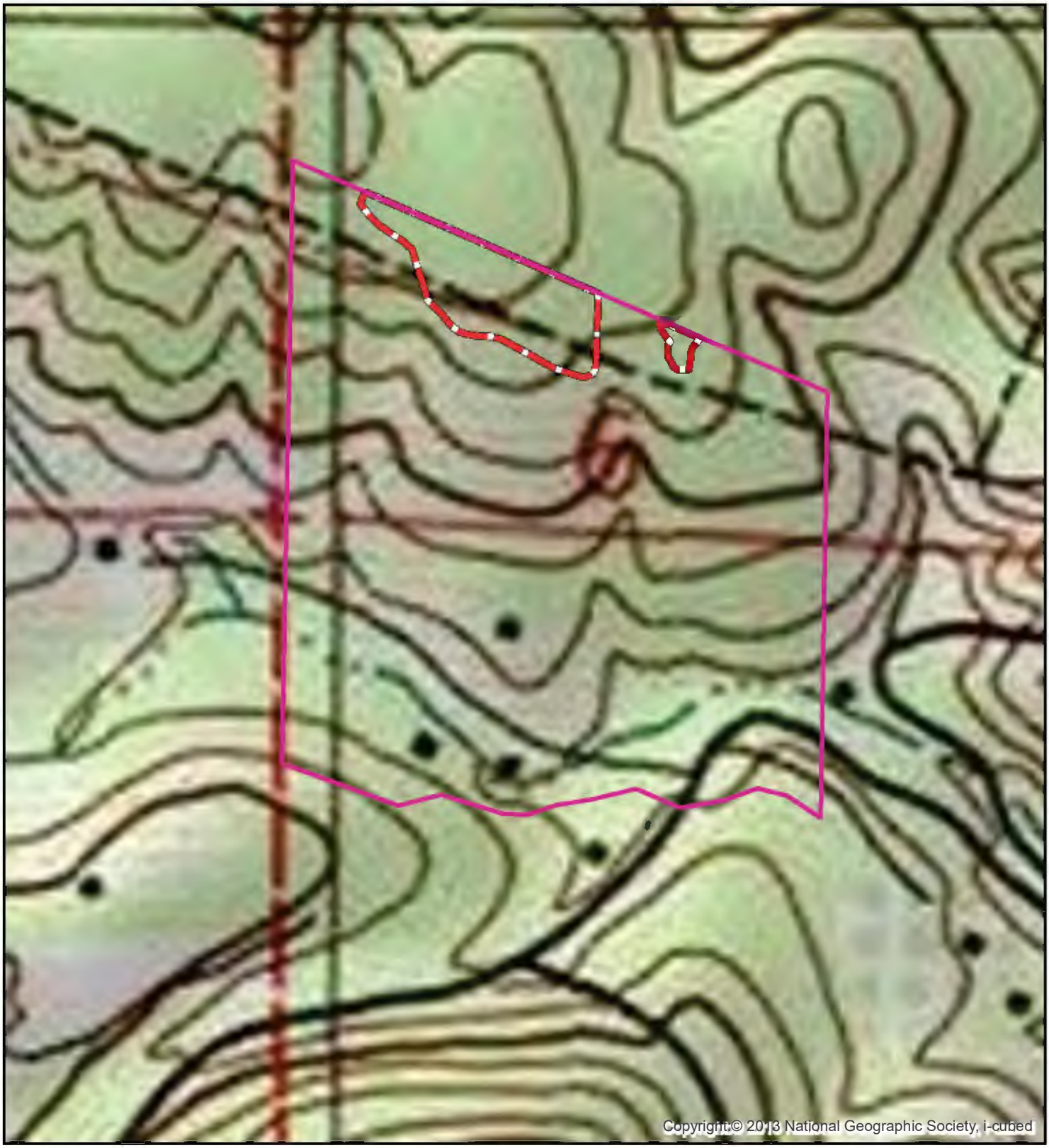
APPLIED

1510 ACQUISITION LLC
VINEYARD DEVELOPMENT EROSION CONTROL PLAN
OVERALL SITE PLAN

C1 OF 4

Map #3

1510 Acquisition Expansion - Project/Study Area



Legend

- Parcel Boundary
- 1510 Conversion Area

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

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1 in = 417 ft

Forest Ecosystem Management

Date: 6/13/2023

Map #4

1510 Acquisition Expansion - Project/Study Area

Legend

- Parcel Boundary
- 1510 Conversion Area

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

N
W E
S

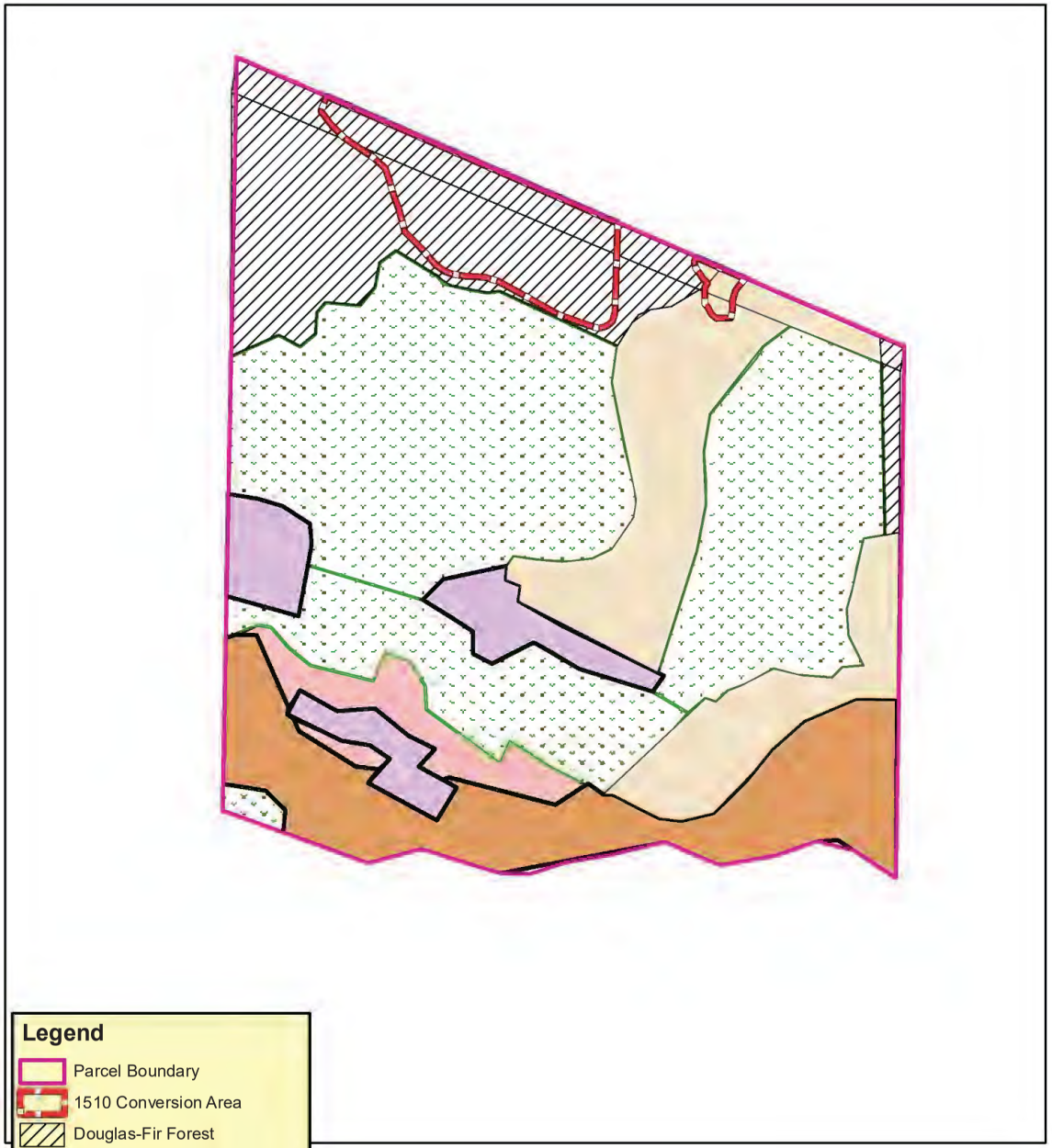
1 in = 417 ft

Forest Ecosystem Management

Date: 6/13/2023

Map #5

Vegetation Map for Parcel on 1510 Acquisition Expansion Project



Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

Forest Ecosystem Management &
Salix Natural Resource Management

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1 in = 333 ft

Date: 6/13/2023

Map #6

Vegetation Types within BREA - 1510 Acquisition Expansion Project

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

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1 in = 5,481 ft

Legend

- Parcel Boundary
- 1510 Conversion Area
- BREA
- <all other values>

MapClass

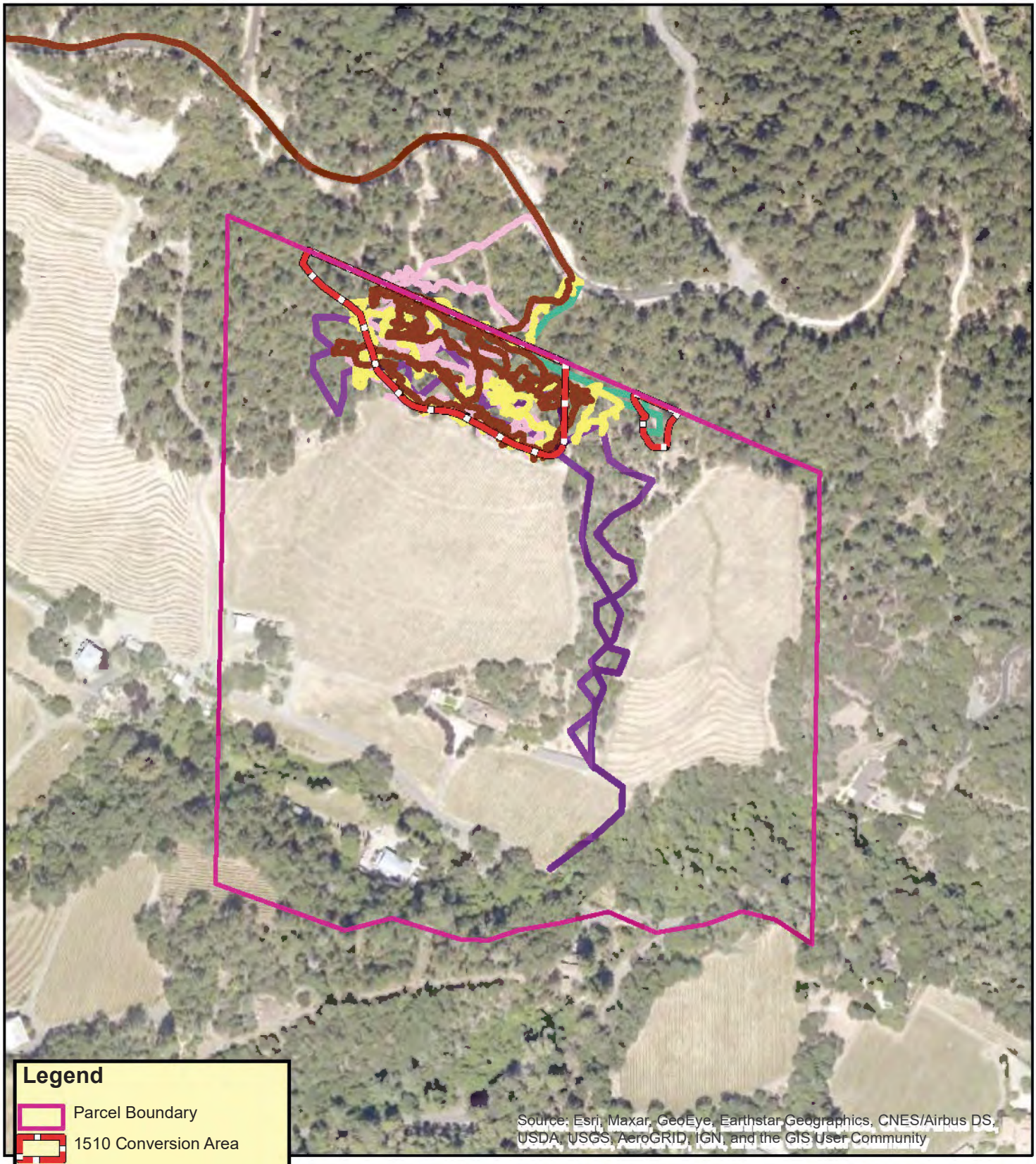
- Agriculture
- Blue Oak Alliance
- California Annual Grasslands Alliance
- California Bay - Madrone - Coast Live Oak - (Black Oak Big - Leaf Maple) NFD Super Alliance
- Chamise Alliance
- Coast Live Oak - Blue Oak - (Foothill Pine) NFD Association
- Coast Live Oak Alliance
- Coast Redwood - Douglas-fir / California Bay NFD Association
- Douglas-fir - Ponderosa Pine Alliance
- Douglas-fir Alliance
- Knobcone Pine Alliance
- Mixed Manzanita - (Interior Live Oak -California Bay - Chamise) West County NFD Alliance
- Mixed Oak Alliance
- Mixed Willow Super Alliance
- Oregon White Oak Alliance
- Rock Outcrop
- Unknown
- Upland Annual Grasslands & Forbs Formation
- Urban or Built-up
- Vacant
- Valley Oak - (California Bay - Coast Live Oak - Walnut - Ash) Riparian Forest NFD Association
- Valley Oak Alliance
- Water

Forest Ecosystem Management &
Salix Natural Resource Management

Date: 6/13/2023

Map #7

Survey Routes for 1510 Acquisition Expansion Project



Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

Forest Ecosystem Management &
Salix Natural Resource Management

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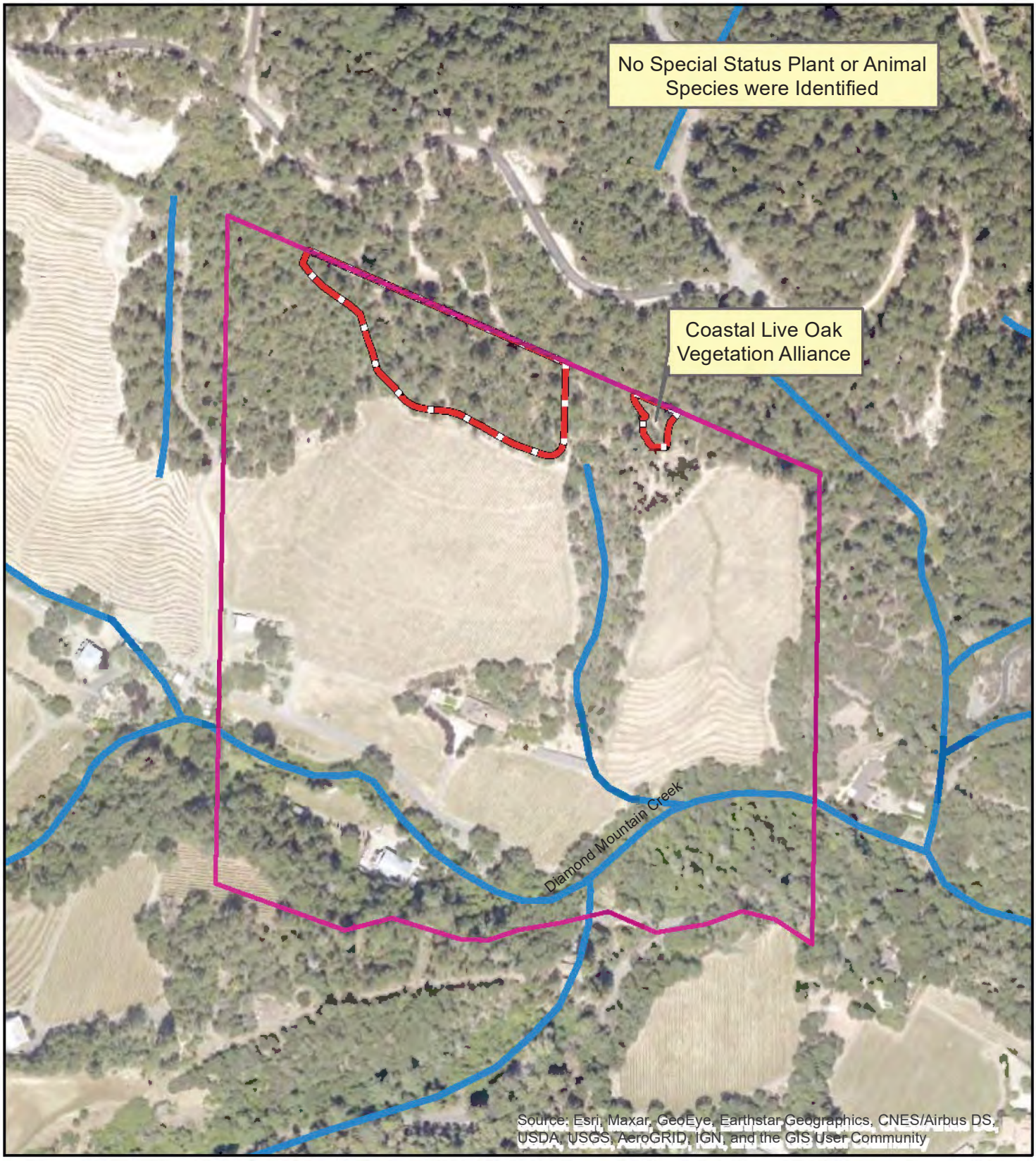
1 in = 375 ft

Date: 6/13/2023

Map #8

Areas of Interest for 1510 Acquisition Expansion Project



Legend

- Parcel Boundary
- 1510 Conversion Area
- Watercourses

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

Forest Ecosystem Management & Salix Natural Resource Management

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W E
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1 in = 375 ft

Date: 6/13/2023

Attachments

Attachment #1 = Photos of Study Area/Project Area
Attachment #2 = Special Status Plant Species Identified through Scoping
Attachment #3 = Plant Species Identified within Study Area
Attachment #4 = Special Status Animal Species Identified through Scoping
Attachment #5 = Animal Species Identified within Study Area
Attachment #6 = Sensitive Natural Communities Identified through Scoping
Attachment #7 = Northern Spotted Owl Assessment
Attachment #8 = Reference Material Including:

- Soil Survey Report
- BREA Map Delineation
- Cnddb Maps
- California WHR Report
- USFWS IPac Report
- NMFS EHM

Attachment #1

1510 Acquisition Vineyard Expansion

Photos Taken: May 2022

Within the Project Area:

Within the Project Area:

Songbird nest found on the ground. Had fallen or blown out of tree.

Attachment #2

Botanical Scoping List[1] for Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Lifeform	CRPR[2]	GRank[3]	SRank[4]	CESA[5]	FESA[6]	Blooming Period	Habitat	Micro Habitat	Elevation Low_m	Elevation High_m	Potential Habitat?
Amorpha californica var. napensis **	Napa false indigo	perennial deciduous shrub	1B.2	G4T2	S2	None	None	Apr-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland	Openings in forest or woodland or in chaparral.	50	2000	High
*Amsinckia lunaris**	bent-flowered fiddleneck	annual herb	1B.2	G3	S3	None	None	Mar-Jun	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland		3	500	High
Arctostaphylos stanfordiana ssp. decumbens*	Rincon Ridge manzanita	perennial evergreen shrub	1B.1	G3T1	S1	None	None	Feb-Apr(May)	Chaparral, Cismontane woodland	Highly restricted endemic to red rhyolites in Sonoma County. 90-375 m.	75	370	High
*Astragalus breweri**	Brewer's milk-vetch	annual herb	4.2	G3	S3	None	None	Apr-Jun	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland	Serpentinite (often), Volcanic	90	730	High
*Astragalus claranus**	Clara Hunt's milk-vetch	annual herb	1B.1	G1	S1	CE	FE	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland	Clay, Rocky, Serpentinite (sometimes), Volcanic (sometimes)	75	275	High
Brodiaea leptandra*	narrow-anthered brodiaea	perennial bulbiferous herb	1B.2	G3?	S3?	None	None	May-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland	Volcanic	110	915	High
*Castilleja ambigua var. ambigua**	johnny-nip	annual herb (hemiparasitic)	4.2	G4T4	S3S4	None	None	Mar-Aug	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools		0	435	High
*Ceanothus confusus**	Rincon Ridge ceanothus	perennial evergreen shrub	1B.1	G1	S1	None	None	Feb-Jun	Chaparral, Cismontane woodland, Closed-cone coniferous forest	Serpentinite (sometimes), Volcanic (sometimes)	75	1065	High
Ceanothus divergens*	Calistoga ceanothus	perennial evergreen shrub	1B.2	G2	S2	None	None	Feb-Apr	Chaparral	Rocky, serpentine or volcanic sites.	170	950	High
*Ceanothus purpureus**	holly-leaved ceanothus	perennial evergreen shrub	1B.2	G2	S2	None	None	Feb-Jun	Chaparral, Cismontane woodland	Rocky, Volcanic	120	640	High
*Ceanothus sonomensis**	Sonoma ceanothus	perennial evergreen shrub	1B.2	G2	S2	None	None	Feb-Apr	Chaparral	Sandy, serpentine or volcanic soils. 140-795 m.	215	800	High
Centromadia parryi ssp. parryi*	pappose tarplant	annual herb	1B.2	G3T2	S2	None	None	May-Nov	Chaparral, Coastal prairie, Marshes and swamps, Meadows and seeps, Valley and foothill grassland	Alkaline (often)	0	420	Unlikely
*Erigeron biolettii**	streamside daisy	perennial herb	3	G3?	S3?	None	None	Jun-Oct	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest	Mesic, Rocky	30	1100	High

Botanical Scoping List[1] for Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Lifeform	CRPR[2]	GRank[3]	SRank[4]	CESA[5]	FESA[6]	Blooming Period	Habitat	Micro Habitat	Elevation Low_m	Elevation High_m	Potential Habitat?
*Harmonia nutans**	nodding harmonia	annual herb	4.3	G3	S3	None	None	Mar-May	Chaparral, Cismontane woodland	Gravelly (sometimes), Rocky (sometimes), Volcanic	75	975	High
Lasthenia burkei	Burke's goldfields	annual herb	1B.1	G1	S1	CE	FE	Apr-Jun	Meadows and seeps, Vernal pools	Most often in vernal pools and swales.	15	600	Unlikely
Leptosiphon jepsonii	Jepson's leptosiphon	annual herb	1B.2	G2G3	S2S3	None	None	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland	Volcanic (usually)	100	500	Moderate
*Lilium rubescens**	redwood lily	perennial bulbiferous herb	4.2	G3	S3	None	None	Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Roadsides (sometimes), Serpentinite (sometimes)	30	1910	High
*Lomatium repostum**	Napa lomatium	perennial herb	1B.2	G2G3	S2S3	None	None	Mar-Jun	Chaparral, Cismontane woodland	Serpentinite	90	1030	High
Lupinus sericatus	Cobb Mountain lupine	perennial herb	1B.2	G2?	S2?	None	None	Mar-Jun	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest	In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine.	275	1525	High
*Monardella viridis**	green monardella	perennial rhizomatous herb	4.3	G3	S3	None	None	Jun-Sep	Broadleafed upland forest, Chaparral, Cismontane woodland		100	1010	High
Navarretia leucocephala ssp. bakeri	Baker's navarretia	annual herb	1B.1	G4T2	S2	None	None	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Mesic; Vernal pools and swales; adobe or alkaline soils.	5	1740	Unlikely
Poa napensis	Napa blue grass	perennial herb	1B.1	G1	S1	CE	FE	May-Aug	Meadows and seeps, Valley and foothill grassland	Moist alkaline meadows fed by runoff from nearby hot springs.	100	200	Unlikely
Puccinellia simplex	California alkali grass	annual herb	1B.2	G3	S2	None	None	Mar-May	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools	Alkaline, vernally mesic. Sinks, flats, and lake margins.	2	930	Unlikely
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	perennial herb	1B.2	G5T2	S2	None	None	Feb-May	Marshes and swamps, Meadows and seeps	Alkaline.	0	255	Unlikely
*Trichostema ruygtii**	Napa bluecurls	annual herb	1B.2	G1G2	S1S2	None	None	Jun-Oct	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools	Often in open, sunny areas. Also has been found in vernal pools.	30	680	High
Trifolium hydrophilum	saline clover	annual herb	1B.2	G2	S2	None	None	Apr-Jun	Marshes and swamps, Valley and foothill grassland, Vernal pools	Mesic, alkaline sites.	0	300	Unlikely

Botanical Scoping List[1] for Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Lifeform	CRPR[2]	GRank[3]	SRank[4]	CESA[5]	FESA[6]	Blooming Period	Habitat	Micro Habitat	Elevation Low_m	Elevation High_m	Potential Habitat?
*Triteleia lugens**	dark-mouthed triteleia	perennial bulbiferous herb	4.3	G4?	S4?	None	None	Apr-Jun	Broadleafed upland forest, Chaparral, Coastal scrub, Lower montane coniferous forest		100	1000	High

[1]March 2022 CNDDB, CNPS, Calistoga, Detert Resevoir, Aetna Springs, St. Helena, Rutherford, Kenwood, Santa Rosa, Mark West Springs, Mount St. Helena USGS 7.5' Quadrangle Maps and USFWS IPaC List
[2]CRPR = California Rare Plant Ranking
[3]NatureServe Global Ranking
[4]NatureServe State Ranking
[5]CE = California Endangered, CT = California Threatened, CR = California Rare
[6]FE = Federally Endangered
* Personal Addition
** Documented within BREA

Attachment 2. Botanical Scoping List[1] for Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Lifeform	CRPR[2]	GRank[3]	SRank[4]	CESA[5]	FESA[6]	Blooming Period	Habitat	Micro Habitat	Elevation Range meters	Potential Habitat?
Amorpha californica var. napensis **	Napa false indigo	perennial deciduous shrub	1B.2	G4T2	S2	None	None	Apr-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland	Openings in forest or woodland or in chaparral.	50-200	High
Arctostaphylos stanfordiana ssp. decumbens **	Rincon Ridge manzanita	perennial evergreen shrub	1B.1	G3T1	S1	None	None	Feb-Apr(May)	Chaparral, Cismontane woodland	Highly restricted endemic to red rhyolites in Sonoma County.	75-370	Moderate
*Astragalus breweri**	Brewer's milk-vetch	annual herb	4.2	G3	S3	None	None	Apr-Jun	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland	Serpentinite (often), Volcanic	90-730	High
*Astragalus claranus**	Clara Hunt's milk-vetch	annual herb	1B.1	G1	S1	CE	FE	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland	Clay, Rocky, Serpentinite (sometimes), Volcanic (sometimes)	75-275	High
Brodiaea leptandra **	narrow-anthered brodiaea	perennial bulbiferous herb	1B.2	G3?	S3?	None	None	May-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland	Volcanic	110-915	High
*Ceanothus confusus**	Rincon Ridge ceanothus	perennial evergreen shrub	1B.1	G1	S1	None	None	Feb-Jun	Chaparral, Cismontane woodland, Closed-cone coniferous forest	Serpentinite (sometimes), Volcanic (sometimes)	75-1065	High
Ceanothus divergens **	Calistoga ceanothus	perennial evergreen shrub	1B.2	G2	S2	None	None	Feb-Apr	Chaparral	Rocky, serpentine or volcanic sites.	175-950	High
*Ceanothus purpureus**	holly-leaved ceanothus	perennial evergreen shrub	1B.2	G2	S2	None	None	Feb-Jun	Chaparral, Cismontane woodland	Rocky, Volcanic	120-640	High
*Ceanothus sonomensis**	Sonoma ceanothus	perennial evergreen shrub	1B.2	G2	S2	None	None	Feb-Apr	Chaparral	Sandy, serpentine or volcanic soils. 140-795 m.	215-800	High
Centromadia parryi ssp. parryi **	pappose tarplant	annual herb	1B.2	G3T2	S2	None	None	May-Nov	Chaparral, Coastal prairie, Marshes and swamps, Meadows and seeps, Valley and foothill grassland	Alkaline (often)	0-420	Unlikely
*Erigeron biolettii**	streamside daisy	perennial herb	3	G3?	S3?	None	None	Jun-Oct	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest	Mesic, Rocky	30-1100	High
Lasthenia burkei **	Burke's goldfields	annual herb	1B.1	G1	S1	CE	FE	Apr-Jun	Meadows and seeps, Vernal pools	Most often in vernal pools and swales.	15-600	Unlikely
Leptosiphon jepsonii **	Jepson's leptosiphon	annual herb	1B.2	G2G3	S2S3	None	None	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland	Volcanic (usually)	100-500	Moderate

*Lilium rubescens**	redwood lily	perennial bulbiferous herb	4.2	G3	S3	None	None	Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Roadsides (sometimes), Serpentinite (sometimes)	30-1910	High
*Lomatium repostum**	Napa lomatium	perennial herb	1B.2	G2G3	S2S3	None	None	Mar-Jun	Chaparral, Cismontane woodland	Serpentinite	90-1030	High
Lupinus sericatus	Cobb Mountain lupine	perennial herb	1B.2	G2?	S2?	None	None	Mar-Jun	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest	In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine.	275-1525	High
*Monardella viridis**	green monardella	perennial rhizomatous herb	4.3	G3	S3	None	None	Jun-Sep	Broadleafed upland forest, Chaparral, Cismontane woodland		100-1010	High
Navarretia leucocephala ssp. bakeri*	Baker's navarretia	annual herb	1B.1	G4T2	S2	None	None	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Mesic; Vernal pools and swales; adobe or alkaline soils.	5-1740	Unlikely
Poa napensis*	Napa blue grass	perennial herb	1B.1	G1	S1	CE	FE	May-Aug	Meadows and seeps, Valley and foothill grassland	Moist alkaline meadows fed by runoff from nearby hot springs.	100-200	Unlikely
Puccinellia simplex*	California alkali grass	annual herb	1B.2	G3	S2	None	None	Mar-May	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools	Alkaline, vernally mesic. Sinks, flats, and lake margins.	2-930	Unlikely
Spergularia macrotheca var. longistyla*	long-styled sand-spurrey	perennial herb	1B.2	G5T2	S2	None	None	Feb-May	Marshes and swamps, Meadows and seeps	Alkaline.	0-255	Unlikely
*Trichostema ruygtii**	Napa bluecurls	annual herb	1B.2	G1G2	S1S2	None	None	Jun-Oct	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools	Often in open, sunny areas. Also has been found in vernal pools.	30-680	High
Trifolium hydrophilum*	saline clover	annual herb	1B.2	G2	S2	None	None	Apr-Jun	Marshes and swamps, Valley and foothill grassland, Vernal pools	Mesic, alkaline sites.	0-300	Unlikely
*Triteleia lugens**	dark-mouthed triteleia	perennial bulbiferous herb	4.3	G4?	S4?	None	None	Apr-Jun	Broadleafed upland forest, Chaparral, Coastal scrub, Lower montane coniferous forest		100-1000	High

[1]March 2022 CNDDB, CNPS, Calistoga, Detert Resevoir, Aetna Springs, St. Helena, Rutherford, Kenwood, Santa Rosa, Mark West Springs, Mount St. Helena USGS 7.5' Quadrangle Maps and USFWS IPaC List
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[5]CE = California Endangered, CT = California Threatened, CR = California Rare
[6]FE = Federally Endangered
* Personal Addition
** Documented within BREA

Attachment 3. Calistoga Hills Biological Assessment - Plants Observed During 2022 Surveys

Scientific Name	Common Name	Family	Origin	Cal IPC
Conifers				
Pseudotsuga menziesii	Douglas-fir	PINACEAE	Native	
Dicots				
Rhus aromatica	fragrant sumac	ANACARDIACEAE	Native	
Toxicodendron diversilobum	poisonoak	ANACARDIACEAE	Native	
Daucus pusillus	wild carrot	APIACEAE	Native	
Sanicula laciniata	coast sanicle	APIACEAE	Native	
Torilis arvensis	tall sock destroyer	APIACEAE	Non-native	Moderate
Anisocarpus madiodes	woodland madia	ASTERACEAE	Native	
Anthemis sp.	dog fennel	ASTERACEAE	Non-native	
Baccharis pilularis	coyote brush	ASTERACEAE	Native	
Eriophyllum lanatum var. *achilloides*	yarrow-leaved sunflower	ASTERACEAE	Native	
Eurybia radulina	roughleaf aster	ASTERACEAE	Native	
Hypochaeris sp.	cats ear	ASTERACEAE	Non-native	Moderate
Lactuca serriola	prickly lettuce	ASTERACEAE	Non-native	
Leontodon saxatilis	hawkbit	ASTERACEAE	Non-native	
Logfia gallica	narrowleaf cottonrose	ASTERACEAE	Non-native	
Madia gracilis	slender tarweed	ASTERACEAE	Native	
Pseudognaphalium thermale	small-headed cudweed	ASTERACEAE	Native	
Sonchus oleraceus	common sow thistle	ASTERACEAE	Non-native	
Calycanthus occidentalis	spicebush	CALYCANTHACEAE	Native	
Lonicera hispidula var. *vacillans*	hairy honeysuckle	CAPRIFOLIACEAE	Native	
Calystegia collina ssp. *collina*	Hillside morning glory	CONVULVACEAE	Native	
Arbutus menziesii	madrone	ERICACEAE	Native	
Acmispon glaber	deerweed	FABACEAE	Native	
Acmispon grandiflorus var. *grandiflorus*	chaparral lotus	FABACEAE	Native	
Genista monspessulana	French broom	FABACEAE	Non-native	High
Lathyrus vestitus var. *vestitus*	wild pea	FABACEAE	Native	
Trifolium hirtum	rose clover	FABACEAE	Non-native	Limited
Trifolium sp.	clover	FABACEAE	Native	
Vicia benghalensis	purple vetch	FABACEAE	Non-native	
Vicia hirsuta	hairy vetch	FABACEAE	Non-native	
Quercus agrifolia var. *agrifolia*	coast live oak	FAGACEAE	Native	
Quercus douglasii	blue oak	FAGACEAE	Native	
Quercus kelloggii	black oak	FAGACEAE	Native	

Hypericum concinnum	gold wire	HYPERICACEAE	Native	
Umbellularia californica	laurel	LAURACEAE	Native	
Fraxinus latifolia	Oregon ash	OLEACEAE	Native	
Olea europaea	olive	OLEACEAE	Non-native	Limited
Epilobium brachycarpum	willow herb	ONAGRACEAE	Native	
Castilleja foliolosa	Texas paintbrush	OROBANCHACEAE	Native	
Evernia prunastri	oakmoss	PARMELIACEAE	Native	
Flavoparmelia caperata	common greenshield lichen	PARMELIACEAE	Native	
Parmelina coleae	fringed shield lichen	PARMELIACEAE	Native	
Parmelia sulcata	shield lichen	PARMELIACEAE	Native	
Usnea intermedia	western bushy beard	PARMELIACEAE	Native	
Diplacus aurantiacus	orange monkey bush	PHRYMACEAE	Native	
Physconia americana	fancy frost lichen	PHYSCIACEAE	Native	
Collomia heterophylla	varied-leaf collomia	POLEMONIACEAE	Native	
Polygala californica	California milkwort	POLYGALACEAE	Native	
Adenostoma fasciculatum	chemise	ROSACEAE	Native	
Cotoneaster sp.	cotoneaster	ROSACEAE	Non-native	Moderate
Heteromeles arbutifolia	toyon	ROSACEAE	Native	
Rosa spithamea	Sonoma rose	ROSACEAE	Native	
Galium aparine	cleavers	RUBIACEAE	Non-native	
Galium bolanderi	Bolander's bedstraw	RUBIACEAE	Native	
Galium californicum var. *californicum*	California bedstraw	RUBIACEAE	Native	
Acer macrophyllum	bigleaf maple	SAPINDACEAE	Native	
Monocots				
Chlorogalum pomeridianum var. *pomeridianum*	soap plant	AGAVACEAE	Native	
Iris macrosiphon	bowl-tubed iris	IRIDACEAE	Native	
Calochortus amabilis	golden fairy lantern	LILIACEAE	Native	
Dipterostemon capitatum ssp. *capitatum*	blue dicks	THEMIDACEAE	Native	
Piperia transversa	mountain piperia	ORCHIDACEAE	Native	
Aira praecox	yellow-haired grass	POACEAE	Non-native	
Brachypodium distachyon	purple false brome	POACEAE	Non-native	Moderate
Bromus diandrus	ripgut grass	POACEAE	Non-native	Moderate
Bromus tectorum	cheat grass	POACEAE	Non-native	High
Elymus caput-medusae	Medusa head	POACEAE	Non-native	High
Elymus glaucus ssp. *glaucus*	wild rye	POACEAE	Native	
Festuca californica	California fescue	POACEAE	Native	
Festuca perennis	Italian rye grass	POACEAE	Non-native	Moderate
Melica sp.	onion grass	POACEAE	Native	

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Taxon: Birds							
Accipiter straitus (Sharp-Shinned Hawk)		WL	Dense forested stands in close proximity to open areas.	Nesting: Usually in dense, pole and small-tree stands of conifers, which are cool, moist, well shaded, close to water.	Cnddb lists occurrences within BREA & 5-Mile Assessment Area	No	Moderate. Habitat present within Project Area
Agelaius tricolor (Tricolored Blackbird)		ST	Highly colonial species in freshwater marshes, swamps, and wetlands.	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	WHR lists as possible within the BREA	No	Unlikely. Nesting Habitat not present.
Agelaius phoeniceus aciculatus (Kern Red-Winged Blackbird)		SSC			WHR lists Red-Winged Blackbirds as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Kern Red-Winged Blackbirds
Aimophila ruficeps obscura (Rufous-Crowned Sparrow)		SSC	Mixed chaparral and coastal scrub habitats (especially coastal sage). Frequents steep, often rocky hillsides with grass and forb patches and grassy slopes without shrubs but with rocky outcrops.	Secretive, seeking cover in shrubs, rocks, and grass/forb patches. Nest on ground as base of grass tussock or shrub. Breed/feeds on steep, dry, herbage-covered hillsides with scattered shrubs and rocky outcrops	WHR lists as possible within the BREA.	No	Unlikely. Habitat not present.
Ammodramus savannarum (Grasshopper Sparrow)		SSC	Summer Resident - March - September. Short to middle-height, moderately open grasslands with scattered shrubs.	Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	WHR lists as possible within the BREA	No	Unlikely. Habitat not present.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Anser albifrons elgasi (Tule Greater White-Fronted Goose)		SSC	Winter range - restricted mainly to vicinity of federal and state refuges and the Butte Sink in the Sacramento Valley, Grizzly Island Wildlife Area and adjacent duck clubs in Suisun Marsh. Marginally in the Napa Marshes.	Does not breed in California. Winter frequent marshes dominated by tulles, bulrushes, and cattails.	WHR lists Greater White-fronted goose as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Tule Greater White-Fronted Goose. Habitat not present for Greater White-Fronted Geese.
Aquila chrysaetos (Golden Eagle)		FP/WL	Rolling foothills, mountain areas, sage-juniper flats, and desert.	Nests on cliffs of all heights and in large trees in open areas. Build large platform nests (often 10' across and 3' high)	WHR lists as possible within the BREA	No	Unlikely. Open areas within watershed are agriculturally developed reducing habitat suitability.
Ardea alba (Great Egret)		Sensitive	Groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas.	Colony nester usually near water in large trees. Feeds in shallow water and along shores of estuaries, lakes, ditches, and slow-moving streams and in irrigated cropland and pastures.	WHR lists as possible within BREA	No	Unlikely. Nesting/foraging habitat not present.
Ardea herodias (Great Blue Heron)		Sensitive	Perch and roost in secluded tall trees isolated from human activities, near aquatic foraging areas.	Colony nester usually near water in large snags or live trees. Tallest trees used near shallow-water feeding areas.	WHR lists as possible within BREA	No	Unlikely. Nesting/Foraging habitat not present.
Artemisiospiza belli belli (Bell's Sage Sparrow)		WL	On coastal slopes, mostly absent north of Sonoma County. Cover is found in fairly dense stands in chaparral and shrub habitats in the breeding season. Uses arid open shrub habitats in the winter.	Dense chaparral and desert scrub habitats. Nests located on ground beneath a shrub. Drinks water regularly.	WHR lists the Bell's Sparrow possible within the BREA.	No	Unlikely. May be outside Bell's Sage Sparrow range. Nesting/foraging habitat not present.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Asio flammeus (Short-Eared Owl)		SSC	Open treeless areas with elevated sites for perches and dense vegetation for roosting and nesting.	Nests on dry ground in depression concealed in vegetation. Dense vegetation, tall grass, brush, ditches, and wetlands	WHR lists as possible within BREA	No	Unlikely. Forested. Open treeless areas in the area are agriculturally developed reducing habitat suitability.
Asio otus (Long-Eared Owl)		SSC	Dense, riparian and live oak thickets near meadow edges, and nearby woodlands and forest habitats. Dense conifer stands at high elevations.	Nests in riparian or other thickets with small, densely canopied trees. Often congregates in flocks or family groups.	WHR lists as possible within BREA	No	Unlikely. Lack riparian and live oak thickets near meadow edges.
Athene cunicularia (Burrowing Owl)		SSC	Grasslands and shrublands with perches and burrows.	Nests in old burrow of ground squirrel or other small mammal. Pipes, culverts, and nest boxes used where burrows scarce. Semicolonial	WHR lists as possible within BREA	No	Unlikely. Forested. Open treeless areas in the area are agriculturally developed reducing habitat suitability.
Aythya americana (Redhead)		SSC	Lacustrine waters - large lakes with extensive areas of emergent vegetation.	Nests in fresh emergent wetlands near open water.	WHR lists as possible within the BREA	No	None. Lacking suitable water source.
Bucephala islandica (Barrow's Goldeneye)		SSC	Estuarine (lagoons and bays), brackish lacustrine waters.	Shelters in open water.	Winter Range. WHR lists as possible within BREA	No	None. Lacking suitable water source.
Callipepla californica catalinensis (Catalina California Quail)		SSC	Located on Santa Catalina Island, Santa Rosa and Santa Cruz islands		WHR lists CA Quail as possible within BREA. This Project is outside the listed subspecies range.	No	None. Outside known range of Catalina California Quail.
Charadrius nivosus nivosus (Western Snowy Plover)	FT	SSC	Sandy beaches, salt pond levees & shores of large alkali lakes.	Needs sandy, gravelly or friable soils for nesting.	WHR lists as possible within BREA	No	None. Lacking suitable habitat.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Charadrius montanus (Mountain Plover)		SSC	Short-grass prairie habitats or their equivalent. Flat and nearly devoid of vegetation	Fallow, grazed or burned sites.	WHR lists as possible within BREA. This Project is outside the listed species range	No	None. Outside known range
Circus hudsonius (Northern Harrier)		SSC	Flat, hummocky open areas of tall dense grasses; moist or dry shrubs; and edges.	Nests on ground in shrubby vegetation, usually at marsh edge. Most nest in emergent wetland or along rivers or lakes, but may nest in grassland, grain fields, or on sagebrush flats.	WHR lists as possible within the BREA	No	Unlikely. Lacking suitable nesting habitat.
Cistothorus palustris clarkae (Clark's Marsh Wren)		SSC			WHR lists Marsh Wrens as possible within BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Clark's Marsh Wrens
Contopus cooperi (Olive-Sided Flycatcher)		SSC	Montane conifer forests where tall trees overlook canyons, meadows, lakes or open terrain.	High perches. Tall trees for nesting and roosting sites	WHR lists as possible within BREA	No	Moderate. Habitat present within Project Area
Elanus leucurus (White-Tailed Kite)		FP	Herbaceous lowlands with variable tree growth and dense vole populations	Dense, broad-leafed deciduous trees used for nesting and roosting	WHR lists as possible within BREA	No	Unlikely. Deciduous trees lacking. Open areas are agricultural decreasing habitat suitability
Falco mexicanus (Prairie Falcon)		WL	Annual grassland to alpine meadows, but primarily perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub. Generally along coastal fog belt.	Nests in sheltered ledge of cliff overlooking large open area. Will also use old raven or eagle stick nest on cliff, bluff, or rock outcrop.	Cnddb lists occurrences within 5-mile Assessment Area.	No	Unlikely. Surrounding open areas agriculturally developed reducing habitat suitability. Lacking suitable nest sites.
Falco peregrinus anatum (American Peregrine Falcon)	Delisted	FP	Breeds near wetlands, lakes, rivers or other water on high cliffs, banks dunes, mounds.	Protected cliffs and ledges	Cnddb lists occurrences within BREA & 5-Mile Assessment Area. WHR lists as possible within the BREA	No	Unlikely. Lacking nesting habitat and suitable water sources.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Gavia immer (Common Loon)		SSC	Aquatic Habitat	Require 60' open water for running talk-off. Like deep water for diving cover.	Winter Range Only. WHR lists possibly occurring in BREA	No	Unlikely. Lacking suitable aquatic habitat.
Geothlypis trichas sinuosa (Saltmarsh or SF Common Yellowthroat)		SSC	Napa sloughs and southern Sonoma County. Wetlands and riparian forests.	Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	WHR lists as possible within BREA	No	Unlikely. Lacking suitable nesting habitat.
Haliaeetus leucocephalus (Bald Eagle)	Delisted	SE	Large, stoutly limbed trees or snags near water	Large, old-growth trees or snags in remote mixed stands near water	Rarefind and WHR lists as possible within the BREA	No	Unlikely. Lacking large trees near water.
Icteria virens (Yellow-Breasted Chat)		SSC	Early successional riparian woodlands with shrubs and open canopy	Dense brushy thickets near water used for nesting	WHR lists as possible within the BREA.	No	Unlikely. Lacking suitable nesting habitat.
Lanius ludovicianus mearnsi (San Clemente Loggerhead Shrike)	FE	SSC	Western juniper woodlands, chaparral, oak woodland or oak savannah, coastal shrub, and riparian areas.	Tall shrubs or trees for perches/nests, open areas for hunting, impaling sites for prey storage.	WHR lists Loggerhead Shrikes as possible within BREA. This Project is outside the listed subspecies range.	No	None. This Project is outside the known range of San Clemente Loggerhead Shrike.
Laterallus jamaicensis coturniculus (California Black Rail)		ST	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays.	Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	WHR lists as possible within the BREA	No	Unlikely. Lacking suitable nesting habitat.
Melospiza melodia spp. (Song Sparrow)		SSC	Tidal Salt marshes. Specimens at Petaluma and Second Napa Slough, Sonoma County, Napa River and Vallejo Marsh.	Dense vegetation of tidal salt marshes. Associated with high marsh, particularly Pickleweed and gumplant.	WHR lists Song Sparrow as possible within the BREA. This Project is outside the listed subspecies ranges.	No	None. Outside known range of listed Song Sparrow Subspecies (Channel Island, Suisun, Modesto population, Alameda, and San Pablo subspecies)

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Melozone crissalis eremophilus (Inyo California Towhee)	FT	SE			WHR lists the California Towhee as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Inyo California Towhee.
Pandion haliaetus (Osprey)		WL	Rivers, lakes, reservoirs, bays, estuaries and surf zones with large trees to nest	Large trees, snags, and dead-topped trees in open forest habitats near fish bearing waters	WHR lists as possible within the BREA	No	Unlikely. Lacking suitable aquatic habitat.
Passerculus sandwichensis beldingi (Belding Savannah Sparrow)		SE	Tidal marshes, grasslands, weedy spoil areas, canal banks, and bottomland pastures.	Tidal marshes and grasslands in coastal fog belt. In Pickleweed and salt grass and adjacent to salt marshes.	WHR lists the Savannah Sparrow as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Belding Savannah Sparrow.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Pelecanus erythrorhynsho (American White Pelican)		SSC	Nests only at large lakes in Klamath Basin. Roosts at night along edge of water, on beaches, sandbars, or old driftwood (never in trees)	Nest at large freshwater and salt water lakes, usually on small islands or remote dikes.	WHR lists possible habitat present within the BREA. This Project is outside the listed species nesting range. May be seen flying over during migration.	No	None. Outside known breeding range
Pipilo maculatus clementae (San Clemente Spotted Towhee)	BCC	SSC	Resident of Santa Rosa, Santa Cataline, and San Clemente Islands.		WHR lists the Spotted Towhee as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of San Clemente Spotted Towhee.
Pooecetes gramineus affinis (Oregon Vesper Sparrow)		SSC			WHR lists the Vesper Sparrow as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Oregon Vesper Sparrow.
Progne subis (Purple Martin)		SSC	Valley foothills and montane hardwood, montane hardwood/conifer and riparian habitats. Coniferous forests	Often prefer tall isolated tree or snag in open forest. Nests in snag or cavity tree, nesting box, under bridge or in culvert.	WHR lists as possible within BREA	No	Moderate. Habitat present within Project Area
Riparia riparia (Bank Swallow)		CT			WHR lists as possible within BREA. This Project is outside this listed species range	No	None. Outside known range
Setophaga petechia (Yellow Warbler)		SSC	Riparian habitat in willows or cottonwoods.	Riparian vegetation close to water along streams and in wet meadows	WHR lists as possible within the BREA	No	Unlikely. Lacking suitable riparian habitat

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Strix occidentalis caurina (Northern Spotted Owl)	FT	ST	Requires large blocks of forest with permanent water and suitable nesting sites	Narrow, steep-sided canyons. Nest in snags or large trees with debris structure or broken top	Ipac and cnddb lists as possible within 5-miles	No	Moderate. Habitat present within Project Area
Thryomanes bewickii leucophrys (San Clemente Bewick's Wren)		SSC			WHR lists Bewick's Wren as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of San Clemente Bewick's Wren.
Vireo huttoni unitti (Catalina Hutton's Vireo)		SSC	Occurs only on Santa Catalina Island in the Channel Islands.		WHR lists Hutton's Vireos as possible within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Catalina Hutton's Vireo
Xanthocephalus xanthocephalis (Yellow-Headed Blackbird)		SSC	Nests in fresh emergent wetlands with dense vegetation and deep water. Forages emergent wetlands and moist open areas croplands and muddy shires of lacustrine habitat	Nests in colonies	WHR lists as possible habitat within the BREA. This Project is outside the listed species range	No	None. Outside known range of Yellow-Headed Blackbird
Taxon: Mammals							
Antrozous pallidus (Pallid Bat)		SSC	Open dry habitats of grasslands, shrublands, woodlands, and forests.	Roosts are in rocky outcrops, cliffs, crevices, snags, bole cavities of oaks, and basal hollows of conifers with access to open habitats for foraging. Roost in groups.	Cnddb lists occurrences within 5--Mile Assessment Area. WHR lists as possibly occurring within the BREA	No	Moderate. Habitat present within Project Area

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Bassariscus astutus (Ringtail)		SF	Mixture of forest and shrubland in close association with rocky areas or riparian habitats.	Hollow trees, logs, snags, cavities in talus and other rocky areas used for cover. Nests in rock recesses, hollow trees, logs, snags, abandoned burros, or woodrat nests.	WHR lists as possibly occurring within BREA	No	Unlikely. Lacking suitable rocky or riparian habitat.
Corynorhinus townsendii (Townsend's Big-Eared Bat)		SSC	Prefers mesic habitats, but found in all but subalpine and alpine habitats.	Requires caves, mines, tunnels, buildings, or chimney trees. Extremely sensitive to human disturbance.	Cnddb lists occurrences within 5-mile Assessment Area. WHR lists as possibly occurring within the BREA	No	Unlikely. Lacking microhabitat for roost sites.
Dipodomys californicus eximius (Marysville California Kangaroo Rat)		SSC			WHR lists the California Kangaroo Rat as possibly occurring within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range of Marysville California Kangaroo Rat.
Lasiurus blossevillii (Western Red Bat)		SSC	Roosts in trees often along edge adjacent to streams, fields or urban areas	Family Groups roost together. Habitat mosaics	WHR lists as possibly occurring within BREA	No	Moderate. Habitat present within Project Area
Lepus californicus bennettii (San Diego Black-Tailed Jackrabbit)	FT	SE			WHR lists Black-Tailed Jackrabbit as possibly occurring within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range of San Diego Black-Tailed Jackrabbit.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Microtus californicus spp. *(Subspecies of California Vole)*		SSC			WHR lists the CA Vole as possibly occurring within the BREA. This Project is outside the listed subspecies ranges	No	None. Outside known range of listed CA Vole subspecies (Monterey, Mohave River, San Pablo, Amargosa, South Coast Marsh, and Owens Valley California Voles).
Myotis evotis (Long-Eared Myotis)	WBWG:M		All brush, woodland, and forest habitats from sea level to 9,000'. Coniferous woodlands and forests are preferred.	Forages among trees, over water, and over shrubs. Roosts in buildings, crevices, spaces under bark, and snags. Caves are primarily used as night roosts.	WHR lists as possible within BREA	No	Moderate. Habitat present within Project Area
Myotis thysanodes (Fringed Myotis)	WBWG:H		Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer, at 4000 - 7000'	Maternity colonies of up to 200 individuals are located in caves, mones, buildings, or crevices. Forage in early successional stages, along streams, lakes, and ponds.	WHR lists as possible within BREA	No	Unlikely. Elevational requirements may be too low.
Neotoma fuscipes riparia (San Joaquin Valley Riparian woodrat)	FE	SSC			WHR lists the woodrat as possibly occurring within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range of San Joaquin Valley Riparian Woodrat.
Peromyscus maniiculatus spp. (Deer Mouse - Anacapa Island and San Clemente subspecies)		SSC			WHR lists deer mice possibly occurring within the BREA. This Project is outside the listed subspecies range	No	None. Outside known range of Anacapa Island and San Clemente Deer Mouse range.

Scientific Name (Common Name)	**Status***		**General Habitat**	**Micro Habitat**	**Species/Habitat Present within BREA/5-Mile**	**Species Identified in Study Area**	**Likelihood of Occurrence at Project Site**
	FEDERAL	**STATE**					
Puma concolor browni (Yuma Mountain Lion)		SSC			WHR lists the mountain lion as possibly occurring within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range of Yuma Mountain Lion.
Reithrodontomys raviventris (Salt-Marsh Harvest Mouse)	FE	SE	Only in the saline emergent wetlands of San Francisco Bay and its tributaries.	Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape.	WHR lists Harvest mice as possibly occurring within the BREA. This Project is outside the listed species range	No	None. Outside known range of Salt-Marsh Harvest Mouse
Silogale gracilis amphiala (Channel Island Spotted Skunk*)*		SCC			WHR lists spotted skunks possibly occurring within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range of Channel Island Spotted Skunk.
Sorex ornatus relictus (Buena Vista Lake Ornate Shrew)	FE	SSC			WHR lists Ornate Shrews possible within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range of Buena Vista Lake Ornate Shrew.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Sylvilagus bachmani riparius (Riparian Brush Rabbit)	FE	SE			WHR lists Brush Rabbits as possibly occurring within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range Riparian Brush Rabbit.
Taxidea taxus (American Badger)		SSC	Found throughout most of the state. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	WHR lists badgers as possibly occurring in the BREA	No	Unlikely. Surrounding open areas are cultivated. Lacking suitable habitat.
Vulpes vulpes necator (pop. 1 & 2) Sierra Nevada Red Fox	FE	ST			WHR lists red foxes as possibly occurring in the BREA. This Project is outside this listed subspecies range.	No	None. Outside the range of Sierra Nevada Red Fox
Taxon: Amphibians							
Ambystoma californiense (California Tiger Salamander)	FE	ST	Cismontane woodlands, meadows & seeps, riparian woodlands, valley & foothill grassland, vernal pools, and wetlands.	Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	WHR lists tiger salamanders as possibly occurring within BREA. This Project is outside this listed species range	No	None. Outside known range of California Tiger Salamander
Dicamptodon ensatus (California Giant Salamander)		SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County.	Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Cnddb lists occurrences within 5-mile Assessment Area.	No	Unlikely. Lacking suitable aquatic habitat.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Rana boylii (Foothill Yellow-Legged Frog)		SSC	Rocky streams in valley-foothill hardwood, valley foothill hardwood/conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows.	Rarely far from permanent water. Tadpoles need water for at least 3 - 4 months	Cnddb lists occurrences within 5-mile Assessment Area. WHR list of possibly occurring in BREA.	No	Unlikely. Lacking suitable aquatic habitat.
Rana draytonii (California Red-Legged Frog)	FT	SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Cnddb lists occurrences within BREA & 5-Mile Assessment Area. Ipac & WHR list of possibly occurring in BREA	No	Unlikely. Lacking suitable aquatic habitat.
Spea hammondii (Western Spadefoot)		SSC	Primarily found in grasslands, with occasional populations in valley foothill hardwood woodlands. Some populations persist in orchard or vineyards.	Breeding requires shallow, temporary pools. Egg masses are attached to plant material or small rocks. Rainfall important in formation and maintenance of breeding pools.	WHR lists western spadefoot as possibly occurring in BREA. Napa County is just outside the known range.	No	Unlikely. Just outside known range. Lacking suitable breeding habitat.
Taricha rivularis (Red-Bellied Newt)		SSC	Broadleaved upland forest. North coast coniferous forests, redwood forests, riparian forests.	Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.	Cnddb lists occurrences within 5-mile Assessment Area. WHR list of possibly occurring in BREA.	No	Unlikely. Lacking suitable breeding habitat.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Taxon: Reptile							
Chelonia mydas (Green Sea Turtle)	FT				Ipac lists as possible habitat within BREA. This Project is outside this listed species range, too far inland.	No	None. Outside known range and lacking suitable marine habitat.
Emys marmorata (Western Pond Turtle)		SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km (2,000') from water for egg-laying.	cnddb lists occurrences within BREA and 5-mile Assessment Area	No	Unlikely. Lacking suitable permanent aquatic habitat.
Thamnophis sirtalis tetrataenia (San Francisco Garter snake)	FE	SE	Forages on land or in quiet pools, generally avoiding swift water. Associated with permanent or semi-permanent bodies of water in a variety of habitats.	Endemic to the San Francisco Peninsula in San Mateo County.	WHR lists common garter snakes as possibly occurring within the BREA. This Project is outside this listed subspecies range	No	None. Outside known range of San Francisco Garter snake.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Taxon: Fisheries							
Hypomesus transpacificus (Delta Smelt)	FT	SE	Aquatic and estuaries	Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	Ipac lists as possible habitat within BREA.	No	None. Mitigation to reduce sediment transport downstream that could conceivably impact fishery habitat will be incorporated into this project and into the ECP. With mitigation for sediment reduction, the project is not expected to have an adverse impact on fisheries habitat.
Oncorhynchus kisutch pop. 4 (Coho Salmon - Central CA Coast ESU)	FE	SE	Aquatic - Anadromous fish	Populations in tributaries to SF Bay Area	Rarefind lists as possible habitat within BREA.	No	None. Mitigation to reduce sediment transport downstream that could conceivably impact fishery habitat will be incorporated into this project and into the ECP. With mitigation for sediment reduction, the project is not expected to have an adverse impact on fisheries habitat.

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					
Oncorhynchus mykiss irideus pop. 8 (Steelhead - Central California Coast DPS)	FT		Aquatic - Anadromous fish	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays.	cnddb lists occurrences within 5-Mile Assessment Area.	No	None. Mitigation to reduce sediment transport downstream that could conceivably impact fishery habitat will be incorporated into this project and into the ECP. With mitigation for sediment reduction, the project is not expected to have an adverse impact on fisheries habitat.
Oncorhynchus tshawytscha pop. 17 (Chinook Salmon - CA Coastal ESU)	FT		Aquatic - Anadromous fish	All naturally spawned populations of salmon (and their progeny) in rivers and streams south of the Klamath River to Russian River	EFH mapper indicates habitat may be present within the BREA.	No	None. Mitigation to reduce sediment transport downstream that could conceivably impact fishery habitat will be incorporated into this project and into the ECP. With mitigation for sediment reduction, the project is not expected to have an adverse impact on fisheries habitat.

Scientific Name (Common Name)	**Status***		**General Habitat**	**Micro Habitat**	**Species/Habitat Present within BREA/5-Mile**	**Species Identified in Study Area**	**Likelihood of Occurrence at Project Site**
	FEDERAL	**STATE**					
Taxon: Other							
Syncaris pacifica (California Freshwater Shrimp)	FE	SE	Aquatic - 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 streamflow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	cnddb lists occurrences within BREA and 5-mile Assessment Area. Ipac list habitat possible.	No	Unlikely. Suitable aquatic habitat not present.
Bombus franklini (Franklin's Bumble Bee)	FE	SC	Found in Siskiyou and Trinity Counties in California		Napa County is outside known range	No	Unlikely. Outside known Range
Bombus crotchii (Crotch Bumble Bee)		SC	Found primarily on coastal southern California. Few sites known around Sacramento. Seem to prefer hotter and drier conditions and like milkweed.	Nesting sites = underground cavities in open west-southwest slopes often near trees. Logs and railroad ties have been used. Nest sites may depend on rodent abundance. Foraging sites = plants that bloom and provide nectar/pollen throughout early February to late November. Overwintering sites = Little known about hibernacula or overwintering sites.	Project Area is outside known range.	No	Unlikely. May be outside known Range. Lacking flower-rich meadows/grasslands for foraging sites. Close to existing vineyards, which would have rodent control methods in place reducing potenital nesting sites.
Bombus occidentallis (Western Bumble Bee)		SC	Wide variety of natural, agricultural, urban and rural habitats, although species richness tends to peak in flower-rich meadows of forests and subalpine zones. Often near wetter areas. Historically found in Napa, Mendocino, and Sonoma Counties	Nesting sites = underground cavities in open west-southwest slopes often near trees. Logs and railroad ties have been used. Nest sites may depend on rodent abundance. Foraging sites = plants that bloom and provide nectar/pollen throughout early February to late November. Overwintering sites = Little known about hibernacula or overwintering sites.	cnddb lists occurrences within BREA and 5-mile Assessment Area.	No	Unlikely. Lacking flower-rich meadows/grasslands for foraging sites. Close to existing vineyards, which would have rodent control methods in place reducing potenital nesting sites. May be found passing through site but not nesting/foraging
Bombus suckleyi (Suckley's cuckoo Bumble Bee)		SC	Found in Siskiyou and Trinity Counties in California		Napa County is outside known range.	No	Unlikely. Outside known Range

Scientific Name (Common Name)	Status*		General Habitat	Micro Habitat	Species/Habitat Present within BREA/5-Mile	Species Identified in Study Area	Likelihood of Occurrence at Project Site
	FEDERAL	STATE					

Status Identified:

FE = Federally Endangered
FT = Federally Threatened
SE = California State Endangered
ST = California State Threatened
SCC = Species of Special Concern
SC = Candidate for Listing Status
WL = California Department of Fish & Wildlife Watch List
FP = California Department of Fish & Wildlife Fully Protected
Sensitive = California Department of Forestry and Fire Protection (CalFire) Sensitive
Delisted = Now delisted from Endangered Species Act
BCC = U.S. Fish & Wildlife Birds of Conservation Concern
WBWG = Western Bat Working Group (M=Moderate, H=High) Concern

cnddb = California Department of Fish & Wildlife Database
WHR = CDFW Wildlife Habitat Relationship System
Ipac = USFWS Review

Attachment #5

Wildlife Species Identified on/adjacent to 1510 Acquisition Vineyard Expansion

Birds:

- Common Raven
- Turkey Vultures
- Mourning Dove
- California Quail
- American Robin
- Unknown flying Duck species
- Canada Geese
- Wild Turkey
- Stellar's Jay
- Sparrows
- Dark-Eyed Junco
- Western Screech Owl
- Northern Pygmy Owl

Mammals:

- Squirrels
- Coyotes

Reptiles:

- Western Fence Lizards

Amphibians:

- Tree Frogs

Fisheries:

- None – no Class I watercourses

Other Wildlife Observations:

- Small songbird nests
- Snags/Cavity trees throughout

Attachment #6

Attachment 6. Special Status Plant Communities with Potential to Occur, Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Primary Lifeform	Global Rarity	State Rarity	Likelihood of Occurrence at Project Site?
Abies grandis	Grand fir forest	Tree	G4	S2.1	None
Abronia latifolia - Ambrosia chamissonis	Dune mat	Herb	G3	S3	None
Acer macrophyllum	Bigleaf maple forest and woodland	Tree	G4	S3	Unlikely
Acer negundo	Box-elder forest and woodland	Tree	G5	S2.2	Unlikely
Aesculus californica	California buckeye groves	Tree	G3	S3	Unlikely
Allium spp. - Streptanthus spp. - Hesperolinon spp. Serpentinite	Onion - twistflower - dwarf-flax serpentinite rock outcrop	Herb	G2G3	S2S3	Unlikely
Alnus viridis	Sitka alder thickets	Shrub	G5	S3?	Unlikely
Alopecurus geniculatus	Water foxtail meadows	Herb	G3?	S3?	Unlikely
Arbutus menziesii	Madrone forest	Tree	G4	S3.2	High
Arctostaphylos (bakeri, montana)	Baker's or Mt. Tamalpais manzanita chaparral	Shrub	G3	S3	Unlikely
Arctostaphylos (canescens, manzanita, stanfordiana)	Hoary, common, and Stanford manzanita chaparral	Shrub	G3	S3	High
Arctostaphylos (nummularia, sensitiva) - Chrysolepis chrysophylla	Glossy leaf manzanita - Golden chinquapin chaparral	Shrub	G2	S2	Unlikely
Argentina egedii	Pacific silverweed marshes	Herb	G4	S1	Unlikely
Bolboschoenus maritimus	Salt marsh bulrush marshes	Herb	G4	S3	Unlikely
Bromus carinatus - Elymus glaucus	California brome - blue wildrye prairie	Herb	G3	S3	Moderate
Bromus rubens - Schismus (arabicus, barbatus)	Red brome or Mediterranean grass grasslands	Herb	None	None	None
Calamagrostis nutkaensis	Pacific reed grass meadows	Herb	G4	S2	None
Calocedrus decurrens	Incense cedar forest and woodland	Tree	G4	S3	None

Attachment 6. Special Status Plant Communities with Potential to Occur, Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Primary Lifeform	Global Rarity	State Rarity	Likelihood of Occurrence at Project Site?
Carex (aquatilis, lenticularis)	Water sedge and lakeshore sedge meadows	Herb	G5	S3	Unlikely
Carex (pansa, praegracilis)	Sand dune sedge swaths	Herb	G4?	S3?	None
Carex barbarae	White-root beds	Herb	G2?	S2?	None
Carex densa	Dense sedge marshes	Herb	G2?	S2?	None
Carex lyngbyei	Lyngbye's sedge swathes	Herb	GNR	S1	None
Carex nudata	Torrent sedge patches	Herb	G3	S3	Unlikely
Carex obnupta	Slough sedge swards	Herb	G4	S3	Moderate
Carex serratodens	Twotooth sedge seeps	Herb	G3	S3?	None
Ceanothus (oliganthus, tomentosus)	Hairy leaf - woolly leaf ceanothus chaparral	Shrub	G3	S3	Moderate
Chamaecyparis lawsoniana	Port Orford cedar forest and woodland	Tree	G3	S3.1	None
Corylus cornuta var. californica	Hazelnut scrub	Shrub	G3	S2?	Moderate
Darlingtonia californica	California pitcher plant fens	Herb	G4?	S3	Unlikely
Deschampsia cespitosa - Hordeum brachyantherum - Danthonia californica	Coastal tufted hair grass - Meadow barley - California oatgrass meadow	Herb	GNR	S3	Unlikely
Eriophyllum staechadifolium - Erigeron glaucus - Eriogonum latifolium	Seaside woolly-sunflower - seaside daisy - buckwheat patches	Herb	G3	S3	None
Festuca idahoensis - Danthonia californica	Idaho fescue - California oatgrass grassland	Herb	GNR	S3	High
Frangula californica - Rhododendron occidentale - Salix breweri	California coffee berry - western azalea scrub - Brewer's willow	Shrub	G3	S3	Moderate

Attachment 6. Special Status Plant Communities with Potential to Occur, Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Primary Lifeform	Global Rarity	State Rarity	Likelihood of Occurrence at Project Site?
Frankenia salina	Alkali heath marsh	Herb	G4	S3	None
Fraxinus latifolia	Oregon ash groves	Tree	G4	S3.2	Unlikely
Glyceria occidentalis	Northwest manna grass marshes	Herb	G3?	S3?	Unlikely
Grindelia (camporum, stricta)	Gum plant patches	Herb	G2G3	S2S3	None
Hesperocyparis (sargentii, macnabiana)	Ultramafic cypress woodland	Tree	G3	S3	Unlikely
Hesperocyparis pigmaea	Mendocino pygmy cypress woodland	Tree	G1	S1	None
Heterotheca (oregona, sessiliflora)	Goldenaster patches	Herb	G3	S3	Unlikely
Hydrocotyle (ranunculoides, umbellata)	Mats of floating pennywort	Herb	G4	S3?	Unlikely
Isoetes (bolanderi, echinospora, howellii, nuttallii, occidentalis)	Quillwort beds	Herb	G3	S3?	Unlikely
Juglans hindsii and Hybrids	Hind's walnut and related stands	Tree	G1	S1.1	Moderate
Juncus (oxymeris, xiphioides)	Iris-leaf rush seeps	Herb	G2?	S2?	Moderate
Juncus lescurii	Salt rush swales	Herb	G3	S2?	None
Lasthenia glaberrima	Smooth goldfields vernal pool bottoms	Herb	G2	S2	None
Leymus cinereus - Leymus triticoides	Ashy ryegrass - Creeping wildrye turfs	Herb	G3	S3	Unlikely
Leymus mollis	Sea lyme grass patches	Herb	G4	S2	None
Lupinus chamissonis - Ericameria ericoides	Silver dune lupine - mock heather scrub	Shrub	G3	S3	None
Mimulus (guttatus)	Common monkey flower seeps	Herb	G4?	S3?	High
Notholithocarpus densiflorus	Tanoak forest	Tree	G4	S3.2	High
Nuphar lutea	Yellow pond-lily mats	Herb	G5	S3?	None

Attachment 6. Special Status Plant Communities with Potential to Occur, Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Primary Lifeform	Global Rarity	State Rarity	Likelihood of Occurrence at Project Site?
Oenanthe sarmentosa	Water-parsley marsh	Herb	G4	S2?	Unlikely
Picea sitchensis	Sitka spruce forest and woodland	Tree	G5	S2	None
Pinus contorta ssp. contorta	Beach pine forest and woodland	Tree	G5	S3	None
Pinus muricata - Pinus radiata	Bishop pine - Monterey pine forest and woodland	Tree	G3	S3.2	None
Populus fremontii - Fraxinus velutina - Salix gooddingii	Fremont cottonwood forest and woodland	Tree	G4	S3.2	Moderate
Populus trichocarpa	Black cottonwood forest and woodland	Tree	G5	S3	Moderate
Pseudotsuga menziesii - Notholithocarpus densiflorus	Douglas fir - tanoak forest and woodland	Tree	G3	S3	High
Quercus garryana (tree)	Oregon white oak woodland and forest	Tree	G4	S3	High
Quercus lobata	Valley oak woodland and forest	Tree	G3	S3	Moderate
Quercus lobata Riparian	Valley oak riparian forest and woodland	Tree	G3	S3	Moderate
Rhododendron columbianum	Western Labrador-tea thickets	Shrub	G4	S2?	None
Rubus spectabilis - Morella californica	Salmonberry - Wax myrtle scrub	Shrub	G4	S3	None
Ruppia (cirrhosa, maritima)	Ditch-grass or widgeon-grass mats	Herb	G4?	S2	None
Salix gooddingii - Salix laevigata	Goodding's willow - red willow riparian woodland and forest	Tree	G4	S3	None
Salix hookeriana	Coastal dune willow thickets	Shrub	G4	S3	None
Salix lucida ssp. lasiandra	Shining willow groves	Tree	G4	S3.2	Moderate
Salix sitchensis	Sitka willow thickets	Shrub	G4	S3?	None
Sarcocornia pacifica (Salicornia depressa)	Pickleweed mats	Herb	G4	S3	None
Schoenoplectus americanus	Common Three-square marsh	Herb	G5	S3.2	None

Attachment 6. Special Status Plant Communities with Potential to Occur, Calistoga Hills Biological Assessment, 195 - 222 meters

Scientific Name	Common Name	Primary Lifeform	Global Rarity	State Rarity	Likelihood of Occurrence at Project Site?
Scirpus microcarpus	Small-fruited bulrush marsh	Herb	G4	S2	Unlikely
Selaginella (bigelovii, wallacei)	Bushy spikemoss mats	Herb	G4	S3	Unlikely
Sequoia sempervirens	Redwood forest and woodland	Tree	G3	S3.2	High
Sparganium (angustifolium)	Mats of bur-reed leaves	Herb	G4	S3?	None
Spartina foliosa	California cordgrass marsh	Herb	G3	S3.2	None
Stuckenia (pectinata) - Potamogeton spp.	Pondweed mats	Herb	G3G5	S3?	Moderate
Trifolium variegatum	White-tip clover swales	Herb	G3?	S3?	None
Tsuga heterophylla	Western hemlock forest	Tree	G5	S2	None
Umbellularia californica	California bay forest and woodland	Tree	G4	S3	High
Vaccinium uliginosum	Bog blueberry wet meadows	Shrub	G4	S3	None
Vitis arizonica - Vitis girdiana	Wild grape shrubland	Shrub	G3	S3	Unlikely
Zostera (marina, pacifica) Pacific Aquatic	Eelgrass beds	Herb	GNR	S3	None

January 2022 CNPS, Northern California Coast Alliance Map

Attachment #7 - NSO Report 16 pages

Forest Ecosystem Management, pllc
1692 East Road * Deary, ID 83823
(406) 490-7427 * Pamtown30@gmail.com

Northern Spotted Owl Assessment

1510 Acquisition Expansion

Napa County

Report Completed by: Pamela Town, Consulting Wildlife Biologist on June 7, 2023

Northern Spotted Owls (*Strix occidentalis caurina)*

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

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

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

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

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

This Assessment is for the less than 3-acre vineyard conversion for the 1510 Acquisition Vineyard Expansion located at 1510 Diamond Mountain Road; Calistoga, California; which occurs within the range of the Northern Spotted Owl.

Project General Information

Project Location: 1510 Diamond Mountain Road; Calistoga, California (Attachment #1)
Legal of Project Area: Portions of Section 6, T08N, R06W MDB&M
Legal of Parcel: Portions of Sec(s) 6 & 7 T08N, R06W MDB&M
APN: 020-400-013
Parcel Acres: 35.8-acres
County: Napa County
Proposed Project: Timberland Conversion of 2.4-acres to Vineyard

Known Northern Spotted Owl Territories

According to the California Department of Fish & Wildlife's Spotted Owl viewer dated 01MAY23, there is one known northern spotted owl territory (NAP007) within 1.3-miles of this Parcel (Attachment #2). The 1.3-mile assessment area was created by USFWS for a Take Avoidance of northern spotted owls within the California Interior (outside the coastal redwood zone). Although the County does have redwoods, the environmental conditions in the area are hotter/drier than the coastal redwood zone; therefore, the 1.3-mile assessment area was used for this Project.

The following briefly describes the status of the known territory within 1.3 miles of the Parcel:

> **NAP007:** This territory is located approximately 1.1 miles south of the parcel boundary. This site was first identified in 1989 and through monitoring efforts, has been found active in 1989 – 1993, 1997 – 1999, 2001 - 2015. The database does not report any detections since 2015. Current monitoring efforts have found this territory active in 2020 (pair), 2021 (pair), and 2022 (single male); even after the Glass Wildfire swept through the area. There were no NSOs detected in 2023.

Northern Spotted Owl Surveys

Surveys for the area occurred for an adjacent Timber Harvest Plan (THP) for Calistoga Hills Resort. The Project's parcel was recently purchase by Calistoga Hills Resort; with NSO surveys for the adjacent THP covering the proposed less than 3-acre timber conversion. Surveys visits for the adjacent THP included: 2017 = 6 survey visits, 2018 = 6 survey visits, 2019 = 3 survey visits, 2020 = 3 survey visits, 2021 = 6 survey visits (information included within this report), 2022 = 6 survey visits, and 2023 = 3 survey visits. The only known NSO within 1.3 miles of the Project area, NAP007, was detected in 2020 (pair detected by myself), 2021 (pair detected by myself), 2022 (singe male detected by myself), and no NSOs in 2023.

Monitoring efforts for this territory was completed under another proposed project further up Diamond Mountain Road. No barred owls have been detected.

Five survey stations were used to survey the adjacent THP and this project (Attachment #3). Station K1 is located within Kartum Canyon, Stations #5 and #6 were located on Calistoga Hill Resort, Station #3 off Diamond Mountain Road when accessible (on Diamond Mountain Road when no access – shown as STA #3A), and Station #4 on Diamond Mountain Road. Station #5A was located on Highway 128 and could be used when access into the gated Calistoga Hill Resort Community wasn't prearranged. Station #6A was added when access into the gated Calistoga Hill Resort Community wasn't prearranged; with Stations #5A and #6A covering the area that Stations #5 and #6 covered. Station #4A is a station created to better triangulate on NAP007 (located further up Diamond Mountain Road) when the NSO was detected.

The following provides the minimum 2-year survey history as required by USFWS protocol:

2021 Breeding Season = 6 Survey Visits

Survey Visit #1 = 07MAR21

Weather: Partly Cloudy and Calm.
Surveyor: Mike Stephens

Station Number	Time at Station	Responses and Notes
STA #4	1905 - 1915	N/R
STA #5A	1920 – 1930	N/R
STA #6A (on 128)	1933 – 1943	N/R – Lack of Access to Property
STA #K1	1949 – 1959	N/R

N/R = No NSO Response

Survey Visit #2 = 18APR21

Weather: Calm and Clear
Surveyor: Mike Stephens

Station Number	Time at Station	Responses and Notes
STA #K1	2048 – 2058	N/R
STA #5A	2103 – 2113	N/R - Bullfrog
STA #4	2118 – 2128	N/R – Western Screech Owl
STA #5	2144 – 2154	N/R
STA #6	2200 – 2210	N/R

N/R = No NSO Response

Survey Visit #3 = 11JUN21

Weather: Breeze, Clear
Surveyor: Mike Stephens

Station Number	Time at Station	Responses and Notes
STA #K1	2155 – 2205	N/R
STA #4	2212 – 2222	N/R
STA #5A	2229 – 2239	N/R
STA #5	2254 – 2304	N/R
STA #6	2307 - 2317	N/R

N/R = No NSO Response

Survey Visit #4 = 16JUL21

Weather: Partly Cloudy and Calm.
Surveyor: Mike Stephens

Station Number	Time at Station	Responses and Notes
STA #K1	0236 – 2046	N/R
STA #4	0254 – 0304	N/R
STA #5A	0309 – 0319	N/R
STA #6	0331 – 0341	N/R
STA #5	0346 - 0356	N/R

N/R = No NSO Response

Survey Visit #5 = 06AUG21

Weather: Clear and Calm.
Surveyor: Mike Stephens

Station Number	Time at Station	Responses and Notes
STA #4	2116 - 2126	N/R
STA #5A	2130 – 2140	N/R – Pygmy Owl
STA #5	2149 - 2159	N/R
STA #6	2203 – 2213	N/R – Coyotes
STA #K1	2225 – 2235	N/R

N/R = No NSO Response

Survey Visit #6 = 22AUG21

Weather: Clear and Calm.
Surveyor: Mike Stephens

Station Number	Time at Station	Responses and Notes
STA #K1	2115 - 2125	N/R
STA #4	2133 – 2143	N/R - Coyotes
STA #5A	2148 - 2158	N/R
STA #6	2209 - 2219	N/R
STA #5	2222 – 2232	N/R

N/R = No NSO Response

2022 Breeding Season = 6 Survey Visits

Survey Visit #1 = 20MAR22

Weather: Cloudy and Calm. Daytime rain – Cold Evening
Sunset: 1921
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #4	1930 – 1940	N/R - Car
STA #3	1954 – 2004	N/R
STA #5A (STA #5)	2010 – 2020	N/R – Not able to access, survey was placed on Highway 128, similar coverage
STA #6A (STA #6)	2034 – 2050	N/R – Not able to access, survey was placed on main road, similar coverage
STA #K1	2055 – 2105	N/R

N/R = No NSO Response

Survey Visit #2 = 07APR22

Weather: Clear skies with light breeze
Sunset: 1943
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #4	2000 – 2010	N/R
STA #3	2020 – 2030	N/R
STA #5	2050 – 2104	N/R
STA #6	2110 – 2120	N/R
STA #K1	2135 – 2145	N/R

N/R = No NSO Response

Survey Visit #3 = 17APR22

Weather: Clear skies and calm
Sunset: 1953
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #K1	2010 - 2020	N/R
STA #6A (STA #6)	2024 - 2034	N/R – Not able to access, survey was placed on main road, similar coverage
STA #5A (STA #5)	2043 - 2053	N/R – Not able to access, survey was placed on Highway 128, similar coverage
STA #3	2059 - 2109	N/R
STA #4	2120 - 2130	N/R

N/R = No NSO Response

Survey Visit #4 = 28APR22

Weather: Partly cloudy with light breeze
Sunset: 2004
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #K1	2119 - 2129	N/R
STA #6	2145 - 2155	N/R
STA #5	2159 - 2209	N/R
STA #3	2224 - 2234	N/R
STA #4	2245 - 2255	N/R

N/R = No NSO Response

Survey Visit #5 = 22MAY22

Weather: Clear skies with light breeze (Hot daytime temperatures)
Sunset: 2026
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #K1	2148 - 2158	N/R
STA #6A (STA #6)	2204 – 2214	N/R – Not able to access, survey was placed on main road, similar coverage
STA #5A (STA #5)	2220 – 2230	N/R – Not able to access, survey was placed on Highway 128, similar coverage
STA #3	2235 - 2245	N/R
STA #4	Skip	See STA #4A
STA #4A	2300 – 2315	Surveying for another project – At 2310 hours a male NSO responded (NAP007). Daytime follow-up not possible due to private property and lack of access. This station was surveyed earlier this year with no NSOs detected. Pair detected from here in 2021 on numerous dates.

N/R = No NSO Response

Survey Visit #6 = 04JUN22

Weather: Cloudy with light breeze – periodic light sprinkles (daytime rain)
Sunset: 2036
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #6A (STA #6)	2200 – 2210	N/R – Not able to access, survey was placed on main road, similar coverage
STA #K1	2215 - 2225	N/R
STA #5A (STA #5A)	2239 – 2249	N/R – Not able to access, survey was placed on Highway 128, similar coverage
STA #3	2259 - 2309	N/R
STA #4	2315 – 2325	N/R
STA #4A	2329 - 2339	N/R – Surveying for another project – Heard NSO from this station on 22MAY22. Nothing tonight!

N/R = No NSO Response

2023 Breeding Season = 3 Spot Check Surveys

NOTES: The 2022/2023 winter season was an exception weather year with record rainfall, snowfall, and wind events throughout the range of the Northern Spotted Owl. It is also the opinion of this surveyor, that early spring night-time temperatures were cooler than normal.

Deviations from the NSO protocol include: not all 3 spot check surveys were completed prior to 15APR due to limited survey nights available and road conditions. This Property has an extensive survey history and deviations from the protocol will have minor to no impact on the ability to detect NSOs if they are in the area.

Survey Visit #1 = 18MAR23

Weather: Cloudy and Calm.
Sunset: 1924
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #4	1900 - 1935	N/R - Car
STA #3A (STA #3)	1939 - 1949	N/R – survey was completed on Diamond Mountain Road
STA #5A (STA #5)	2010 - 2025	N/R – Not able to access, survey was placed on Highway 128, similar coverage
STA #6A (STA #6)	2035 - 2045	N/R – Not able to access, survey was placed on main road, similar coverage
STA #K1	2048 - 2100	N/R

N/R = No NSO Response

Survey Visit #2 = 05APR23

Weather: Partly cloudy with light breeze
Sunset: 1941
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #K1	2115 - 2125	N/R
STA #6A (STA #6)	2129 - 2139	N/R
STA #5A (STA #5)	2145 - 2155	N/R
STA #3A (STA #3)	2207 - 2217	N/R
STA #4	2223 – 2233	N/R

N/R = No NSO Response

Survey Visit #3 = 22APR23

Weather: Clear and calm (warm day and evening)
Sunset: 1958
Surveyor: Pam Town

Station Number	Time at Station	Responses and Notes
STA #4	2010 - 2025	N/R (frogs)
STA #3A (STA #3)	2030 – 2045	N/R (lots tree frogs)
STA #5 (STA #5A)	2100 - 2110	N/R
STA #6 (STA #6A)	2117 - 2127	N/R
STA #K1	2145 – 2155	N/R

N/R = No NSO Response

Northern Spotted Owl Habitat

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

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

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

- High Quality Nesting/Roosting Habitat: Mixed tree species with basal area of 210+ ft2 and ≥ 15" quadratic mean diameter, and ≥ 8 trees per acre of trees ≥ 26" in diameter at breast height, and ≥ 60% canopy closure.
- Suitable Nesting/Roosting Habitat: Mixed tree species with basal area ranging from 150 - 180+ ft2 and ≥ 15" quadratic mean diameter, and ≥ 8 trees per acre of trees ≥ 26" in diameter at breast height, and ≥ 60% canopy closure.
- Suitable Forging Habitat: Mixed tree species with basal area ranging from 120 - 180+ ft2 and ≥ 13" quadratic mean diameter, and ≥ 5 trees per acre of trees ≥ 26" in diameter at breast height, and a mix of ≥ 40% to 100% canopy closure.
- Low Quality Foraging Habitat: Mixed tree species with basal area ranging from 80 - 120+ ft2 and ≥ 11" quadratic mean diameter, and ≥ 40% canopy closure.

Recent Wildfire (Glass Wildfire): In the early fall of 2020, the Glass Wildfire occurred within Napa Valley and engulfed portions of Napa and Sonoma Counties, including areas along Diamond Mountain Road, near NAP007. The Project Area and parcel did not burn during the Glass wildfire.

Project Area: The habitat within the Project Area is primarily an overstory of Douglas-fir with hardwoods (black oak and madrone) also within the dominant and co-dominant canopy. The overstory canopy closure is over 60%. Shrubs and ground cover is sparse where the sunlight does not reach the forest floor to denser when the sunlight can penetrate the overstory canopy. The vegetation may meet the definitions of nesting/roosting habitat; however, the location of the Project Area greatly decreases the habitat suitability. Immediately to the south of the Project Area is existing vineyards. Immediately to the north is the Calistoga Hills Resort Community; which possesses numerous disturbances through houses, auto traffic, people recreating, and dogs. In addition, the project area is close to the highly developed Napa Valley with no deep canyons for roosting spotted owls (Attachment #4).

Recommendations

The northern spotted owl habitat within the Project Area is marginal; however, due to recent wildfires degrading or removing northern spotted owl habitat, unknown effects of NSO movement following the fire, and this project is a timberland conversion; the following is recommended to reduce disturbance/impacts to northern spotted owls:

- Follow USFWS Protocol for surveying for Northern Spotted Owls in all years that timber harvest operations are anticipated. This includes having a minimum of 2-year survey history prior to timber harvest operations (which they currently have). To keep surveys up-to-date; three (3) spot check surveys would be required in 2024 and returning to the 6 surveys in 2025. Once timber harvest operations are complete, northern spotted owl surveys will no longer be necessary.
    - NOTE: If the THP to the north has completed operations, survey stations may be adjusted to cover just the Project Area and area immediately surrounding it.
- NSO surveys are valid until the beginning of the next breeding season (01FEB). Timber harvest operations after this 01FEB date, require a current years' survey effort.
- As there are no known northern spotted owls within ¼-mile; there are no seasonal restrictions proposed at this time.
- If a new northern spotted owl territory is identified within 1.3 miles of the Project Area or NAP007 moves closer to the Project Area; a reassessment may be required.
- If this Project changes from a less than 3-acre conversion, a reassessment will be required.

Attachments

Attachment #1 – Topographical Map – Project Location and NSOs within 1.3 Miles
Attachment #2 – CA Fish & Wildlife Spotted Owl Sites Found
Attachment #3 – Topographic Map of NSO Survey Stations & Owl Detection
Attachment #4 – Aerial Map of Project Area & Surrounding Parcels

Northern Spotted Owl Contact Information

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

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

Other Information

Definitions:

- Activity Center: Area of concentrated activity of either a pair of NSOs or a single territorial NSO, represented by a mapped location (usually a nest tree) that occurs within, but not necessarily in the exact center of, the core area. Where clusters of site centers exist in a core area a geographic centroid or nearest neighbor calculation may be used as a designated activity center for habitat analysis purposes. A single territory may also have more than one designated activity center.
- Territory: A spatial area of landscape that is defended by a single resident or pair of northern spotted owls. Specific NSO territories generally refer to a fixed geographic area. Over time, individual spotted owls may occupy different territories (i.e. breeding dispersal, interference competition with barred owls, changes in habitat or prey availability, etc.).
- Home Range: In the absence of site-specific data, the home range is a 1.3-mile radius circle centered on the activity center.
- Territory Identification Number (NAP0005): A number generated by the California Department of Fish & Wildlife assigned to a geographic area currently and/or historically occupied by northern spotted owls.
- Suitable Habitat: Areas meeting the criteria for high quality nesting/roosting habitat, suitable nesting/roosting habitat, suitable foraging habitat, and low-quality foraging habitat.
- Unsuitable Habitat: Areas not meeting the criteria for high quality nesting/roosting habitat, suitable nesting/roosting habitat, suitable foraging habitat, and low-quality foraging habitat.
- NSO Breeding Season: February 1 to August 31st within the inland ecotype.
- NSO Survey Season: March 15 to August 31st within the inland ecotype.
- Degrade Habitat: Signifies when treatments have a negative influence on the quality of habitat due to the removal or reduction of NSO habitat elements but not to the degree where the existing habitat function is changed.
- Downgrade Habitat: Treatments that reduce habitat elements to the degree the habitat will not function in the capacity that exists pre-treatment, but the activities will not remove habitat entirely.
- Assessment Area: The area used to address northern spotted owls includes 1) Project Footprint; 2) Area within ¼ mile of Project Footprint; 3) Area within ½ mile of Project Footprint; 4) 1.3 miles from Project Footprint.

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

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

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

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

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

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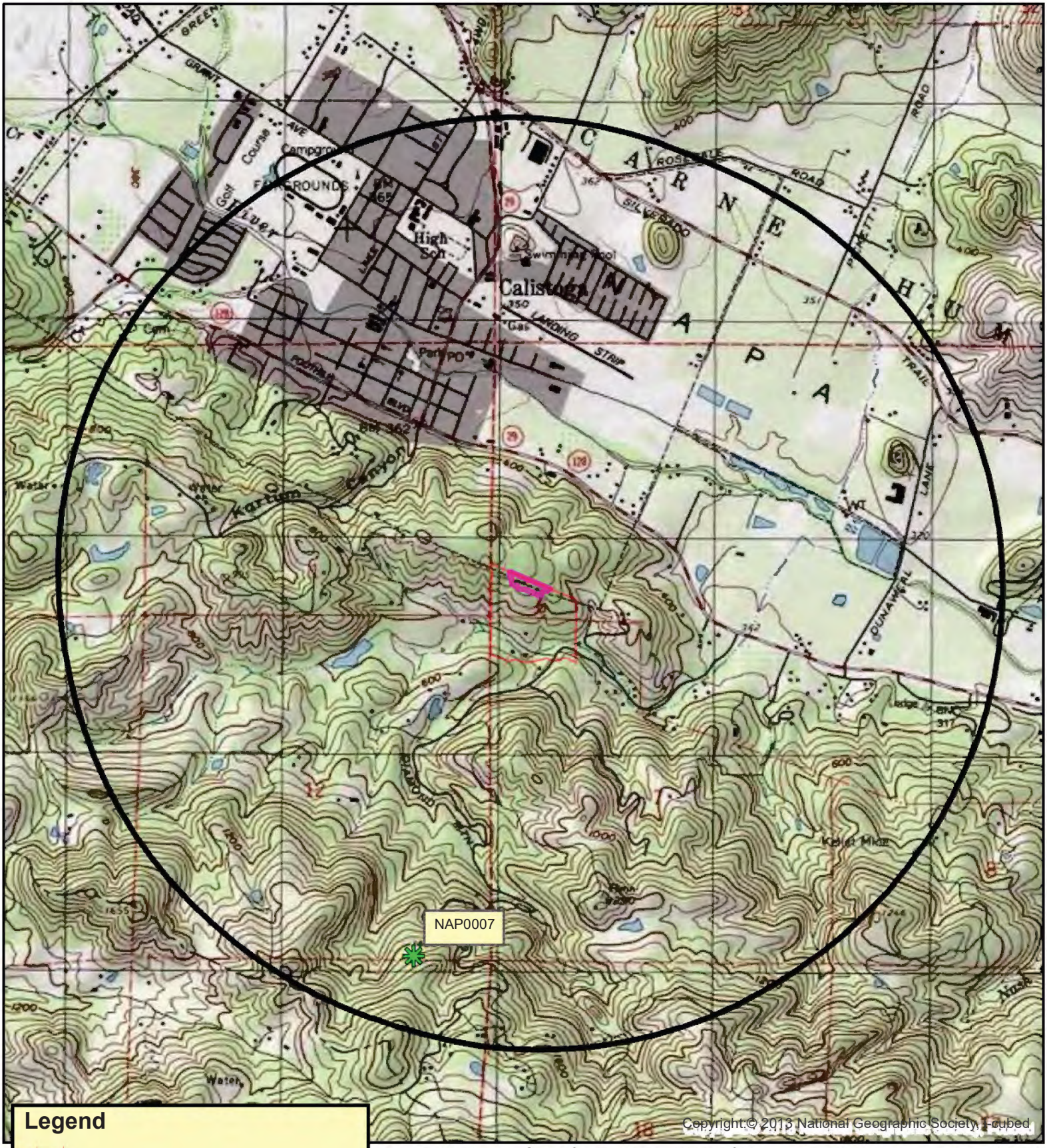
Attachment #1

Northern Spotted Owls within 1.3 Miles of 1510 Acquisition Vineyard Expansion



Legend

- Parcel Boundary
- Project Area
- Project Area 1.3-Mile Owl Assessment
- NSO Activity Center

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec. 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

Forest Ecosystem Management
Date: 9/22/2022

N
W E
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1 in = 2,500 ft

Attachment #2

Data Version Date:
03/30/2023

Report Generation Date:
5/1/2023

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

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

M_08N_07W Sections(01,12);

M_09N_06W Sections(31,32);

M_09N_07W Sections(36);

M_08N_06W Sections(05,06,07,08);

NOTES:

1510 Acquisition Vineyard

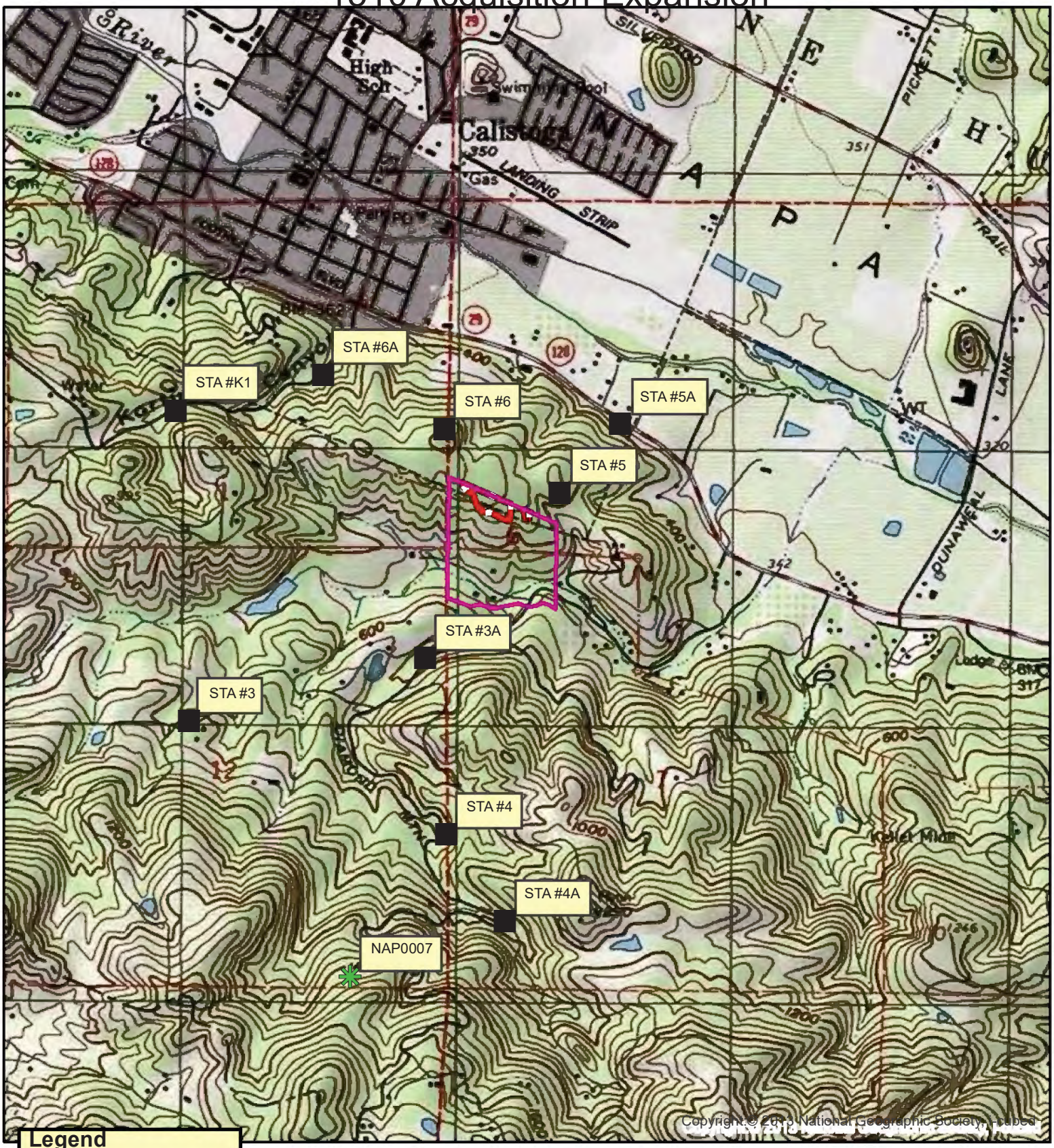
Masterowl	*Subspecies*	*LatDD NAD83*	*LonDD NAD83*	*MTRS*	*AC Coordinate Source*	
NAP0007	NORTHERN	38.553044	-122.580998	M 08N 07W 12	Contributor	1.1 Miles
NAP0013	NORTHERN	38.569601	-122.604975	M 08N 07W 02	Contributor	2+ Miles

owls in 1.3 Miles NAP007

As Report #2 only has information to 2015 ~ not included Write-up includes Monitoring efforts of NAP007

Attachment #3

Northern Spotted Owl Survey Statins for 1510 Acquisition Expansion



Legend

- Parcel Boundary
- 1510 Conversion Area
- NSO Survey Station
- NSO Activity Center

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

Forest Ecosystem Management &
Salix Natural Resource Management

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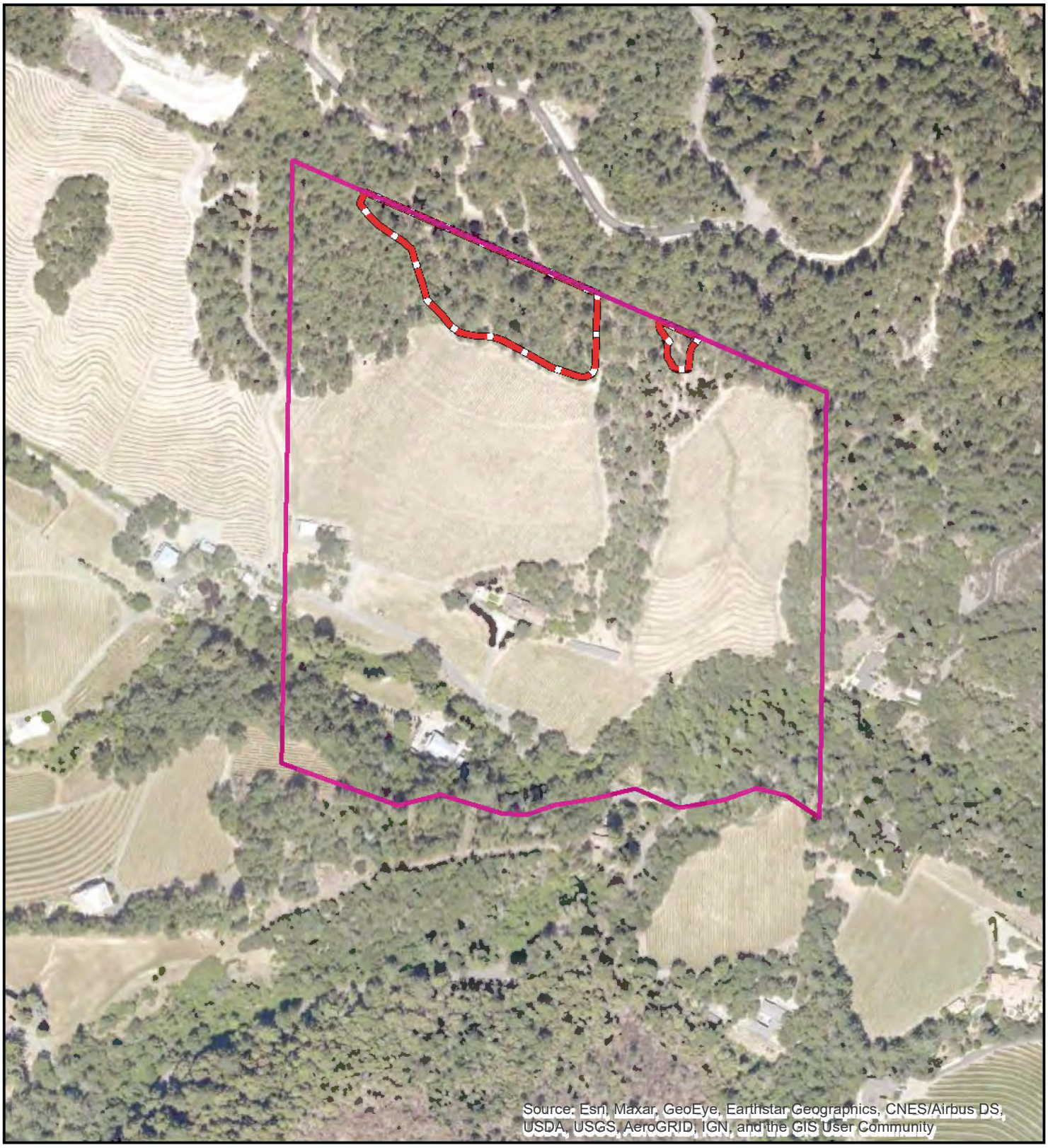
W E
S

1 in = 2,000 ft

Date: 6/13/2023

Map #4

1510 Acquisition Expansion - Project/Study Area



Legend

- Parcel Boundary
- 1510 Conversion Area

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

N
W E
S

1 in = 417 ft

Forest Ecosystem Management

Date: 6/13/2023

Attachment #8

Reference Material Specific to Project

- Soil Survey Report
- BREA Map Delineation
- Cnddb Maps (5-Mile & BREA)
- California WHR Report
- USFWS IPac Report
- NMFS EHM

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Napa County, California

Calistoga Hills Project Area

March 31, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Map Scale: 1:1,060 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
Survey Area Data: Version 14, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 2, 2019—Jul 5, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
111	Boomer-Forward-Felta complex, 5 to 30 percent slopes	2.2	100.0%
Totals for Area of Interest		**2.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Napa County, California

111—Boomer-Forward-Felta complex, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: hdkc
Elevation: 100 to 5,500 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 54 to 55 degrees F
Frost-free period: 210 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Boomer and similar soils: 40 percent
Forward and similar soils: 35 percent
Felta and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boomer

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from igneous rock

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 44 inches: clay loam
H3 - 44 to 59 inches: weathered bedrock

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F005XZ010CA - Very Deep Gravelly Mesic Hills 40-60"ppt
Hydric soil rating: No

Description of Forward

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from rhyolite

Typical profile

H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 35 inches: gravelly loam
H3 - 35 to 59 inches: weathered bedrock

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F005XZ007CA - Moderately Deep Mesic Hills 40-60"ppt
Hydric soil rating: No

Description of Felta

Setting

Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from tuff and/or alluvium derived from metavolcanics

Typical profile

H1 - 0 to 7 inches: very gravelly loam
H2 - 7 to 26 inches: very gravelly clay loam
H3 - 26 to 60 inches: very gravelly sandy clay loam

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F005XZ003CA - Terraces
Hydric soil rating: No

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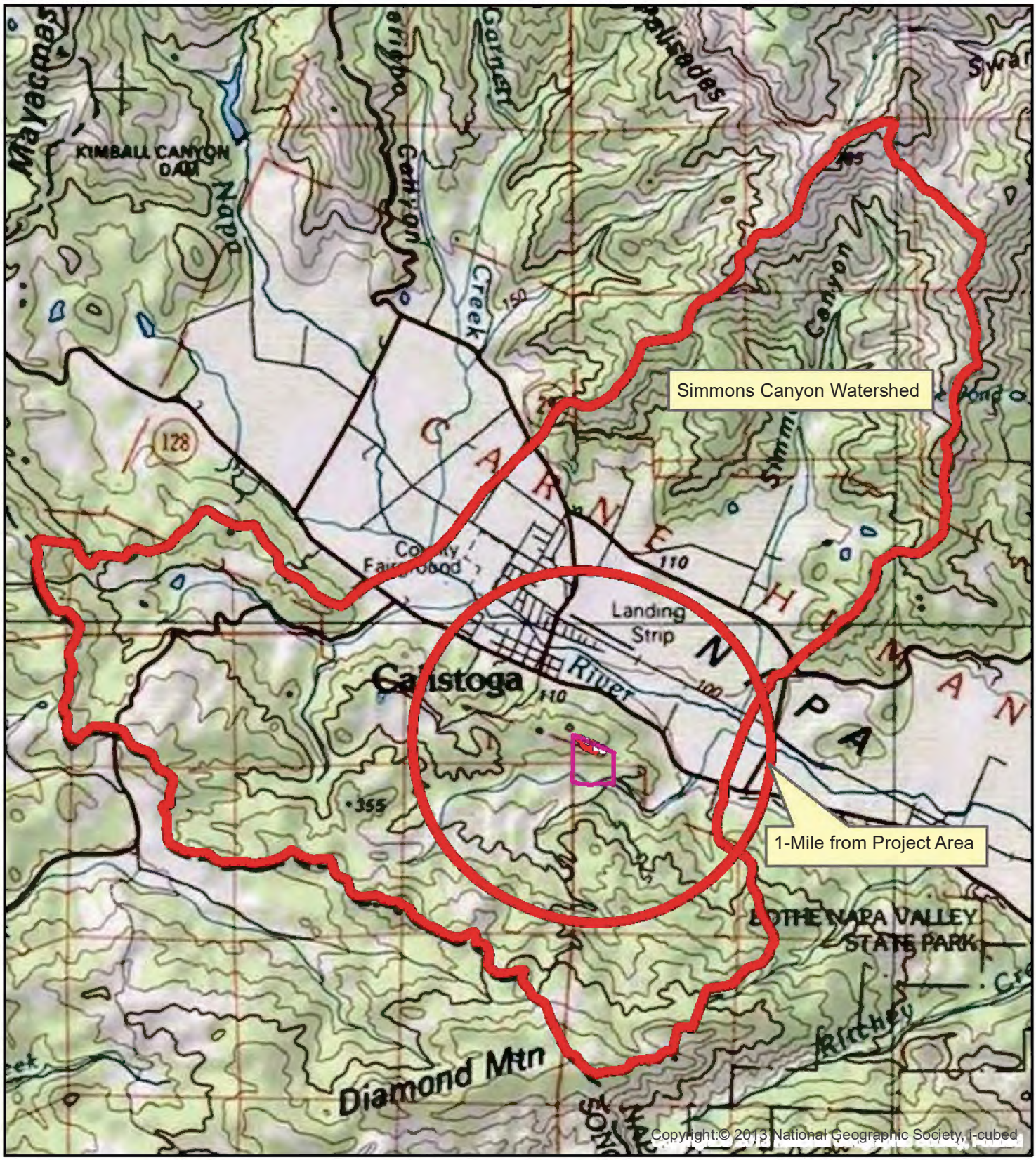
1510 Acquisition Expansion - BREA



Legend

- Parcel Boundary
- 1510 Conversion Area
- BREA

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

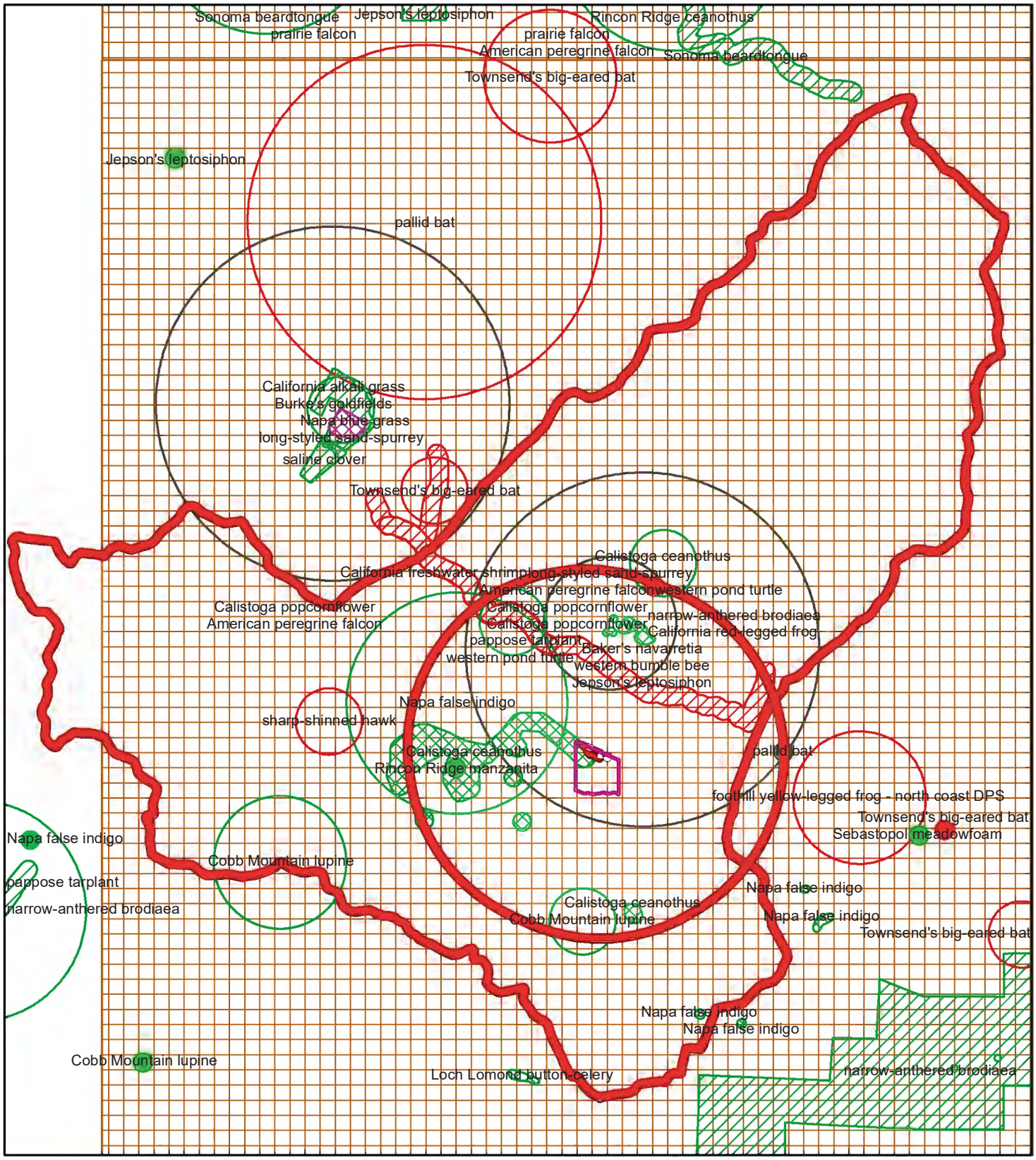
Forest Ecosystem Management &
Salix Natural Resource Management

N
W E
S

1 in = 5,417 ft

Date: 6/13/2023

1510 Acquisition Expansion
cnddb within BREA



Legend

- Parcel Boundary
- 1510 Conversion Area
- BREA

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

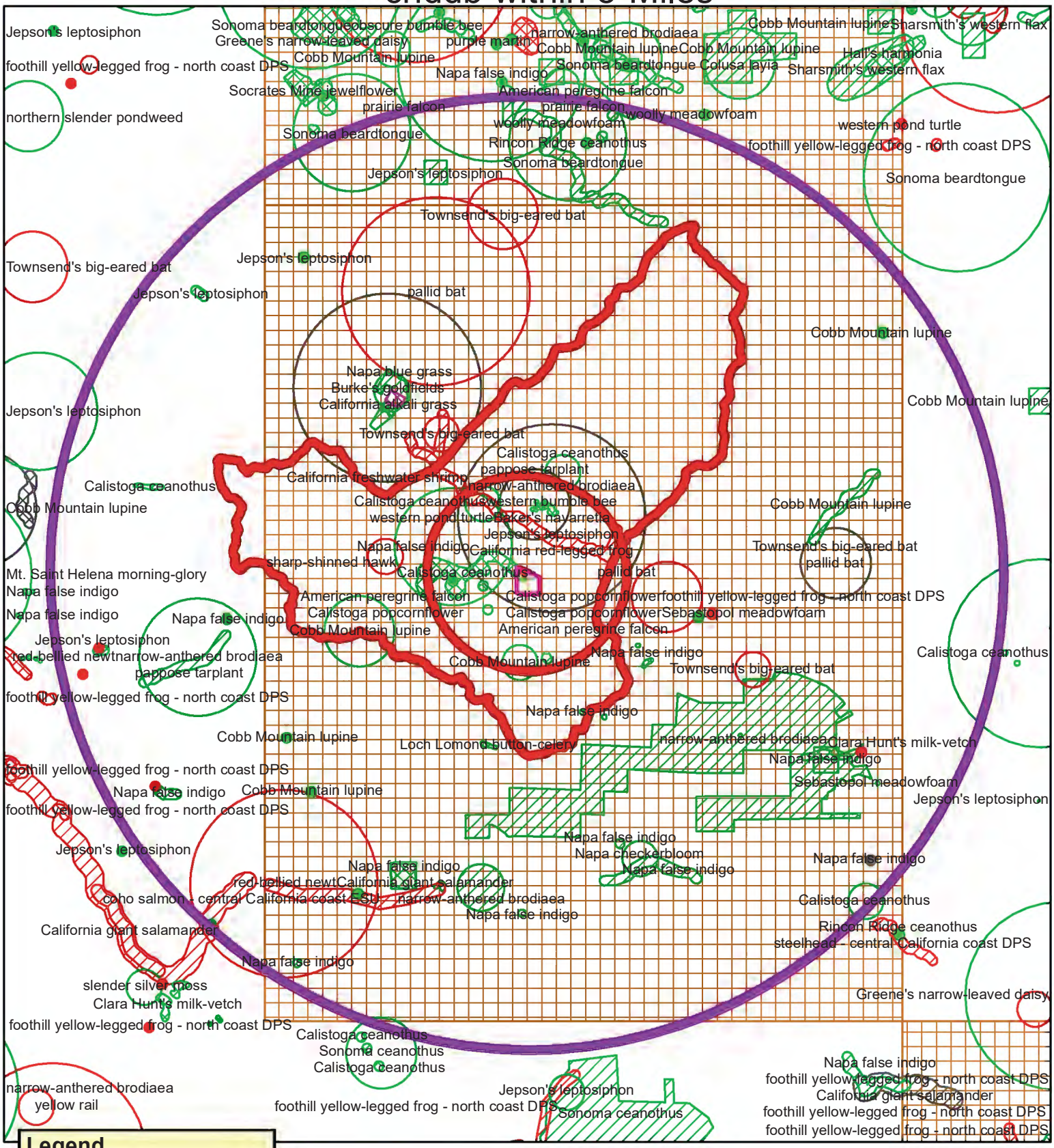
Forest Ecosystem Management &
Salix Natural Resource Management

N
W E
S

1 in = 5,167 ft

Date: 6/13/2023

1510 Acquisition Expansion
cnddb within 5-Miles



Legend

- Parcel Boundary
- 1510 Conversion Area
- BREA
- Five Mile from Project Area

Parcel Legal: Sec 6 & 7 T08N, R06W MDB&M
Project Legal: Sec 6 T08N, R06W MDB&M
APN: 020-400-013
Napa County

Forest Ecosystem Management &
Salix Natural Resource Management

N
W E
S

1 in = 9,417 ft

Date: 6/13/2023

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM
supported by the
CALIFORNIA INTERAGENCY WILDLIFE TASK GROUP
and maintained by the
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
Database Version: 9.0

SPECIES SUMMARY REPORT

FE = Federal Endangered
FT = Federal Threatened
CE = California Endangered
CT = California Threatened
CF = California Fully Protected
CP = California Protected
SC = California Species of Special Concern
PE = Federally-Proposed Endangered
PT = Federally-Proposed Threatened
FC = Federal Candidate
BL = BLM Sensitive
FS = USFS Sensitive
CD = CDF Sensitive
HA = Harvest

Note: Any given status code for a species may apply to the full species or to only one or more subspecies or distinct population segments.

ID	Species Name	Status	Native/Introduced
A001	CALIFORNIA TIGER SALAMANDER	FE FT CT SC	NATIVE
A007	CALIFORNIA NEWT	SC	NATIVE
A012	COMMON ENSATINA	SC BL FS	NATIVE
A028	WESTERN SPADEFOOT	SC BL	NATIVE
A043	FOOTHILL YELLOW-LEGGED FROG	SC BL FS	NATIVE
A071	CALIFORNIA RED-LEGGED FROG	FT SC	NATIVE
B003	COMMON LOON	SC	NATIVE
B042	AMERICAN WHITE PELICAN	SC	NATIVE
B051	GREAT BLUE HERON	CD	NATIVE
B052	GREAT EGRET	CD	NATIVE
B070	GREATER WHITE-FRONTED GOOSE	SC HA	NATIVE
B090	REDHEAD	SC HA	NATIVE
B102	BARROW'S GOLDENEYE	SC HA	NATIVE
B110	OSPREY	CD	NATIVE
B111	WHITE-TAILED KITE	CF BL	NATIVE
B113	BALD EAGLE	CE CF BL FS CD	NATIVE
B114	NORTHERN HARRIER	SC	NATIVE
B126	GOLDEN EAGLE	CF BL CD	NATIVE
B129	PEREGRINE FALCON	CF CD	NATIVE
B140	CALIFORNIA QUAIL	SC HA	NATIVE
B143	BLACK RAIL	CT CF BL	NATIVE
B144	CLAPPER RAIL	FE CE CT CF	NATIVE
B154	SNOWY PLOVER	FT SC	NATIVE
B159	MOUNTAIN PLOVER	SC BL	NATIVE
B269	BURROWING OWL	SC BL	NATIVE
B270	SPOTTED OWL	FT SC BL FS CD	NATIVE
B272	LONG-EARED OWL	SC	NATIVE
B273	SHORT-EARED OWL	SC	NATIVE
B309	OLIVE-SIDED FLYCATCHER	SC	NATIVE
B338	PURPLE MARTIN	SC	NATIVE
B342	BANK SWALLOW	CT BL	NATIVE
B368	BEWICK'S WREN	SC	NATIVE
B372	MARSH WREN	SC	NATIVE
B410	LOGGERHEAD SHRIKE	FE SC	NATIVE
B417	HUTTON'S VIREO	SC	NATIVE
B430	YELLOW WARBLER	SC	NATIVE
B461	COMMON YELLOWTHROAT	SC	NATIVE
B467	YELLOW-BREASTED CHAT	SC	NATIVE
B483	SPOTTED TOWHEE	SC	NATIVE

ID	Species	Status	Native/Introduced
B484	CALIFORNIA TOWHEE	FT CE	NATIVE
B487	RUFOUS-CROWNED SPARROW	SC	NATIVE
B494	VESPER SPARROW	SC	NATIVE
B497	BELL'S SPARROW	FT SC	NATIVE
B499	SAVANNAH SPARROW	CE SC	NATIVE
B501	GRASSHOPPER SPARROW	SC	NATIVE
B505	SONG SPARROW	SC	NATIVE
B519	RED-WINGED BLACKBIRD	SC	NATIVE
B520	TRICOLORED BLACKBIRD	SC BL	NATIVE
B522	YELLOW-HEADED BLACKBIRD	SC	NATIVE
M006	ORNATE SHREW	FE SC	NATIVE
M018	BROAD-FOOTED MOLE	SC	NATIVE
M023	YUMA MYOTIS	BL	NATIVE
M025	LONG-EARED MYOTIS	BL	NATIVE
M026	FRINGED MYOTIS	BL	NATIVE
M033	WESTERN RED BAT	SC FS	NATIVE
M037	TOWNSEND'S BIG-EARED BAT	SC BL FS	NATIVE
M038	PALLID BAT	SC BL FS	NATIVE
M045	BRUSH RABBIT	FE CE HA	NATIVE
M051	BLACK-TAILED JACKRABBIT	SC HA	NATIVE
M087	SAN JOAQUIN POCKET MOUSE	SC BL	NATIVE
M105	CALIFORNIA KANGAROO RAT	SC	NATIVE
M114	SALT-MARSH HARVEST MOUSE	FE CE CF	NATIVE
M117	DEER MOUSE	SC	NATIVE
M127	DUSKY-FOOTED WOODRAT	FE SC	NATIVE
M134	CALIFORNIA VOLE	FE CE SC BL	NATIVE
M147	RED FOX	CT FS HA	NATIVE
M152	RINGTAIL	CF	NATIVE
M160	AMERICAN BADGER	SC HA	NATIVE
M161	WESTERN SPOTTED SKUNK	SC HA	NATIVE
M165	MOUNTAIN LION	SC	NATIVE
M170	CALIFORNIA SEA-LION	CP	NATIVE
M171	HARBOR SEAL	CP	NATIVE
R004	WESTERN POND TURTLE	SC BL FS	NATIVE
R023	COMMON SAGEBRUSH LIZARD	BL	NATIVE
R036	WESTERN SKINK	SC BL	NATIVE
R046	NORTHERN RUBBER BOA	CT FS	NATIVE
R048	RING-NECKED SNAKE	FS	NATIVE
R053	STRIPED RACER	FT CT	NATIVE
R057	GOPHERSNAKE	SC	NATIVE
R059	CALIFORNIA MOUNTAIN KINGSNAKE	SC BL FS	NATIVE
R061	COMMON GARTERSNAKE	FE CE CF SC	NATIVE

Total Number of Species: 81

Query Parameters

Included Locations
Napa Co

Included Location Seasons
Migrant, Summer, Winter, Yearlong

Included Habitats & (Stages)
Annual Grassland, Barren, Blue Oak Woodland, Chamise-redshank Chaparral, Closed-cone Pine-cypress, Coastal Oak Woodland,

Douglas-fir, Lacustrine, Mixed Chaparral, Montane Hardwood, Montane Riparian, Perennial Grassland, Redwood, Urban, Valley Oak Woodland, Vineyard

Habitat Suitability Threshold

Reproduction - Low, Cover - Low, Feeding - Low

Included Habitat Seasons

Migrant, Summer, Winter, Yearlong

Excluded Elements

Bogs, Salt Ponds, Tidepools, Wharf

Included Species

All Species Included

Included Special Statuses

Blm Sensitive, California Endangered, California Fully Protected, California Protected, California Species Of Special Concern, California Threatened, Cdf Sensitive, Federal Candidate, Federal Endangered, Federal Proposed Endangered, Federal Proposed Threatened, Federal Threatened, Introduced, Native, Usfs Sensitive

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: August 03, 2022
Project Code: 2022-0070867
Project Name: Calistoga Hills Vineyard Conversion

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0070867
Project Name: Calistoga Hills Vineyard Conversion
Project Type: Clearing Forest
Project Description: Forest Conversion of 2.17 acres within larger parcel
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.56866135,-122.57587993153442,14z

Counties: Napa County, California

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/1123

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas*	Threatened

Population: East Pacific DPS
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6199

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/321

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Crustaceans

NAME	STATUS
California Freshwater Shrimp *Syncaris pacifica*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7903

Flowering Plants

NAME	STATUS
Burke's Goldfields *Lasthenia burkei*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4338

Clara Hunt's Milk-vetch *Astragalus clarianus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3300

Loch Lomond Coyote Thistle *Eryngium constancei*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5106

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Forest Ecosystem Management
Name: Pam Town
Address: 1692 East Road
City: Deary
State: ID
Zip: 83823
Email pamtown30@gmail.com
Phone: 4064907427

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office
Alaska Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 38° 34' 19" N, Longitude = 123° 25' 18" W
Decimal Degrees: Latitude = 38.572, Longitude = -122.578

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No Essential Fish Habitats (EFH) were identified at the report location.

Salmon EFH

Link	HUC Name	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
	San Pablo Bay - Below San Pablo Dam	Chinook Salmon, Coho Salmon	All	Pacific	Pacific Coast Salmon Plan

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Bigeye Thresher Shark - North Pacific,
Bluefin Tuna - Pacific,
Dolphinfish (Dorado or Mahimahi) - Pacific,
Pelagic Thresher Shark - North Pacific,
Swordfish - North Pacific