
**BIOLOGICAL RESOURCE ASSESSMENT
WITH BOTANICAL SURVEYS
AND DELINEATION OF WATERS OF THE U.S.
for the
WINROD VINEYARDS PROJECT
APN 017-110-038
Calistoga, CA**

September 5, 2019

Updated September 8, 2020

**Prepared by
Northwest Biosurvey**



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1.0 PROJECT DESCRIPTION

1.1 Proposed Project: This Biological Resource Assessment was conducted for a proposed vineyard expansion project that would expand 5.75 acres of existing vineyard to 16.37 acres on a 106.47-acre¹ parcel in Calistoga, California. Vegetation types are mapped for the entire property. The property is currently developed with residential and agricultural uses. The local permitting agency is requesting completion of an assessment of biological resources on the property as part of the California Environmental Quality Act (CEQA) review required for vineyard development on the property.

Updated Assessment: This assessment is an update of an assessment completed in 2019, following the “Tubbs Fire” in 2018. Following submittal of that report the project engineer redesigned the proposed vineyard blocks in response to mitigation measures proposed in the 2019 assessment. This report assesses the new vineyard blocks, providing new maps and tables, an updated impact assessment, and updated recommendations.

Report Structure: The initial phase of this assessment evaluates the potential of the parcel to contain sensitive plant and wildlife habitat. The second phase consists of a floristic-level botanical survey listing all plant taxa² on and around the project area. The assessment will determine whether the property contains sensitive plants or potentially contains sensitive wildlife requiring mitigation under the California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA). As used here, the terms sensitive plant or wildlife includes all state or federal rare, threatened, or endangered species and all species listed in the California Natural Diversity Database (CNDDB) list of “Special Status Plants, Animals and Natural Communities”.

A survey for sensitive bat habitat was also conducted for this project. The results of the survey are provided in Section 5.1. Two sections are added to this assessment to meet Napa County environmental review policy: These are the “Napa County Woodland Assessment” (Section 6.0) and “Conformance with the Napa County Baseline Data Report” (Section 7.0).

A delineation of waters of the U.S. was conducted due to the presence of streams within the parcel. Because wetland delineations are prepared with a standard format for U.S.

¹ Based on the ESRI shape file for this parcel calculated via GIS, this parcel contains 129.54 acres and not 104.79 acres as indicated on the Napa County Public Browser site.

² Many sensitive plants and wildlife are subspecies or varieties which are taxonomic subcategories of species. The term “taxa” refers to species and their sub-specific categories.

Army Corps of Engineers review, the delineation is provided as a separate report in **Appendix D**.

1.2 Location: The property is located at 3465 State Hwy. 128, Calistoga, California (APN 017-110-038); T09N R07W, Mark West Springs, Calif. 7½' Topographic Map). A location map is provided in **Figure 1**.

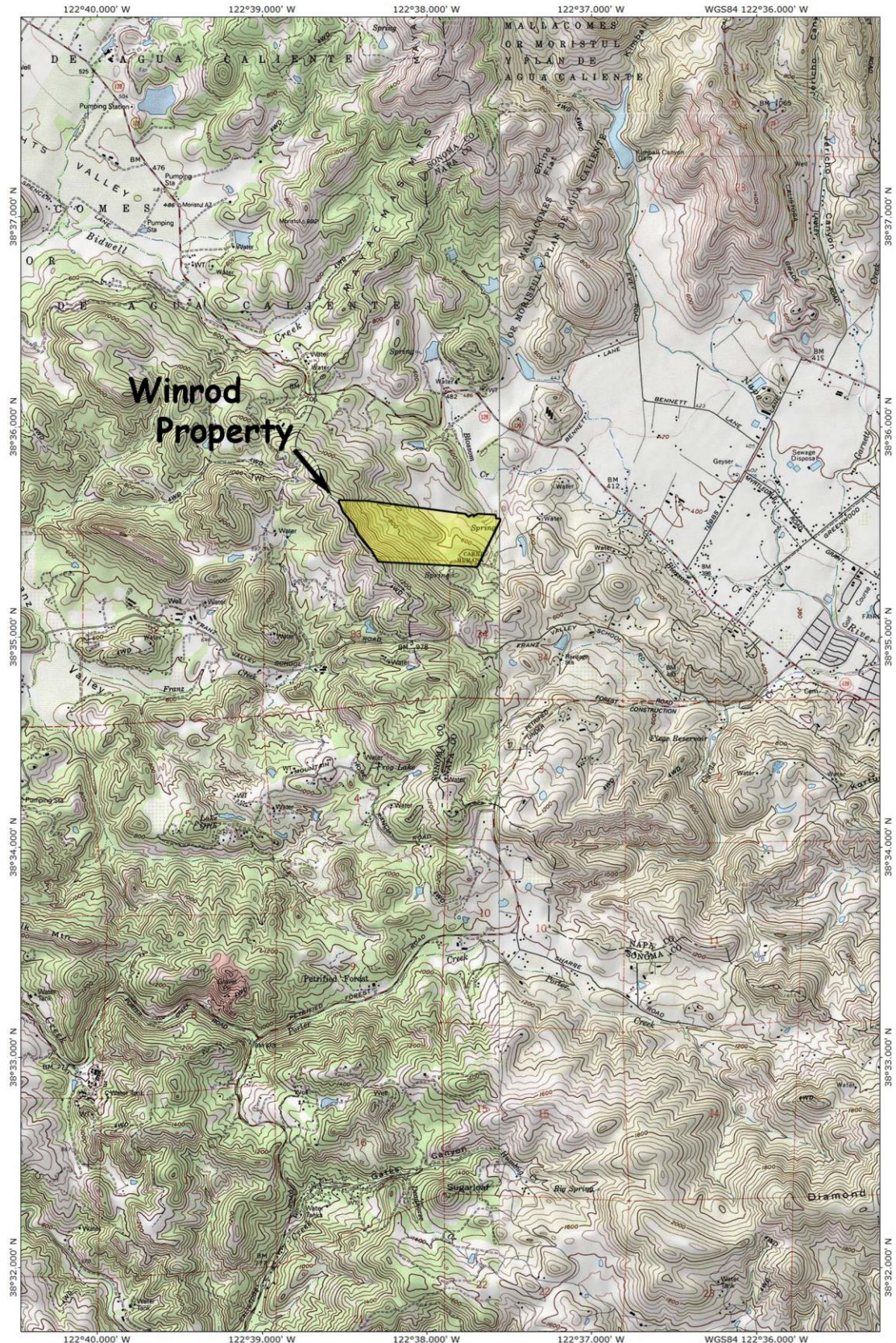
2.0 ASSESSMENT METHODOLOGY

The basis of the biological resource assessment is a comparison of existing habitat conditions within the project boundaries to the geographic range and habitat requirements of sensitive plants and wildlife. It includes all sensitive species that occupy habitats similar to those found in the project area and whose known geographic ranges encompass it. The approach is conservative in that it tends to over-estimate the actual number of sensitive species potentially present. The analysis includes the following site characteristics:

- Location of the project area with regard to the geographic range of sensitive plant and wildlife species
- Location(s) of known populations of sensitive plant and wildlife species as mapped in the California Natural Diversity Database (CNDDDB)
- Soils of the project area
- Elevation
- Presence or absence of special habitat features such as vernal pools and serpentine soils
- Plant communities existing within the project area

In addition to knowledge of the local plants and wildlife, the following computer databases were used to analyze the suitability of the site for sensitive species:

- California Department of Fish and Wildlife (CDFW), *California Natural Diversity Database (CNDDDB)*; RareFind 5, 2019
- California Native Plant Society's (CNPS) *Electronic Inventory of Rare and Endangered Vascular Plants of California* (2019 edition)
- California Department of Fish and Wildlife, *California Wildlife Habitat Relationships System (CWHR)*, Version 9.0
- Napa County *Baseline Data Report* (2005)



LOCATION MAP
Figure 1

141°N
09/03/19

The **CNDDDB** and **RareFind 5** databases consist of maps and records of all known populations of sensitive plants and wildlife in California. This data is continually updated by the CDFW with new sensitive species population data.

The **CNPS** database produces a list of sensitive plants potentially occurring at a site based on the various site characteristics listed above. While use of the CNPS inventory does not in itself eliminate the need for an in-season botanical survey, it can, when used in conjunction with other information, provide a very good indication of the suitability of a site as habitat for sensitive plant species.

The **CWHR database** operates on the same basis as the CNPS inventory. Input includes geographic area, plant community (including development stage), soil structure, and special features such as presence of water, snags, cover, and food (fruit, seeds, insects, etc.).

2.1 Botanical Survey Methods: A full, in-season floristic-level survey was conducted for the project. CNDDDB information and maps for the Mark West Springs quadrangle were referenced prior to the survey. Vegetation communities were identified based on the nomenclature of *A Manual of California Vegetation* (Sawyer et al. 2009) as modified by the California Native Plant Society (CNPS) and mapped on a 1"=250' aerial photo. Vegetation community names are based on an assessment of dominant cover species.

Plants occurring on the site were identified using *The Jepson Manual of Higher Plants of California*. Where necessary, species names were updated based on the 6th edition, *CNPS Inventory of Rare and Endangered Plants of California*. A map of the vegetation types is provided in **Figure 2**.

2.2 Bat Habitat Survey Methods: Mature trees and woodlands within the proposed vineyard blocks were assessed for their potential as habitat for sensitive bat species. These included searching for hollow trees, trees with open cavities, and trees with exfoliating bark.

2.3 Delineation Methods: The delineation was conducted as prescribed in the *Corps of Engineers Wetlands Delineation Manual*, January 1987, and the *Arid West 2008 Supplement*. Plant taxonomy and nomenclature is from the *Jepson Manual, Higher Plants of California*, 2012. Other texts, such as Munz's *A California Flora and Supplement*, 1973, and Mason's *Flora of the Marshes of California*, 1957, were used as supplemental texts. The survey included use of lidar mapped overlays and an extensive foot survey.

2.4 Woodland Assessment Methods: The proposed vineyard blocks contain three distinct woodland types which are discussed in Section 3.3, Vegetation Types. These are: Blue Oak Woodland, Mixed Oak Woodland, and Pacific Madrone Forest. One study plot was selected within each of the three woodland communities that would be impacted by vineyard development. These were selected based on community structure and identifiable geographic references (woodland boundaries, etc.). Trees within the study plots were mapped with a GPS waypoint and a record was made of their species, diameter at breast height (DBH), and any unique characteristics (dead, hollow, acorn storage tree, etc.). The methodology is discussed in detail in **Section 6.0** of this report.

2.5 Survey Dates: Site visits for botanical surveys, habitat assessments, the delineation, and mapping were made by Northwest Biosurvey staff on May 6 and August 20, 2019.

2.6 Biological Assessment Staff: Field surveys, plant taxonomy, and the delineation were conducted by Steve Zalusky, Northwest Biosurvey principal biologist. Mr. Zalusky has a Master of Science Degree in Biology from the California State University at Northridge and a Bachelor of Science Degree in Zoology from the University of California at Santa Barbara. Mr. Zalusky has over 35 years of experience as a biologist in the government and private sectors.

Mr. Zalusky was assisted in the field and with mapping, the delineation, and the woodland analysis by Leigh Zalusky. Leigh Zalusky has a Bachelor of Science Degree in Computer Engineering from the University of California, Davis. He has also developed extensive skills in plant taxonomy and ecology while managing and assisting in the development of the Seigler Valley Wetland Mitigation Bank and while assisting Northwest Biosurvey staff in field surveys and vegetation mapping over the past four years.

Danielle Zalusky, Northwest Biosurvey principal planner, assisted with database review and report preparation. Ms. Zalusky has 15 years of experience as a planner in local government and the private sector and more than 16 years in field biology. She has a Bachelor of Arts Degree all course work toward an M.A. Degree in Rural and Town Planning from Chico State University. Prior to joining Northwest Biosurvey in 2002, Ms. Zalusky was a senior planner for the Lake County Community Development Department.

3.0 SITE CHARACTERISTICS

3.1 Topography and Drainage: The Winrod property extends eastward from the crest of the Mayacamas Mountains into the northern-most end of the Napa Valley. The property slopes steeply from the crest of the ridge at an elevation of 1,240 feet msl (mean sea level) to an elevation of 480 feet msl on the valley floor. It is cut from northwest to southeast by a deeply incised intermittent stream channel which drains into Blossom Creek at the northeast corner of the property. Blossom Creek continues east to the Napa River, which travels the length of the Napa Valley to eventually drain into San Pablo Bay.

3.2 Soils: The property contains the following soil types:

- **Aiken loam, 15-30% slopes:**

Much of the northernmost vineyard block contains this soil type. This strongly sloping well-drained clayey soil is on hillsides and uplands. This soil formed in material weathered from basic volcanic rock. Permeability of the Aiken soil is moderately slow. Runoff is medium to rapid, and the hazard of erosion is moderate to high. The natural vegetation consists of ponderosa pine, oaks, redwoods in moist draws, annual grasses, and brush in small areas that had been cleared.

- **Forward silt loam, 5-39% slopes;**

- **Forward silt loam, 12-57% slopes:**

Most of the proposed vineyard blocks are within these soil units. These sloping to moderately steep soils are on hillslopes. The Forward series consists of well-drained soils on uplands. These soils formed in material weathered from rhyolite. The plant cover is mainly Douglas fir and ponderosa pines. Runoff is medium and the hazard of erosion is severe.

- **Kidd loam, 30-75% slopes (soil unit 156):**

This is a well-drained soil on uplands. It is a steep to very steep soil that formed in materials weathered from rhyolite. Runoff is rapid to very rapid, and permeability is moderately rapid. The hazard from erosion is high to very high. Typical vegetation on this loam includes manzanita, chamise, scrub oak, forbs, grasses, and some ponderosa pine.

3.3 Vegetation Types: The entire parcel was mapped for vegetation in order to provide project context. The project contains seven plant communities or vegetation types based on or derived from the "Standardized Classification" scheme described in the California Native Plant Society (CNPS) *A Manual of California Vegetation*. These vegetation types and other cover types are listed in **Table 1**. They are described below and shown in the vegetation map provided in **Figure 2**.

This property was heavily burned during the Tubbs fire in 2017. The impacts and recovery of burned areas (shown in dark overlay in **Figure 2**) depends on the plant community and its location. Unburned islands of all plant communities persist on the property.

- **Coast Redwood Forest:**

Mature coast redwood (*Sequoia sempervirens*) occurs in shaded defiles below the crest of the Mayacamas Mountains central ridge on the west side of the property. These small forest "islands" are interspersed with surrounding Douglas fir (*Pseudotsuga menziesii* var. *menziesii*) forest with which it intergrades. The shrub and ground cover layer are the same as those of the surrounding fir forest. Coast redwood has a remarkable ability to recover from even severe fire damage. Most of these trees, even those with no remaining branches, are re-sprouting along their trunks and should make full recoveries.

- **Douglas Fir Forest:**

Douglas fir forest covers most of the northeast-facing slopes on the upper elevations of the property. California black oak (*Quercus kelloggii*), California bay (*Umbellularia californica*), Pacific madrone (*Arbutus menziesii*), big-leaf maple (*Acer macrophyllum*) provide the sub-canopy. Canopy density is generally too high to support a shrub layer other than younger members of the canopy species. Following the Tubbs Fire, the ground cover remains primarily bare earth with scattered surviving members of the original ground cover including coastal wood fern (*Dryopteris arguta*), woodland madia (*Anisocarpus madioides*), and grand hound's tongue (*Cynoglossum grande*) mixed with invading wild oat grassland species.

This forest did poorly during the Tubbs Fire and most of the trees in burned areas are dead.

- **Knobcone Pine Forest:**

This small forest is located along the steeper terrain in the southeastern corner of the property. It is heavily dominated by knobcone pine (*Pinus attenuata*) but includes an uncharacteristic sub-canopy of Pacific madrone, which is typically a shade-loving sub-canopy species of the Douglas fir forest. Knobcone pines typically grow in exposed xeric (hot, relatively dry) exposed slopes. This mixing is due to the small size of this forest and the presence of sub-canopy species from the surrounding Douglas fir forest.

TABLE 1. PLANT COMMUNITIES AND OTHER COVER TYPES PRESENT

COVER TYPE	<u>Pre-fire</u> Acres of Cover Type on Property	<u>Post-fire</u> Acres of Cover Type on Property	<u>Pre-fire</u> Percent of Property Supporting Cover Type	<u>Post-fire</u> Percent of Property Supporting Cover Type	<u>Post-fire Acres of</u> <u>Cover Type in</u> <u>Potential Vineyard</u> <u>Blocks</u>			Total <u>Post-fire</u> <u>Acres of Cover</u> <u>Types in</u> <u>Vineyard</u> <u>Blocks</u>	Percent of <u>Post-fire</u> <u>Cover</u> <u>Types in</u> <u>Vineyard</u> <u>Blocks</u>
					1	2	3		
Coast Redwood Forest	3.62	0.59	3.40	0.55	-	-	-	0.00	0.00
Douglas Fir Forest	45.05	11.47	42.31	10.77	-	-	-	0.00	0.00
Knobcone Pine Forest	0.48	0.48	0.45	0.45	-	-	-	0.00	0.00
Mixed Oak Woodland	37.63	22.70	35.34	21.32	0.38	0.07	2.51	2.96	13.04
Blue Oak Woodland	4.08	3.53	3.83	3.32	-	-	2.56	2.56	72.52
Pacific Madrone Forest	3.35	0.82	3.15	0.77	-	0.52	-	0.52	63.41
Wild Oat Grassland	2.50	2.50	2.35	2.35	-	0.07	0.87	0.94	37.60
Vineyard	5.75	5.75	5.40	5.40	1.18	3.10	-	4.28	74.43
Ruderal (disturbed)	4.01	4.01	3.77	3.77	0.10	0.51	0.32	0.93	23.19
Burned Unrecovered	0.00	53.77	0.00	50.50	0.25	1.21	1.87	3.33	6.19
Cleared	0.00	0.85	0.00	0.80	-	0.85	-	0.85	100.00
Total Acres of Cover Type	106.47	106.47	100%	100%	1.91	6.33	8.13	16.37	15.37*

* Percent of total property in proposed vineyard blocks

The majority of both knobcone pine and Pacific madrone trees here were killed during the Tubbs Fire and now persist as standing deadwood. Knobcone pine is a “fire-obligate” species which requires a crown fire to open cones and regenerate new forest. This forest will most likely quickly regenerate with a new crop of seedlings. The Pacific madrone trees are recovering through stump sprouting.

The shrub layer has not recovered while the ground cover consists of a transitional “fire recovery” community dominated by invading wild oat grassland. This ground cover will be shaded-out once the forest begins to recover.

- **Mixed Oak Woodland:**

This heterogeneous woodland/forest occupies the lower northeast-facing slopes, generally below the Douglas fir forest. It consists of a mosaic of shifting dominance of Oregon white oak (*Quercus garryana* var. *garryana*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), and California black oak, depending on the soil depth and amount of shading. Other species present include big-leaf maple, California buckeye (*Aesculus californica*), Douglas fir, and Pacific madrone.

The shrub layer consists of widely scattered common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*) and toyon (*Heteromeles arbutifolia*). The ground cover consists of a fire recovery community dominated by wild oat grassland.

At the time of the survey most of the oak trees in this community were recovering from the Tubbs Fire.

- **Blue Oak Woodland:**

This mature, xeric woodland maintains the classic open savanna structure characteristic of these “woodlands”. Community edges include a mix of other oaks from the adjacent mixed oak woodland. As is common for this community, it lacks a shrub layer and occurs within a matrix of wild oat grassland. This woodland survived the Tubbs Fire in relatively good condition. This is perhaps due to the wide spacing of trees and lack of a shrub layer. Most trees that were burned are recovering.

- **Pacific Madrone Forest:**

This community consists of dense, homogenous stands of Pacific madrone. It is unlikely to have supported a shrub layer due to the dense canopy cover. It mixes along its edges with species from the surrounding Douglas fir and mixed oak woodland communities. The standing trunks and top growth of Pacific madrone typically have a high mortality rate from fire. Most of the trees in this forest now consist of standing dead wood. However, most trees are stump sprouting and should eventually recover.

The ground cover consists of a fire recovery community of wild oat grassland. This cover will eventually be shaded out once the top growth of the trees matures.

- **Chamise Chaparral:**

This community is heavily dominated by chamise (*Adenostoma fasciculatum*). Toyon, common manzanita, and bush monkeyflower (*Mimulus aurantiacus* ssp. *aurantiacus*) are present but do not reach a level of sub-dominance. Groundcover in unburned areas consists of leaf litter. Burned areas support rattail sixweeks grass (*Festuca myuros*), foothill needlegrass (*Stipa lepida*), annual agoseris (*Agoseris heterophylla* var. *heterophylla*), and wavyleaf soap plant (*Chlorogalum pomeridianum*).

- **Wild Oat Grassland:**

This community is heavily dominated by slender wild oat (*Avena barbata*). Spring vetch (*Vicia sativa* ssp. *sativa*) is present in the early spring. Shaded areas also include fork-toothed ookow (*Dichelostemma congestum*) and blue wildrye (*Elymus glaucus* ssp. *glaucus*). Soft chess (*Bromus hordeaceus*), hedgehog dogtail (*Cynosurus echinatus*), California fescue (*Festuca californica*), red-stem storksbill (*Erodium cicutarium*), and red brome (*Bromus hordeaceus*) are also present.

- **Vineyard:**

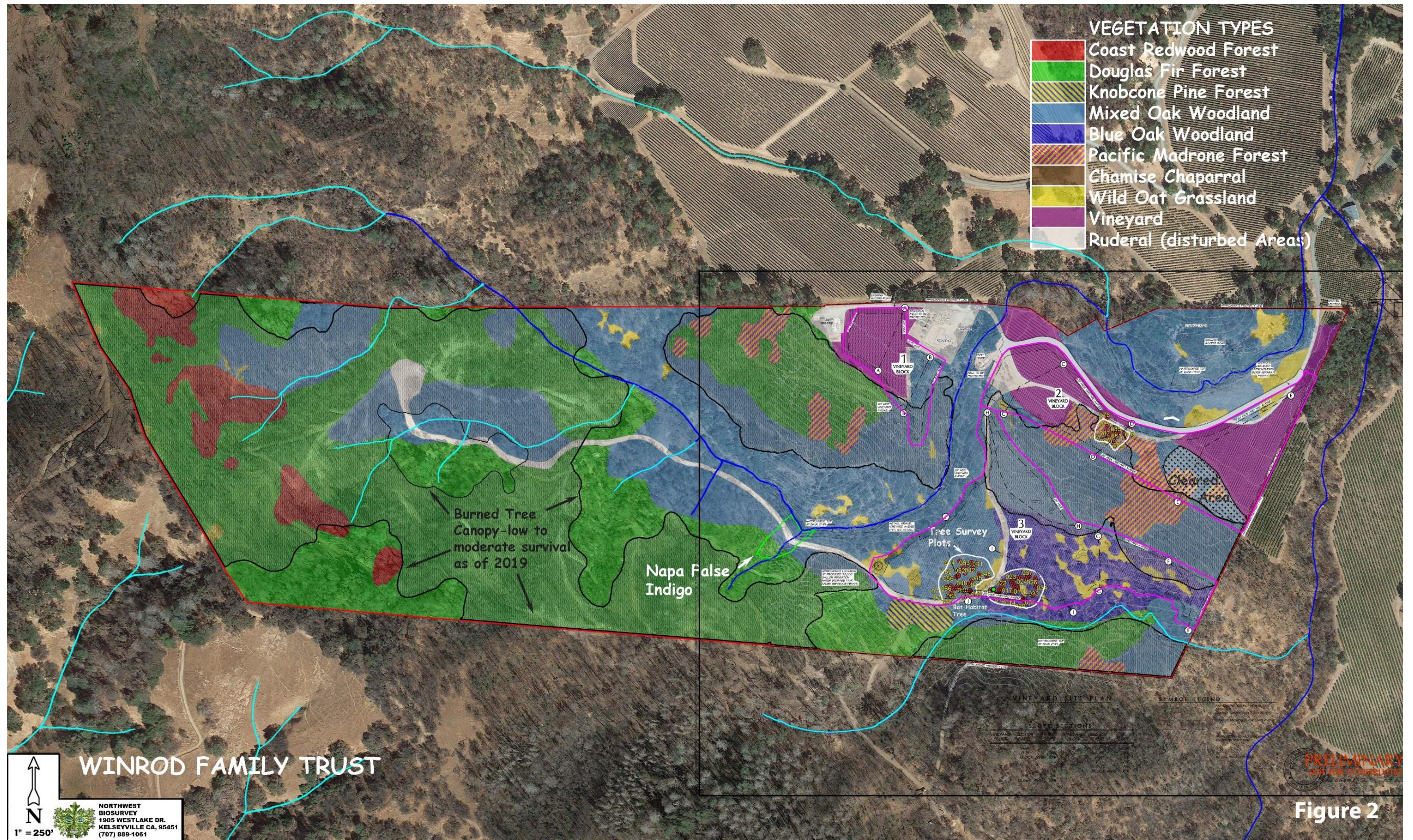
The northeastern quarter of the property supports existing vineyards.

- **Ruderal:**

Small areas consisting of structures and roads occur in parts of the property.

- **Burned, unrecovered areas:** While not a vegetation type, Figure 2 and Table 1 account for areas burned in the Tubbs fire that have not yet recovered. Vegetation in these areas was typically severely burned with most trees and shrubs present as standing deadwood. While stump sprouting has occurred in woody vegetation, this has so far been minor-to-moderate. As a result of the loss of tree and shrub canopy, the ground cover (grasses and forbs) has become dense. The species are typically those of the pre-burned community but with a shift in species pallet to the more xeric (dry soil) members.

As the shrub and tree canopies recover, possibly following one or more post-fire seral stages, this ground cover will come to resemble the pre-fire community. Dead trees in these burned areas were not included in tree count estimates for the proposed vineyard blocks.



4.0 PRE-SURVEY RESEARCH RESULTS

4.1 CNPS Electronic Inventory Analysis: A California Native Plant Society (CNPS) analysis was conducted for all plants with federal and state regulatory status, and all non-status plants on the CNPS Rare Plant Ranks 1B through 4. The query included all plants within this area of Napa County occurring within the plant communities identified on the project site. The inventory lists species potentially occurring at the site; these are listed in **Table 2**. These species were included in the list of potentially sensitive species specifically searched for during field surveys.

Note: *The CNPS list is used to broaden the list of sensitive species considered during the subsequent field surveys; however, it must be used with discretion because the database search does not allow fine-tuning for specific soil types or for many specific habitats required by sensitive plant taxa (e.g. serpentine and vernal pools). Consequently, the CNPS list generated for a site may include several taxa for which the required habitat is not present.*

4.2 California Natural Diversity Database: The California Natural Diversity Database (CNDDB) and CDFW RareFind 5 data and maps for the Mark West Springs 7½' quadrangle map were reviewed for this project. **Table 3** presents a list of sensitive plant and wildlife species known to occur within the quadrangle. In addition to listing the species present within the quadrangle, the table provides a brief descriptor of the habitat requirements and blooming season, along with an assessment of whether the project area contains the necessary habitat requirements for each species. **Appendix A** at the end of this report lists the species within the nine quadrangles in the vicinity of this property.

TABLE 2. CALIFORNIA NATIVE PLANT SOCIETY'S INVENTORY OF RARE AND ENDANGERED PLANTS

Selected CNPS Plants by Scientific Name

Winrod Vineyards Property

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat/Micro-Habitat
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	Fabaceae	perennial deciduous shrub	1B.2	None	None	Apr-Jul	Broadleafed upland forest (openings), Chaparral, Cismontane woodland
<i>Astragalus claranus</i>	Clara Hunt's milk-vetch	Fabaceae	annual herb	1B.1	CT	FE	Mar-May	Chaparral (openings), Cismontane woodland, Valley and foothill grassland; serpentinite or volcanic, rocky, clay
<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	1B.2	None	None	May-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland; volcanic
<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	Convolvulaceae	perennial rhizomatous herb	4.2	None	None	Apr-Jun	Chaparral, Lower montane coniferous forest, Valley and foothill grassland; serpentinite
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	None	None	Feb-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland; volcanic or serpentinite
<i>Ceanothus divergens</i>	Calistoga ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	None	None	Feb-Apr	Chaparral (serpentinite or volcanic, rocky)
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	Asteraceae	annual herb	1B.2	None	None	May-Nov	Chaparral, Coastal prairie, Meadows and seeps, Marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic); often alkaline
<i>Erigeron biolettii</i>	streamside daisy	Asteraceae	perennial herb	3	None	None	Jun-Oct	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest; rocky, mesic

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat/Micro-Habitat
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	Polemoniaceae	annual herb	1B.2	None	None	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland; usually volcanic
<i>Lilium rubescens</i>	redwood lily	Liliaceae	perennial bulbiferous herb	4.2	None	None	Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; Sometimes serpentinite, sometimes roadsides
<i>Lupinus sericatus</i>	Cobb Mountain lupine	Fabaceae	perennial herb	1B.2	None	None	Mar-Jun	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Micropus amphibolus</i>	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	None	None	Mar-May	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; rocky
<i>Monardella viridis</i>	green monardella	Lamiaceae	perennial rhizomatous herb	4.3	None	None	Jun-Sep	Broadleafed upland forest, Chaparral, Cismontane woodland
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	Polemoniaceae	annual herb	1B.1	None	None	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools; Mesic
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	4.2	None	None	Feb-May	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; Mesic
<i>Viburnum ellipticum</i>	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	None	None	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest

KEY FOR TABLE 2:

CNPS Rare Plant-Threat Rank Definitions:

CRPR = California Rare Plant Rank

1B.1 = Rare, threatened, or endangered in California and elsewhere; seriously threatened in California

1B.2 = Rare, threatened, or endangered in California and elsewhere; fairly threatened in California

1B.3 = Rare, threatened, or endangered in California and elsewhere; not very threatened in California

2A = Presumed extinct in California, but extant elsewhere

2B.1 = Rare, threatened, or endangered in Calif., but more common elsewhere; seriously threatened in Calif.

2B.2 = Rare, threatened, or endangered in Calif., but more common elsewhere; fairly threatened in Calif.

2B.3 = Rare, threatened, or endangered in Calif., but more common elsewhere; not very threatened in Calif.

3 = Plants about which we need more information (Review List)

3.1 = Plants about which we need more information (Review List); seriously threatened in California

3.2 = Plants about which we need more information (Review List); fairly threatened in California

3.3 = Plants about which we need more information (Review List); not very threatened in California

4.1 = Plants of limited distribution (watch list); seriously threatened in California

4.2 = Plants of limited distribution (watch list); fairly threatened in California

4.3 = Plants of limited distribution (watch list); not very threatened in California

State and Federal Status:

CESA = California Endangered Species Act

FESA = Federal Endangered Species Act

CR = State Rare

CT = State Threatened

SSC = CDFW Species of Special Concern

WL = CDFW Watch List

FT = Federal Threatened

CE = State Endangered.

CD = State Delisted

FP = CDFW Fully Protected

FE = Federal Endangered

FD = Federal Delisted

TABLE 3. CNDDDB SENSITIVE PLANT AND WILDLIFE SPECIES WITHIN THE MARK WEST SPRINGS, CALIF. 7½' QUAD.

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	Broadleaved upland forest, chaparral, cismontane woodland/openings; --/--/1B.2	April-July decid. shrub	Habitat is present: Species found during visits
<i>Anomobryum julaceum</i>	slender silver moss	Broadleaved upland forest, lower montane conif. forest, North Coast conif. forest/damp rock and soil on outcrops, usually on roadcuts; --/--/2.2	moss	Habitat is present
<i>Astragalus claranus</i>	Clara Hunt's milk-vetch	Chaparral, cismontane woodland, valley & foothill grassland/serpentine or volcanic, rocky, clay; FE/ST/1B.1	March-May ann. herb	Habitat not present
<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	Broadleaved upland forest, chaparral, lower montane conif. forest, valley & foothill grassland/volcanic; --/--/1B.2	May-July per. herb	Habitat not present
<i>Calandrinia breweri</i>	Brewer's calandrinia	Chaparral, coastal scrub/sandy or loamy, disturbed sites and burns; --/--/4.2	(Jan)March-June ann. herb	Habitat is present
<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	Chaparral, lower montane conif. forest, valley & foothill grassland/serpentine; --/--/4.2	April-June rhizom. herb	Serpentine habitat not present
<i>Ceanothus confusus</i>	Rincon ridge ceanothus	Closed cone conif. forest, chaparral, cismontane woodland; volcanic; --/--/1B.1	Feb.-April everg. shrub	Habitat is present
<i>Ceanothus divergens</i>	Calistoga ceanothus	Chaparral, cismontane woodland/serpentine, volcanic, rocky; --/--/1B.2	Feb.-March everg. shrub	Habitat not present
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	Coastal prairie, meadows & seeps, marshes & swamps (coastal salt), valley & foothill grassland (vernally mesic)/often alkaline; --/--/1B.2	May-Nov. ann. herb	Mesic/vernal pool habitat not present
<i>Erigeron biolettii</i>	streamside daisy	Broadleaved upland forest, cismontane woodland, North Coast coniferous forest /rocky, mesic; --/--/3	June-Oct. per. herb	Mesic habitat not present
<i>Eriogonum umbellatum</i> var. <i>bahiiforme</i>	bay buckwheat	Cismontane woodland, lower montane coniferous forest, serpentine chaparral/rocky, often serpentine; --/--/4.2	July-Sept. per. herb	Habitat not present
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	Freshwater marsh, marshes & swamps (freshwater), vernal pools, sometimes lake margins/clay --/SE/1B.2	April-Aug. ann. herb	Mesic/vernal pool habitat not present
<i>Harmonia nutans</i>	nodding harmonia	Chaparral, cismontane woodland/rocky or gravelly, volcanic; --/--/4.3	March-May ann. herb	Habitat not present
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	congestion-headed hayfield tarplant	Valley and foothill grassland/often in fallow fields, sometimes roadsides; --/--/1B.2	April-Nov. ann. herb	Habitat is present
<i>Juglans hindsii</i>	Northern California black walnut	Riparian scrub, riparian woodland/deep alluvial soil associated with creek or stream; --/--/1B.1	April-May decid. tree	Habitat is present

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
<i>Leptosiphon acicularis</i>	bristly leptisiphon	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; --/--/4.2	April-July ann. herb	Habitat is present
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	Chaparral, cismontane woodland, grassy slopes/volcanic or serpentine edge; --/--/1B.2	May-July ann. herb	Habitat is present
<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	Broad-leaved upland forest, cismontane woodland; --/--/4.3	April-June ann. herb	Habitat is present
<i>Lilium rubescens</i>	redwood lily	Broadleaved upland forest, chaparral, lower montane coniferous forest, North Coast coniferous forest, upper montane coniferous forest/sometimes serpentinite, sometimes roadsides; --/--/4.2	April- Aug(Sept) bulb. herb	Habitat is present
<i>Lomatium repostum</i>	Napa lomatium	Chaparral, cismontane woodland/serpentinite; --/--/4.3	March-July per. herb	Serpentine habitat not present
<i>Lupinus sericatus</i>	Cobb Mountain lupine	Broadleaved upland forest, chaparral, cismontane woodland, lower montane conif. forest/gravelly soils, sometimes serpentine; --/--/1B.2	March-June per. herb	Moderate habitat present
<i>Microseris paludosa</i>	marsh microseris	Closed-cone conif. forest, cismontane woodland, coastal scrub, valley & foothill grassland; --/--/1B.2	Apr- June(July) per. herb	Habitat not present
<i>Monardella viridis</i>	green monardella	Broadleaved upland forest, chaparral, cismontane woodland; --/--/4.3	June-Sept. rhizom. herb	Habitat is present
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	Cismontane woodland, lower montane conif. forest, meadows & seeps, valley & foothill grassland, vernal pools, swales/adobe or alkaline soils; --/--/1B.1	May-July ann. herb	Mesic/vernal pool habitat not present
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	Volcanic ash flow vernal pools; FE/SE/1B.2	May-June ann. herb	Mesic/vernal pool habitat not present
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools/mesic--/--/4.2	Feb.-May ann. herb (aquatic)	Mesic/vernal pool habitat not present
<i>Viburnum ellipticum</i>	oval-leaved viburnum	Chaparral, cismontane woodland, lower montane coniferous forest; --/--/2B.3	May-June decid. shrub	Habitat present

*See CNPS list for key

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
<i>Syncaris pacifica</i>	California freshwater shrimp	Endemic to Marin, Napa, Sonoma Counties. Vernal pools, low elevation, low gradient streams with moderate to heavy riparian cover; FE/SE/G1/S1	year-round	Habitat not present-found in tributaries to Russian River
<i>Lavinia symmetricus navarroensis</i>	Navarro roach	Permanent streams through heavily forested areas. Found in both warm and cold waters: usually slower, warmer reaches of streams in the Russian and Navarro River drainages; SSC/S2S3	year-round	Habitat not present-not in Russian/Navarro Rivers watersheds
<i>Oncorhynchus kisutch</i> (pop. 4)	coho salmon – central California coast ESU	Freshwater salmon of streams along Pacific Ocean from Humboldt County to Santa Cruz County. Spawning streams are mainly in areas with redwood forest as the dominant vegetation ³ . Found in Russian River and tributaries. Habitats include bays, lagoons, large and medium rivers; FE/SE/G5/S2?	long-distance migrant	Habitat not present-not in Russian/Navarro Rivers watersheds
<i>Oncorhynchus mykiss irideus</i> pop. 8	steelhead-Central California Coast DPS	Small cool fast-flowing tributary streams with gravel beds. Steelhead are anadromous species that require streams that are contiguous with the ocean. Russian River so. to Soquel Creek and to no. of Pajaro River, San Francisco and San Pablo bay basins; FT/G5/S2S3	migratory	Habitat may be present in Blossom Creek
<i>Lampetra ayresii</i>	river lamprey	Anadromous and parasitic lamprey. Require gravelly streams for spawning. Adults may spend most of their lives in estuaries or near shore; SSC/G5/S3	migratory	Habitat may be present in Blossom Creek
<i>Taricha rivularis</i>	red-bellied newt	Occurs near high to moderate gradient streams and rivers, riffles, pools. Burrows in soil or debris near water, emerges during fall rains to water to breed; SSC/G4/SNR	year-round	Habitat not present
<i>Dicamptodon ensatus</i>	California giant salamander	Cool, moist forest habitats associated with rocky streams; SSC/G3/SNR	year-round	Habitat not present
<i>Rana boylei</i>	foothill yellow-legged frog	Riparian/aquatic: partly-shaded, shallow streams & riffles with a rocky substrate in variety of habitats; SSC/SCT/G3/S2S3	year-round	Habitat not present
<i>Emys marmorata</i>	western pond turtle	Aquatic turtle found in ponds, lakes, rivers, creeks, marshes & irrigation ditches with abundant vegetation and rocky or muddy bottoms; In woodland, forest, & grasslands; SSC/G3G4/S3	year-round	Habitat not present

³ National Marine Fisheries Service (NMFS), 1995.

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
<i>Strix occidentalis caurina</i>	northern spotted owl	Old-growth forests or mixed stands of old-growth & mature trees; occasionally in younger forests with patches of big trees; FT/ST	year-round	Habitat not present
<i>Antrozous pallidus</i>	pallid bat	Open, dry habitats, forest habitats, in caves, tunnels, buildings, bridges; sensitive to human disturbance; SSC/G5/S3	local migrant	Habitat may be present in woodland or forests
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	Roosts in open near relatively mesic sites, mainly montane forest habitats; SSC/G3/S2	local migrant	Habitat may be present in Douglas fir forest
<i>Myotis thysanodes</i>	fringed myotis	Caves, mines, buildings; valley foothill hardwood or hardwood-conifer, sometimes redwood forests; G4/S3	local migrant	Habitat may be present in woodlands or redwood forest
<i>Pekania pennanti</i>	fisher, West Coast DPS	North Coast conifer forest: old-growth conifer or riparian forests; cavities, snags, logs, rocky areas; ST/SSC/G5/S3	year-round	Habitat not present
<i>Taxidea taxus</i>	American badger	Dryer open stages of shrub, forest, & herbaceous habitats. Needs friable soils for burrows and open uncultivated ground; SSC/G5/S3	year-round	Habitat may be present in woodlands or forests

KEY FOR TABLE 3:

SE/ST/SD=State Endangered/Threatened/Delisted
 SC/SCD=State Candidate for Listing/Delisting
 SSC=CDFW Species of Special Concern
 SFP=CDFW Fully Protected
 WL=CDFW Watch List
 FE/FT/FD=Federal Endangered/Threatened/Delisted
 FPE/FPT/FPD/FP=Federal Proposed Endangered/Threatened/Delisting
 FC=Federal Candidate

NatureServe Conservation Status:

G1/S1 = Global/State Critically Imperiled
 G2/S2 = Global/State Imperiled
 G3/S3 = Global/State Vulnerable
 G4/S4 = Global/State Apparently Secure
 G5/S5 = Global/State Secure
 SNR=Not rated

4.3 Wildlife Habitat Analysis Results: The California Wildlife Habitat Relationships analysis listed a large number of native wildlife species as potentially occurring on the site based on the geographic location and wildlife habitats present. This list is included as **Appendix B.**

4.4 Wildlife Assessment: Based on the pre-survey research conducted for this study, a total of 18 sensitive wildlife species need to be accounted for within the project area. These consist of the species identified as present within the Mark West Springs quadrangle by the CNDDDB and/or listed in the CWHR analysis. Three additional species included in the Napa County BDR have a potential to be on the parcel and are addressed below. Accepted protocol requires that all CNDDDB species in the surrounding U.S.G.S. quadrangle be discussed even though suitable habitat may not occur on the site.

Habitat for the following species is not found on the property. These species include:

- California freshwater shrimp
- Navarro roach
- Coho salmon
- Steelhead-Central California Coast DPS (Distinct Population Segment)
- River lamprey
- Red-bellied newt
- California giant salamander
- Foothill yellow-legged frog
- Western pond turtle
- Northern spotted owl
- Fisher-West Coast DPS

The segment of Blossom Creek within the property boundaries is a short-duration ephemeral stream lacking the long-term cold water flows necessary to support fish or aquatic herptiles (reptiles and amphibians). While the coast redwood and Douglas fir forests may have supported moderate habitat for northern spotted owl or fisher, these forests are severely burned and now occur as open xeric habitats not suitable for these cool, shaded forest species.

The potential for occurrence of the remaining wildlife species is addressed below. The sensitive wildlife species with a potential to occur on this property are either found in the woodland or grassland habitats. Most of the vineyard blocks are proposed within the mixed oak and blue oak habitats.

- Potential habitat for the following species is present on this property in the oak woodlands:

○ **Lawrence's gold finch (*Carduelis lawrencei*):**

These passerine (perching birds) prefer to nest in the dense foliage of oaks in dry open woodland near brushy and grassy areas or chaparral. Proximity to water is important. Their diet consists primarily of seeds but includes some insects. They frequently nest near other pairs during a breeding season that extends from late March through July, with birds migrating south in August. There is nesting habitat for this bird in oak woodlands within the survey area.

○ **Lewis' woodpecker (*Melanerpes lewis*):**

These woodpeckers excavate nest cavities in dead trees and dead limbs of live trees in open woodlands. They hunt insects and eat fruits and berries throughout the spring and summer and shift their diet to cached acorns and emerging insects in the fall and winter. Breeding occurs between early May and July. The open oak woodland habitat within the grassland community provides potential habitat.

○ **Loggerhead shrike (*Lanius ludovicianus*):**

This bird is considered a sensitive species by the County of Napa. These passerines prefer open-canopied woodlands with grass ground cover and grazed open pastures. Preferred habitats include valley-foothill woodlands and riparian. They build well-concealed nests in the dense foliage of oaks and shrubs. They eat large insects but are fairly unique for passerines in that they also eat small amphibians, reptiles, birds, and mammals which they may impale on thorns or barbed wire fences. Shrikes use fence posts or shrubs as observation posts. Nesting occurs between March and early July when the young are fully fledged. Potential habitat for this species may be found in the mix of grassland and oak woodlands.

○ **American badger (*Taxidea taxus*):**

Badgers are found mostly in drier open stages of shrub, forest, and herbaceous habitats with friable soils such as open grasslands, fields, and pastures. They are found from high alpine meadows to sea level and occur throughout the state except for the northern North Coast. This species is carnivorous, eating mostly fossorial rodents; they also will eat reptiles, insects, birds, eggs, and carrion. They dig burrows in friable or sandy soil for cover and nesting, and often reuse old burrows. Breeding occurs in late summer or fall. Nests are in areas with little overstory cover, often a grass-lined den, and young are born mostly in March and April. Young become independent in 5 or 6 months.

- **Pallid bat (*Antrozous pallidus*):**

Optimal habitat for these bats consists of open forest and woodlands with sources of water over which to feed. These bats prefer the cool summer temperatures of caves, crevices, and mines as roosting sites where they are known to wedge themselves into small spaces, but they will also roost in buildings, bridges, and hollow trees. Foraging occurs over open country. Pallid bats take a variety of prey, including insects, reptiles, and rodents. Maternity colonies tend to be in the more protected, isolated locations and may consist of more than 100 individuals. These bats have a home range of 1 to 3 miles and are known to roost with other bat species. This species is extremely sensitive to human disturbance of roosting sites.

➤ Potential habitat for the following species is present on this property in the oak woodlands, Douglas fir forest, and coast redwood forest:

- **Townsend's western big-eared bat (*Corynorhinus townsendii ssp. townsendii*):**

Physical characteristics of this bat include bilateral nose lumps and very large ears. The most restrictive resource required by this species is daytime roosting habitat. This species prefers caves and mines and is easily observed when present, hanging from open surfaces in mines and caves. Less frequently it will roost in tunnels, bridges or other human-made structures, or hollow trees. Roost sites may vary from year to year. They may use separate roosting sites for day and night and prefer open roosting sites with complete darkness. These bats typically prefer relatively mesic (moist) habitat such as streams near woodland habitats and may travel long distances for foraging. Most of their diet consists of moths. This species is extremely sensitive to disturbance of roosting sites. These sites are frequently abandoned after being visited by humans.

- **Fringed myotis (*Myotis thysanodes*):**

This species occurs at mid-elevations over most of its range. Along the west coast, this bat is found at low elevations and is associated with redwood forests, valley foothill hardwood, and hardwood-conifer. Maternity colonies are large, up to 300 individuals, and are located in caves, mines, and buildings. Males roost separately from the maternity colonies in similar roosting features. They primarily eat beetles, but also moths, flies, crickets, lacewings, and other flying and terrestrial insects which they may glean from foliage. This species is included in CNDDB maps but has no state or federal status.

5.0 FIELD SURVEY RESULTS

5.1 Bat Habitat Survey Results: A survey for bat habitat was included in this assessment. Mature trees within the proposed vineyard blocks were assessed for potential as roosting sites for sensitive bat species. These potential bat habitat sites include hollow trees, trees with open cavities, and trees with exfoliating bark.

Results of bat habitat survey: A single decadent oak with potential habitat was identified near the southwest corner of proposed Vineyard Block 3. This tree is mapped in **Figure 2** as waypoint 6. A photo is provided in **Photo 1** below. No indication of current or past use by bats was observed at this tree.



5.2 Botanical Field Survey Results: Table 4 presents the results of the floristic-level botanical survey of the proposed vineyard blocks. Each of the sensitive plant taxa potentially occurring at within the property and listed in Tables 2 and 3 was specifically searched for during the surveys. A total of 108 native and introduced plant taxa were identified. One plant with sensitive regulatory status (CNPS Rank 1B.2) was identified: **Napa false indigo (*Amorpha californica* var. *napensis*)**. The population of this shrub on the property is mapped in Figure 2 with a green polygon. It is located west of proposed Vineyard Block 3.

Note: *Even when a site meets the generalized habitat description for a sensitive plant taxon, this is not a guarantee that it is present. The precise habitat requirements for any species cannot be known in most cases. Plants with sensitive regulatory status are rare because they have a narrow band of habitat criteria that must be met. These may include a wide range factors including microclimate, seasonal soil moisture, soil chemistry and texture, and presence or absence of specific pests or competitors.*

At present the specifics of these factors are not known for the vast majority of plant taxa. This issue is understood by regulatory biologists and is dealt with through the requirement that a floristic-level botanical survey be conducted which lists all plants occurring at a site throughout the full range of blooming seasons. Ultimately, the botanical survey determines whether a taxon is present or not present.

TABLE 4. FLORA OF THE WINROD VINEYARD PROPERTY

Habit	Species	Common Name	Family	Origin
fern	<i>Woodwardia fimbriata</i>	giant chain fern	Azollaceae	N
fern	<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	sub-arctic lady fern	Dryopteridaceae	N
fern	<i>Dryopteris arguta</i>	coastal wood fern	Dryopteridaceae	N
forb	<i>Anthriscus caucalis</i>	bur chervil	Apiaceae	A
forb	<i>Daucus carota</i>	Queen Anne's lace	Apiaceae	A
forb	<i>Achillea millefolium</i>	common yarrow	Asteraceae	N
forb	<i>Agoseris heterophylla</i> var. <i>heterophylla</i>	annual agoseris, annual mountain dandelion	Asteraceae	N
forb	<i>Anisocarpus madioides</i>	woodland madia	Asteraceae	N
forb	<i>Centaurea solstitialis</i>	yellow star thistle	Asteraceae	A
forb	<i>Cichorium intybus</i>	chicory, blue sailors	Asteraceae	A
forb	<i>Cirsium vulgare</i>	bull thistle	Asteraceae	A
forb	<i>Erigeron bonariensis</i>	horseweed	Asteraceae	A
forb	<i>Eriophyllum lanatum</i> var. <i>achillaeoides</i>	yarrow leaved woolly sunflower	Asteraceae	N
forb	<i>Helianthus gracilentus</i>	slender sunflower	Asteraceae	N
forb	<i>Lactuca seriola</i>	prickly lettuce	Asteraceae	A
forb	<i>Logfia gallica</i>	daggerleaf cottonrose	Asteraceae	A
forb	<i>Micropus californicus</i>	cottontop	Asteraceae	N
forb	<i>Psilocarpus tenellus</i>	slender woolly marbles	Asteraceae	N
forb	<i>Sonchus oleraceus</i>	common sow thistle	Asteraceae	A
forb	<i>Wyethia glabra</i>	green mule ears, shining mule ears	Asteraceae	N
forb	<i>Amsinckia menziesii</i>	small-flowered fiddleneck, rancher's fireweed	Boraginaceae	N
forb	<i>Cynoglossum grande</i>	grand hound's tongue	Boraginaceae	N
forb	<i>Cardamine breweri</i>	Brewer's bittercress	Brassicaceae	N
forb	<i>Cerastium glomeratum</i>	mouse-ear chickweed, sticky mouse-ear	Caryophyllaceae	A
forb	<i>Petrorhagia dubia</i>	pink grass, wilding pink	Caryophyllaceae	A

Habit	Species	Common Name	Family	Origin
forb	<i>Silene gallica</i>	small-flower catchfly	Caryophyllaceae	A
forb	<i>Cyperus eragrostis</i>	tall flat sedge	Cyperaceae	N
forb	<i>Croton setigerus</i>	turkey mullein	Euphorbiaceae	N
forb	<i>Euphorbia oblongata</i>	eggleaf spurge	Euphorbiaceae	A
forb	<i>Acmispon brachycarpus</i>	shortpodded lotus, hill lotus	Fabaceae	N
forb	<i>Acmispon micranthus</i>	smallflower lotus	Fabaceae	N
forb	<i>Lathyrus jepsonii</i> var. <i>californicus</i>	California tule pea	Fabaceae	N
forb	<i>Lupinus formosus</i>	western lupine	Fabaceae	N
forb	<i>Lupinus nanus</i>	sky lupine	Fabaceae	N
forb	<i>Melilotus indicus</i>	sour clover, yellow sweet clover	Fabaceae	A
forb	<i>Trifolium incarnatum</i>	crimson clover	Fabaceae	A
forb	<i>Trifolium willdenovii</i>	tomcat clover	Fabaceae	N
forb	<i>Vicia sativa</i> ssp. <i>sativa</i>	spring vetch	Fabaceae	A
forb	<i>Vicia villosa</i> ssp. <i>villosa</i>	winter vetch, hairy vetch	Fabaceae	A
forb	<i>Erodium cicutarium</i>	red-stem storksbill	Geraniaceae	A
forb	<i>Geranium dissectum</i>	cut-leaved geranium	Geraniaceae	A
forb	<i>Geranium robertianum</i>	Robert's geranium	Geraniaceae	A
forb	<i>Nemophila menziesii</i> var. <i>atomaria</i>	baby blue eyes	Hydrophyllaceae	N
forb	<i>Sisyrinchium bellum</i>	blue-eyed grass, western blue-eyed grass	Iridaceae	N
forb	<i>Juncus bufonius</i> var. <i>bufonius</i>	toad rush	Juncaceae	N
forb	<i>Juncus confusus</i>	Colorado rush	Juncaceae	N
forb	<i>Stachys albens</i>	cobwebby hedge nettle, white-stem hedge nettle	Lamiaceae	N
forb	<i>Calochortus amabilis</i>	Diogenes lantern, golden fairy lantern	Liliaceae	N
forb	<i>Chlorogalum pomeridianum</i>	wavyleaf soap plant	Liliaceae	N
forb	<i>Dichelostemma congestum</i>	fork-toothed ookow	Liliaceae	N
forb	<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	miner's lettuce	Montiaceae	N
forb	<i>Epilobium brachycarpum</i>	tall annual willow herb	Onagraceae	N
forb	<i>Collinsia heterophylla</i> var. <i>heterophylla</i>	purple Chinese houses	Plantaginaceae	N

Habit	Species	Common Name	Family	Origin
forb	<i>Plantago lanceolata</i>	English plantain	Plantaginaceae	A
forb	<i>Collomia heterophylla</i>	variable-leaf collomia	Polemoniaceae	N
forb	<i>Linanthus parviflorus</i>	variable linanthus	Polemoniaceae	N
forb	<i>Rumex acetosella</i>	sheep sorrel	Polygonaceae	A
forb	<i>Rumex crispus</i>	curly dock	Polygonaceae	A
forb	<i>Lysimachia</i> (f. <i>Anagalis</i>) <i>arvensis</i>	scarlet pimpernel	Primulaceae	A
forb	<i>Delphinium variegatum</i> ssp. <i>variegatum</i>	royal larkspur	Ranunculaceae	N
forb	<i>Ranunculus muricatus</i>	spiny-fruit buttercup	Ranunculaceae	A
forb	<i>Ranunculus occidentalis</i>	western buttercup	Ranunculaceae	N
forb	<i>Galium aparine</i>	goose grass, common bedstraw	Rubiaceae	N
forb	<i>Lithophragma affine</i>	common woodland star	Saxifragaceae	N
grass	<i>Aira caryophylla</i>	silver European hairgrass	Poaceae	A
grass	<i>Avena barbata</i>	slender wild oat	Poaceae	A
grass	<i>Briza maxima</i>	big quaking grass	Poaceae	A
grass	<i>Briza minor</i>	small quaking grass	Poaceae	A
grass	<i>Bromus carinatus</i> var. <i>carinatus</i>	California brome	Poaceae	N
grass	<i>Bromus diandrus</i>	ripgut grass, ripgut brome	Poaceae	A
grass	<i>Bromus hordeaceus</i>	soft chess	Poaceae	A
grass	<i>Bromus laevipes</i>	woodland brome	Poaceae	N
grass	<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome	Poaceae	A
grass	<i>Cynosurus echinatus</i>	hedgehog dogtail, annual dogtail	Poaceae	A
grass	<i>Dactylus glomerata</i>	orchard grass	Poaceae	A
grass	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	blue wildrye	Poaceae	N
grass	<i>Elymus hispidus</i>	intermediate wheat grass	Poaceae	A
grass	<i>Festuca californica</i>	California fescue	Poaceae	N
grass	<i>Festuca myuros</i>	rattail sixweeks grass	Poaceae	A
grass	<i>Festuca perennis</i>	perennial ryegrass, Italian rye grass	Poaceae	A
grass	<i>Melica californica</i>	California melic	Poaceae	N
grass	<i>Stipa lepida</i>	foothill needle-grass	Poaceae	N

Habit	Species	Common Name	Family	Origin
grass	<i>Triticum aestivum</i>	common wheat, winter wheat	Poaceae	A
shrub	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	Adoxaceae	N
shrub	<i>Rhus ovata</i>	sugar bush, sugar sumac	Anacardiaceae	N
shrub	<i>Toxicodendron diversilobum</i>	poison oak	Anacardiaceae	N
shrub	<i>Arctostaphylos manzanita</i> subsp. <i>manzanita</i>	common manzanita	Ericaceae	N
shrub	<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo; CNPS Rank 1B.2	Fabaceae	N
shrub	<i>Cytisus scoparius</i>	Scotch broom	Fabaceae	A
shrub	<i>Mimulus aurantiacus</i> ssp. <i>aurantiacus</i>	bush monkeyflower, sticky monkeyflower	Phrymaceae	N
shrub	<i>Heteromeles arbutifolia</i>	toyon	Rosaceae	N
shrub	<i>Prunus virginiana</i>	western chokecherry	Rosaceae	N
shrub	<i>Rosa californica</i>	California wild rose	Rosaceae	N
shrub	<i>Rubus armeniacus</i>	Himalayan blackberry	Rosaceae	A
tree	<i>Sequoia sempervirens</i>	coast redwood	Cupressaceae	N
tree	<i>Arbutus menziesii</i>	Pacific madrone	Ericaceae	N
tree	<i>Quercus agrifolia</i>	coast live oak	Fagaceae	N
tree	<i>Quercus douglasii</i>	blue oak	Fagaceae	N
tree	<i>Quercus garryana</i> var. <i>garryana</i>	Oregon white oak	Fagaceae	N
tree	<i>Quercus kelloggii</i>	California black oak	Fagaceae	N
tree	<i>Aesculus californica</i>	California buckeye	Hippocastanaceae	N
tree	<i>Umbellularia californica</i>	California bay	Lauraceae	N
tree	<i>Fraxinus latifolia</i>	Oregon ash	Oleaceae	N
tree	<i>Pinus attenuata</i>	knobcone pine	Pinaceae	N
tree	<i>Pinus ponderosa</i>	ponderosa pine	Pinaceae	N
tree	<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas fir	Pinaceae	N
tree	<i>Acer macrophyllum</i>	big-leaf maple	Sapindaceae	N
vine	<i>Lathyrus tingitanus</i>	Tangier pea	Fabaceae	A
vine	<i>Vitis californica</i>	California wild grape	Vitaceae	N

Origin: N = Native, A = Alien

6.0 NAPA COUNTY WOODLAND ASSESSMENT

This woodland analysis follows a protocol reviewed and approved by Napa County planning staff in January 2008.

6.1 Procedure: The Winrod Vineyards proposed vineyard blocks contain three distinct woodland and forest communities. These are discussed in detail in Section 3.3. These are Blue Oak Woodland, Mixed Oak Woodland, and Pacific Madrone Forest.

One study plot was selected within each forest or woodland type. In each case, the location of the study area was based on how well it represented the community it was intended to sample, even if it was outside of the actual proposed development area. The size was based on the need to include enough trees to provide a meaningful statistical sample. A total of three study plots were selected. These are mapped with their waypoints in **Figure 2**.

Within each study plot, all trees were mapped with a GPS waypoint and a record was made of its species, diameter at breast height (DBH), and any unique characteristics (dead, hollow, acorn storage tree, etc.). The field data for each plot is provided in **Appendix C**.

The data collected for the study plots for each woodland community were then statistically analyzed to provide the following information for each community:

- Woodland species composition
- Average diameter at base height (DBH) for each species
- Average canopy size within woodland
- Average distance between trunks
- Percent of canopy closure

This data is provided below for each woodland/forest type in **Tables 5, 6 and 7**.

TABLE 5. TREE SURVEY DATA SUMMARY – BLUE OAK WOODLAND

SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	AVERAGE # OF TRUNKS PER ACRE⁴
BLAK	1	12.0	3.40
BLUK	35	11.0	118.99
CLO	3	17.0	10.20
TOTAL	39	11.5	132.59
Total area of sample plot		12,813ft ²	
Average canopy size ¹		256ft ²	
Average distance between trunks ²		18ft	
Canopy closure ³		78%	

TABLE 6. TREE SURVEY DATA SUMMARY – MIXED OAK WOODLAND

SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	AVERAGE # OF TRUNKS PER ACRE⁴
BLAK	1	9.0	2.92
BLUK	11	10.7	32.11
CLO	4	13.5	11.68
OWO	20	11.0	58.38
TOTAL	36	11.1	105.08
Total area of sample plot		14,924ft ²	
Average canopy size ¹		352ft ²	
Average distance between trunks ²		20ft	
Canopy closure ³		85%	

TABLE 7. TREE SURVEY DATA SUMMARY – PACIFIC MADRONE FOREST

SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	AVERAGE # OF TRUNKS PER ACRE⁴
OWO	5	19.8	31.60
MAD	8	11.9	50.56
TOTAL	13	14.9	82.15
Total area of sample plot		6,893ft ²	
Average canopy size ¹		461ft ²	
Average distance between trunks ²		23ft	
Canopy closure ³		87%	

Key for Tables 5 - 7:

BLAK=Black Oak

CLO=Coast Live Oak

OWO = Oregon White Oak

BLUK=Blue Oak

MAD=Pacific Madrone

GPS waypoint for each tree is indicated on the vegetation map provided in Figure 2.

1. Average canopy size per tree/trunk = (area of test plot X percent canopy closure)/combined # of trees in test plots
2. Average distance between trunks = square root of (sample area/total number of trunks)
3. Total area of canopy in community/total area of community
4. Total number of trunks per acre = ((ft²/acre)/area of test plot)) X number of trunks in test plot

Table 8 provides an estimate of the species and number of trees that will be impacted by vineyard development in each of the proposed vineyard blocks based on the analysis provided above.

TABLE 8. ESTIMATED NUMBERS & SPECIES OF TREES IMPACTED WITHIN PROPOSED VINEYARD AREAS*

Block #	Number and Species of Trees					Total # of Trees per Block
	BLAK	BLUK	CLO	OWO	MAD	
VB1	1	12	4	22	-	39
VB2	0	2	1	20	26	49
VB3	16	386	55	147	0	604
Total # Each Species	17	400	60	189	26	Total estimated trees in all blocks = 692

6.2 Regional Setting and Continuity with Surrounding Woodlands and Other Habitat:

The Winrod property is located on a northeast- facing slope below the central ridge of the Mayacamas Mountains. It extends steeply downslope eastward into the northern end of the Napa Valley. This slope typically supports dense Douglas fir forest with small inclusions of coast redwood forest; however, tracts of this habitat were burned in the Tubbs Fire in 2017. As the terrain descends into the Napa Valley, forests are replaced by mixed oak and blue oak woodlands which in turn give way to the open grasslands and vineyards of the valley floor.

Due to the steepness of the slopes here, these northeast-facing slopes support broad expanses of undisturbed forest and woodlands. As slopes transition into the valley floor, these natural communities are supplanted by vineyard and residential development.

As shown in **Figure 3**, most of the Winrod property lies within the Douglas fir and redwood zone. This zone extends along the entire northeast slope of the central Mayacamas ridge where the steepness of terrain has prevented development. It extends into the valley floor where low foothill intrude into the lowlands. This largely unbroken terrain allows continuity with plant and wildlife populations throughout this natural habitat.

Existing vineyards on the property occupy valley terrain along its northern edge. The proposed new vineyard blocks would occupy the gentler slopes to the southwest, ending at a point where the terrain steeply slopes upward to the Mayacamas ridge.

6.3 Wildlife Value of Woodlands in the Survey Area:

- **Core Habitat Value:** Core habitat is habitat provided by a plant community in its pure form without the direct influence of surrounding plant communities and intermediate, overlapping edge habitat (edge effect). While many wildlife species can use a wide range of habitats and may even need a mix of habitats to meet their needs, some species are limited to core habitat within a plant community or at least require the presence of core habitat within their home range. This typically requires that the patch size (overall aerial extent) of the habitat be large enough to exclude the edge effect from the surrounding habitats.

Wildlife dependent on core woodland and forest habitat consist primarily of species using trees as shelter or whose food sources are associated with trees. This includes amphibians and reptiles using downed woody debris for cover and whose food consists of insects associated with woody debris. Woodpeckers are obviously associated with woodlands but many other passerines (perching birds) also depend on woodland insects and plant material or are dependent on dense woodland for nesting sites and cover. Larger mammals such as deer and their predators typically require sites providing dense cover not provided by more open woodlands and grasslands.

Core habitat on the Winrod property occurs throughout the southwestern two-thirds of the property, occupying Douglas fir and coast redwood forests as well as mixed and blue oak woodlands. The value of this habitat has been significantly diminished as a result of the Tubbs Fire. At present, core habitat is limited to the larger islands of unburned habitat along the northeastern slope of the ridge. The value of this habitat will increase over the next decade as these natural habitats recover from the fire. Full

recovery will take decades. **Appendix B** provides a list of wildlife species occupying the types of habitats present on the property and whose ranges include this region.

- **Cover and Edge Habitat for Surrounding Communities:** Edge habitat consists of boundaries between structurally different vegetation types with particular emphasis on boundaries between woodland or forest and open habitats such as grasslands or shrublands. Edge areas often support an increased density and diversity of wildlife species due to the overlap of two different plant communities and the unique assemblages of wildlife they support. Many species such as raptors require edge. Raptors use tree canopies as perches from which they can scan adjacent grasslands for prey. Deer will feed in open grassland if nearby tree cover is available.

As shown in **Figure 2**, structural edge on the Winrod property occurs primarily between open areas occupied by wild oat grassland and chaparral and surrounding mixed oak and blue oak woodlands. Surrounding woodland provides hunting and plucking perches for raptors and cover for deer, small mammals, and their predators. The open grasslands provide browse and hunting habitat. Most of this edge survived the Tubbs Fire.

Additional edge now occurs between remaining islands of forest and woodland and open burned areas. As the early seral stage of grasses, forbs, and low shrubs take hold within these burned areas, they will serve as greatly expanded edge habitat until the forests and woodlands recover. Native Americans regularly burned woodland to produce edge and increase game habitat and populations.

- **Value as a Wildlife Corridor:** The project area does not occur within any of the wildlife corridors identified as a *CalWild Linkage* shown in Map 4-2 of the Napa County BDR. It is important to note, however, that these linkage maps pertain to large-scale regional movement of wildlife (typically within valleys).

For local diurnal movement (daily movement between sources of food, cover, and water), wildlife generally follow stream courses when moving up and down slopes and use adjacent habitats (often preferring woodlands) for cover, browse, or hunting. **Figure 3** shows the most likely diurnal movement corridors through the project area. These are mapped as green zones along the principal stream courses. The actual width of usable corridors would continually change based on the density of vegetation, steepness of adjacent slopes or presence of unsuitable habitat such as fenced vineyards and residential areas.

The principal wildlife movement corridor within the Winrod property is the tributary to Blossom Creek which loops through the northern half of the parcel. While some of the

riparian corridor here was affected by the Tubbs Fire, much remains intact and due to the isolation and deeply incised nature of this corridor, it remains an important corridor for wildlife moving along the northeast slope of the Mayacamas ridge and onto the valley floor. The existing and proposed vineyard blocks are held back from this corridor and should not significantly impact it. Proposed vineyard blocks to the south occur within currently undeveloped (though burned) habitat along the northeast slope. However, sufficient natural habitat extends to the south to prevent significant habitat fragmentation.

- **Presence of Critical Plant Community or Wildlife Resources:**

Critical Plant Communities: Coast Redwood Forest is among the 23 plant communities considered sensitive in the Napa County Baseline Data Report.

Critical Wildlife Resources: A survey for bat habitat was conducted as part of the field surveys for this project. The survey is discussed in Section 5.0 of this report. A single decadent live oak southwest edge of proposed Vineyard Block 3 contains suitable habitat for bats. The tree (waypoint 6 in **Figure 2**) is inside of the proposed block boundaries. During the survey, there was no sign of current or past use of this tree by bats.

- **Woodland Age Class and Size:** A woodland assessment was conducted for this project (Section 7.0). Trees within potential vineyard blocks were individually counted and are mapped in Figure 2. Much of these woodlands and forests were burned during the Tubbs Fire in 2017. Dead trees were not counted in the tree surveys. While young trees were particularly hard hit by the fire, due to their thin bark and lack of thermal mass, these forests and woodlands should recover as healthy communities over the following decades.
- **Trees with Unique Wildlife Value:** Woodlands on the property provide excellent wildlife value as discussed above in this section. A single decadent oak southeast of proposed Vineyard Block B provides suitable potential habitat for bats. No bat sign was found at the time of the survey.

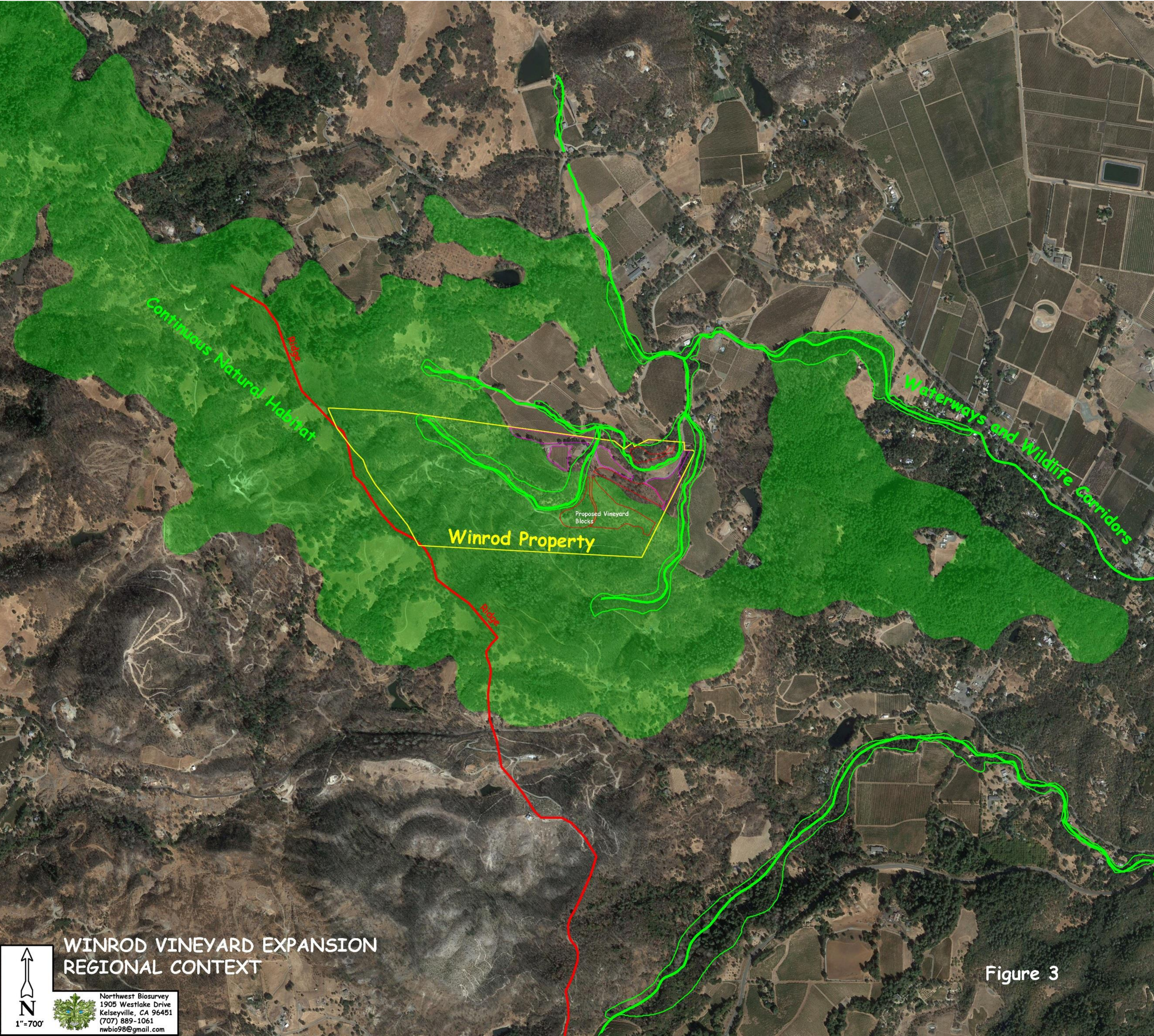


Figure 3

7.0 CONFORMANCE WITH NAPA COUNTY BASELINE DATA REPORT (BDR)

Each of the pertinent sections of the Napa County Baseline Data Report was reviewed to determine whether the issues and biological resources with special status in Napa County have been addressed in this biological assessment.

7.1 Sensitive Biotic Communities: The property contains Coast Redwood Forest, which qualifies as sensitive in the Napa County Baseline Data Report.

7.2 Special Status Plants and Wildlife: As noted in Section 2 (Assessment Methodology), the pre-survey research conducted for this project included systematic reviews of the California Natural Diversity Database (CNDDDB), California Native Plant Society Electronic Inventory, and California Department of Fish and Wildlife's Wildlife Habitat Relations Program. The list of special status plants and wildlife used in the BDR is derived from the CNDDDB. Additionally, Tables 4-6 and 4-7 of the Special Status Plants and Wildlife sections of the BDR were reviewed to assure consistency between the lists. Most species listed in the CNDDDB are subject to CEQA review pursuant to Section 15380 (d) of the CEQA Guidelines.

- Plants: A population of Napa false indigo (*Amorpha californica* var. *napensis*) sensitive regulatory status (CNPS Rank 1B.2) was found on the property during the floristic-level botanical survey.
- Wildlife: The property provides potential habitat for the following wildlife species with sensitive regulatory status:

Pallid bat	American badger
Lawrence's gold finch	Lewis' woodpecker
Loggerhead shrike	

Fringed myotis may also be present but does not have sensitive regulatory status

7.3 Potential Wildlife Movement Corridors: The CalWild Linkage Map presented in Map 4-2 of the BDR was reviewed with respect to this project. The project area is not within a movement area as defined by the CalWild database. **Figure 3** provides a map of wildlife movement corridors within the region. The on-site tributary to Blossom Creek, which extends through the center of the property provides an important wildlife corridor through the property.

7.4 Fisheries Resources: The segment of Blossom Creek extending through the western edge of the property is a short-duration ephemeral stream that lacks habitat for a fisheries resource.

8.0 SUMMARY, IMPACT ANALYSIS, AND RECOMMENDATIONS

8.1 Summary: This biological resource assessment involved the following analyses and surveys for sensitive plants and wildlife potentially occurring in the vicinity of the project:

- Review of current California Natural Diversity Database (CNDDDB) mapping of known sensitive plant and wildlife populations within the region.
- An analysis of the suitability of the site for sensitive plants and wildlife using the California Native Plant Society *Electronic Inventory of Rare and Endangered Vascular Plants of California*, and the California Department of Fish and Wildlife's *California Wildlife Habitat Relations System*.
- A California Department of Fish and Wildlife protocol, floristic-level field survey of the plants occurring within and in the immediate vicinity of the project.
- A delineation of waters of the U.S. conducted according to the *Corps of Engineers Wetlands Delineation Manual, January 1987* as updated by the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, 2008*.
- A bat habitat survey
- Review of the Napa County Baseline Data Report (BDR), 2005.

Sensitive Plants: A total of 108 native and introduced plant taxa were identified on the property during the in-season, floristic-level botanical surveys. A population of **Napa false indigo** (CNPS Rank 1B.2) was found west of proposed Vineyard Block A. As used here, the term sensitive includes species having state or federal regulatory status, defined as Rare Plant Ranks 1B through 4 by the California Native Plant Society, or otherwise listed in the California Natural Diversity Database.

Sensitive Wildlife: A total of 18 sensitive wildlife species were assessed for potential occurrence at the site because of inclusion in the CNDDDB database for the Mark West Springs quadrangle, The Napa County BDR, or the presence of appropriate habitat on the site. Based on the habitat assessment, the following conclusions are made regarding species with sensitive regulatory status:

- Sensitive status animal species potentially present on the Winrod property:
 - Lawrence's gold finch
 - Lewis's woodpecker
 - Loggerhead shrike
 - Pallid bat

- Townsend's big-eared bat
- American badger

Possible Waters of U.S.: The total area of all delineated waters of the U.S. on the property is 0.78 acre. All Waters of the U.S. occurring within the survey area are defined as "other waters" consisting of a perennial stream and numerous ephemeral streams, pursuant of Corps of Engineers Definitions. No federal jurisdictional wetlands were found within the survey area (see **Appendix D, Delineation Report**).

8.2 Potential Impacts and Proposed Mitigation for Biological Resources:

(For all recommended mitigation measures accepted as conditions of approval, the text should be modified to use declarative language, i.e. "should" should become "shall", etc.)

A. Habitat Fragmentation

Potential Impacts:

The proposed vineyard blocks will be developed on land that currently supports native woodland and forest. This will result in the loss of 6.04 acres of this habitat out of a post-fire total of 40.18 acres. Habitat fragmentation due to this loss is reduced by the establishment of a substantial buffer between Blossom Creek and the proposed vineyard blocks. This creek is the primary wildlife movement corridor through the property. Second, the proposed vineyard blocks will be established adjacent to existing vineyard and residential development in the northern quarter of the property. As shown in the map of regional context provided in Figure 3, a substantial band of native forest and woodland extends south of the proposed vineyard blocks, leaving a broad continuous band of forest along the central ridge of the Mayacamas Mountains.

The use of deer fencing has a potential to increase habitat fragmentation if it extends beyond the boundaries of the proposed new vineyard blocks. This would include placement of fencing along roadways that do not bound vineyard blocks or along property boundaries.

Proposed Mitigation for Habitat Fragmentation:

Measure 1: Deer fencing should be restricted to vineyard block boundaries in order to permit wildlife passage between vineyard blocks.

B. Woodland and Forest Resources

Potential Impact:

As shown in **Table 1**, the proposed vineyard project would result in the loss of 2.96 acres of mixed oak woodland, 2.56 acres of blue oak woodland, and 0.52 acres of Pacific madrone forest. As shown in Table 8, this would result in the estimated loss of 692 trees.

Proposed Mitigation for Impacts to Woodland and Forest:

Measure 2: The significance of this loss of woodland habitat must be determined by County staff to be in conformance with *Napa County General Plan policy CON-22*. Standard mitigation within the County of Napa calls for preservation of 70-percent of remaining woodlands. There is a combined area of 39.59 acres of forest and woodland on the property, 6.04 acres of which (15.26-percent) occurs within proposed vineyard blocks. Considering overall acreage of forest and woodland, the loss would be well within the allowable 30-percent. The final column in Table 1 shows percent loss within vineyard blocks by forest and woodland type.

C. Sensitive Plants and Wildlife

Potential Impacts:

Plants: A population of Napa false indigo, a CNPS Rank 1B.2 sensitive species, is located west of proposed Vineyard Block 3. This population will not be impacted by the proposed project.

Wildlife: The following wildlife species have a potential to be at least seasonally present during the breeding season within the mixed oak and blue oak woodlands:

- Lawrence's gold finch
- Lewis's woodpecker
- Loggerhead shrike
- Pallid bat
- Townsend's big-eared bat
- American badger

In addition, the following bird species protected under the Migratory Bird Treaty Act and California Fish and Wildlife Code may be present in the mixed oak and blue oak woodlands during the breeding season (February 1 – August 31):

- Migratory passerines, and raptors (perching birds and birds of prey)

Proposed Mitigation for Birds with Sensitive or Protected Regulatory Status:

Measure 3: In order to avoid impacts sensitive passerines and raptors protected under the Migratory Bird Treaty Act and California Fish and Wildlife Code, the following recommendation is made:

Removal of trees during the nesting season (February 1 to August 31) must be preceded by a survey for nesting birds conducted by a qualified biologist. In the event that nesting birds are identified, a suitable construction buffer will be established around the nest site until either the end of the nesting season or upon determination by a qualified biologist that fledging has been completed, or that the nest has been abandoned. It is recommended that trees approved for removal be felled outside of the nesting season.

Measure 4: In order to avoid impacts to bats with sensitive regulatory status for work after 2020 the following recommendation is made:

If work is proposed within 50 feet of woodland habitat during the maternity roosting season (April 1 through September 15), trees with features capable of supporting roosting bats shall be surveyed for bat roosts or evidence of bat roosting (guano, urine staining and scent, dead bats) by a qualified biologist within 14 days of the start of project activities or removal of vegetation. If active roosts are discovered, a buffer of 50 feet around the active roost should be established by the biologist. Removal may occur once active roosting ceases as determined by the biologist. Downed trees should remain on the ground for 24 hours in order to allow any remaining bats to leave.

Measure 5: In order to avoid impacts to American badgers the following recommendation is made:

Prior to grading within vineyard blocks or in the surrounding grassland a survey shall be conducted by a qualified biologist to determine whether American badger den sites are present and in use. If it is determined that a den site is present and in use, a mitigation plan shall be prepared by a qualified biologist and approved by staff of the California Department of Fish and Wildlife.

D. Waters of the U.S.

Potential Impacts:

Possible waters of the U.S. mapped in the Delineation Report provided in Appendix D have been avoided during the design of the proposed vineyard blocks. The proposed vineyard design avoids potential for impacts to these waterways. Placement of fill within any of the possible waters of the U.S. mapped in **Appendix D, Figure 2** would be regulated under the Clean Water Act.

Proposed Mitigation for Impacts to Waters of the U.S.:

Measure 6: Placement of fill within Waters of the U.S. may require a Nationwide Permit by the Corps of Engineers (possibly a non-reporting permit under the Nationwide Permit Program), along with a 401 Water Quality Certification from the Regional Water Quality Control Board, and 1604 Stream Alteration Agreement from the California Department of Fish and Wildlife. The County of Napa may require stream setbacks.

E. Erosion Control

Potential Impacts:

Vegetation clearing and grading activities have a potential to result in sediment runoff to Blossom Creek and downstream waterways.

Proposed Mitigation for impacts due to Erosion and Sedimentation:

Measure 7: All work in or near tributaries to Blossom Creek should incorporate extensive erosion control measures consistent with Napa County Grading Regulations in order to avoid erosion and the potential for transport of sediments to local creeks and the Napa River. Coverage under the National Pollutant Discharge Elimination System (NPDES), General Permit for Storm Water Discharges associated with a Construction Activity (General Permit) and a Storm Water Pollution Prevention Plan (SWPPP) may be required.

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APPENDIX A

CNDDDB SENSITIVE PLANT AND WILDLIFE SPECIES WITHIN THE SURROUNDING CALIF. 7½' QUADS.

Surrounding 9-Quad List: Mark West Springs Quadrangle

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Calistoga	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Calistoga	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Calistoga	<i>Rana draytonii</i>	California red-legged frog	Threat	None	SSC	-
Calistoga	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Calistoga	<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	WL	-
Calistoga	<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	-
Calistoga	<i>Syncaris pacifica</i>	California freshwater shrimp	End	End	-	-
Calistoga	<i>Hysterocarpus traskii</i> pomo	Russian River tule perch	None	None	SSC	-
Calistoga	<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	-
Calistoga	<i>Oncorhynchus kisutch</i> pop. 4	coho salmon - central California coast ESU	End	End	-	-
Calistoga	<i>Oncorhynchus mykiss irideus</i> pop. 8	steelhead - central California coast DPS	Threat	None	-	-
Calistoga	<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-
Calistoga	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Calistoga	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Calistoga	<i>Myotis evotis</i>	long-eared myotis	None	None	-	-
Calistoga	<i>Myotis thysanodes</i>	fringed myotis	None	None	-	-
Calistoga	<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Calistoga	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Calistoga	<i>Coastal and Valley Freshwater Marsh</i>	Coastal and Valley Freshwater Marsh	None	None	-	-
Calistoga	<i>Eryngium constancei</i>	Loch Lomond button-celery	End	End	-	1B.1
Calistoga	<i>Lomatium repostum</i>	Napa lomatium	None	None	-	4.3
Calistoga	<i>Centromadia parryi</i> ssp. parryi	pappose tarplant	None	None	-	1B.2
Calistoga	<i>Erigeron biolettii</i>	streamside daisy	None	None	-	3
Calistoga	<i>Harmonia nutans</i>	nodding harmonia	None	None	-	4.3
Calistoga	<i>Lasthenia burkei</i>	Burke's goldfields	End	End	-	1B.1
Calistoga	<i>Lessingia hololeuca</i>	woolly-headed lessingia	None	None	-	3
Calistoga	<i>Plagiobothrys strictus</i>	Calistoga popcornflower	End	Threat	-	1B.1
Calistoga	<i>Spergularia macrotheca</i> var. longistyla	long-styled sand-spurrey	None	None	-	1B.2
Calistoga	<i>Arctostaphylos stanfordiana</i> ssp. decumbens	Rincon Ridge manzanita	None	None	-	1B.1
Calistoga	<i>Amorpha californica</i> var. napensis	Napa false indigo	None	None	-	1B.2
Calistoga	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
Calistoga	<i>Astragalus claranus</i>	Clara Hunt's milk-vetch	End	Threat	-	1B.1
Calistoga	<i>Lupinus sericatus</i>	Cobb Mountain lupine	None	None	-	1B.2
Calistoga	<i>Trifolium hydrophilum</i>	saline clover	None	None	-	1B.2
Calistoga	<i>Monardella viridis</i>	green monardella	None	None	-	4.3
Calistoga	<i>Erythronium helenae</i>	St. Helena fawn lily	None	None	-	4.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Calistoga	<i>Fritillaria purdyi</i>	Purdy's fritillary	None	None	-	4.3
Calistoga	<i>Limnanthes vincularis</i>	Sebastopol meadowfoam	End	End	-	1B.1
Calistoga	<i>Sidalcea hickmanii</i> ssp. <i>napensis</i>	Napa checkerbloom	None	None	-	1B.1
Calistoga	<i>Clarkia breweri</i>	Brewer's clarkia	None	None	-	4.2
Calistoga	<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	None	None	-	1B.3
Calistoga	<i>Calamagrostis ophitidis</i>	serpentine reed grass	None	None	-	4.3
Calistoga	<i>Poa napensis</i>	Napa blue grass	End	End	-	1B.1
Calistoga	<i>Puccinellia simplex</i>	California alkali grass	None	None	-	1B.2
Calistoga	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Calistoga	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Calistoga	<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	None	None	-	4.3
Calistoga	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	None	None	-	1B.1
Calistoga	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Calistoga	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Calistoga	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
Calistoga	<i>Ceanothus sonomensis</i>	Sonoma ceanothus	None	None	-	1B.2
Calistoga	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	None	None	-	1B.2
Calistoga	<i>Triteleia lugens</i>	dark-mouthed triteleia	None	None	-	4.3
Detert Reservoir	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Detert Reservoir	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Detert Reservoir	<i>Falco mexicanus</i>	prairie falcon	None	None	WL	-
Detert Reservoir	<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	-
Detert Reservoir	<i>Progne subis</i>	purple martin	None	None	SSC	-
Detert Reservoir	<i>Agelaius tricolor</i>	tricolored blackbird	None	Threat	SSC	-
Detert Reservoir	<i>Strix occidentalis caurina</i>	northern spotted owl	Threat	Threat	-	-
Detert Reservoir	<i>Hysteroecarpus traskii</i> pomo	Russian River tule perch	None	None	SSC	-
Detert Reservoir	<i>Oncorhynchus mykiss irideus</i> pop. 8	steelhead - central California coast DPS	Threat	None	-	-
Detert Reservoir	<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	-
Detert Reservoir	<i>Trachykele hartmani</i>	serpentine cypress wood-boring beetle	None	None	-	-
Detert Reservoir	<i>Hydrochara rickseckeri</i>	Ricksecker's water scavenger beetle	None	None	-	-
Detert Reservoir	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Detert Reservoir	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Detert Reservoir	<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	-	-
Detert Reservoir	<i>Lasiurus blossevillii</i>	western red bat	None	None	SSC	-
Detert Reservoir	<i>Lasiurus cinereus</i>	hoary bat	None	None	-	-
Detert Reservoir	<i>Myotis ciliolabrum</i>	western small-footed myotis	None	None	-	-
Detert Reservoir	<i>Myotis evotis</i>	long-eared myotis	None	None	-	-
Detert Reservoir	<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Detert Reservoir	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Detert Reservoir	<i>Northern Vernal Pool</i>	Northern Vernal Pool	None	None	-	-
Detert Reservoir	<i>Lomatium hooveri</i>	Hoover's lomatium	None	None	-	4.3
Detert Reservoir	<i>Asclepias solanoana</i>	serpentine milkweed	None	None	-	4.2
Detert Reservoir	<i>Erigeron biolettii</i>	streamside daisy	None	None	-	3
Detert Reservoir	<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	None	None	-	1B.2
Detert Reservoir	<i>Harmonia hallii</i>	Hall's harmonia	None	None	-	1B.2
Detert Reservoir	<i>Harmonia nutans</i>	nodding harmonia	None	None	-	4.3
Detert Reservoir	<i>Helianthus exilis</i>	serpentine sunflower	None	None	-	4.2
Detert Reservoir	<i>Layia septentrionalis</i>	Colusa layia	None	None	-	1B.2
Detert Reservoir	<i>Cryptantha dissita</i>	serpentine cryptantha	None	None	-	1B.2
Detert Reservoir	<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i>	Socrates Mine jewelflower	None	None	-	1B.2
Detert Reservoir	<i>Streptanthus hesperidis</i>	green jewelflower	None	None	-	1B.2
Detert Reservoir	<i>Streptanthus morrisonii</i> ssp. <i>elatus</i>	Three Peaks jewelflower	None	None	-	1B.2
Detert Reservoir	<i>Streptanthus vernalis</i>	early jewelflower	None	None	-	1B.2
Detert Reservoir	<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	None	None	-	4.2
Detert Reservoir	<i>Calystegia collina</i> ssp. <i>venusta</i>	South Coast Range morning-glory	None	None	-	4.3
Detert Reservoir	<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	None	None	-	1B.3
Detert Reservoir	<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	None	None	-	1B.2
Detert Reservoir	<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	None	None	-	4.3
Detert Reservoir	<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	None	None	-	1B.2
Detert Reservoir	<i>Lupinus sericatus</i>	Cobb Mountain lupine	None	None	-	1B.2
Detert Reservoir	<i>Ribes victoris</i>	Victor's gooseberry	None	None	-	4.3
Detert Reservoir	<i>Juncus luciensis</i>	Santa Lucia dwarf rush	None	None	-	1B.2
Detert Reservoir	<i>Trichostema ruygtii</i>	Napa bluecurls	None	None	-	1B.2
Detert Reservoir	<i>Calochortus uniflorus</i>	pink star-tulip	None	None	-	4.2
Detert Reservoir	<i>Erythronium helenae</i>	St. Helena fawn lily	None	None	-	4.2
Detert Reservoir	<i>Fritillaria purdyi</i>	Purdy's fritillary	None	None	-	4.3
Detert Reservoir	<i>Limnanthus floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	None	None	-	4.2
Detert Reservoir	<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	None	None	-	1B.2
Detert Reservoir	<i>Hesperolinon sharsmithiae</i>	Sharsmith's western flax	None	None	-	1B.2
Detert Reservoir	<i>Calyptridium quadripetalum</i>	four-petaled pussypaws	None	None	-	4.3
Detert Reservoir	<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	None	None	-	4.3
Detert Reservoir	<i>Erythranthe nudata</i>	bare monkeyflower	None	None	-	4.3
Detert Reservoir	<i>Antirrhinum virga</i>	twig-like snapdragon	None	None	-	4.3
Detert Reservoir	<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	None	None	-	1B.3
Detert Reservoir	<i>Collomia diversifolia</i>	serpentine collomia	None	None	-	4.3
Detert Reservoir	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Detert Reservoir	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Detert Reservoir	<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	None	None	-	4.3
Detert Reservoir	<i>Navarretia myersii ssp. diminuta</i>	small pincushion navarretia	None	None	-	1B.1
Detert Reservoir	<i>Navarretia paradoxinota</i>	Porter's navarretia	None	None	-	1B.3
Detert Reservoir	<i>Eriogonum umbellatum var. bahiiforme</i>	bay buckwheat	None	None	-	4.2
Detert Reservoir	<i>Delphinium uliginosum</i>	swamp larkspur	None	None	-	4.2
Detert Reservoir	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Detert Reservoir	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
Detert Reservoir	<i>Ceanothus purpureus</i>	holly-leaved ceanothus	None	None	-	1B.2
Detert Reservoir	<i>Ceanothus sonomensis</i>	Sonoma ceanothus	None	None	-	1B.2
Detert Reservoir	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	None	None	-	1B.2
Healdsburg	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Healdsburg	<i>Rana draytonii</i>	California red-legged frog	Threat	None	SSC	-
Healdsburg	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Healdsburg	<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	-
Healdsburg	<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
Healdsburg	<i>Ardea alba</i>	great egret	None	None	-	-
Healdsburg	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Healdsburg	<i>Pandion haliaetus</i>	osprey	None	None	WL	-
Healdsburg	<i>Ammodramus savannarum</i>	grasshopper sparrow	None	None	SSC	-
Healdsburg	<i>Athene cunicularia</i>	burrowing owl	None	None	SSC	-
Healdsburg	<i>Linderiella occidentalis</i>	California linderiella	None	None	-	-
Healdsburg	<i>Lavinia symmetricus navarroensis</i>	Navarro roach	None	None	SSC	-
Healdsburg	<i>Lavinia symmetricus ssp. 4</i>	Clear Lake - Russian River roach	None	None	SSC	-
Healdsburg	<i>Mylopharodon conocephalus</i>	hardhead	None	None	SSC	-
Healdsburg	<i>Hysteroecarpus traskii pomo</i>	Russian River tule perch	None	None	SSC	-
Healdsburg	<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	-
Healdsburg	<i>Oncorhynchus kisutch pop. 4</i>	coho salmon - central California coast ESU	End	End	-	-
Healdsburg	<i>Oncorhynchus mykiss irideus pop. 8</i>	steelhead - central California coast DPS	Threat	None	-	-
Healdsburg	<i>Oncorhynchus tshawytscha pop. 17</i>	chinook salmon - California coastal ESU	Threat	None	-	-
Healdsburg	<i>Vulpes vulpes patwin</i>	Sacramento Valley red fox	None	None	-	-
Healdsburg	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Healdsburg	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Healdsburg	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Healdsburg	<i>Northern Hardpan Vernal Pool</i>	Northern Hardpan Vernal Pool	None	None	-	-
Healdsburg	<i>Perideridia gairdneri ssp. gairdneri</i>	California Gairdner's yampah	None	None	-	4.2
Healdsburg	<i>Blennosperma bakeri</i>	Sonoma sunshine	End	End	-	1B.1
Healdsburg	<i>Centromadia parryi ssp. parryi</i>	pappose tarplant	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Healdsburg	<i>Hemizonia congesta ssp. congesta</i>	congested-headed hayfield tarplant	None	None	-	1B.2
Healdsburg	<i>Hesperexax caulescens</i>	hogwallow starfish	None	None	-	4.2
Healdsburg	<i>Lasthenia burkei</i>	Burke's goldfields	End	End	-	1B.1
Healdsburg	<i>Microseris paludosa</i>	marsh microseris	None	None	-	1B.2
Healdsburg	<i>Downingia pusilla</i>	dwarf downingia	None	None	-	2B.2
Healdsburg	<i>Amorpha californica var. napensis</i>	Napa false indigo	None	None	-	1B.2
Healdsburg	<i>Hosackia gracilis</i>	harlequin lotus	None	None	-	4.2
Healdsburg	<i>Juglans hindsii</i>	Northern California black walnut	None	None	-	1B.1
Healdsburg	<i>Monardella viridis</i>	green monardella	None	None	-	4.3
Healdsburg	<i>Limnanthes vincularis</i>	Sebastopol meadowfoam	End	End	-	1B.1
Healdsburg	<i>Cypripedium montanum</i>	mountain lady's-slipper	None	None	-	4.2
Healdsburg	<i>Castilleja ambigua var. ambigua</i>	johnny-nip	None	None	-	4.2
Healdsburg	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Healdsburg	<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	None	None	-	1B.1
Healdsburg	<i>Navarretia leucocephala ssp. pliantha</i>	many-flowered navarretia	End	End	-	1B.2
Healdsburg	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Healdsburg	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	None	None	-	1B.2
Jimtown	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Jimtown	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Jimtown	<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	-
Jimtown	<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
Jimtown	<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	End	FP	-
Jimtown	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Jimtown	<i>Pandion haliaetus</i>	osprey	None	None	WL	-
Jimtown	<i>Athene cunicularia</i>	burrowing owl	None	None	SSC	-
Jimtown	<i>Lavinia symmetricus navarroensis</i>	Navarro roach	None	None	SSC	-
Jimtown	<i>Lavinia symmetricus ssp. 4</i>	Clear Lake - Russian River roach	None	None	SSC	-
Jimtown	<i>Mylopharodon conocephalus</i>	hardhead	None	None	SSC	-
Jimtown	<i>Hysterocarpus traskii pomo</i>	Russian River tule perch	None	None	SSC	-
Jimtown	<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	-
Jimtown	<i>Oncorhynchus mykiss irideus pop. 8</i>	steelhead - central California coast DPS	Threat	None	-	-
Jimtown	<i>Oncorhynchus tshawytscha pop. 17</i>	chinook salmon - California coastal ESU	Threat	None	-	-
Jimtown	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Jimtown	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Jimtown	<i>Asclepias solanoana</i>	serpentine milkweed	None	None	-	4.2
Jimtown	<i>Helianthus exilis</i>	serpentine sunflower	None	None	-	4.2
Jimtown	<i>Lasthenia burkei</i>	Burke's goldfields	End	End	-	1B.1
Jimtown	<i>Cryptantha dissita</i>	serpentine cryptantha	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Jimtown	<i>Streptanthus brachiatus ssp. hoffmanii</i>	Freed's jewelflower	None	None	-	1B.2
Jimtown	<i>Calystegia collina ssp. oxyphylla</i>	Mt. Saint Helena morning-glory	None	None	-	4.2
Jimtown	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
Jimtown	<i>Juglans hindsii</i>	Northern California black walnut	None	None	-	1B.1
Jimtown	<i>Erythronium helenae</i>	St. Helena fawn lily	None	None	-	4.2
Jimtown	<i>Calamagrostis ophitidis</i>	serpentine reed grass	None	None	-	4.3
Jimtown	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Jimtown	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Kenwood	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Kenwood	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Kenwood	<i>Rana draytonii</i>	California red-legged frog	Threat	None	SSC	-
Kenwood	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Kenwood	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Kenwood	<i>Strix occidentalis caurina</i>	northern spotted owl	Threat	Threat	-	-
Kenwood	<i>Syncaris pacifica</i>	California freshwater shrimp	End	End	-	-
Kenwood	<i>Hysteroecarpus traskii</i> pomo	Russian River tule perch	None	None	SSC	-
Kenwood	<i>Oncorhynchus mykiss irideus</i> pop. 8	steelhead - central California coast DPS	Threat	None	-	-
Kenwood	<i>Oncorhynchus tshawytscha</i> pop. 17	chinook salmon - California coastal ESU	Threat	None	-	-
Kenwood	<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-
Kenwood	<i>Hydroporus leechi</i>	Leech's skyline diving beetle	None	None	-	-
Kenwood	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Kenwood	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Kenwood	Northern Vernal Pool	Northern Vernal Pool	None	None	-	-
Kenwood	Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None	-	-
Kenwood	<i>Allium peninsulare</i> var. <i>franciscanum</i>	Franciscan onion	None	None	-	1B.2
Kenwood	<i>Lomatium repostum</i>	Napa lomatium	None	None	-	4.3
Kenwood	<i>Erigeron biolettii</i>	streamside daisy	None	None	-	3
Kenwood	<i>Harmonia nutans</i>	nodding harmonia	None	None	-	4.3
Kenwood	<i>Layia septentrionalis</i>	Colusa layia	None	None	-	1B.2
Kenwood	<i>Downingia pusilla</i>	dwarf downingia	None	None	-	2B.2
Kenwood	<i>Viburnum ellipticum</i>	oval-leaved viburnum	None	None	-	2B.3
Kenwood	<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i>	Rincon Ridge manzanita	None	None	-	1B.1
Kenwood	<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	None	None	-	1B.2
Kenwood	<i>Hosackia gracilis</i>	harlequin lotus	None	None	-	4.2
Kenwood	<i>Trifolium amoenum</i>	two-fork clover	End	None	-	1B.1
Kenwood	<i>Iris longipetala</i>	coast iris	None	None	-	4.2
Kenwood	<i>Juglans hindsii</i>	Northern California black walnut	None	None	-	1B.1
Kenwood	<i>Monardella viridis</i>	green monardella	None	None	-	4.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Kenwood	<i>Trichostema ruygtii</i>	Napa bluecurls	None	None	-	1B.2
Kenwood	<i>Calochortus uniflorus</i>	pink star-tulip	None	None	-	4.2
Kenwood	<i>Sidalcea oregana ssp. valida</i>	Kenwood Marsh checkerbloom	End	End	-	1B.1
Kenwood	<i>Calandrinia breweri</i>	Brewer's calandrinia	None	None	-	4.2
Kenwood	<i>Clarkia breweri</i>	Brewer's clarkia	None	None	-	4.2
Kenwood	<i>Castilleja ambigua var. ambigua</i>	johnny-nip	None	None	-	4.2
Kenwood	<i>Cordylanthus tenuis ssp. brunneus</i>	serpentine bird's-beak	None	None	-	4.3
Kenwood	<i>Penstemon newberryi var. sonomensis</i>	Sonoma beardtongue	None	None	-	1B.3
Kenwood	<i>Alopecurus aequalis var. sonomensis</i>	Sonoma alopecurus	End	None	-	1B.1
Kenwood	<i>Calamagrostis ophitidis</i>	serpentine reed grass	None	None	-	4.3
Kenwood	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Kenwood	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Kenwood	<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	None	None	-	4.3
Kenwood	<i>Navarretia heterandra</i>	Tehama navarretia	None	None	-	4.3
Kenwood	<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	None	None	-	1B.1
Kenwood	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Kenwood	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Kenwood	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
Kenwood	<i>Ceanothus gloriosus var. exaltatus</i>	glory brush	None	None	-	4.3
Kenwood	<i>Ceanothus purpureus</i>	holly-leaved ceanothus	None	None	-	1B.2
Kenwood	<i>Ceanothus sonomensis</i>	Sonoma ceanothus	None	None	-	1B.2
Kenwood	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	None	None	-	1B.2
Mark West Spr	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Mark West Spr	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Mark West Spr	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Mark West Spr	<i>Strix occidentalis caurina</i>	northern spotted owl	Threat	Threat	-	-
Mark West Spr	<i>Syncaris pacifica</i>	California freshwater shrimp	End	End	-	-
Mark West Spr	<i>Lavinia symmetricus navarroensis</i>	Navarro roach	None	None	SSC	-
Mark West Spr	<i>Lavinia symmetricus ssp. 4</i>	Clear Lake - Russian River roach	None	None	SSC	-
Mark West Spr	<i>Hysteroecarpus traskii pomo</i>	Russian River tule perch	None	None	SSC	-
Mark West Spr	<i>Lampetra ayresii</i>	river lamprey	None	None	SSC	-
Mark West Spr	<i>Oncorhynchus kisutch pop. 4</i>	coho salmon - central California coast ESU	End	End	-	-
Mark West Spr	<i>Oncorhynchus mykiss irideus pop. 8</i>	steelhead - central California coast DPS	Threat	None	-	-
Mark West Spr	<i>Oncorhynchus tshawytscha pop. 17</i>	chinook salmon - California coastal ESU	Threat	None	-	-
Mark West Spr	<i>Atractelmis wawona</i>	Wawona riffle beetle	None	None	-	-
Mark West Spr	<i>Pekania pennanti</i>	fisher - West Coast DPS	None	Threat	SSC	-
Mark West Spr	<i>Taxidea taxus</i>	American badger	None	None	SSC	-
Mark West Spr	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Mark West Spr	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Mark West Spr	<i>Myotis lucifugus</i>	little brown bat	None	None	-	-
Mark West Spr	<i>Myotis thysanodes</i>	fringed myotis	None	None	-	-
Mark West Spr	<i>Anodonta californiensis</i>	California floater	None	None	-	-
Mark West Spr	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Mark West Spr	<i>Anomobryum julaceum</i>	slender silver moss	None	None	-	4.2
Mark West Spr	<i>Lomatium repostum</i>	Napa lomatium	None	None	-	4.3
Mark West Spr	<i>Centromadia parryi ssp. parryi</i>	pappose tarplant	None	None	-	1B.2
Mark West Spr	<i>Erigeron biolettii</i>	streamside daisy	None	None	-	3
Mark West Spr	<i>Harmonia nutans</i>	nodding harmonia	None	None	-	4.3
Mark West Spr	<i>Hemizonia congesta ssp. congesta</i>	congested-headed hayfield tarplant	None	None	-	1B.2
Mark West Spr	<i>Microseris paludosa</i>	marsh microseris	None	None	-	1B.2
Mark West Spr	<i>Viburnum ellipticum</i>	oval-leaved viburnum	None	None	-	2B.3
Mark West Spr	<i>Calystegia collina ssp. oxyphylla</i>	Mt. Saint Helena morning-glory	None	None	-	4.2
Mark West Spr	<i>Amorpha californica var. napensis</i>	Napa false indigo	None	None	-	1B.2
Mark West Spr	<i>Astragalus claranus</i>	Clara Hunt's milk-vetch	End	Threat	-	1B.1
Mark West Spr	<i>Lupinus sericatus</i>	Cobb Mountain lupine	None	None	-	1B.2
Mark West Spr	<i>Juglans hindsii</i>	Northern California black walnut	None	None	-	1B.1
Mark West Spr	<i>Monardella viridis</i>	green monardella	None	None	-	4.3
Mark West Spr	<i>Lilium rubescens</i>	redwood lily	None	None	-	4.2
Mark West Spr	<i>Calandrinia breweri</i>	Brewer's calandrinia	None	None	-	4.2
Mark West Spr	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	None	End	-	1B.2
Mark West Spr	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Mark West Spr	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Mark West Spr	<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	None	None	-	4.3
Mark West Spr	<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	None	None	-	1B.1
Mark West Spr	<i>Navarretia leucocephala ssp. plieantha</i>	many-flowered navarretia	End	End	-	1B.2
Mark West Spr	<i>Eriogonum umbellatum var. bahiiforme</i>	bay buckwheat	None	None	-	4.2
Mark West Spr	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Mark West Spr	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Mark West Spr	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
Mark West Spr	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	None	None	-	1B.2
Mt. St. Helena	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Mt. St. Helena	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Mt. St. Helena	<i>Taricha rivularis</i>	red-bellied newt	None	None	SSC	-
Mt. St. Helena	<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL	-
Mt. St. Helena	<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP	-
Mt. St. Helena	<i>Strix occidentalis caurina</i>	northern spotted owl	Threat	Threat	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Mt. St. Helena	<i>Stygobromus cherylae</i>	Barr's amphipod	None	None	-	-
Mt. St. Helena	<i>Lavinia symmetricus ssp. 4</i>	Clear Lake - Russian River roach	None	None	SSC	-
Mt. St. Helena	<i>Hysteroecarpus traskii</i> pomo	Russian River tule perch	None	None	SSC	-
Mt. St. Helena	<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	-
Mt. St. Helena	<i>Oncorhynchus kisutch</i> pop. 4	coho salmon - central California coast ESU	End	End	-	-
Mt. St. Helena	<i>Oncorhynchus mykiss irideus</i> pop. 8	steelhead - central California coast DPS	Threat	None	-	-
Mt. St. Helena	<i>Oncorhynchus tshawytscha</i> pop. 17	chinook salmon - California coastal ESU	Threat	None	-	-
Mt. St. Helena	<i>Trachykele hartmani</i>	serpentine cypress wood-boring beetle	None	None	-	-
Mt. St. Helena	<i>Pekania pennanti</i>	fisher - West Coast DPS	None	Threat	SSC	-
Mt. St. Helena	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Mt. St. Helena	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Mt. St. Helena	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Mt. St. Helena	<i>Lomatium repostum</i>	Napa lomatium	None	None	-	4.3
Mt. St. Helena	<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	None	None	-	1B.2
Mt. St. Helena	<i>Harmonia nutans</i>	nodding harmonia	None	None	-	4.3
Mt. St. Helena	<i>Streptanthus brachiatus ssp. hoffmanii</i>	Freed's jewelflower	None	None	-	1B.2
Mt. St. Helena	<i>Calystegia collina ssp. oxyphylla</i>	Mt. Saint Helena morning-glory	None	None	-	4.2
Mt. St. Helena	<i>Arctostaphylos manzanita ssp. elegans</i>	Konocti manzanita	None	None	-	1B.3
Mt. St. Helena	<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	None	None	-	4.3
Mt. St. Helena	<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	None	None	-	1B.2
Mt. St. Helena	<i>Lupinus sericatus</i>	Cobb Mountain lupine	None	None	-	1B.2
Mt. St. Helena	<i>Erythronium helenae</i>	St. Helena fawn lily	None	None	-	4.2
Mt. St. Helena	<i>Fritillaria purdyi</i>	Purdy's fritillary	None	None	-	4.3
Mt. St. Helena	<i>Limnanthes vinculans</i>	Sebastopol meadowfoam	End	End	-	1B.1
Mt. St. Helena	<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	None	None	-	1B.2
Mt. St. Helena	<i>Sidalcea oregana ssp. valida</i>	Kenwood Marsh checkerbloom	End	End	-	1B.1
Mt. St. Helena	<i>Cordylanthus tenuis ssp. brunneus</i>	serpentine bird's-beak	None	None	-	4.3
Mt. St. Helena	<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	None	None	-	1B.3
Mt. St. Helena	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Mt. St. Helena	<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	None	None	-	4.3
Mt. St. Helena	<i>Navarretia cotulifolia</i>	cotula navarretia	None	None	-	4.2
Mt. St. Helena	<i>Eriogonum nervulosum</i>	Snow Mountain buckwheat	None	None	-	1B.2
Mt. St. Helena	<i>Stuckenia filiformis ssp. alpina</i>	slender-leaved pondweed	None	None	-	2B.2
Mt. St. Helena	<i>Delphinium uliginosum</i>	swamp larkspur	None	None	-	4.2
Mt. St. Helena	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Mt. St. Helena	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
Mt. St. Helena	<i>Horkelia parryi</i>	Parry's horkelia	None	None	-	1B.2
Mt. St. Helena	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Santa Rosa	<i>Ambystoma californiense</i>	California tiger salamander	Threat	Threat	WL	-
Santa Rosa	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Santa Rosa	<i>Rana boylei</i>	foothill yellow-legged frog	None	Cand Threat	SSC	-
Santa Rosa	<i>Rana draytonii</i>	California red-legged frog	Threat	None	SSC	-
Santa Rosa	<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	-
Santa Rosa	<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
Santa Rosa	<i>Ardea alba</i>	great egret	None	None	-	-
Santa Rosa	<i>Egretta thula</i>	snowy egret	None	None	-	-
Santa Rosa	<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	-
Santa Rosa	<i>Coturnicops noveboracensis</i>	yellow rail	None	None	SSC	-
Santa Rosa	<i>Linderiella occidentalis</i>	California linderiella	None	None	-	-
Santa Rosa	<i>Cottus gulosus</i>	riffle sculpin	None	None	SSC	-
Santa Rosa	<i>Lavinia symmetricus navarroensis</i>	Navarro roach	None	None	SSC	-
Santa Rosa	<i>Lavinia symmetricus ssp. 4</i>	Clear Lake - Russian River roach	None	None	SSC	-
Santa Rosa	<i>Hysteroecarpus traskii pomo</i>	Russian River tule perch	None	None	SSC	-
Santa Rosa	<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	-
Santa Rosa	<i>Oncorhynchus kisutch pop. 4</i>	coho salmon - central California coast ESU	End	End	-	-
Santa Rosa	<i>Oncorhynchus mykiss irideus pop. 8</i>	steelhead - central California coast DPS	Threat	None	-	-
Santa Rosa	<i>Oncorhynchus tshawytscha pop. 17</i>	chinook salmon - California coastal ESU	Threat	None	-	-
Santa Rosa	<i>Andrena blennospermatis</i>	Blennosperma vernal pool andrenid bee	None	None	-	-
Santa Rosa	<i>Bombus caliginosus</i>	obscure bumble bee	None	None	-	-
Santa Rosa	<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-
Santa Rosa	<i>Taxidea taxus</i>	American badger	None	None	SSC	-
Santa Rosa	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Santa Rosa	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Santa Rosa	<i>Valley Needlegrass Grassland</i>	Valley Needlegrass Grassland	None	None	-	-
Santa Rosa	<i>Triquetrella californica</i>	coastal triquetrella	None	None	-	1B.2
Santa Rosa	<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	None	None	-	1B.2
Santa Rosa	<i>Blennosperma bakeri</i>	Sonoma sunshine	End	End	-	1B.1
Santa Rosa	<i>Hemizonia congesta ssp. congesta</i>	congested-headed hayfield tarplant	None	None	-	1B.2
Santa Rosa	<i>Lasthenia burkei</i>	Burke's goldfields	End	End	-	1B.1
Santa Rosa	<i>Layia septentrionalis</i>	Colusa layia	None	None	-	1B.2
Santa Rosa	<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	None	None	-	1B.2
Santa Rosa	<i>Arctostaphylos stanfordiana ssp. decumbens</i>	Rincon Ridge manzanita	None	None	-	1B.1
Santa Rosa	<i>Amorpha californica var. napensis</i>	Napa false indigo	None	None	-	1B.2
Santa Rosa	<i>Astragalus claranus</i>	Clara Hunt's milk-vetch	End	Threat	-	1B.1
Santa Rosa	<i>Trifolium amoenum</i>	two-fork clover	End	None	-	1B.1
Santa Rosa	<i>Trifolium buckwestiorum</i>	Santa Cruz clover	None	None	-	1B.1

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Santa Rosa	<i>Trifolium hydrophilum</i>	saline clover	None	None	-	1B.2
Santa Rosa	<i>Calochortus uniflorus</i>	pink star-tulip	None	None	-	4.2
Santa Rosa	<i>Fritillaria liliacea</i>	fragrant fritillary	None	None	-	1B.2
Santa Rosa	<i>Limnanthes vincularis</i>	Sebastopol meadowfoam	End	End	-	1B.1
Santa Rosa	<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	-	4.2
Santa Rosa	<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	-	1B.2
Santa Rosa	<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	None	None	-	1B.1
Santa Rosa	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Santa Rosa	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Santa Rosa	<i>Ceanothus divergens</i>	Calistoga ceanothus	None	None	-	1B.2
Santa Rosa	<i>Ceanothus purpureus</i>	holly-leaved ceanothus	None	None	-	1B.2
Santa Rosa	<i>Ceanothus sonomensis</i>	Sonoma ceanothus	None	None	-	1B.2
Santa Rosa	<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	None	None	-	1B.2
Sebastopol	<i>Ambystoma californiense</i>	California tiger salamander	Threat	Threat	WL	-
Sebastopol	<i>Elanus leucurus</i>	white-tailed kite	None	None	FP	-
Sebastopol	<i>Chaetura vauxi</i>	Vaux's swift	None	None	SSC	-
Sebastopol	<i>Ardea alba</i>	great egret	None	None	-	-
Sebastopol	<i>Ardea herodias</i>	great blue heron	None	None	-	-
Sebastopol	<i>Egretta thula</i>	snowy egret	None	None	-	-
Sebastopol	<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	-	-
Sebastopol	<i>Progne subis</i>	purple martin	None	None	SSC	-
Sebastopol	<i>Agelaius tricolor</i>	tricolored blackbird	None	Threat	SSC	-
Sebastopol	<i>Icteria virens</i>	yellow-breasted chat	None	None	SSC	-
Sebastopol	<i>Lanius ludovicianus</i>	loggerhead shrike	None	None	SSC	-
Sebastopol	<i>Setophaga petechia</i>	yellow warbler	None	None	SSC	-
Sebastopol	<i>Passerculus sandwichensis alaudinus</i>	Bryant's savannah sparrow	None	None	SSC	-
Sebastopol	<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None	WL	-
Sebastopol	<i>Melanerpes lewis</i>	Lewis' woodpecker	None	None	-	-
Sebastopol	<i>Asio otus</i>	long-eared owl	None	None	SSC	-
Sebastopol	<i>Athene cunicularia</i>	burrowing owl	None	None	SSC	-
Sebastopol	<i>Selasphorus rufus</i>	rufous hummingbird	None	None	-	-
Sebastopol	<i>Syncaris pacifica</i>	California freshwater shrimp	End	End	-	-
Sebastopol	<i>Linderiella occidentalis</i>	California linderiella	None	None	-	-
Sebastopol	<i>Lavinia exilicauda exilicauda</i>	Sacramento hitch	None	None	SSC	-
Sebastopol	<i>Lavinia symmetricus navarroensis</i>	Navarro roach	None	None	SSC	-
Sebastopol	<i>Lavinia symmetricus ssp. 4</i>	Clear Lake - Russian River roach	None	None	SSC	-
Sebastopol	<i>Mylopharodon conocephalus</i>	hardhead	None	None	SSC	-
Sebastopol	<i>Hysterocarpus traskii pomo</i>	Russian River tule perch	None	None	SSC	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Sebastopol	<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	SSC	-
Sebastopol	<i>Oncorhynchus kisutch</i> pop. 4	coho salmon - central California coast ESU	End	End	-	-
Sebastopol	<i>Oncorhynchus mykiss irideus</i> pop. 16	steelhead - northern California DPS	Threat	None	-	-
Sebastopol	<i>Oncorhynchus mykiss irideus</i> pop. 8	steelhead - central California coast DPS	Threat	None	-	-
Sebastopol	<i>Oncorhynchus tshawytscha</i> pop. 17	chinook salmon - California coastal ESU	Threat	None	-	-
Sebastopol	<i>Andrena blennospermatis</i>	Blennosperma vernal pool andrenid bee	None	None	-	-
Sebastopol	<i>Bombus occidentalis</i>	western bumble bee	None	None	-	-
Sebastopol	<i>Taxidea taxus</i>	American badger	None	None	SSC	-
Sebastopol	<i>Antrozous pallidus</i>	pallid bat	None	None	SSC	-
Sebastopol	<i>Lasiurus cinereus</i>	hoary bat	None	None	-	-
Sebastopol	<i>Emys marmorata</i>	western pond turtle	None	None	SSC	-
Sebastopol	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Sebastopol	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	None	None	-	-
Sebastopol	Northern Vernal Pool	Northern Vernal Pool	None	None	-	-
Sebastopol	<i>Blennosperma bakeri</i>	Sonoma sunshine	End	End	-	1B.1
Sebastopol	<i>Hemizonia congesta</i> ssp. <i>congesta</i>	congested-headed hayfield tarplant	None	None	-	1B.2
Sebastopol	<i>Lasthenia burkei</i>	Burke's goldfields	End	End	-	1B.1
Sebastopol	<i>Lasthenia californica</i> ssp. <i>bakeri</i>	Baker's goldfields	None	None	-	1B.2
Sebastopol	<i>Microseris paludosa</i>	marsh microseris	None	None	-	1B.2
Sebastopol	<i>Campanula californica</i>	swamp harebell	None	None	-	1B.2
Sebastopol	<i>Downingia pusilla</i>	dwarf downingia	None	None	-	2B.2
Sebastopol	<i>Legenere limosa</i>	legenere	None	None	-	1B.1
Sebastopol	<i>Viburnum ellipticum</i>	oval-leaved viburnum	None	None	-	2B.3
Sebastopol	<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	None	None	-	2B.2
Sebastopol	<i>Eriophorum gracile</i>	slender cottongrass	None	None	-	4.3
Sebastopol	<i>Rhynchospora alba</i>	white beaked-rush	None	None	-	2B.2
Sebastopol	<i>Rhynchospora californica</i>	California beaked-rush	None	None	-	1B.1
Sebastopol	<i>Rhynchospora capitellata</i>	brownish beaked-rush	None	None	-	2B.2
Sebastopol	<i>Rhynchospora globularis</i>	round-headed beaked-rush	None	None	-	2B.1
Sebastopol	<i>Arctostaphylos densiflora</i>	Vine Hill manzanita	None	End	-	1B.1
Sebastopol	<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i>	Rincon Ridge manzanita	None	None	-	1B.1
Sebastopol	<i>Hosackia gracilis</i>	harlequin lotus	None	None	-	4.2
Sebastopol	<i>Trifolium amoenum</i>	two-fork clover	End	None	-	1B.1
Sebastopol	<i>Trifolium hydrophilum</i>	saline clover	None	None	-	1B.2
Sebastopol	<i>Iris longipetala</i>	coast iris	None	None	-	4.2
Sebastopol	<i>Juglans hindsii</i>	Northern California black walnut	None	None	-	1B.1
Sebastopol	<i>Fritillaria liliacea</i>	fragrant fritillary	None	None	-	1B.2
Sebastopol	<i>Lilium pardalinum</i> ssp. <i>pitkinense</i>	Pitkin Marsh lily	End	End	-	1B.1

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Sebastopol	<i>Limnanthes vincularis</i>	Sebastopol meadowfoam	End	End	-	1B.1
Sebastopol	<i>Clarkia imbricata</i>	Vine Hill clarkia	End	End	-	1B.1
Sebastopol	<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip	None	None	-	4.2
Sebastopol	<i>Castilleja uliginosa</i>	Pitkin Marsh paintbrush	None	End	-	1A
Sebastopol	<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	End	None	-	1B.1
Sebastopol	<i>Calamagrostis bolanderi</i>	Bolander's reed grass	None	None	-	4.2
Sebastopol	<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	None	None	-	2B.1
Sebastopol	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	None	None	-	1B.1
Sebastopol	<i>Chorizanthe valida</i>	Sonoma spineflower	End	End	-	1B.1
Sebastopol	<i>Delphinium luteum</i>	golden larkspur	End	Rare	-	1B.1
Sebastopol	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Sebastopol	<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	-	1B.1
Sebastopol	<i>Ceanothus foliosus</i> var. <i>vineatus</i>	Vine Hill ceanothus	None	None	-	1B.1
Sebastopol	<i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	glory brush	None	None	-	4.3
Sebastopol	<i>Ceanothus purpureus</i>	holly-leaved ceanothus	None	None	-	1B.2
Sebastopol	<i>Horkelia tenuiloba</i>	thin-lobed horkelia	None	None	-	1B.2

KEY FOR 9-QUAD LIST:

- 1B.1 = Rare, threatened, or endangered in California and elsewhere; seriously threatened in California
 1B.2 = Rare, threatened, or endangered in California and elsewhere; fairly threatened in California
 1B.3 = Rare, threatened, or endangered in California and elsewhere; not very threatened in California
 2A = Presumed extinct in California, but extant elsewhere
 2B.1 = Rare, threatened, or endangered in Calif., but more common elsewhere; seriously threatened in Calif.
 2B.2 = Rare, threatened, or endangered in Calif., but more common elsewhere; fairly threatened in Calif.
 2B.3 = Rare, threatened, or endangered in Calif., but more common elsewhere; not very threatened in Calif.
 3 = Plants about which we need more information (Review List)
 3.1 = Plants about which we need more information (Review List); seriously threatened in California
 3.2 = Plants about which we need more information (Review List); fairly threatened in California
 3.3 = Plants about which we need more information (Review List); not very threatened in California
 4.2 = Plants of limited distribution (watch list); fairly threatened in California
 4.3 = Plants of limited distribution (watch list); not very threatened in California

SE/ST/SD=State Endangered/Threatened/Delisted

SSC=CDFW Species of Special Concern

WL=CDFW Watch List

FPE/FPT/FPD/FP=Federal Proposed Endangered/Threatened/Delisting

Threat=Threatened

Cand=Candidate

SC/SCD=State Candidate for Listing/Delisting

SFP=State Fully Protected

FE/FT/FD=Federal Endangered/Threatened/Delisted

FC=Federal Candidate

End=Endangered

Prop=Proposed

APPENDIX B

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM RESULTS



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/INTRODUC
A001	CALIFORNIA TIGER SALAMANDER	FE FT	CT	SC	NATIVE
A014	CALIFORNIA SLENDER SALAMANDER				NATIVE
A020	SPECKLED BLACK SALAMANDER				NATIVE
A071	CALIFORNIA RED-LEGGED FROG	FT		SC	NATIVE
B051	GREAT BLUE HERON				CD
B052	GREAT EGRET				CD
B057	CATTLE EGRET				
B058	GREEN HERON				
B059	BLACK-CROWNED NIGHT HERON				
B079	MALLARD				HA
B080	NORTHERN PINTAIL				HA
B082	BLUE-WINGED TEAL				HA
B084	NORTHERN SHOVELER				HA
B086	EURASIAN WIGEON				HA
B108	TURKEY VULTURE				
B110	OSPREY				CD
B111	WHITE-TAILED KITE		CF		BL
B113	BALD EAGLE	CE	CF		BL FS CD
B114	NORTHERN HARRIER			SC	
B115	SHARP-SHINNED HAWK				
B116	COOPER'S HAWK				
B119	RED-SHOULDERED HAWK				
B123	RED-TAILED HAWK				
B124	FERRUGINOUS HAWK				
B125	ROUGH-LEGGED HAWK				
B126	GOLDEN EAGLE		CF		BL CD

ID	SPECIES NAME	STATUS		NATIVE/INTRODUC
B127	AMERICAN KESTREL			NATIVE
B128	MERLIN			NATIVE
B131	PRAIRIE FALCON			NATIVE
B141	MOUNTAIN QUAIL		HA	NATIVE
B159	MOUNTAIN PLOVER	SC	BL	NATIVE
B168	WILLET			NATIVE
B170	SPOTTED SANDPIPER			NATIVE
B172	WHIMBREL			NATIVE
B173	LONG-BILLED CURLEW			NATIVE
B200	WILSON'S PHALAROPE			NATIVE
B251	BAND-TAILED PIGEON		HA	NATIVE
B260	GREATER ROADRUNNER			NATIVE
B262	BARN OWL			NATIVE
B264	WESTERN SCREECH OWL			NATIVE
B265	GREAT HORNED OWL			NATIVE
B267	NORTHERN PYGMY OWL			NATIVE
B269	BURROWING OWL	SC	BL	NATIVE
B272	LONG-EARED OWL	SC		NATIVE
B273	SHORT-EARED OWL	SC		NATIVE
B274	NORTHERN SAW-WHET OWL			NATIVE
B277	COMMON POORWILL			NATIVE
B286	BLACK-CHINNED HUMMINGBIRD			NATIVE
B287	ANNA'S HUMMINGBIRD			NATIVE
B289	CALLIOPE HUMMINGBIRD			NATIVE
B291	RUFIOUS HUMMINGBIRD			NATIVE
B292	ALLEN'S HUMMINGBIRD			NATIVE
B293	BELTED KINGFISHER			NATIVE
B294	LEWIS' S WOODPECKER			NATIVE
B299	RED-BREASTED SAPSUCKER			NATIVE
B302	NUTTALL'S WOODPECKER			NATIVE
B303	DOWNY WOODPECKER			NATIVE
B304	HAIRY WOODPECKER			NATIVE
B307	NORTHERN FLICKER			NATIVE
B309	OLIVE-SIDED FLYCATCHER	SC		NATIVE
B311	WESTERN WOOD-PEWEE			NATIVE

ID	SPECIES NAME	STATUS	NATIVE/INTRODUC
B318	DUSKY FLYCATCHER		NATIVE
B320	PACIFIC-SLOPE FLYCATCHER		NATIVE
B323	SAY'S PHOEBE		NATIVE
B326	ASH-THROATED FLYCATCHER		NATIVE
B333	WESTERN KINGBIRD		NATIVE
B337	HORNED LARK		NATIVE
B338	PURPLE MARTIN	SC	NATIVE
B339	TREE SWALLOW		NATIVE
B340	VIOLET-GREEN SWALLOW		NATIVE
B341	NORTHERN ROUGH-WINGED SWALLOW		NATIVE
B343	CLIFF SWALLOW		NATIVE
B346	STELLER'S JAY		NATIVE
B348	WESTERN SCRUB-JAY		NATIVE
B352	YELLOW-BILLED MAGPIE		NATIVE
B353	AMERICAN CROW	HA	NATIVE
B354	COMMON RAVEN		NATIVE
B357	CHESTNUT-BACKED CHICKADEE		NATIVE
B358	OAK TITMOUSE		NATIVE
B360	BUSHTIT		NATIVE
B361	RED-BREASTED NUTHATCH		NATIVE
B362	WHITE-BREASTED NUTHATCH		NATIVE
B364	BROWN CREEPER		NATIVE
B368	BEWICK'S WREN	SC	NATIVE
B369	HOUSE WREN		NATIVE
B370	WINTER WREN		NATIVE
B375	GOLDEN-CROWNED KINGLET		NATIVE
B376	RUBY-CROWNED KINGLET		NATIVE
B377	BLUE-GRAY GNATCATCHER		NATIVE
B381	MOUNTAIN BLUEBIRD		NATIVE
B382	TOWNSEND'S SOLITAIRE		NATIVE
B385	SWAINSON'S THRUSH		NATIVE
B386	HERMIT THRUSH		NATIVE
B389	AMERICAN ROBIN		NATIVE
B390	VARIED THRUSH		NATIVE
B391	WRENTIT		NATIVE

ID	SPECIES NAME	STATUS		NATIVE/INTRODUC
B393	NORTHERN MOCKINGBIRD			NATIVE
B398	CALIFORNIA THRASHER			NATIVE
B404	AMERICAN PIPIT			NATIVE
B407	CEDAR WAXWING			NATIVE
B408	PHAINOPEPLA			NATIVE
B410	LOGGERHEAD SHRIKE	FE	SC	NATIVE
B415	CASSIN'S VIREO			NATIVE
B417	HUTTON'S VIREO		SC	NATIVE
B418	WARBLING VIREO			NATIVE
B425	ORANGE-CROWNED WARBLER			NATIVE
B426	NASHVILLE WARBLER			NATIVE
B430	YELLOW WARBLER		SC	NATIVE
B435	YELLOW-RUMPED WARBLER			NATIVE
B436	BLACK-THROATED GRAY WARBLER			NATIVE
B437	TOWNSEND'S WARBLER			NATIVE
B438	HERMIT WARBLER			NATIVE
B460	MACGILLIVRAY'S WARBLER			NATIVE
B461	COMMON YELLOWTHROAT		SC	NATIVE
B463	WILSON'S WARBLER			NATIVE
B471	WESTERN TANAGER			NATIVE
B475	BLACK-HEADED GROSBEAK			NATIVE
B477	LAZULI BUNTING			NATIVE
B483	SPOTTED TOWHEE		SC	NATIVE
B484	CALIFORNIA TOWHEE	FT CE		NATIVE
B487	RUFIOUS-CROWNED SPARROW		SC	NATIVE
B489	CHIPPING SPARROW			NATIVE
B493	BLACK-CHINNED SPARROW			NATIVE
B494	VESPER SPARROW		SC	NATIVE
B495	LARK SPARROW			NATIVE
B497	BELL'S SPARROW	FT	SC	NATIVE
B499	SAVANNAH SPARROW	CE	SC	NATIVE
B501	GRASSHOPPER SPARROW		SC	NATIVE
B504	FOX SPARROW			NATIVE
B505	SONG SPARROW		SC	NATIVE
B506	LINCOLN'S SPARROW			NATIVE

ID	SPECIES NAME	STATUS		NATIVE/INTRODUC
B509	GOLDEN-CROWNED SPARROW			NATIVE
B510	WHITE-CROWNED SPARROW			NATIVE
B512	DARK-EYED JUNCO			NATIVE
B521	WESTERN MEADOWLARK			NATIVE
B522	YELLOW-HEADED BLACKBIRD	SC		NATIVE
B524	BREWER'S BLACKBIRD			NATIVE
B528	BROWN-HEADED COWBIRD			NATIVE
B532	BULLOCK'S ORIOLE			NATIVE
B536	PURPLE FINCH			NATIVE
B539	RED CROSSBILL			NATIVE
B542	PINE SISKIN			NATIVE
B543	LESSER GOLDFINCH			NATIVE
B544	LAWRENCE'S GOLDFINCH			NATIVE
B545	AMERICAN GOLDFINCH			NATIVE
B546	EVENING GROSBEAK			NATIVE
B554	PLUMBEOUS VIREO			NATIVE
B699	BARRED OWL			NATIVE
B773	AMERICAN REDSTART			NATIVE
B798	WHITE-THROATED SPARROW			NATIVE
B799	HARRIS'S SPARROW			NATIVE
B809	INDIGO BUNTING			NATIVE
M006	ORNATE SHREW	FE	SC	NATIVE
M012	TROWBRIDGE'S SHREW			NATIVE
M033	WESTERN RED BAT	SC	FS	NATIVE
M034	HOARY BAT			NATIVE
M037	TOWNSEND'S BIG-EARED BAT	SC	BL FS	NATIVE
M038	PALLID BAT	SC	BL FS	NATIVE
M039	BRAZILIAN FREE-TAILED BAT			NATIVE
M045	BRUSH RABBIT	FE	CE	HA
M047	AUDUBON'S COTTONTAIL			HA
M051	BLACK-TAILED JACKRABBIT	SC		HA
M059	SONOMA CHIPMUNK			NATIVE
M077	WESTERN GRAY SQUIRREL			HA
M105	CALIFORNIA KANGAROO RAT	SC		NATIVE
M113	WESTERN HARVEST MOUSE			NATIVE

ID	SPECIES NAME	STATUS				NATIVE/INTRODUC
M116	CALIFORNIA MOUSE					NATIVE
M117	DEER MOUSE			SC		NATIVE
M119	BRUSH MOUSE					NATIVE
M120	PINYON MOUSE					NATIVE
M127	DUSKY-FOOTED WOODRAT	FE		SC		NATIVE
M134	CALIFORNIA VOLE	FE	CE	SC	BL	NATIVE
M146	COYOTE				HA	NATIVE
M149	GRAY FOX				HA	NATIVE
M151	BLACK BEAR				HA	NATIVE
M152	RINGTAIL			CF		NATIVE
M157	LONG-TAILED WEASEL				HA	NATIVE
M165	MOUNTAIN LION			SC		NATIVE
M166	BOBCAT				HA	NATIVE
M177	ELK				HA	NATIVE
M181	MULE DEER				HA	NATIVE
R022	WESTERN FENCE LIZARD					NATIVE
R040	SOUTHERN ALLIGATOR LIZARD					NATIVE
R042	NORTHERN ALLIGATOR LIZARD					NATIVE
R046	NORTHERN RUBBER BOA		CT		FS	NATIVE
R051	NORTH AMERICAN RACER					NATIVE
R053	STRIPED RACER	FT	CT			NATIVE
R057	GOPHERSNAKE			SC		NATIVE
R058	EASTERN KINGSNAKE					NATIVE
R061	COMMON GARTERSNAKE	FE	CE	CF	SC	NATIVE
R062	TERRESTRIAL GARTERSNAKE					NATIVE
R071	DESERT NIGHTSNAKE					NATIVE
R076	WESTERN RATTLESNAKE					NATIVE

193 Species

Included Species All Species Included

Included Special Statuses Native

APPENDIX C

TREE SURVEY DATA

TREE SURVEY DATA – BLUE OAK WOODLAND		
WAYPOINT	SPECIES	DIAMETER AT BREAST HEIGHT (DBH) (in.)
1	BLUK	17
2	BLUK	5
3	BLUK	17
4	BLUK	15
5	BLUK	5
6	BLUK	20 (Bat Tree)
7	BLUK	8
8	BLUK	7
9	BLUK	14
10	BLUK	7
11	BLUK	8
12	BLUK	9
13	BLUK	18
14	BLUK	7
15	BLUK	10
16	BLUK	8
17	BLUK	9
18	BLUK	9
19	BLUK	12
20	BLUK	10
21	BLUK	16
22	BLUK	6
23	BLUK	12
24	BLUK	9
25	BLUK	9
26	BLUK	10
27	BLUK	11
28	BLUK	12
29	CLO	10
30	BLUK	11
31	BLUK	11
32	BLUK	12
33	CLO	32
34	BLUK	16
35	BLUK	9
36	CLO	9
37	BLUK	13
38	BLAK	12
39	BLUK	12

TREE SURVEY DATA – BLUE OAK WOODLAND			
SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	STD DEVIATION OF DBH (INCHES)
BLAK	1	12.0	NA
BLUK	35	11.0	3.8
CLO	3	17.0	13.0
TOTAL	39	11.5	NA

TREE SURVEY DATA – MIXED OAK WOODLAND		
WAYPOINT	SPECIES	DIAMETER AT BREAST HEIGHT (DBH) (in.)
40	CLO	13
41	CLO	14
42	BLUK	16
43	CLO	14
44	OWO	10
45	BLUK	5
46	BLUK	12
47	BLUK	10
48	OWO	16
49	OWO	12
50	OWO	13
51	OWO	11
52	CLO	13
53	BLUK	12
54	OWO	24
55	BLUK	6
56	OWO	8
57	BLUK	11
58	BLUK	5
59	BLUK	13
60	OWO	10
61	OWO	7
62	BLUK	8
63	OWO	3
64	OWO	17
65	OWO	5
66	OWO	13
67	BLAK	9
68	OWO	8
69	BLUK	20
70	OWO	14
71	OWO	7
72	OWO	11
73	OWO	10

TREE SURVEY DATA – MIXED OAK WOODLAND			
WAYPOINT	SPECIES	DIAMETER AT BREAST HEIGHT (DBH) (in.)	
74	OWO	12	
75	OWO	8	
SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	STD DEVIATION OF DBH (INCHES)
BLAK	1	9.0	NA
BLUK	11	10.7	4.7
CLO	4	13.5	0.6
OWO	20	11.0	4.7
TOTAL	36	11.1	NA

TREE SURVEY DATA – PACIFIC MADRONE FOREST			
WAYPOINT	SPECIES	DIAMETER AT BREAST HEIGHT (DBH) (in.)	
76	OWO	12	
77	OWO	35	
78	MAD	8 (Stump Sprout)	
80	MAD	12(Stump Sprout)	
81	MAD	18(Stump Sprout)	
82	MAD	32(Stump Sprout)	
83	OWO	20	
84	OWO	23	
85	MAD	7(Stump Sprout)	
86	MAD	5(Stump Sprout)	
87	MAD	8(Stump Sprout)	
88	MAD	5(Stump Sprout)	
89	OWO	9	
SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	STD DEVIATION OF DBH (INCHES)
OWO	5	19.8	10.2
MAD	8	11.9	9.2
TOTAL	13	14.9	NA

Key: CLO = Coast Live Oak BLUK = Blue Oak BLAK = Black Oak
OWO = Oregon White Oak MAD = Pacific Madrone

GPS waypoint for each tree is indicated on the vegetation map provided in Figure 2.

APPENDIX D

DELINEATION REPORT

DELINEATION OF WATERS OF THE U.S.

1.0 **Methodology**

1.1 Purpose of Delineation: This delineation has been conducted at the request of the local permitting agency in order to determine the extent of possible waters of the U.S. on the project.

1.2 Delineation Procedure: This delineation has been conducted as prescribed in the *Corps of Engineers Wetlands Delineation Manual*, January 1987, and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, 2008. Plant taxonomy and nomenclature is from the *Jepson Manual, Higher Plants of California*, 2012. Other texts, such as *Munz's A California Flora and Supplement* 1973, and *Mason's Flora of the Marshes of California*, 1957, were used as supplemental texts; however, all nomenclature and wetland indicator status have been checked with the U.S. Army Corps of Engineers. 2016. *National Wetland Plant Lists: Arid West and California*. The survey included use of Google satellite images, 7.5' USGS quadrangle maps, and LIDAR mapped overlays along with an extensive foot survey.

1.3 Delineation Dates: Delineation fieldwork was completed on May 7, 2019. The map was updated based on the new data on September 2, 2020.

1.4 Delineation Staff: The delineation was conducted by Steve Zalusky, Northwest Biosurvey principal biologist. Mr. Zalusky has a Master of Science Degree in Biology from the California State University at Northridge and a Bachelor of Science Degree in Zoology from the University of California at Santa Barbara. Mr. Zalusky has more than 35 years of experience as a biologist in the government and private sectors. He completed his wetland delineation training under Terry Huffman of Huffman & Associates, Inc.

Fieldwork, mapping, and report preparation were also conducted by Leigh Zalusky. Leigh Zalusky has a Bachelor of Science Degree in Computer Engineering from the University of California, Davis. Leigh also received formal delineation training under Terry Huffman of Huffman & Associates, Inc.

2.0 Existing Conditions

2.1 Location: The property is located at 3465 State Hwy. 128, Calistoga, California (APN 017-110-038); T09N R07W, Mark West Springs, Calif. 7½' Topographic Map). A location map is provided in **Figure 1**.

2.2 Site Topography and Drainage: The Winrod property extends eastward from the crest of the Mayacamas Mountains into the northern-most end of the Napa Valley. The property slopes steeply from the crest of the ridge at an elevation of 1,240 feet msl (mean sea level) to an elevation of 480 feet msl on the valley floor. It is cut from northwest to southeast by a deeply incised intermittent stream channel which drains into Blossom Creek at the northeast corner of the property. Blossom Creek continues east to the Napa River which travels the length of the Napa Valley to eventually drain into San Pablo Bay.

2.3 Soils: The property contains the following soil types:

- **Aiken loam, 15-30% slopes:**

Much of the northernmost vineyard block contains this soil type. This strongly sloping well-drained clayey soil is on hillsides and uplands. This soil formed in material weathered from basic volcanic rock. Permeability of the Aiken soil is moderately slow. Runoff is medium to rapid, and the hazard of erosion is moderate to high. The natural vegetation consists of ponderosa pine, oaks, redwoods in moist draws, annual grasses, and brush in small areas that had been cleared.

- **Forward silt loam, 5-39% slopes;**

- **Forward silt loam, 12-57% slopes:**

Most of the proposed vineyard blocks are within these soil units. These sloping to moderately steep soils are on hillslopes. The Forward series consists of well drained soils on uplands. These soils formed in material weathered from rhyolite. The plant cover is mainly Douglas fir and ponderosa pines. Runoff is medium and the hazard of erosion is severe.

- **Kidd loam, 30-75% slopes (soil unit 156):**

This is a well-drained soil on uplands. It is a steep to very steep soil that formed in materials weathered from rhyolite. Runoff is rapid to very rapid, and permeability is moderately rapid. The hazard from erosion is high to very high. Typical vegetation on this loam includes manzanita, chamise, scrub oak, forbs, grasses, and some ponderosa pine.

3.0 Aquatic Resources Results

3.1 Waters of the U.S: Waters of the U.S. within the property consist of perennial, intermittent, and ephemeral stream channels as shown on Figure W-2. No wetlands were delineated. The total area of all delineated waters is **0.78 acre**. The delineation results are shown in **Table 1**.

TABLE 1. POSSIBLE AQUATIC RESOURCES WITHIN THE SURVEY AREA

Name	Cowardin Code	HGM Code	Waters Type	Latitude	Longitude	Length (ft)	Width (ft)	Area (acres)
PS1	R3	NA	RPW	38.591311°	-122.634762°	356	3.0	0.0245
PS2	R3	NA	RPW	38.589706°	-122.629792°	1065	5.2	0.1271
IS1	R4	NA	RPW	38.591202°	-122.633637°	3567	5.5	0.4504
IS2	R4	NA	RPW	38.591035°	-122.634201°	215	1.5	0.0074
IS3	R4	NA	RPW	38.590344°	-122.633488°	332	2.7	0.0206
ED1	R6	NA	NRPW	38.593857°	-122.640152°	534	2.4	0.0294
ED2	R6	NA	NRPW	38.592003°	-122.639772°	175	2.0	0.0080
ED3	R6	NA	NRPW	38.591723°	122.639627°	217	1.5	0.0075
ED4	R6	NA	NRPW	38.591437°	-122.636407°	695	4.0	0.0638
ED5	R6	NA	NRPW	38.591529°	-122.638426°	209	1.5	0.0072
ED6	R6	NA	NRPW	38.591427°	-122.637293°	251	2.2	0.0127
ED7	R6	NA	NRPW	38.591103°	-122.638397°	323	2.9	0.0215
Total Stream Segments								0.7801
Total Possible Waters of U.S. Within Survey Area								0.7801

