BIOLOGICAL RESOURCE ASSESSMENT
WITH BOTANICAL SURVEYS
AND DELINEATION OF WATERS OF THE U.S.
for the
MATTHES VINEYARDS PROJECT
APN 025-070-043
St. Helena, CA

June 23, 2020

Updated September 22, 2021

Updated May 11, 2022

Updated December 5, 2022

Updated February 15, 2023

Prepared by

Northwest Biosurvey



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CONTENTS

1.0 PROJECT DESCRIPTION 1
- 1.1 Proposed Project 1
- 1.2 Location 1

2.0 ASSESSMENT METHODOLOGY 4
- 2.1 Botanical Survey Methods 5
- 2.2 Delineation Methods 5
- 2.3 Woodland Assessment Methods 5
- 2.4 Survey Dates 5
- 2.5 Biological Assessment Staff 6

3.0 SITE CHARACTERISTICS 6
- 3.1 Topography and Drainage 6
- 3.2 Soils 6
- 3.3 Vegetation Types 7

4.0 PRE-SURVEY RESEARCH RESULTS 12
- 4.1 CNPS Electronic Inventory Analysis 12
- 4.2 California Natural Diversity Database 12
- 4.3 Wildlife Habitat Analysis Results 24
- 4.4 Wildlife Assessment 24

5.0 FIELD SURVEY RESULTS 27

6.0 NAPA COUNTY WOODLAND ASSESSMENT 32
- 6.1 Procedure 32
- 6.2 Regional Setting 34
- 6.3 Wildlife Value of Woodland 35

7.0 CONFORMANCE WITH NAPA COUNTY BDR 38
- 7.1 Sensitive Biotic Communities 38
- 7.2 Special Status Plants and Wildlife 38
- 7.3 Potential Wildlife Movement Corridors 38
- 7.4 Fisheries Resources 38

8.0 SUMMARY, IMPACT ANALYSIS AND RECOMMENDATIONS 39
- 8.1 Summary 39
- 8.2 Potential Impacts and Recommended Mitigations 40

9.0 BIBLIOGRAPHY 44

FIGURES AND TABLES

Section		Page
Figure 1	Location Map	3
Figure 2	Vegetation Map	11
Figure 3	Regional Overview	37
Table 1	Plant Communities and Other Cover Types	8
Table 2	Selected CNPS Plants	13
Table 3	CNDDB Sensitive Plant and Wildlife Species	18
Table 4	Flora of the Matthes Vineyards Property	28
Table 5	Tree Survey Data Summary-Coast Live Oak Woodland	33
Table 6	Tree Survey Data Summary-Blue Oak Woodland	33
Table 7	Estimated Numbers of Species of Trees Impacted	34

APPENDIX A CNDDB 9-Quad Species List
APPENDIX B CWHR Results
APPENDIX C Tree Survey Data Forms
APPENDIX D Delineation Report and Map
APPENDIX E Potential Impact of Vineyard Development on Raptor Hunting Habitat

1.0 PROJECT DESCRIPTION

1.1 Proposed Project: This Biological Resource Assessment was conducted for a proposed vineyard project on a 40-acre parcel east of St. Helena, California. The project consists of three vineyard blocks totaling approximately 12 acres. There is a portion of an existing vineyard at the northeastern corner of the parcel. The entire parcel was surveyed.

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 taxa[1] 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."

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 waterways within the parcel. Due to the fact that wetland delineations are prepared with a standard format for U.S. Army Corps of Engineers review, the delineation is provided as a separate report in **Appendix D**.

***2021 Update*:** Following completion of the assessment in June of 2020, the project was redesigned with new vineyard blocks and was also subject to the Glass Fire in September and October of 2020. This update addresses the redesigned project as well as the impacts of the fire.

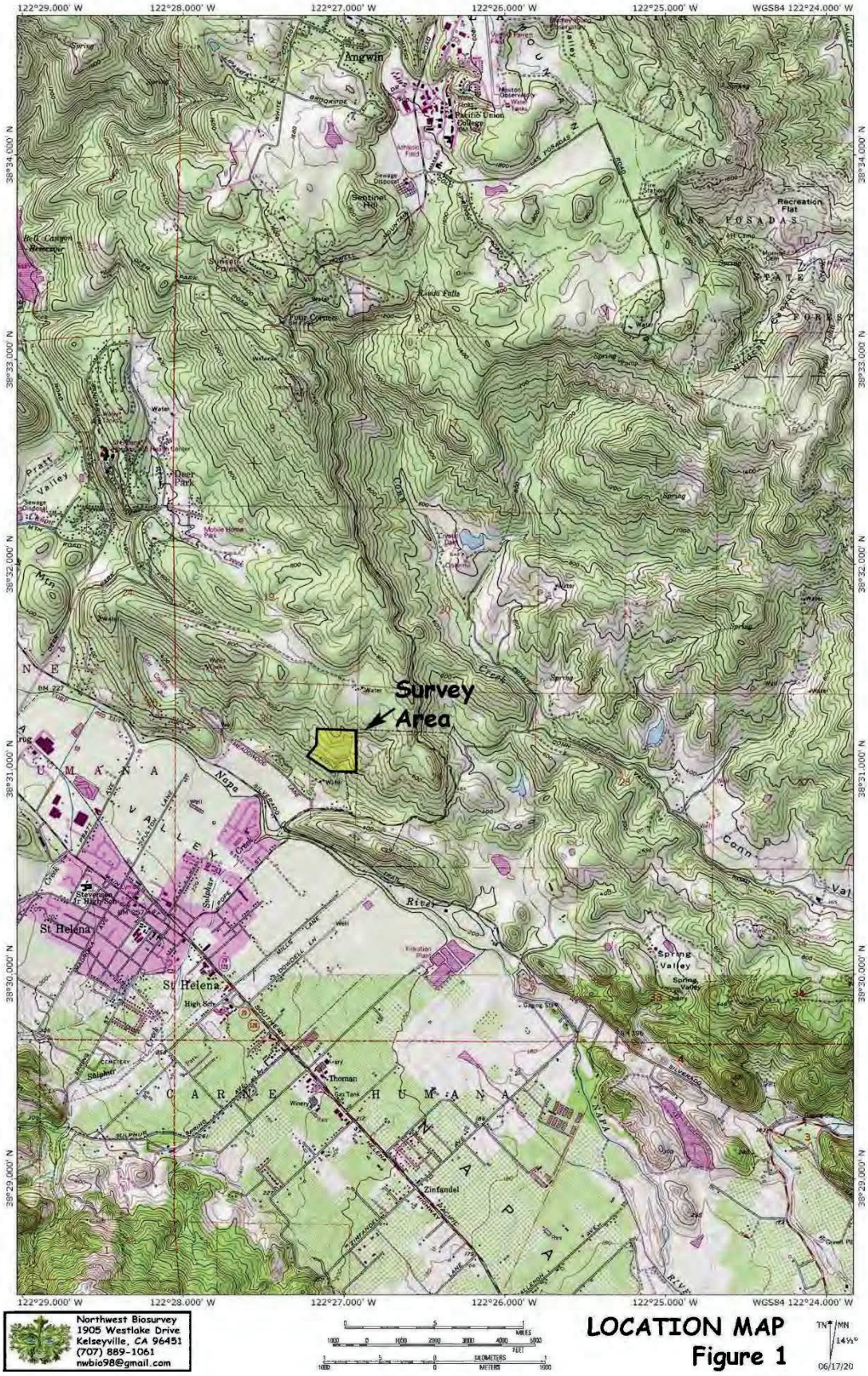
[1] Many sensitive plants and wildlife are subspecies or varieties which are taxonomic subcategories of species. The term "taxa" refers to species and their sub-specific categories.

***2022 Update 1*:** The 2021 update identified impacts to surviving, post-fire woodland that would have resulted from the 2021 vineyard design. In response, the project engineer redesigned the vineyard plan to avoid impacts to surviving woodlands and forest. This updated addresses the new 2021 vineyard design.

2022 Update 2: Following submittal of the 2022 update 1, the vineyard blocks were further redesigned and a second update was completed to address these changes.

2023 Update 1: This update addresses county staff comments on the second 2022 update including redesign of the woodland preservation area.

1.2 Location: The property is located west of Silverado Trail near Meadowood Lane, St. Helena, California (APN 025-070-043; S. 29&30 T08N R05W, St. Helena, Calif. 7½' Topographic Maps). A location map is provided in **Figure 1**.


122°29.000' W
122°28.000' W
122°27.000' W
122°26.000' W
122°25.000' W
WGS84 122°24.000' W
38°34.000' N
38°33.000' N
38°32.000' N
38°31.000' N
38°30.000' N
38°29.000' N
Angwin
Pacific Union College
Sentinel Hill
Recreation Flat
FOSADAS
Bell Canyon Reservoir
Four Corners
Deer Park
Pratt Valley
Survey Area
NAPA VALLEY
St Helena
Spring Valley
Thornan
Zinfandel
CARNEROS
Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 96451
(707) 889-1061
nwbio98@gmail.com
LOCATION MAP
Figure 1
TN
MN
14½°
06/17/20

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 (CNDDB)
- 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 digital databases were used to analyze the suitability of the site for sensitive species:

- California Department of Fish and Wildlife (CDFW), *California Natural Diversity Database (CNDDB)*; RareFind 5, 2020
- California Native Plant Society's (CNPS) *Electronic Inventory of Rare and Endangered Vascular Plants of California* (2020 edition)
- California Department of Fish and Wildlife, *California Wildlife Habitat Relationships System (CWHR)*, Version 9.0
- Napa County *Baseline Data Report (2005)*

The CNDDB 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 in 2020. CNDDB information and maps for the St. Helena 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"=100' 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 *CNPS Inventory of Rare and Endangered Plants of California*. A map of the vegetation types is provided in **Figure 2.**

2.2 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.

2.3 Woodland Assessment Methods: The proposed vineyard blocks contain two woodland types which are discussed in Section 3.3, Vegetation Types. These woodland types cover the wooded or forested areas of the development areas and extend into other parts of the property not proposed for development. Within the Coast Live Oak Woodland/Forest, one study plot was analyzed for species makeup, diameter and distribution and the results scaled to the total area present within the impacted areas. In smaller, more open sites, a direct mapping technique is used, where data on each tree present within the impacted area (GPS location, species, DBH, etc.) is collected and recorded. Due to the manageable size of the impacted areas within the Blue Oak Woodland, this technique was used for this analysis. The methodology is discussed in detail in **Section 6.0** of this report.

2.4 Survey Dates: Site visits for botanical surveys, habitat assessments, the delineation, and mapping were made by Northwest Biosurvey staff on May 13 and June 15, 2020, September 18, 2021.

2.5 Biological Assessment Staff: Field surveys and plant taxonomy 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 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.

Database review and report preparation were conducted by Danielle Zalusky, Northwest Biosurvey principal planner. Ms. Zalusky has 15 years of experience as a planner in local government and the private sector and over 17 years as a field biologist. She has a Bachelor of Arts Degree all course work toward an M.A. Degree in Rural and Town Planning from Chico State University.

3.0 SITE CHARACTERISTICS

3.1 Topography and Drainage: The Matthes property occupies a steep, southwest-facing slope northeast of Saint Helena. Elevations range from 600 feet msl (mean sea level) in the northeast corner to 320 feet msl along the property's southern boundary. Drainage in the western half of the property is via sheet flow to the Napa Valley. Drainage in the eastern half of the property is via an unnamed ephemeral tributary to the Napa River. This tributary flows due south through a deep defile until it reaches the valley floor and then flows west to the Napa River. The topography is shown in **Figure 1**.

3.2 Soils: The property contains the following soil types:

- **Forward silt loam, 12-57% slopes:**
  This strongly sloping to moderately steep soil is on hill slopes. 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 pine. Runoff is medium and the hazard of erosion is severe. The east half of the property contains this soil type.

- **Rock outcrop-Kidd complex, 50-75% slopes:**
  This complex consists of areas of Rock outcrop and soils on south-facing slopes. The areas of Rock outcrop and soils are so intermingled that it was not practical to map

them separately at the scale used in mapping. The soils formed in material weathered from basic igneous rock and rhyolite. This complex is about 70 percent Rock outcrop, 25 percent Kidd soils, and 5 percent Hambright, Boomer, and Forward soils. The Kidd soils are described below. Rock outcrop is in areas 1 to 5 acres in size. It consists of basic igneous boulders and massive rhyolitic escarpments, stones, and outcrops. Runoff is rapid. The hazard of erosion is very high. The west half of the property contains this steep soil type.

3.3 Vegetation Types: The entire parcel was mapped for vegetation during the 2020 survey season in order to provide project context. The project contains five 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.**

***Note: Post Fire Conditions*:** The Glass Fire of 2020 burned through the property as a very hot fire, killing the majority of vegetation. The green polygons in **Figure 2** indicate the few remaining areas where sufficient tree canopy survived to promote the recovery of many of the trees within the indicated areas. This is particularly important with regard to conifers. The basic Forest Service rule of thumb for survival of confers is that trees with less than 30-percent of remaining canopy are unlikely to recover. Oaks, on the other-hand, have a much higher rate of survival even when all of these leaves have burned. Even trees with lost or severely damaged trunks may stump sprout.

While chaparral and grassland communities will quickly recover, the recovery of woodlands on the property will take decades. The coast live oak woodland will need to recover first in order to provide the necessary shade for the reestablishment of Douglas fir forest.

In conformance with Napa County Ordinance Code Section 8.80.130, vegetation canopy cover is mapped and assessed as it existed prior to June 19, 2018, and as it existed at the time of the original biological resource assessment in 2020, three months prior to the fire.

TABLE 1. PLANT COMMUNITIES AND OTHER COVER TYPES PRESENT

COVER TYPE	Acres of Cover Type on Property	Acres of Cover Type in Potential Vineyard Blocks				Total Acres of Cover Types in Vineyard Blocks	Percent of Total Acres on Property in Vineyard Blocks
		A	B1	B2	Avenues		
Douglas Fir Forest	5.09	-	-	0.14	0.12	0.26	5.11
Coast Live Oak Forest	15.56	0.84	0.23	0.49	0.61	2.17	13.95
Blue Oak Woodland	0.10	-	-	-	-	0.00	0.00
Mixed Chaparral	15.36	7.28	0.46	-	1.05	8.79	57.23
Wild Oat Grassland	3.51	1.76	0.01	-	0.17	1.94	55.27
Vineyard	0.76	-	-	-	-	0.00	0.00
Ruderal	0.14	-	-	-	-	0.00	0.00
Total Acres of Cover Type	**40.52**	**9.88**	**0.70**	**0.63**	**1.95**	**13.16**	**32.48**

* Percent of total property in proposed vineyard blocks

- **Douglas Fir Forest:**

  This forest is dominated by mature to moderate-aged Douglas firs (*Pseudotsuga menziesii var. menziesii*). While many trees reach a width of 20 inches, the average is ~14 inches DBH (diameter at breast height). The canopy cover is approximately 90-percent. The community contains a well-developed understory of coast live oak (*Quercus agrifolia*). On the more exposed slopes there is a shrub layer of toyon (*Heteromeles arbutifolia*), bush monkeyflower (*Mimulus aurantiacus ssp. aurantiacus*), and poison oak (*Toxicodendron diversilobum*).

  The ground cover is well-developed with a continuous cover of grasses including California brome (*Bromus carinatus var. carinatus*), blue wildrye (*Elymus glaucus ssp. glaucus*), hedgehog dogtail (*Cynosurus echinatus*), smooth brome (*Bromus racemosus*), and California melic (*Melica californica*). Forbs include bowl-tubed iris (*Iris macrosiphon*) and field hedge parsley (*Torilis arvensis*). The most densely-shaded areas support a dense layer of leaf litter and duff.

- **Coast Live Oak Woodland:**

  This community is essentially a variation of the Douglas fir forest where coast live oak becomes dominant and Douglas fir occurs as scattered individuals. The shrub layer is heavily dominated by Douglas fir seedlings and saplings but includes toyon and poison oak. Based on this community structure, the coast live oak woodland is a seral stage that will give way to a climax community of Douglas fir resembling the community described above. This indicates that a former Douglas fir community existed here but was removed by fire or other means during the past ~50 plus years. The ground cover here is primarily leaf litter and duff.

- **Blue Oak Woodland:**

  This is a savannah community consisting of a small number of mature, scattered blue oak (*Quercus douglasii*) within a matrix of wild oat grassland and mixed chaparral. It occupies an exposed south-facing slope in the southern quarter of the property. The shrub and ground cover layers are mixed chaparral and wild oat grassland.

- **Mixed Chaparral:**

  This heterogeneous shrub community occupies the western half of the property on a continuous south-facing slope. The shrubs here are in a clumped distribution over a substrate of exposed bedrock and boulders interspersed with small patches of wild oat grassland.

  Chamise (*Adenostoma fasciculatum*) is co-dominant with coyote brush (*Baccharis pilularis*), bush monkeyflower, and poison oak. Small copses of interior live oak woodland or individual interior live oak trees are scattered throughout this shrub community. The ground cover is primarily exposed rock and small patches of wild oat grassland. In less exposed sites the rock substrate supports a heavy growth of Nevada homalothecium moss (*Homalothecium nevadense*) and Emery rock tripe lichen (*Umbilicaria phaea*).

- **Wild Oat Grassland:**

  Throughout the property wild oat grassland occupies scattered openings within the woodland and shrub communities. The substrate consists of thin soils supporting grasses and forbs intermixed with exposed bedrock and boulders. Bird's foot fern (*Pellaea mucronata var. mucronata*) is widespread within rock crevices and edges. Forbs include Hartweg's fleabane (*Erigeron foliosis var hartwegii*), yarrow-leaved woolly sunflower (*Eriophyllum lanatum var. achillaeoides*), gold-wire (*Hypericum concinnum*), and coyote mint (*Monardella villosa*). Slender wild oat (*Avena barbata*) is clearly dominant in this grassland. Other grasses include big squirreltail (*Elymus*

multisetus), rattail sixweeks grass (*Festuca myuros*), red brome (*Bromus madritensis ssp. rubens*), and soft chess (*Bromus hordeaceus*).

- **Vineyard:**
  An existing vineyard occupies ¾ acres in the northeast corner of the property.

- **Ruderal:** Ruderal on this parcel consists of an existing ranch road in the eastern third of the property.

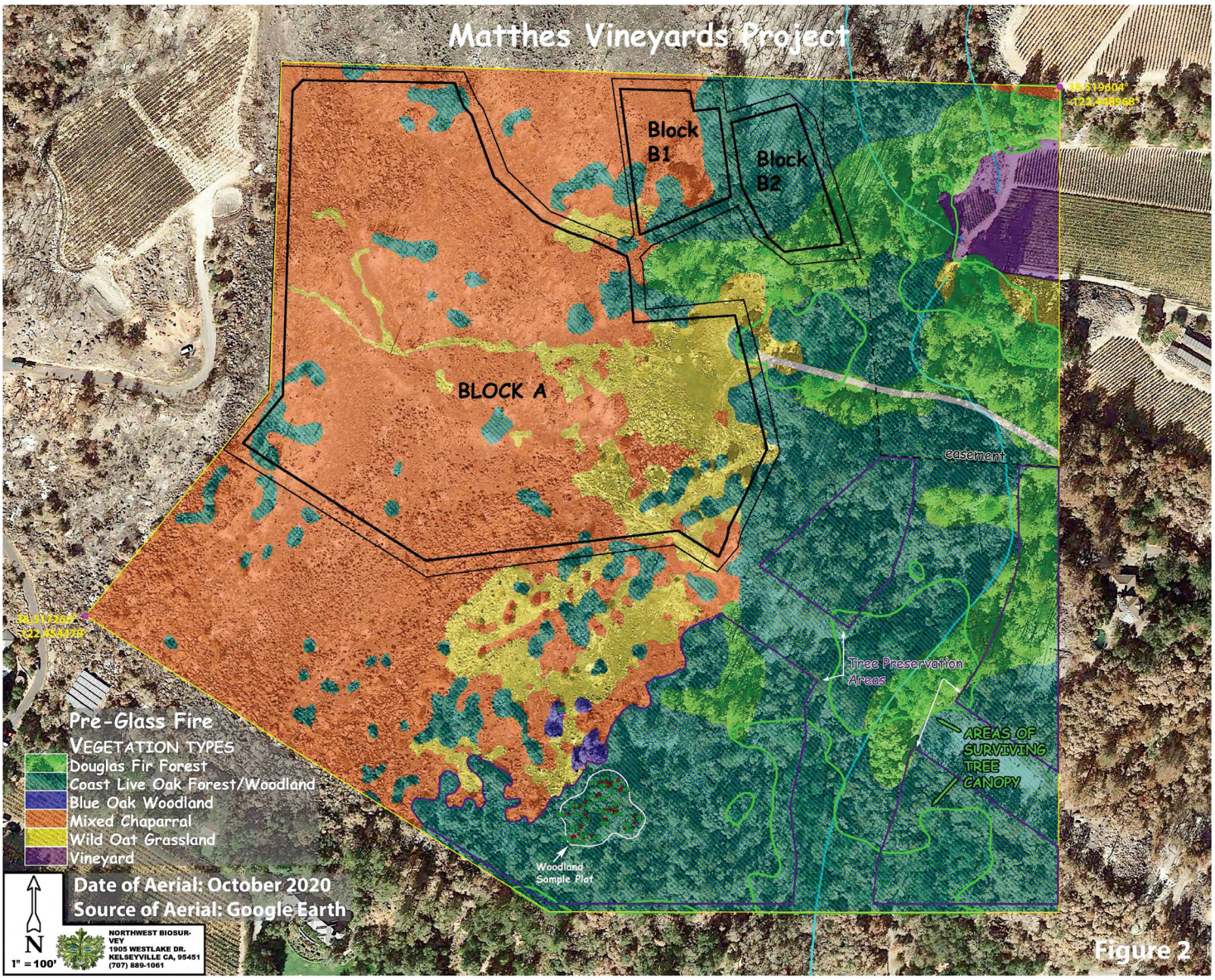

Matthes Vineyards Project
Block B1
Block B2
BLOCK A
easement
Tree Preservation Areas
AREAS OF SURVIVING TREE CANOPY
Woodland Sample Plot
Pre-Glass Fire
VEGETATION TYPES
Douglas Fir Forest
Coast Live Oak Forest/Woodland
Blue Oak Woodland
Mixed Chaparral
Wild Oat Grassland
Vineyard
Date of Aerial: October 2020
Source of Aerial: Google Earth
N
1" = 100'
NORTHWEST BIOSURVEY
1905 WESTLAKE DR.
KELSEYVILLE CA, 95451
(707) 889-1061

Figure 2

4.0 PRE-SURVEY RESEARCH RESULTS

4.1 <u>CNPS Electronic Inventory Analysis</u>: 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.

<u>Note</u>: *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 <u>California Natural Diversity Database</u>: The California Natural Diversity Database (CNDDB) and CDFW RareFind 5 data and maps for the St. Helena 7½' quadrangle 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

Matthes Vineyards Property

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Amorpha californica var. napensis	Napa false indigo	Fabaceae	perennial deciduous shrub	1B.2	None	None	Apr-Jul	Broadleaved upland forest (openings), Chaparral, Cismontane woodland
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	4.2	None	None	Apr-Jun	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly); often serpentinite, volcanic
Astragalus claranus	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
Astragalus clevelandii	Cleveland's milk-vetch	Fabaceae	perennial herb	4.3	None	None	Jun-Sep	Chaparral, Cismontane woodland, Riparian forest; serpentinite seeps
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	1B.2	None	None	May-Jul	broad-leafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland; volcanic
Calamagrostis ophitidis	serpentine reed grass	Poaceae	perennial herb	4.3	None	None	Apr-Jul	Chaparral (open, often north-facing slopes), Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland; serpentinite, rocky

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	None	None	Mar-Aug	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	None	None	Feb-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland; volcanic or serpentinite
Ceanothus divergens	Calistoga ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	None	None	Feb-Apr	Chaparral (serpentinite or volcanic, rocky)
Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	None	None	Feb-Jun	Chaparral, Cismontane woodland; volcanic, rocky
Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	None	None	Feb-Apr	Chaparral (sandy, serpentinite or volcanic)
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Onagraceae	annual herb	4.2	None	None	Apr-Jul	Chaparral (openings, usually serpentinite)
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	4.3	None	None	May-Jun	Chaparral, Cismontane woodland; serpentinite, rocky or gravelly
Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	4.3	None	None	Jul-Aug	Closed-cone coniferous forest, Chaparral, Cismontane woodland; usually serpentinite
Delphinium uliginosum	swamp larkspur	Ranunculaceae	perennial herb	4.2	None	None	May-Jun	Chaparral, Valley and foothill grassland
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	3	None	None	Jun-Oct	broadleaved upland forest, Cismontane woodland, North Coast coniferous forest; rocky, mesic
Erigeron greenei	Greene's narrow-leaved daisy	Asteraceae	perennial herb	1B.2	None	None	May-Sep	Chaparral (serpentinite or volcanic)

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Harmonia nutans	nodding harmonia	Asteraceae	annual herb	4.3	None	None	Mar-May	Chaparral, Cismontane woodland; rocky or gravelly, volcanic
Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	annual herb	1B.2	None	None	May-Jul	Chaparral (serpentinite)
Hesperolinon sharsmithiae	Sharsmith's western flax	Linaceae	annual herb	1B.2	None	None	May-Jul	Chaparral; serpentinite
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	1B.2	None	None	Apr-May	Chaparral, Cismontane woodland, Valley and foothill grassland; sandy, serpentinite
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	1B.2	None	None	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland; usually volcanic
Lomatium repostum	Napa lomatium	Apiaceae	perennial herb	4.3	None	None	Mar-Jun	Chaparral, Cismontane woodland; serpentinite
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	1B.2	None	None	Mar-Jun	broad-leafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	None	None	Mar-May	broadleaved upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; rocky
Navarretia cotulifolia	cotula navarretia	Polemoniaceae	annual herb	4.2	None	None	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland; adobe
Navarretia leucocephala ssp. bakeri	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
Ranunculus lobbii	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

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Senecio clevelandii var. clevelandii	Cleveland's ragwort	Asteraceae	perennial herb	4.3	None	None	Jun-Jul	Chaparral (serpentinite seeps)
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	Malvaceae	perennial herb	1B.2	None	None	(Jun)Jul-Aug	Meadows and seeps, Riparian forest; mesic
Streptanthus hesperidis	green jewelflower	Brassicaceae	annual herb	1B.2	None	None	May-Jul	Chaparral (openings), Cismontane woodland; serpentinite, rocky
Toxicoscordion fontanum	marsh zigadenus	Melanthiaceae	perennial bulbiferous herb	4.2	None	None	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps; vernally mesic, often serpentinite
Trichostema ruygtii	Napa bluecurls	Lamiaceae	annual herb	1B.2	None	None	Jun-Oct	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools

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
CE = State Endangered.
CT = State Threatened
CD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List
FE = Federal Endangered
FT = Federal Threatened
FD = Federal Delisted

TABLE 3. CNDDB SENSITIVE PLANT AND WILDLIFE SPECIES WITHIN THE ST. HELENA, CALIF. 7½' QUAD.

Habitat Type	Habitat Present
Northern Vernal Pool	No

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Amorpha californica var. napensis	Napa false indigo	Broadleaved upland forest, chaparral, cismontane woodland/openings; --/--/1B.2	April-July decid. shrub	Potential habitat present
Astragalus breweri	Brewer's milk-vetch	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (open, often gravelly)/often serpentinite, volcanic; --/--/4.2	April-June ann. herb	Potential habitat present
Astragalus claranus	Clara Hunt's milk-vetch	Chaparral, cismontane woodland, valley & foothill grassland/serpentinite or volcanic, rocky, clay; FE/ST/1B.1	March-May ann. herb	Potential habitat present
Astragalus clevelandii	Cleveland's milk-vetch	Chaparral, cismontane woodland, riparian forest/serpentinite seeps; --/--/4.3	June-Sept. per. herb	Potential habitat present
Brodiaea leptandra	narrow-anthered brodiaea	Broadleaved upland forest, chaparral, lower montane coniferous forest, valley & foothill grassland/volcanic; --/--/1B.2	May-July per. herb	Potential habitat present
Calamagrostis ophitidis	serpentine reed grass	Chaparral (open, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland /serpentinite, rocky; --/--/4.3	April-July per. herb	Poor habitat is present
Castilleja ambigua var. ambigua	johnny-nip	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools (margins); --/--/4.2	March-Aug. ann. herb	Habitat is not present
Ceanothus confusus	Rincon ridge ceanothus	Closed cone coniferous forest, chaparral, cismontane woodland; volcanic; --/--/1B.1	Feb.-April everg. shrub	Potential habitat but not found in survey area
Ceanothus divergens	Calistoga ceanothus	Chaparral, cismontane woodland/serpentine, volcanic, rocky;--/--/1B.2	Feb.-March ever. shrub	Potential habitat but not found in survey area

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Ceanothus pinetorum	Kern ceanothus	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest/rocky, granitic; --/--/4.3	May-July everg. shrub	Potential habitat but not found in survey area
Ceanothus purpureus	holly-leaved ceanothus	Chaparral, cismontane woodland/volcanic, rocky; --/--/1B.2	Feb.-June everg. shrub	Potential habitat but not found in survey area
Ceanothus sonomensis	Sonoma ceanothus	Chaparral; sandy, serpentine, volcanic; --/--/1B.2	Feb.-April everg. shrub	Potential habitat but not found in survey area
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Chaparral (openings, usually serpentinite); --/--/4.2	April-June ann. herb	Potential habitat present
Collomia diversifolia	serpentine collomia	Chaparral, cismontane woodland/serpentinite, rocky or gravelly; --/--/4.3	May-June ann. herb	Habitat is not present
Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	Closed-cone coniferous forest, chaparral, cismontane woodland/usually serpentinite; --/ --/4.3	July-Aug. ann. herb	Habitat is not present
Delphinium uliginosum	swamp larkspur	Chaparral, valley and foothill grassland /serpentinite seeps; --/--/4.2	May-June per. herb	Habitat is not present
Erigeron biolettii	streamside daisy	Broadleaved upland forest, cismontane woodland, North Coast coniferous forest /rocky, mesic; --/--/3	June-Oct. per. herb	Habitat is not present
Erigeron greenei	Greene's narrow-leaved daisy	Chaparral/serpentine and volcanic, generally in shrubby vegetation; --/--/1B.2	May-Sept. per. herb	Potential habitat present
Eryngium jepsonii	Jepson's coyote-thistle	Valley & foothill grassland, vernal pools/clay; --/--/1B.2	April-August per herb	Habitat is not present
Erythronium helenae	St. Helena Fawn lily	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland/volcanic or serpentinite; --/--/4.2	Mar-May bulb. herb	Potential habitat present
Harmonia nutans	nodding harmonia	Chaparral, cismontane woodland/rocky or gravelly, volcanic; --/--/4.3	March-May ann. herb	Potential habitat present

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Helianthus exilis	serpentine sunflower	Chaparral, cismontane woodland/serpentinite seeps;--/--/4.2	April-Nov. ann. herb	Habitat is not present
Hesperolinon sharsmithiae	Sharsmith's western flax	Chaparral, serpentinite; --/--/1B.2	May-July ann. herb	Habitat is not present
Layia septentrionalis	Colusa layia	Chaparral, cismontane woodland, valley & foothill grassland/sandy, serpentinite; --/--/1B.2	April-May ann. herb	Habitat is not present
Leptosiphon jepsonii	Jepson's leptosiphon	Chaparral, cismontane woodland, grassy slopes/ volcanic or serpentine edge; --/--/1B.2	May-July ann. herb	Potential habitat present
Leptosiphon latisectus	broad-lobed leptosiphon	Broad-leaved upland forest, cismontane woodland; --/--/4.3	April-June ann. herb	Potential habitat present
Lomatium repostum	Napa lomatium	Chaparral, cismontane woodland/serpentinite; --/--/4.3	March-July per. herb	Habitat is not present
Lupinus sericatus	Cobb Mountain lupine	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest/gravelly soils, sometimes serpentine; --/--/1B.2	March-June per. herb	Potential habitat present
Navarretia cotulifolia	cotula navarretia	Chaparral, cismontane woodland, valley and foothill grassland/adobe; --/--/4.2	May-June ann. herb	Habitat is not present
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Cismontane woodland, lower montane coniferous forest, meadows & seeps, valley & foothill grassland, vernal pools/mesic, adobe or alkaline soils; --/--/1B.1	May-July ann. herb	Habitat is not present
Penstemon newberryi var. sonomensis	Sonoma beardtongue	Chaparral, rocky; --/--/1B.3	April-Aug. per. herb	Potential habitat present
Ranunculus lobbii	Lobb's aquatic buttercup	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools/mesic--/--/4.2	Feb.-May ann. herb (aquatic)	Habitat is not present
Sagittaria sanfordii	Sanford's arrowhead	Marshes & swamps; standing or slow-moving freshwater ponds, marshes, ditches; --/--/1B.2	May-Oct. rhizom. herb	Habitat is not present
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	Marshes & seeps, riparian forest/wet soil of streambanks, meadows; --/--1B.2	July-Aug. per. herb	Habitat is not present
Streptanthus hesperidis	green jewel flower	Chaparral or cismontane woodland (openings)/serpentine, rocky; --/--/1B.2	May-July ann. herb	Habitat is not present

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Toxicoscordion fontanum	marsh zigadenus	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps/vernally mesic, often serpentinite; --/--/4.2	April-July bulb. herb	Habitat is not present
Trichostema ruygtii	Napa bluecurls	Chaparral, cismontane woodland, lower montane coniferous forest, valley & foothill grassland, vernal pools; --/--/1B.2	June-Oct. ann. herb	Habitat is not present
Triteleia lugens	dark-mouthed triteleia	Broadleaved upland forest, chaparral, coastal scrub, lower montane coniferous forest; --/--/4.3	April-June bulb. herb	Potential habitat present

*See CNPS list for key

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
Bombus caliginosus	obscure bumble bee	A black and yellow bee found in California, Oregon, Washington. Food plant genera: Baccharis, Cirsium, Lupinus, Lotus, Grindelia, Phacelia; G3G4/CA-SNR	year-round	Poor habitat present
Margaritifera falcata	western pearlshell	Freshwater mussel: prefers cold clean creeks and rivers that support salmonid populations. Sand, gravel, and cobble are preferred substrates; G5/S1S2	year-round	Habitat not present
Lavinia exilicauda exilicauda	Sacramento hitch	Scattered populations are found in freshwater streams, lakes, and reservoirs in the Sacramento Valley. Spawns over gravel riffles; SSC/T3/S2S4	year-round	Habitat not present
Oncorhynchus mykiss irideus 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 not present
Dicamptodon ensatus	California giant salamander	Cool, moist forest habitats associated with rocky streams; SSC/G3/SNR	year-round	Habitat not present
Rana boylii	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

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
Rana draytonii	California red-legged frog	Generally slow or ponded water, riparian; FT/SSC/G2G3/S2S3	year-round	Habitat not present
Emys marmorata	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
Haliaeetus leucocephalus	bald eagle	Large bodies of water with adjacent snags. Nests in large old-growth or dominant live tree (often ponderosa pine) with open branches; FD/SE/SFP/G5/S2	year-round	Habitat not present
Progne subis	purple martin	Open woodland near water. Nests in old woodpecker cavities in isolated trees, sometimes in human-made structures; SSC/G5/S3	migratory in winter	Possible habitat present
Ardea herodias	great blue heron	Shallow ponds and estuaries, & salt and fresh emergent wetlands; G5/S4	sometimes migratory	Habitat not present
Athene cunicularia	burrowing owl	Valley & foothill grassland, coastal prairie and scrub: Nests are in abandoned burrows dug by ground squirrels, foxes, etc. in open short grasslands; SSC/G4/S3	sometimes migratory in winter	Habitat not present
Setophaga petechia	yellow warbler	Riparian plant associations; prefers willows, cottonwoods, aspens, sycamores & alders for nesting & foraging; SSC/G5/S2	nesting migratory	Habitat not present
Strix occidentalis caurina	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	Possible habitat present
Antrozous pallidus	pallid bat	Open, dry habitats, forest habitats, in caves, tunnels, buildings, bridges; sensitive to human disturbance; SSC/G5/S3	local migrant	Possible habitat present
Corynorhinus townsendii	Townsend's big-eared bat	Roosts in open near relatively mesic sites, mainly montane forest habitats; SSC/G3G4/S2	year-round	Poor habitat present due to lack of water
Myotis evotis	long-eared myotis	Hollow trees in mixed hardwood/conifer forest and montane conifer forest, sometimes caves, mines, buildings; G5/S3	year-round	Poor habitat present due to lack of water

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
Myotis thysanodes	fringed myotis	Caves, mines, buildings; valley foothill hardwood or hardwood-conifer, sometimes redwood forests; G4/S3	local migrant	Poor habitat present due to lack of water
Myotis yumanensis	Yuma myotis	Open conifer forests and riparian woodlands with nearby water. Roosts may be found in caves, mines, under bridges, and buildings; G5/S4	year-round	Habitat not present
Erethizon dorsatum	North American porcupine	Occurs in a wide variety of coniferous and mixed woodland habitats in Sierra Nevada, Cascade, and Coast Ranges; G5/S3	year-round	Poor habitat present

KEY FOR TABLE 3:

SE/ST/SD=State Endangered/Threatened/Delisted
SC/SCT/SCD=State Candidate for Listing/Threatened/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 yet assessed

4.3 Wildlife Habitat Analysis Results: The California Wildlife Habitat Relationships analysis listed a large number of sensitive and non-sensitive 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 23 sensitive wildlife species need to be accounted for within the project area. These consist of the species identified as present within the St. Helena quadrangle by the CNDDB and 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 CNDDB species in the surrounding U.S.G.S. quadrangle be discussed even through suitable habitat may not occur on the site.

Habitat for the following species is absent or very poor on the property. Most of these species require perennial water, ponds, lakes, or marshes. Large raptors like eagles require large nesting platforms or ledges; burrowing owls require open areas with friable soils. These species include:

- Obscure bumble bee
- Western pearlshell
- Sacramento hitch
- Steelhead-Central California Coast DPS
- California giant salamander
- Foothill yellow-legged frog
- California red-legged frog
- Western pond turtle
- Bald eagle
- Great blue heron
- Burrowing owl
- Yellow warbler
- Townsend's big-eared bat
- Long-eared myotis
- Fringed myotis
- Yuma myotis
- North American porcupine

The stream segments on the east side of the parcel are warm and are short-duration ephemeral streams lacking the long-term cold water flows necessary to support fish or aquatic herptiles (reptiles and amphibians). The southwest-facing parcel is generally warm and arid.

The following birds and bat may occur on or in the vicinity of the property:

- **White-tailed kite (*Elanus leucurus*):**

  Usually found near agricultural areas, the kite prefers open terrain near woodlands and water. These raptors hunt over open country and prefer large, deciduous trees surrounded by expanses of grassland, meadows, farmland, and/or wetlands for nesting and roosting sites. They feed mostly on small diurnal mammals, but will sometimes eat birds, insects, amphibians, and reptiles. The woodlands and forests adjacent to the grassland provide moderate habitat for kites for both nesting and feeding.

  The California Fully Protected status of these raptors pertains to nesting pairs with an emphasis on protecting nesting habitat. This species, along with all other raptors and some passerines, is also protected under the Migratory Bird Treaty Act.

- **Purple martin (*Progne subis*):**

  These migratory passerine (perching) birds prefer open, old growth, multilayered woodland with nearby water. Much is known about habitat preference in this species due to recent research. They are commonly found in riparian habitat, or valley foothill with montane hardwood or montane-hardwood-conifer habitats near water. Up to 70-percent of nests are in fire-killed firs and pines. These birds may nest as pairs in old woodpecker cavities or in colonies in large hollow snags; nests are also sometimes found in residential areas or in manmade structures. Most tree nest sites are located in the upper slopes of hilly and mountainous terrain. Purple martins form large roosting flocks at night after the nesting season and before southward migration. There is currently no water on the property.

- **Northern spotted owl (*Strix caurina occidentalis*):**

  These owls are usually found in dense, multi-layered old-growth conifer, redwood, and fir forests, although they may also be found in otherwise-suitable newer-growth forests in California. They are intolerant of high temperatures and inhabit cool, moist, well-shaded habitats. In summer, the owls roost in north-facing slopes in dense overhead canopy, while in winter they may roost in oak habitats. They nest in tree or snag cavities, or in broken tops of large trees. Mature multi-layered forests are required for breeding. Territories for this owl are very large. This species is very sensitive to habitat disturbance and destruction, predation by other birds, and low reproductive success.

  Spotted owls have been identified in the vicinity of Howell Mountain in appropriate habitat. Although some Douglas fir forest remains on this property, the hotter southwest-facing aspect of the property makes it unlikely that spotted owls would occur here.

- **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. Although there is a potential for habitat for this bird in the oak woodlands, the gold finch is unlikely to nest here due to lack of water.

- **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 moderate habitat.

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

  Optimal habitat for these bats consists of open, dry habitats with rocky areas, but the bats are also found in oak savanna grasslands, and in open forest and woodlands with access to riparian and open water for feeding and drinking in northern California. Foraging occurs over open country. 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; they will also roost in buildings, bridges, and hollow trees. Preferred roosts are high above the ground and inaccessible to terrestrial predators, although they are occasionally found roosting on the ground underneath sacks and other items left by humans.

  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. The bats have a home range of 1 to 3 miles and, like the Townsend's bat, are known to roost with other bat species. This species of bat does not migrate long distances between seasons. This species is extremely sensitive to human disturbance of roosting sites. Populations in California have declined due to habitat destruction and use of pesticides. The small trees within the proposed vineyard blocks do not contain suitable habitat for bats, and the remaining property contains poor habitat for pallid bats.

5.0 FIELD SURVEY RESULTS

Botanical Field Survey Results: Table 4 presents the results of the floristic-level botanical survey of the entire parcel conducted in 2020. 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 93 native and introduced plant taxa including non-vascular plants such as mosses and lichens are included in the plant list. No sensitive plant taxa were found.

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 MATTHES VINEYARDS PROPERTY

Habit	Species	Common Name	Family	Origin
fern	*Pteridium aquilinum var. pubescens*	bracken fern	Dennstaedtiaceae	N
fern	*Polypodium glycyrrhiza*	licorice fern	Polypodiaceae	N
fern	*Pellaea mucronata var. mucronata*	bird's-foot fern	Pteridaceae	N
fern	*Pentagramma triangularis ssp. triangularis*	gold-back fern	Pteridaceae	N
forb	*Osmorhiza occidentalis*	western sweet cicely	Apiaceae	N
forb	*Sanicula bipinnatifida*	purple sanicle	Apiaceae	N
forb	*Sanicula crassicaulis*	Pacific sanicle, Pacific blacksnakeroot	Apiaceae	N
forb	*Torilis arvensis*	field hedge parsley	Apiaceae	A
forb	*Agoseris heterophylla var. heterophylla*	annual agoseris, annual mountain dandelion	Asteraceae	N
forb	*Anaphalis margaritaceae*	pearly everlasting	Asteraceae	N
forb	*Centaurea melitensis*	tocalote, Napa star thistle	Asteraceae	A
forb	*Centaurea solstitialis*	yellow star thistle	Asteraceae	A
forb	*Cirsium brevistylum*	clustered thistle, Indian thistle	Asteraceae	N
forb	*Cirsium occidentale var. occidentale*	cobweb thistle	Asteraceae	N
forb	*Erigeron foliosis var. hartwegii*	Hartweg's fleabane	Asteraceae	N
forb	*Eriophyllum lanatum var. achillaeoides*	yarrow leaved woolly sunflower	Asteraceae	N
forb	*Hieracium bolanderi*	Bolander's hawkweed	Asteraceae	N
forb	*Rhagadiolus stellatus*	endive daisy	Asteraceae	A
forb	*Taraxacum officinale*	common dandelion	Asteraceae	A
forb	*Wyethia angustifolia*	narrow-leaved mule ears	Asteraceae	N
forb	*Wyethia glabra*	green mule ears, shining mule ears	Asteraceae	N
forb	*Cynoglossum grande*	grand hound's tongue	Boraginaceae	N
forb	*Cardamine breweri*	Brewer's bittercress	Brassicaceae	N
forb	*Minuartia nuttallii var. Gregoria*	Nuttall sandwort	Caryophyllaceae	N
forb	*Dudleya cymosa ssp. cymosa*	yellow star tulip, canyon dudleya	Crassulaceae	N
forb	*Croton setigerus*	turkey mullein	Euphorbiaceae	N
forb	*Euphorbia oblongata*	eggleaf spurge	Euphorbiaceae	A

Habit	Species	Common Name	Family	Origin
forb	*Acmispon americanus var. americanus*	Spanish lotus	Fabaceae	N
forb	*Lathyrus jepsonii var. californicus*	California tule pea	Fabaceae	N
forb	*Lathyrus vestitus var. vestitus*	perennial sweet pea, common Pacific pea	Fabaceae	N
forb	*Trifolium hirtum*	rose clover	Fabaceae	A
forb	*Vicia villosa ssp. villosa*	winter vetch, hairy vetch	Fabaceae	A
forb	*Erodium cicutarium*	red-stem storksbill	Geraniaceae	A
forb	*Geranium robertianum*	Robert's geranium	Geraniaceae	A
forb	*Hypericum concinnum*	gold-wire	Hypericaceae	N
forb	*Hypericum perforatum*	Klamath weed	Hypericaceae	A
forb	*Iris macrosiphon*	bowl-tubed iris	Iridaceae	N
forb	*Monardella villosa*	coyote-mint	Lamiaceae	N
forb	*Stachys albens*	cobwebby hedge nettle, white-stem hedge nettle	Lamiaceae	N
forb	*Calochortus amabilis*	Diogenes lantern, golden fairy lantern	Liliaceae	N
forb	*Chlorogalum pomeridianum*	wavyleaf soap plant	Liliaceae	N
forb	*Zigadenus fremontii*	small-flowered star lily	Liliaceae	N
forb	*Clarkia purpurea ssp. quadrivulnera*	purple clarkia, winecup clarkia, four-spot	Onagraceae	N
forb	*Plantago lanceolata*	English plantain	Plantaginaceae	A
forb	*Rumex acetosella*	sheep sorrel	Polygonaceae	A
forb	*Reseda luteola*	Dyer's rocket	Resedaceae	A
forb	*Poterium sanguisorba*	garden burnet	Rosaceae	A
forb	*Galium porrigens var. porrigens*	climbing bedstraw, graceful bedstraw	Rubiaceae	N
forb	*Penstemon heterophyllus ssp. heterophyllus*	foothill penstemon	Scrophulariaceae	N
forb	*Brodiaea elegans ssp. elegans*	harvest brodiaea	Themidaceae	N
grass	*Aira caryophyllea*	silver European hairgrass	Poaceae	A
grass	*Avena barbata*	slender wild oat	Poaceae	A
grass	*Briza maxima*	big quaking grass	Poaceae	A
grass	*Briza minor*	small quaking grass	Poaceae	A

Habit	Species	Common Name	Family	Origin
grass	*Bromus carinatus var. carinatus*	California brome	Poaceae	N
grass	*Bromus hordeaceus*	soft chess	Poaceae	A
grass	*Bromus madritensis ssp. rubens*	red brome	Poaceae	A
grass	*Bromus racemosus*	smooth brome	Poaceae	A
grass	*Cynosurus echinatus*	hedgehog dogtail, annual dogtail	Poaceae	A
grass	*Dactylus glomerata*	orchard grass	Poaceae	A
grass	*Elymus glaucus ssp. glaucus*	blue wildrye	Poaceae	N
grass	*Elymus multisetus*	big squirreltail	Poaceae	N
grass	*Festuca californica*	California fescue	Poaceae	N
grass	*Festuca myuros*	rattail sixweeks grass	Poaceae	A
grass	*Koeleria gerardii*	annual Junegrass	Poaceae	N
grass	*Melica californica*	California melic	Poaceae	N
shrub	*Rhus ovata*	sugar bush, sugar sumac	Anacardiaceae	N
shrub	*Toxicodendron diversilobum*	poison oak	Anacardiaceae	N
shrub	*Baccharis pilularis*	coyote brush, chaparral broom	Asteraceae	N
shrub	*Arctostaphylos manzanita ssp. manzanita*	common manzanita	Ericaceae	N
shrub	*Cytisus scoparius*	Scotch broom	Fabaceae	A
shrub	*Quercus berberidifolia*	California scrub oak	Fagaceae	N
shrub	*Mimulus aurantiacus ssp. aurantiacus*	bush monkeyflower, sticky monkeyflower	Phrymaceae	N
shrub	*Ceanothus cuneatus var. cuneatus*	buckbrush	Rhamnaceae	N
shrub	*Rhamnus crocea*	spiny redberry	Rhamnaceae	N
shrub	*Adenostoma fasciculatum*	chamise	Rosaceae	N
shrub	*Heteromeles arbutifolia*	toyon	Rosaceae	N
shrub	*Holodiscus discolor*	oceanspray, creambush	Rosaceae	N
shrub	*Physocarpus capitatus*	western ninebark, Pacific ninebark	Rosaceae	N
tree	*Arbutus menziesii*	Pacific madrone	Ericaceae	N
tree	*Quercus agrifolia*	coast live oak	Fagaceae	N
tree	*Quercus douglasii*	blue oak	Fagaceae	N

Habit	Species	Common Name	Family	Origin
tree	*Quercus kelloggii*	California black oak	Fagaceae	N
tree	*Aesculus californica*	California buckeye	Hippocastanaceae	N
tree	*Umbellularia californica*	California bay	Lauraceae	N
tree	*Olea europaea*	European olive	Oleaceae	A
tree	*Pinus ponderosa*	ponderosa pine	Pinaceae	N
tree	*Pinus sabiniana*	ghost pine, foothill pine	Pinaceae	N
tree	*Pseudotsuga menziesii var. menziesii*	Douglas fir	Pinaceae	N
vine	*Aristolochia californica*	California pipevine	Aristolochiaceae	N
vine	*Symphoricarpos mollis*	tripvine, creeping snowberry	Caprifoliaceae	N
lichen	*Umbilicaria phaea*	Emery rock tripe	Umbilicariaceae	N
moss	*Homalothecium nevadense*	Nevada homalothecium	Brachytheciaceae	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 of 2008.

***Note on Fire Impacts*:** This woodland analysis was conducted in 2020 prior to the Glass Fire. Pursuant to Napa Ordinance Code Section 8.80.130 B, the vegetation mapping and assessment of potential tree loss is consistent with pre-fire conditions. The acreage of forest and woodland habitat is provided in **Table 1**.

It should be noted that the tree loss estimates provided below are based on pre-fire conditions; in other words, the tables provided below show the acreage and number of trees that would have occurred in vineyard blocks had the fire not occurred. The tables also provide the most reliable estimate of what these forests and woodlands would look like in their final climax seral stage following many decades of recovery. As shown in **Figure 2**, the areas of post-fire, surviving tree canopy have been specifically avoided in the current 2022 vineyard block design.

6.1 Procedure: The Matthes Vineyards' proposed vineyard blocks contain mainly chaparral with patches of coast live oak woodland and wild oat grassland. The makeup of these communities is described in detail in section 3.3.

Within the Coast Live Oak Forest/Woodland, a study plot was selected and analyzed, with the representative species makeup scaled to account for the total mapped area present within the survey area using statistical tools. This is the only practical method of estimating the number and species of trees over large survey areas.

The Blue Oak Woodland was small enough to allow a direct mapping method to be employed. Each tree within the blocks was GPS mapped and cataloged by species and diameter. Tree sample plots, including waypoints for trees used in the analysis, are mapped on Figure 2, with specific instance information presented in **Appendix C.**

At the time of the pre-fire surveys in 2020, no Douglas fir forest occurred within the vineyard blocks proposed at that time. Consequently, tree survey data similar to that provided below in Tables 5 and 6 was not collected for this forest habitat. Post-fire conditions have not left sufficient forest to allow use of woodland sample plots. Therefore, impacts to Douglas fir forest are limited to acreage of this forest within proposed vineyard blocks as provided in **Table 1**.

Tables 5 and 6 provide a pre-fire estimate of the species and number of coast live oaks and blue oaks and sub-dominant trees that will be impacted by vineyard development in the proposed vineyard blocks based on the mapping methods outlined above.

TABLE 5. TREE SURVEY DATA SUMMARY – COAST LIVE OAK WOODLAND
(Study Plot Method)

SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	AVERAGE # OF TRUNKS PER ACRE[4]
CLO	21	14.5	81.85
DF	11	14.1	42.87
MAD	1	14.0	3.90
TOTAL	**33**	**14.4**	**128.62**
Total area of sample plot			11,176ft^2
Average canopy size[1]			328ft^2
Average distance between trunks[2]			18ft
Canopy closure[3]			97%

TABLE 6. TREE SURVEY DATA SUMMARY – BLUE OAK WOODLAND
(Direct Mapping Method)

SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	AVERAGE # OF TRUNKS PER ACRE[4]
BLUK	9	13.9	108.33
Total area of sample plot			3,619ft^2
Average canopy size[1]			241ft^2
Average distance between trunks[2]			20ft
Canopy closure[3]			60%

Key:

CLO=Coast Live Oak ***DF=Douglas Fir*** ***MAD=Pacific Madrone*** ***BLUK=Blue Oak***

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 = ((ft^2/acre)/area of test plot)) X number of trunks in test plot

Table 7 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 7. ESTIMATED NUMBERS & SPECIES OF TREES WITHIN COAST LIVE OAK AND BLUE OAK WOODLANDS IMPACTED WITHIN PROPOSED VINEYARD AREAS*

Block	Number and Species of Trees				Total # of Trees per Block
	CLO	DF	MAD	BLUK	
A	67	9	1	0	77
B1	17	2	0	0	19
B2	40	21	0	0	61
Avenues	50	26	1	0	77
Total # Each Species	174	58	2	0	Total estimated trees in coast live oak and blue oak woodlands in all blocks = 234

*In areas of high crown density, the average trunks per acre method was used to determine approximate species makeup. In sparse areas individual trees were counted when visible on aerial imagery. In some areas, a combination of these techniques was used.

6.2 Regional Setting and Continuity with Surrounding Woodlands and Other Habitat: The Matthes vineyard project is located along a lower, south-facing slope of the Howell Mountain Range, northeast of the City of Saint Helena and along the northeastern edge of the Napa Valley. The property is divided from north-to-south along a ridge extending between the western two-thirds of the parcel and the eastern third. This change in topography defines a transition from the open, rocky chaparral and grassland in the west to the shaded coast live oak and Douglas fir forests covering the eastern third of the parcel.

This lower flank of the Howell Mountain Range is generally heavily developed in a mix of vineyard and residential development which is relieved only by areas of steep, undevelopable terrain. As shown in the Regional Overlay map provided in **Figure 3**, the property occupies an island of undeveloped habitat isolated from remaining open habitat to the north by recent vineyard development (not shown in the 2018 aerial base map used in the figure). Steep ridges and slopes to the north provide a continuous expanse of undeveloped wildlife habitat; however, surface water resources on these slopes are limited to springs and occasional pools within creek channels during the summer and fall months.

Impact of Glass Fire: As much as 80-percent of mature woodland and forest within this region was lost as a result of the Glass Fire. While this habitat will recover over a period of decades, much of the wildlife cover and woodland and forest habitat has been reduced to "islands" which are primarily associated with the steep slopes along drainages.

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.

  The coast live oak and Douglas fir forests along the eastern third of the property provide marginal remaining (post-fire) core forest habitat with the caveat that this habitat is largely isolated from extensive core habitat to the north. Appendix B provides a list of wildlife species potentially present on the property based on species range and the presence of suitable habitat.

- **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.

  The Matthes property provides extensive edge between the woodland islands to the east and the grassland and shrubland communities to the west. This form of edge habitat is particularly suitable for birds of prey, which nest in woodlands and survey prey in open grassland and shrubland from perches along the woodland edge.

- **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 region. 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.

  As shown in **Figure 3**, access to extensive open habitats to the north is limited by development; however, there is undoubtedly movement between these areas by birds and some larger mammals (which may traverse the less suitable areas at night). The drainage to the south which extends through a steep defile would serve as a natural wildlife corridor to the Napa River, although this would require crossing roadways and some exposed areas.

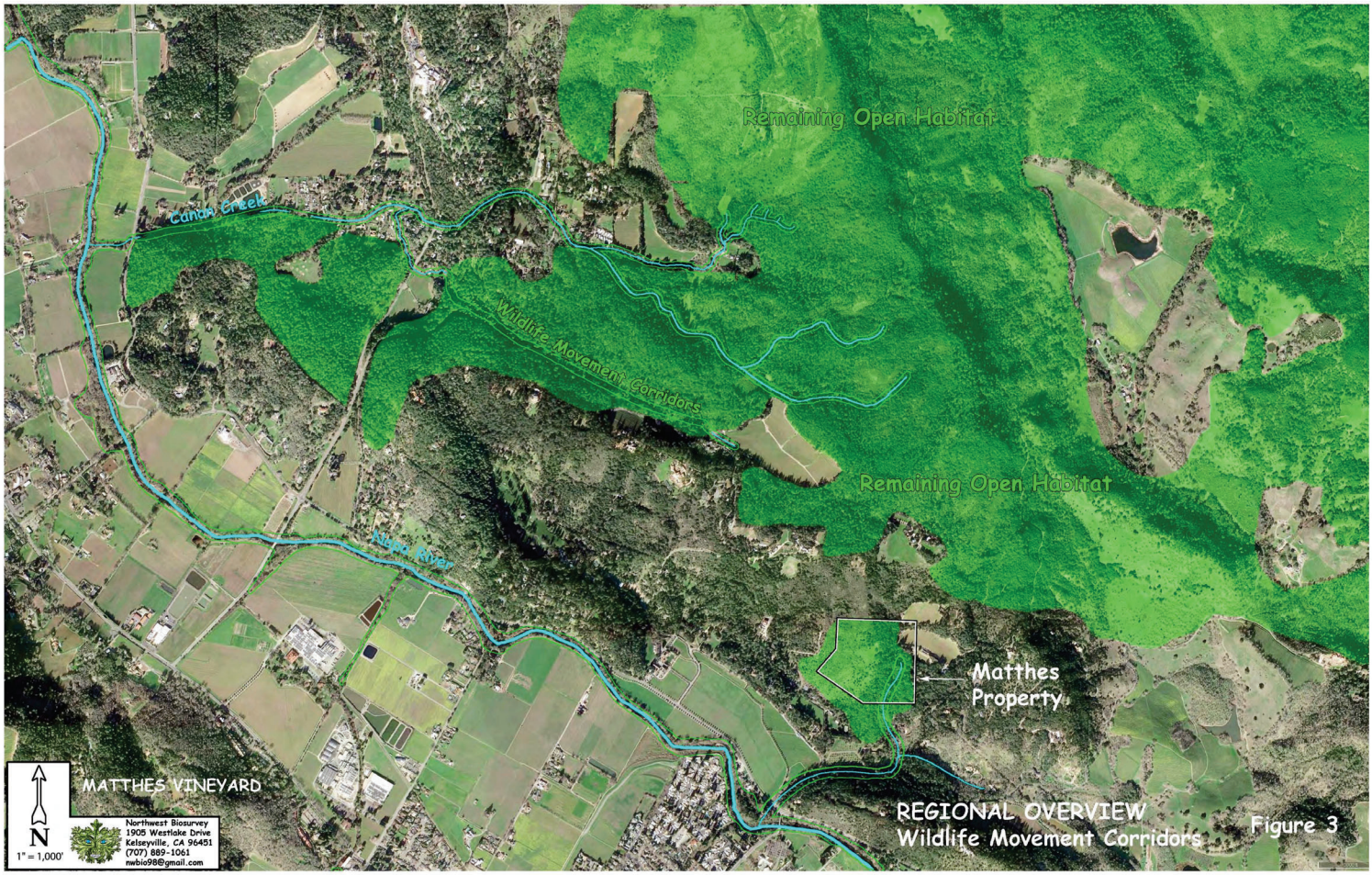
- **Presence of Critical Plant Community or Wildlife Resources:**

  Critical Plant Communities: The five plant communities mapped in **Figure 2** and described in Section 3.3 are not among the 23 plant communities considered sensitive in the Napa County Baseline Data Report. While old growth Douglas fir forest is listed as a sensitive community, the forest present on this parcel is comparatively young (~50-100 years).

  Critical Wildlife Resources: No bat surveys were warranted for this project.

- **Woodland Age Class and Size:** A woodland assessment was conducted for this project (Section 7.0). Based on this assessment, the woodland communities contain a mix of age classes and seral stages. This mix indicates that these forests and woodlands were healthy and regenerating prior to the Glass Fire. Recovery will take several decades.

- **Trees with Unique Wildlife Value:** Woodlands on the property provide significant wildlife value as discussed above in this section; however, trees providing unique habitat such as bat habitat or acorn woodpecker storage trees were not identified within the vineyard blocks.


Remaining Open Habitat
Canada Creek
Wildlife Movement Corridors
Remaining Open Habitat
Napa River
Matthes Property
MATTHES VINEYARD
N
1" = 1,000'
Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 96451
(707) 889-1061
nwbio98@gmail.com
REGIONAL OVERVIEW
Wildlife Movement Corridors
Figure 3

7.0 CONFORMANCE WITH NAPA COUNTY BASELINE DATA REPORT (BDR)

Each of the pertinent sections of the Napa Count 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 survey area does not contain plant communities listed 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 (CNDDB), California Native Plant Society Electronic Inventory, and California Department of Fish and Wildlife's Wildlife Habitat Relationships Program. The list of special status plants and wildlife used in the BDR is derived from the CNDDB. 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 CNDDB are subject to CEQA review pursuant to Section 15380 (d) of the CEQA Guidelines.

- Plants: No special status plants were identified within the survey area.

- Wildlife: The property provides potential habitat for the following wildlife species with sensitive regulatory status:

    - White-tailed kite
    - Northern spotted owl (low potential)
    - Lawrence's gold finch (low potential)
    - Lewis' woodpecker
    - Pallid bat

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.

7.4 Fisheries Resources: No fisheries resources are present on the parcel.

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 (CNDDB) 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 *Wildlife Habitat Relationships 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.*
- Review of the Napa County Baseline Data Report (BDR), 2005.

Sensitive Plants: A total of 93 native and introduced plant taxa were identified on the property during the in-season, floristic-level botanical surveys. No sensitive taxa were identified. 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 23 sensitive wildlife species were assessed for potential occurrence at the site because of inclusion in the CNDDB database for the St. Helena quadrangle, 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 Matthes Vineyards property:

- White-tailed kite
- Northern spotted owl (low potential)
- Lawrence's gold finch (low potential)
- Lewis' woodpecker
- Pallid bat

Possible Waters of U.S.: The total area of all delineated waters of the U.S. on the property is 0.1484 acre. All Waters of the U.S. occurring within the survey area are defined as "other waters" consisting of two ephemeral drainages, 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:

As discussed in **Section 6.3**, wildlife access from remaining natural habitat associated with the Matthes Vineyards property to the extensive tracts of habitat to the north has been disrupted by prior vineyard and residential development. Remaining local wildlife movement from the Napa Valley to woodlands on the property would emphasize use of the riparian corridor in the eastern third of the parcel. Post-fire woodland islands in the eastern portion of the property would remain as local wildlife habitat accessed via this corridor. The proposed vineyard development will occur within the open, western two-thirds of the property and should not result in significant wildlife habitat fragmentation. Wildlife movement within the western portion of the property from woodlands to the east should be retained to the extent practical by limiting the use of deer fencing to vineyard blocks only.

Proposed Mitigation for Habitat Fragmentation:

***Measure 1*:** Deer fencing should be restricted to contiguous 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 0.26 acres of pre-fire Douglas fir habitat (5.11-percent of the pre-fire habitat) and 2.17 acres of pre-fire coast live oak woodland habitat (13.95-percent of this community on the property). As estimated in Table 5, approximately 234 trees occur within proposed vineyard blocks and vineyard avenues.

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 remaining woodlands at a ratio of 3 acres of preservation for each acre removed for vineyard development. The parcel supports a total of 15.56 acres of coast live oak woodland, 2.17 acres of which lie within the proposed vineyard blocks and avenues. Of the 5.09 acres of pre-fire Douglas fir habitat, 0.26 acre occurs within proposed vineyard blocks and avenues.

Sufficient acreage for mitigation of pre-fire woodland habitat loss through preservation is present if the standard 3:1 preservation method is used.

It is important to note that the 2022 vineyard block re-design reduces impacts to post-fire trees to a single coast live oak.

C. Sensitive Plants and Wildlife

Potential Impacts:

- **Plants:** No plant species with sensitive regulatory status were found within the survey area during the floristic level botanical survey. This includes non-vascular plants, none of which are listed in this USGS quadrangle by the California Natural Diversity Database.

- **Wildlife:** The following wildlife species have a potential to be seasonally present within the proposed vineyard blocks:

  - White-tailed kite
  - Northern spotted owl (low potential)
  - Lawrence's gold finch (low potential)
  - Lewis' woodpecker
  - Pallid bat

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

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

Removal of woodland and chaparral habitat has a potential to result in an incidental take of nests, eggs, and/or nestlings if it occurs during the nesting season.

Additionally, loss of grasslands used as hunting habitat for raptors has the potential to add to cumulative, though not clearly quantifiable, impacts on raptors in the region. This issue is addressed in more detail in **Appendix E,** which is an excerpt from a letter prepared by Northwest Biosurvey in 2018 in response to a Napa County staff inquiry on another project regarding this issue.

Proposed Mitigation for Birds or Bats with Sensitive or Protected Regulatory Status:

***Measure 4*:** 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 within 14 days of the proposed removal. 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. This would also pertain to removal of chaparral habitat which should either be grubbed (removed above ground level) if not during the grading season, or graded if this can be done during the grading season.

***Measure 5*:** In order to avoid impacts to bats with sensitive regulatory status 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 or 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.

D. Waters of the U.S.

Potential Impacts:

Placement of fill within any of the possible waters of the U.S. mapped in **Appendix D, Figure W-2** would be regulated under the Clean Water Act.

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

***Measure 6*:** It is recommended that all waterways mapped in Appendix D, Figure W-2 be avoided through the use of setbacks required by Napa County regulations.

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 increased sediment runoff to the Napa River and pertinent tributaries.

Proposed Mitigation for impacts due to Erosion and Sedimentation:

***Measure 7*:** All work in or near the delineated ephemeral drainages should include extensive erosion control measures consistent with Napa County Grading Regulations in order to avoid erosion and the potential for transport of sediments 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

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

Surrounding 9-Quad List: St. Helena Quadrangle

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Aetna Springs	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
Aetna Springs	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
Aetna Springs	Rana draytonii	California red-legged frog	Threatened	None	SSC	-
Aetna Springs	Agelaius tricolor	tricolored blackbird	None	Threatened	SSC	-
Aetna Springs	Ardea herodias	great blue heron	None	None	-	-
Aetna Springs	Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	FP	-
Aetna Springs	Bombus caliginosus	obscure bumble bee	None	None	-	-
Aetna Springs	Vandykea tuberculata	serpentine cypress long-horned beetle	None	None	-	-
Aetna Springs	Antrozous pallidus	pallid bat	None	None	SSC	-
Aetna Springs	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Aetna Springs	Lasionycteris noctivagans	silver-haired bat	None	None	-	-
Aetna Springs	Lasiurus blossevillii	western red bat	None	None	SSC	-
Aetna Springs	Lasiurus cinereus	hoary bat	None	None	-	-
Aetna Springs	Myotis ciliolabrum	western small-footed myotis	None	None	-	-
Aetna Springs	Myotis evotis	long-eared myotis	None	None	-	-
Aetna Springs	Myotis thysanodes	fringed myotis	None	None	-	-
Aetna Springs	Myotis volans	long-legged myotis	None	None	-	-
Aetna Springs	Myotis yumanensis	Yuma myotis	None	None	-	-
Aetna Springs	Emys marmorata	western pond turtle	None	None	SSC	-
Aetna Springs	Serpentine Bunchgrass	Serpentine Bunchgrass	None	None	-	-
Aetna Springs	Wildflower Field	Wildflower Field	None	None	-	-
Aetna Springs	Amorpha californica var. napensis	Napa false indigo	None	None	-	1B.2
Aetna Springs	Amsinckia lunaris	bent-flowered fiddleneck	None	None	-	1B.2
Aetna Springs	Antirrhinum virga	twig-like snapdragon	None	None	-	4.3
Aetna Springs	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Aetna Springs	Astragalus clevelandii	Cleveland's milk-vetch	None	None	-	4.3
Aetna Springs	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	-	4.2
Aetna Springs	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
Aetna Springs	Centromadia parryi ssp. parryi	pappose tarplant	None	None	-	1B.2
Aetna Springs	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
Aetna Springs	Collomia diversifolia	serpentine collomia	None	None	-	4.3
Aetna Springs	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
Aetna Springs	Cypripedium montanum	mountain lady's-slipper	None	None	-	4.2
Aetna Springs	Delphinium uliginosum	swamp larkspur	None	None	-	4.2
Aetna Springs	Eryngium jepsonii	Jepson's coyote-thistle	None	None	-	1B.2
Aetna Springs	Erythranthe nudata	bare monkeyflower	None	None	-	4.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Aetna Springs	Erythronium helenae	St. Helena fawn lily	None	None	-	4.2
Aetna Springs	Fritillaria pluriflora	adobe-lily	None	None	-	1B.2
Aetna Springs	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Aetna Springs	Harmonia hallii	Hall's harmonia	None	None	-	1B.2
Aetna Springs	Harmonia nutans	nodding harmonia	None	None	-	4.3
Aetna Springs	Helianthus exilis	serpentine sunflower	None	None	-	4.2
Aetna Springs	Hesperolinon bicarpellatum	two-carpellate western flax	None	None	-	1B.2
Aetna Springs	Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	-	1B.2
Aetna Springs	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Aetna Springs	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Aetna Springs	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
Aetna Springs	Lilium bolanderi	Bolander's lily	None	None	-	4.2
Aetna Springs	Lupinus sericatus	Cobb Mountain lupine	None	None	-	1B.2
Aetna Springs	Monardella viridis	green monardella	None	None	-	4.3
Aetna Springs	Navarretia cotulifolia	cotula navarretia	None	None	-	4.2
Aetna Springs	Navarretia jepsonii	Jepson's navarretia	None	None	-	4.3
Aetna Springs	Navarretia paradoxinota	Porter's navarretia	None	None	-	1B.3
Aetna Springs	Navarretia rosulata	Marin County navarretia	None	None	-	1B.2
Aetna Springs	Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	-	1B.3
Aetna Springs	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
Aetna Springs	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
Aetna Springs	Streptanthus morrisonii ssp. elatus	Three Peaks jewelflower	None	None	-	1B.2
Aetna Springs	Toxicoscordion fontanum	marsh zigadenus	None	None	-	4.2
Calistoga	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
Calistoga	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
Calistoga	Rana draytonii	California red-legged frog	Threatened	None	SSC	-
Calistoga	Taricha rivularis	red-bellied newt	None	None	SSC	-
Calistoga	Accipiter striatus	sharp-shinned hawk	None	None	WL	-
Calistoga	Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	FP	-
Calistoga	Syncaris pacifica	California freshwater shrimp	Endangered	Endangered	-	-
Calistoga	Entosphenus tridentatus	Pacific lamprey	None	None	SSC	-
Calistoga	Hysterocarpus traskii pomo	Russian River tule perch	None	None	SSC	-
Calistoga	Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Endangered	Endangered	-	-
Calistoga	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Threatened	None	-	-
Calistoga	Bombus occidentalis	western bumble bee	None	None	-	-
Calistoga	Antrozous pallidus	pallid bat	None	None	SSC	-
Calistoga	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Calistoga	Myotis evotis	long-eared myotis	None	None	-	-
Calistoga	Myotis thysanodes	fringed myotis	None	None	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Calistoga	Myotis yumanensis	Yuma myotis	None	None	-	-
Calistoga	Emys marmorata	western pond turtle	None	None	SSC	-
Calistoga	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Calistoga	Amorpha californica var. napensis	Napa false indigo	None	None	-	1B.2
Calistoga	Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	None	None	-	1B.1
Calistoga	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Calistoga	Astragalus claranus	Clara Hunt's milk-vetch	Endangered	Threatened	-	1B.1
Calistoga	Brodiaea leptandra	narrow-anthered brodiaea	None	None	-	1B.2
Calistoga	Calamagrostis ophitidis	serpentine reed grass	None	None	-	4.3
Calistoga	Ceanothus confusus	Rincon Ridge ceanothus	None	None	-	1B.1
Calistoga	Ceanothus divergens	Calistoga ceanothus	None	None	-	1B.2
Calistoga	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
Calistoga	Centromadia parryi ssp. parryi	pappose tarplant	None	None	-	1B.2
Calistoga	Clarkia breweri	Brewer's clarkia	None	None	-	4.2
Calistoga	Erigeron biolettii	streamside daisy	None	None	-	3
Calistoga	Eryngium constancei	Loch Lomond button-celery	Endangered	Endangered	-	1B.1
Calistoga	Erythronium helenae	St. Helena fawn lily	None	None	-	4.2
Calistoga	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Calistoga	Harmonia nutans	nodding harmonia	None	None	-	4.3
Calistoga	Lasthenia burkei	Burke's goldfields	Endangered	Endangered	-	1B.1
Calistoga	Leptosiphon acicularis	bristly leptosiphon	None	None	-	4.2
Calistoga	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Calistoga	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
Calistoga	Lessingia hololeuca	woolly-headed lessingia	None	None	-	3
Calistoga	Limnanthes vinculans	Sebastopol meadowfoam	Endangered	Endangered	-	1B.1
Calistoga	Lomatium repostum	Napa lomatium	None	None	-	4.3
Calistoga	Lupinus sericatus	Cobb Mountain lupine	None	None	-	1B.2
Calistoga	Monardella viridis	green monardella	None	None	-	4.3
Calistoga	Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	-	1B.1
Calistoga	Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	-	1B.3
Calistoga	Plagiobothrys strictus	Calistoga popcornflower	Endangered	Threatened	-	1B.1
Calistoga	Poa napensis	Napa blue grass	Endangered	Endangered	-	1B.1
Calistoga	Puccinellia simplex	California alkali grass	None	None	-	1B.2
Calistoga	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
Calistoga	Sidalcea hickmanii ssp. napensis	Napa checkerbloom	None	None	-	1B.1
Calistoga	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	None	None	-	1B.2
Calistoga	Trifolium hydrophilum	saline clover	None	None	-	1B.2
Calistoga	Triteleia lugens	dark-mouthed triteleia	None	None	-	4.3
Chiles Valley	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Chiles Valley	Rana draytonii	California red-legged frog	Threatened	None	SSC	-
Chiles Valley	Agelaius tricolor	tricolored blackbird	None	Threatened	SSC	-
Chiles Valley	Aquila chrysaetos	golden eagle	None	None	FP ; WL	-
Chiles Valley	Ardea herodias	great blue heron	None	None	-	-
Chiles Valley	Elanus leucurus	white-tailed kite	None	None	FP	-
Chiles Valley	Pandion haliaetus	osprey	None	None	WL	-
Chiles Valley	Bombus caliginosus	obscure bumble bee	None	None	-	-
Chiles Valley	Antrozous pallidus	pallid bat	None	None	SSC	-
Chiles Valley	Myotis evotis	long-eared myotis	None	None	-	-
Chiles Valley	Myotis yumanensis	Yuma myotis	None	None	-	-
Chiles Valley	Anodonta californiensis	California floater	None	None	-	-
Chiles Valley	Anodonta oregonensis	Oregon floater	None	None	-	-
Chiles Valley	Gonidea angulata	western ridged mussel	None	None	-	-
Chiles Valley	Emys marmorata	western pond turtle	None	None	SSC	-
Chiles Valley	Northern Vernal Pool	Northern Vernal Pool	None	None	-	-
Chiles Valley	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Chiles Valley	Brodiaea leptandra	narrow-anthered brodiaea	None	None	-	1B.2
Chiles Valley	Calamagrostis ophitidis	serpentine reed grass	None	None	-	4.3
Chiles Valley	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	-	4.2
Chiles Valley	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
Chiles Valley	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
Chiles Valley	Collomia diversifolia	serpentine collomia	None	None	-	4.3
Chiles Valley	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
Chiles Valley	Delphinium uliginosum	swamp larkspur	None	None	-	4.2
Chiles Valley	Erigeron greenei	Greene's narrow-leaved daisy	None	None	-	1B.2
Chiles Valley	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Chiles Valley	Helianthus exilis	serpentine sunflower	None	None	-	4.2
Chiles Valley	Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	-	1B.2
Chiles Valley	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Chiles Valley	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Chiles Valley	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
Chiles Valley	Lomatium repostum	Napa lomatium	None	None	-	4.3
Chiles Valley	Navarretia rosulata	Marin County navarretia	None	None	-	1B.2
Chiles Valley	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
Chiles Valley	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
Detert Reservoir	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
Detert Reservoir	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
Detert Reservoir	Agelaius tricolor	tricolored blackbird	None	Threatened	SSC	-
Detert Reservoir	Falco mexicanus	prairie falcon	None	None	WL	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Detert Reservoir	Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	FP	-
Detert Reservoir	Progne subis	purple martin	None	None	SSC	-
Detert Reservoir	Strix occidentalis caurina	northern spotted owl	Threatened	Threatened	-	-
Detert Reservoir	Hysterocarpus traskii pomo	Russian River tule perch	None	None	SSC	-
Detert Reservoir	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Threatened	None	-	-
Detert Reservoir	Bombus caliginosus	obscure bumble bee	None	None	-	-
Detert Reservoir	Hydrochara ricksecker	Ricksecker's water scavenger beetle	None	None	-	-
Detert Reservoir	Trachykele hartmani	serpentine cypress wood-boring beetle	None	None	-	-
Detert Reservoir	Antrozous pallidus	pallid bat	None	None	SSC	-
Detert Reservoir	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Detert Reservoir	Lasionycteris noctivagans	silver-haired bat	None	None	-	-
Detert Reservoir	Lasiurus blossevillii	western red bat	None	None	SSC	-
Detert Reservoir	Lasiurus cinereus	hoary bat	None	None	-	-
Detert Reservoir	Myotis ciliolabrum	western small-footed myotis	None	None	-	-
Detert Reservoir	Myotis evotis	long-eared myotis	None	None	-	-
Detert Reservoir	Myotis yumanensis	Yuma myotis	None	None	-	-
Detert Reservoir	Emys marmorata	western pond turtle	None	None	SSC	-
Detert Reservoir	Northern Vernal Pool	Northern Vernal Pool	None	None	-	-
Detert Reservoir	Amorpha californica var. napensis	Napa false indigo	None	None	-	1B.2
Detert Reservoir	Antirrhinum virga	twig-like snapdragon	None	None	-	4.3
Detert Reservoir	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Detert Reservoir	Asclepias solanoana	serpentine milkweed	None	None	-	4.2
Detert Reservoir	Astragalus clevelandii	Cleveland's milk-vetch	None	None	-	4.3
Detert Reservoir	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	None	None	-	1B.2
Detert Reservoir	Brodiaea leptandra	narrow-anthered brodiaea	None	None	-	1B.2
Detert Reservoir	Calochortus uniflorus	pink star-tulip	None	None	-	4.2
Detert Reservoir	Calyptridium quadripetalum	four-petaled pussypaws	None	None	-	4.3
Detert Reservoir	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	-	4.2
Detert Reservoir	Calystegia collina ssp. venusta	South Coast Range morning-glory	None	None	-	4.3
Detert Reservoir	Ceanothus confusus	Rincon Ridge ceanothus	None	None	-	1B.1
Detert Reservoir	Ceanothus divergens	Calistoga ceanothus	None	None	-	1B.2
Detert Reservoir	Ceanothus purpureus	holly-leaved ceanothus	None	None	-	1B.2
Detert Reservoir	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
Detert Reservoir	Collomia diversifolia	serpentine collomia	None	None	-	4.3
Detert Reservoir	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
Detert Reservoir	Cryptantha dissita	serpentine cryptantha	None	None	-	1B.2
Detert Reservoir	Delphinium uliginosum	swamp larkspur	None	None	-	4.2
Detert Reservoir	Erigeron biolettii	streamside daisy	None	None	-	3
Detert Reservoir	Erigeron greenei	Greene's narrow-leaved daisy	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Detert Reservoir	Eriogonum umbellatum var. bahiiforme	bay buckwheat	None	None	-	4.2
Detert Reservoir	Erythranthe nudata	bare monkeyflower	None	None	-	4.3
Detert Reservoir	Erythronium helenae	St. Helena fawn lily	None	None	-	4.2
Detert Reservoir	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Detert Reservoir	Harmonia hallii	Hall's harmonia	None	None	-	1B.2
Detert Reservoir	Harmonia nutans	nodding harmonia	None	None	-	4.3
Detert Reservoir	Helianthus exilis	serpentine sunflower	None	None	-	4.2
Detert Reservoir	Hesperolinon bicarpellatum	two-carpellate western flax	None	None	-	1B.2
Detert Reservoir	Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	-	1B.2
Detert Reservoir	Juncus luciensis	Santa Lucia dwarf rush	None	None	-	1B.2
Detert Reservoir	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Detert Reservoir	Leptosiphon acicularis	bristly leptosiphon	None	None	-	4.2
Detert Reservoir	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Detert Reservoir	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
Detert Reservoir	Limnanthes floccosa ssp. floccosa	woolly meadowfoam	None	None	-	4.2
Detert Reservoir	Lomatium hooveri	Hoover's lomatium	None	None	-	4.3
Detert Reservoir	Lupinus sericatus	Cobb Mountain lupine	None	None	-	1B.2
Detert Reservoir	Navarretia myersii ssp. deminuta	small pincushion navarretia	None	None	-	1B.1
Detert Reservoir	Navarretia paradoxinota	Porter's navarretia	None	None	-	1B.3
Detert Reservoir	Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	-	1B.3
Detert Reservoir	Ribes victoris	Victor's gooseberry	None	None	-	4.3
Detert Reservoir	Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	None	None	-	1B.2
Detert Reservoir	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
Detert Reservoir	Streptanthus morrisonii ssp. elatus	Three Peaks jewelflower	None	None	-	1B.2
Detert Reservoir	Streptanthus vernalis	early jewelflower	None	None	-	1B.2
Detert Reservoir	Trichostema ruygtii	Napa bluecurls	None	None	-	1B.2
Kenwood	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
Kenwood	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
Kenwood	Rana draytonii	California red-legged frog	Threatened	None	SSC	-
Kenwood	Taricha rivularis	red-bellied newt	None	None	SSC	-
Kenwood	Ardea herodias	great blue heron	None	None	-	-
Kenwood	Strix occidentalis caurina	northern spotted owl	Threatened	Threatened	-	-
Kenwood	Syncaris pacifica	California freshwater shrimp	Endangered	Endangered	-	-
Kenwood	Hysterocarpus traskii pomo	Russian River tule perch	None	None	SSC	-
Kenwood	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Threatened	None	-	-
Kenwood	Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	Threatened	None	-	-
Kenwood	Bombus occidentalis	western bumble bee	None	None	-	-
Kenwood	Hydroporus leechi	Leech's skyline diving beetle	None	None	-	-
Kenwood	Antrozous pallidus	pallid bat	None	None	SSC	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Kenwood	Emys marmorata	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	Allium peninsulare var. franciscanum	Franciscan onion	None	None	-	1B.2
Kenwood	Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Endangered	None	-	1B.1
Kenwood	Amorpha californica var. napensis	Napa false indigo	None	None	-	1B.2
Kenwood	Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	None	None	-	1B.1
Kenwood	Brodiaea leptandra	narrow-anthered brodiaea	None	None	-	1B.2
Kenwood	Calamagrostis ophitidis	serpentine reed grass	None	None	-	4.3
Kenwood	Calandrinia breweri	Brewer's calandrinia	None	None	-	4.2
Kenwood	Calochortus uniflorus	pink star-tulip	None	None	-	4.2
Kenwood	Castilleja ambigua var. ambigua	johnny-nip	None	None	-	4.2
Kenwood	Ceanothus confusus	Rincon Ridge ceanothus	None	None	-	1B.1
Kenwood	Ceanothus divergens	Calistoga ceanothus	None	None	-	1B.2
Kenwood	Ceanothus gloriosus var. exaltatus	glory brush	None	None	-	4.3
Kenwood	Ceanothus purpureus	holly-leaved ceanothus	None	None	-	1B.2
Kenwood	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
Kenwood	Clarkia breweri	Brewer's clarkia	None	None	-	4.2
Kenwood	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
Kenwood	Downingia pusilla	dwarf downingia	None	None	-	2B.2
Kenwood	Erigeron biolettii	streamside daisy	None	None	-	3
Kenwood	Harmonia nutans	nodding harmonia	None	None	-	4.3
Kenwood	Hosackia gracilis	harlequin lotus	None	None	-	4.2
Kenwood	Iris longipetala	coast iris	None	None	-	4.2
Kenwood	Juglans hindsii	Northern California black walnut	None	None	-	1B.1
Kenwood	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Kenwood	Leptosiphon acicularis	bristly leptosiphon	None	None	-	4.2
Kenwood	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Kenwood	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
Kenwood	Lomatium repostum	Napa lomatium	None	None	-	4.3
Kenwood	Monardella viridis	green monardella	None	None	-	4.3
Kenwood	Navarretia heterandra	Tehama navarretia	None	None	-	4.3
Kenwood	Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	-	1B.1
Kenwood	Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	-	1B.3
Kenwood	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
Kenwood	Sidalcea oregana ssp. valida	Kenwood Marsh checkerbloom	Endangered	Endangered	-	1B.1
Kenwood	Trichostema ruygtii	Napa bluecurls	None	None	-	1B.2
Kenwood	Trifolium amoenum	two-fork clover	Endangered	None	-	1B.1
Kenwood	Viburnum ellipticum	oval-leaved viburnum	None	None	-	2B.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Rutherford	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
Rutherford	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
Rutherford	Taricha rivularis	red-bellied newt	None	None	SSC	-
Rutherford	Ardea herodias	great blue heron	None	None	-	-
Rutherford	Buteo swainsoni	Swainson's hawk	None	Threatened	-	-
Rutherford	Cypseloides niger	black swift	None	None	SSC	-
Rutherford	Elanus leucurus	white-tailed kite	None	None	FP	-
Rutherford	Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	FP	-
Rutherford	Icteria virens	yellow-breasted chat	None	None	SSC	-
Rutherford	Nycticorax nycticorax	black-crowned night heron	None	None	-	-
Rutherford	Setophaga petechia	yellow warbler	None	None	SSC	-
Rutherford	Entosphenus tridentatus	Pacific lamprey	None	None	SSC	-
Rutherford	Hysterocarpus traskii pomo	Russian River tule perch	None	None	SSC	-
Rutherford	Lampetra ayresii	river lamprey	None	None	SSC	-
Rutherford	Mylopharodon conocephalus	hardhead	None	None	SSC	-
Rutherford	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Threatened	None	-	-
Rutherford	Bombus caliginosus	obscure bumble bee	None	None	-	-
Rutherford	Antrozous pallidus	pallid bat	None	None	SSC	-
Rutherford	Erethizon dorsatum	North American porcupine	None	None	-	-
Rutherford	Gonidea angulata	western ridged mussel	None	None	-	-
Rutherford	Emys marmorata	western pond turtle	None	None	SSC	-
Rutherford	Amorpha californica var. napensis	Napa false indigo	None	None	-	1B.2
Rutherford	Amsinckia lunaris	bent-flowered fiddleneck	None	None	-	1B.2
Rutherford	Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	None	None	-	1B.1
Rutherford	Astragalus claranus	Clara Hunt's milk-vetch	Endangered	Threatened	-	1B.1
Rutherford	Brodiaea leptandra	narrow-anthered brodiaea	None	None	-	1B.2
Rutherford	Ceanothus confusus	Rincon Ridge ceanothus	None	None	-	1B.1
Rutherford	Ceanothus divergens	Calistoga ceanothus	None	None	-	1B.2
Rutherford	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
Rutherford	Clarkia breweri	Brewer's clarkia	None	None	-	4.2
Rutherford	Erigeron biolettii	streamside daisy	None	None	-	3
Rutherford	Erigeron greenei	Greene's narrow-leaved daisy	None	None	-	1B.2
Rutherford	Eryngium jepsonii	Jepson's coyote-thistle	None	None	-	1B.2
Rutherford	Harmonia nutans	nodding harmonia	None	None	-	4.3
Rutherford	Helianthus exilis	serpentine sunflower	None	None	-	4.2
Rutherford	Leptosiphon acicularis	bristly leptosiphon	None	None	-	4.2
Rutherford	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Rutherford	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
Rutherford	Lomatium repostum	Napa lomatium	None	None	-	4.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Rutherford	Lupinus sericatus	Cobb Mountain lupine	None	None	-	1B.2
Rutherford	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
Rutherford	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
St. Helena	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
St. Helena	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
St. Helena	Rana draytonii	California red-legged frog	Threatened	None	SSC	-
St. Helena	Ardea herodias	great blue heron	None	None	-	-
St. Helena	Athene cunicularia	burrowing owl	None	None	SSC	-
St. Helena	Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	FP	-
St. Helena	Progne subis	purple martin	None	None	SSC	-
St. Helena	Setophaga petechia	yellow warbler	None	None	SSC	-
St. Helena	Strix occidentalis caurina	northern spotted owl	Threatened	Threatened	-	-
St. Helena	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Threatened	None	-	-
St. Helena	Bombus caliginosus	obscure bumble bee	None	None	-	-
St. Helena	Antrozous pallidus	pallid bat	None	None	SSC	-
St. Helena	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
St. Helena	Erethizon dorsatum	North American porcupine	None	None	-	-
St. Helena	Myotis evotis	long-eared myotis	None	None	-	-
St. Helena	Myotis thysanodes	fringed myotis	None	None	-	-
St. Helena	Myotis yumanensis	Yuma myotis	None	None	-	-
St. Helena	Emys marmorata	western pond turtle	None	None	SSC	-
St. Helena	Northern Vernal Pool	Northern Vernal Pool	None	None	-	-
St. Helena	Amorpha californica var. napensis	Napa false indigo	None	None	-	1B.2
St. Helena	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
St. Helena	Astragalus claranus	Clara Hunt's milk-vetch	Endangered	Threatened	-	1B.1
St. Helena	Astragalus clevelandii	Cleveland's milk-vetch	None	None	-	4.3
St. Helena	Brodiaea leptandra	narrow-anthered brodiaea	None	None	-	1B.2
St. Helena	Calamagrostis ophitidis	serpentine reed grass	None	None	-	4.3
St. Helena	Castilleja ambigua var. ambigua	johnny-nip	None	None	-	4.2
St. Helena	Ceanothus confusus	Rincon Ridge ceanothus	None	None	-	1B.1
St. Helena	Ceanothus divergens	Calistoga ceanothus	None	None	-	1B.2
St. Helena	Ceanothus pinetorum	Kern ceanothus	None	None	-	4.3
St. Helena	Ceanothus purpureus	holly-leaved ceanothus	None	None	-	1B.2
St. Helena	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
St. Helena	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
St. Helena	Collomia diversifolia	serpentine collomia	None	None	-	4.3
St. Helena	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
St. Helena	Delphinium uliginosum	swamp larkspur	None	None	-	4.2
St. Helena	Erigeron biolettii	streamside daisy	None	None	-	3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
St. Helena	Erigeron greenei	Greene's narrow-leaved daisy	None	None	-	1B.2
St. Helena	Eryngium jepsonii	Jepson's coyote-thistle	None	None	-	1B.2
St. Helena	Erythronium helenae	St. Helena fawn lily	None	None	-	4.2
St. Helena	Harmonia nutans	nodding harmonia	None	None	-	4.3
St. Helena	Helianthus exilis	serpentine sunflower	None	None	-	4.2
St. Helena	Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	-	1B.2
St. Helena	Layia septentrionalis	Colusa layia	None	None	-	1B.2
St. Helena	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
St. Helena	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
St. Helena	Lomatium repostum	Napa lomatium	None	None	-	4.3
St. Helena	Lupinus sericatus	Cobb Mountain lupine	None	None	-	1B.2
St. Helena	Navarretia cotulifolia	cotula navarretia	None	None	-	4.2
St. Helena	Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	-	1B.1
St. Helena	Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	-	1B.3
St. Helena	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
St. Helena	Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	-	1B.2
St. Helena	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
St. Helena	Toxicoscordion fontanum	marsh zigadenus	None	None	-	4.2
St. Helena	Trichostema ruygtii	Napa bluecurls	None	None	-	1B.2
St. Helena	Triteleia lugens	dark-mouthed triteleia	None	None	-	4.3
Walter Springs	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
Walter Springs	Aquila chrysaetos	golden eagle	None	None	FP ; WL	-
Walter Springs	Ardea herodias	great blue heron	None	None	-	-
Walter Springs	Athene cunicularia	burrowing owl	None	None	SSC	-
Walter Springs	Falco mexicanus	prairie falcon	None	None	WL	-
Walter Springs	Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	FP	-
Walter Springs	Pandion haliaetus	osprey	None	None	WL	-
Walter Springs	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Walter Springs	Anodonta californiensis	California floater	None	None	-	-
Walter Springs	Anodonta oregonensis	Oregon floater	None	None	-	-
Walter Springs	Emys marmorata	western pond turtle	None	None	SSC	-
Walter Springs	Northern Vernal Pool	Northern Vernal Pool	None	None	-	-
Walter Springs	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Walter Springs	Astragalus clevelandii	Cleveland's milk-vetch	None	None	-	4.3
Walter Springs	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	None	None	-	1B.2
Walter Springs	Ceanothus sonomensis	Sonoma ceanothus	None	None	-	1B.2
Walter Springs	Collomia diversifolia	serpentine collomia	None	None	-	4.3
Walter Springs	Cryptantha rostellata	red-stemmed cryptantha	None	None	-	4.2
Walter Springs	Delphinium uliginosum	swamp larkspur	None	None	-	4.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Walter Springs	Eryngium jepsonii	Jepson's coyote-thistle	None	None	-	1B.2
Walter Springs	Fritillaria pluriflora	adobe-lily	None	None	-	1B.2
Walter Springs	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Walter Springs	Helianthus exilis	serpentine sunflower	None	None	-	4.2
Walter Springs	Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	-	1B.2
Walter Springs	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Walter Springs	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Walter Springs	Lomatium hooveri	Hoover's lomatium	None	None	-	4.3
Walter Springs	Malacothamnus helleri	Heller's bush-mallow	None	None	-	3.3
Walter Springs	Monardella viridis	green monardella	None	None	-	4.3
Walter Springs	Navarretia cotulifolia	cotula navarretia	None	None	-	4.2
Walter Springs	Navarretia jepsonii	Jepson's navarretia	None	None	-	4.3
Walter Springs	Sidalcea keckii	Keck's checkerbloom	Endangered	None	-	1B.1
Walter Springs	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
Walter Springs	Toxicoscordion fontanum	marsh zigadenus	None	None	-	4.2
Yountville	Rana boylii	foothill yellow-legged frog	None	Cand. Thrt.	SSC	-
Yountville	Ardea alba	great egret	None	None	-	-
Yountville	Ardea herodias	great blue heron	None	None	-	-
Yountville	Elanus leucurus	white-tailed kite	None	None	FP	-
Yountville	Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	FP	-
Yountville	Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	FP	-
Yountville	Icteria virens	yellow-breasted chat	None	None	SSC	-
Yountville	Phalacrocorax auritus	double-crested cormorant	None	None	WL	-
Yountville	Setophaga petechia	yellow warbler	None	None	SSC	-
Yountville	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Threatened	None	-	-
Yountville	Bombus caliginosus	obscure bumble bee	None	None	-	-
Yountville	Antrozous pallidus	pallid bat	None	None	SSC	-
Yountville	Emys marmorata	western pond turtle	None	None	SSC	-
Yountville	Astragalus clevelandii	Cleveland's milk-vetch	None	None	-	4.3
Yountville	Brodiaea leptandra	narrow-anthered brodiaea	None	None	-	1B.2
Yountville	Castilleja ambigua var. ambigua	johnny-nip	None	None	-	4.2
Yountville	Castilleja ambigua var. meadii	Mead's owls-clover	None	None	-	1B.1
Yountville	Ceanothus purpureus	holly-leaved ceanothus	None	None	-	1B.2
Yountville	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
Yountville	Downingia pusilla	dwarf downingia	None	None	-	2B.2
Yountville	Erigeron greenei	Greene's narrow-leaved daisy	None	None	-	1B.2
Yountville	Eryngium jepsonii	Jepson's coyote-thistle	None	None	-	1B.2
Yountville	Harmonia nutans	nodding harmonia	None	None	-	4.3
Yountville	Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Yountville	Leptosiphon acicularis	bristly leptosiphon	None	None	-	4.2
Yountville	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Yountville	Leptosiphon latisectus	broad-lobed leptosiphon	None	None	-	4.3
Yountville	Limnanthes vinculans	Sebastopol meadowfoam	Endangered	Endangered	-	1B.1
Yountville	Lomatium repostum	Napa lomatium	None	None	-	4.3
Yountville	Micropus amphibolus	Mt. Diablo cottonweed	None	None	-	3.2
Yountville	Monardella viridis	green monardella	None	None	-	4.3
Yountville	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Endangered	Threatened	-	1B.1
Yountville	Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	-	1B.3
Yountville	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
Yountville	Sagittaria sanfordii	Sanford's arrowhead	None	None	-	1B.2
Yountville	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
Yountville	Trichostema ruygtii	Napa bluecurls	None	None	-	

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=Propose

APPENDIX B

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/INTRODUCED
B115	SHARP-SHINNED HAWK		NATIVE
B116	COOPER'S HAWK		NATIVE
B124	FERRUGINOUS HAWK		NATIVE
B125	ROUGH-LEGGED HAWK		NATIVE
B251	BAND-TAILED PIGEON	HA	NATIVE
B260	GREATER ROADRUNNER		NATIVE
B265	GREAT HORNED OWL		NATIVE
B277	COMMON POORWILL		NATIVE
B291	RUFOUS HUMMINGBIRD		NATIVE
B309	OLIVE-SIDED FLYCATCHER	SC	NATIVE
B318	DUSKY FLYCATCHER		NATIVE
B337	HORNED LARK		NATIVE
B346	STELLER'S JAY		NATIVE
B348	WESTERN SCRUB-JAY		NATIVE
B353	AMERICAN CROW	HA	NATIVE
B360	BUSHTIT		NATIVE
B375	GOLDEN-CROWNED KINGLET		NATIVE
B376	RUBY-CROWNED KINGLET		NATIVE
B377	BLUE-GRAY GNATCATCHER		NATIVE
B389	AMERICAN ROBIN		NATIVE
B390	VARIED THRUSH		NATIVE
B391	WRENTIT		NATIVE
B393	NORTHERN MOCKINGBIRD		NATIVE
B398	CALIFORNIA THRASHER		NATIVE
B410	LOGGERHEAD SHRIKE	FE SC	NATIVE

ID	SPECIES NAME	STATUS	NATIVE/INTRODUCED
B425	ORANGE-CROWNED WARBLER		NATIVE
B426	NASHVILLE WARBLER		NATIVE
B436	BLACK-THROATED GRAY WARBLER		NATIVE
B437	TOWNSEND'S WARBLER		NATIVE
B438	HERMIT WARBLER		NATIVE
B471	WESTERN TANAGER		NATIVE
B475	BLACK-HEADED GROSBEAK		NATIVE
B477	LAZULI BUNTING		NATIVE
B484	CALIFORNIA TOWHEE	FT CE	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
B506	LINCOLN'S SPARROW		NATIVE
B509	GOLDEN-CROWNED SPARROW		NATIVE
B510	WHITE-CROWNED SPARROW		NATIVE
B512	DARK-EYED JUNCO		NATIVE
B521	WESTERN MEADOWLARK		NATIVE
B536	PURPLE FINCH		NATIVE
B538	HOUSE FINCH		NATIVE
B539	RED CROSSBILL		NATIVE
B542	PINE SISKIN		NATIVE
B543	LESSER GOLDFINCH		NATIVE
B544	LAWRENCE'S GOLDFINCH		NATIVE
B546	EVENING GROSBEAK		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
M034	HOARY BAT		NATIVE
M037	TOWNSEND'S BIG-EARED BAT	SC BL FS	NATIVE

ID	SPECIES NAME	STATUS				NATIVE/INTRODUCED
M045	BRUSH RABBIT	FE	CE		HA	NATIVE
M047	AUDUBON'S COTTONTAIL				HA	NATIVE
M059	SONOMA CHIPMUNK					NATIVE
M113	WESTERN HARVEST MOUSE					NATIVE
M116	CALIFORNIA MOUSE					NATIVE
M117	DEER MOUSE			SC		NATIVE
M119	BRUSH MOUSE					NATIVE
M134	CALIFORNIA VOLE	FE	CE	SC	BL	NATIVE
M151	BLACK BEAR				HA	NATIVE
M181	MULE DEER				HA	NATIVE

Total Number of Species: 71

Query Parameters

Included Locations
Napa Co

Included Location Seasons
Migrant, Summer, Winter, Yearlong

Included Habitats & (Stages)
Annual Grassland, Blue Oak Woodland, Chamise-redshank Chaparral, Coastal Oak Woodland, Douglas-fir

Habitat Suitability Threshold
Reproduction - Low, Cover - Low, Feeding - Low

Included Habitat Seasons
Migrant, Summer, Winter, Yearlong

Excluded Elements
Algae, Amphibians, Aquatics - Emergent, Aquatics - Submerged, Bank, Barren, Brush Pile, Buildings, Burrow, Campground, Cave, Cliff, Dump, Fish, Grass/water, Invertebrates - Aquatic, Jetty, Kelp, Lithic, Log - Large (hollow), Log - Large (rotten), Log - Large (sound), Log - Medium (hollow), Log - Medium (rotten), Log - Medium (sound), Mine, Nest Box, Nest Island, Nest Platform, Pack Stations, Riparian Inclusion, Rock, Salt Ponds, Sand Dune, Shrub/agriculture, Shrub/water, Slash - Large (hollow), Slash - Large (rotten), Slash - Large (sound), Slash - Small, Snag - Large (rotten), Snag - Large (sound), Snag - Medium (rotten), Snag - Medium (sound), Snag - Small (rotten), Snag - Small (sound), Soil - Aerated, Soil - Friable, Soil - Gravelly, Soil - Organic, Soil - Saline, Soil - Sandy, Stump (rotten), Stump (sound), Talus, Transmission Lines, Tree - Broken Top Live, Tree - With Cavities, Tree - With Loose Bark, Tree/water, Water - Created Body, Water/agriculture, Wharf

Included Species All Species Included

Included Special Statuses Native

APPENDIX C

TREE SURVEY DATA

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

SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	STD DEVIATION OF DBH (INCHES)
CLO	21	14.5	7.2
DF	11	14.1	8.2
MAD	1	14.0	NA
TOTAL	33	14.4	NA

Key:

CLO = Coast Live Oak ***DF = Douglas Fir*** ***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

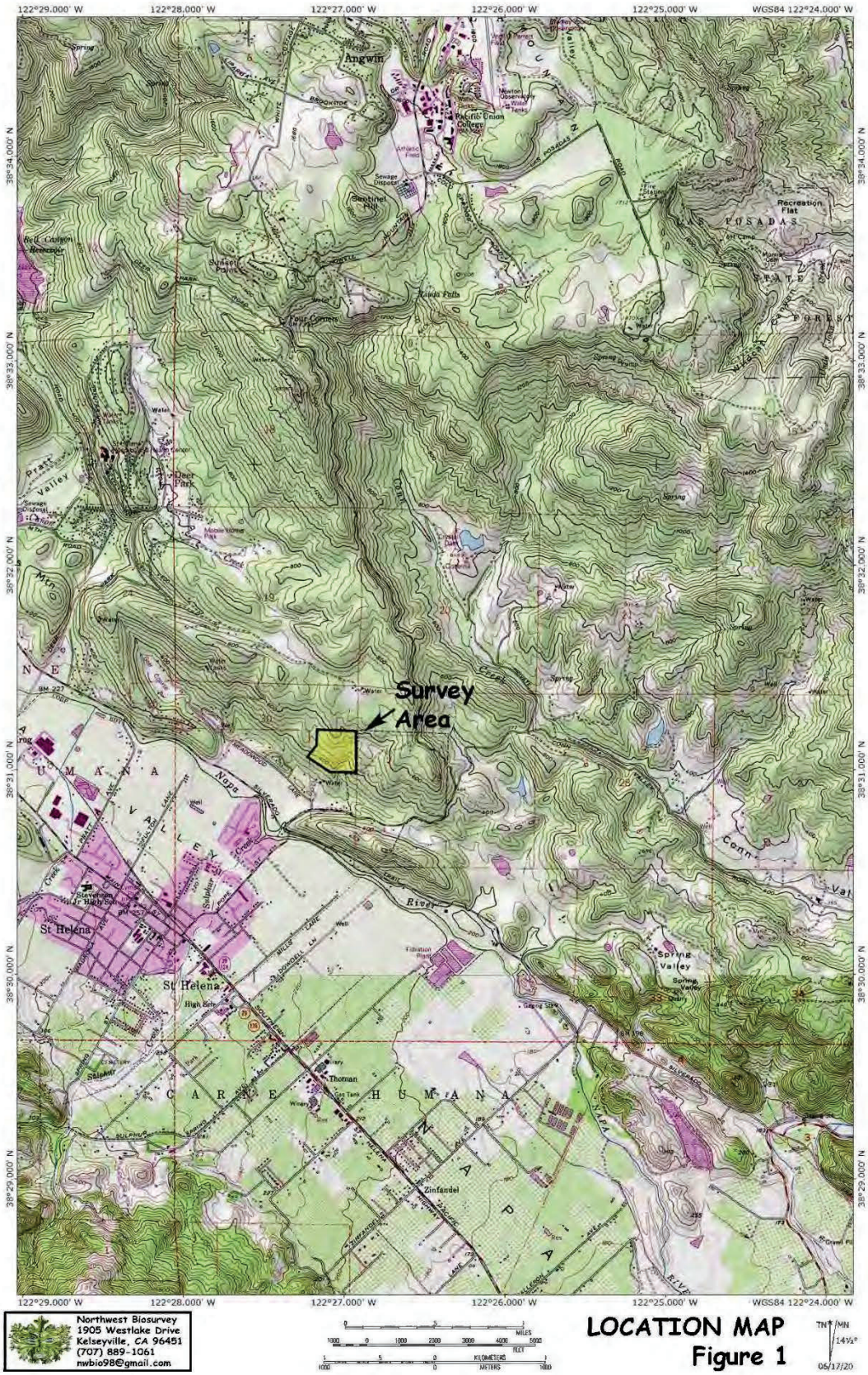
1.1 Purpose of Delineation: This delineation has been conducted at the request of the local permitting agency in order to determine the extent of possible waters of the U.S. on the project.

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


122°29.000' W
122°28.000' W
122°27.000' W
122°26.000' W
122°25.000' W
WGS84 122°24.000' W
38°34.000' N
38°33.000' N
38°32.000' N
38°31.000' N
38°30.000' N
38°29.000' N
Survey Area
Angwin
Pacific Union College
Recreation Flat
Deer Park
St Helena
Spring Valley
Thomann
Zinfandel
Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 96451
(707) 889-1061
nwbio98@gmail.com
LOCATION MAP
Figure 1
06/17/20

2.0 Existing Conditions

2.1 Location: The property is located west of Silverado Trail near Meadowood Lane, St. Helena, California (APN 025-070-043; S. 29&30 T08N R05W, St. Helena, Calif. 7½' Topographic Maps). A location map is provided in **Figure 1**.

2.2 Topography and Drainage: The Matthes property occupies a steep, southwest-facing slope northeast of Saint Helena. Elevations range from 600 feet msl (mean sea level) in the northeast corner to 320 feet msl along the property's southern boundary. Drainage in the western half of the property is via sheet flow to the Napa Valley. Drainage in the eastern half of the property is via an unnamed ephemeral tributary to the Napa River. this tributary flows due south through a deep defile until it reaches the valley floor and flows west to the Napa River. The topography is shown in **Figure 1**.

2.3 Soils: The property contains the following soil types:

- **Forward silt loam, 12-57% slopes:**
  This strongly sloping to moderately steep soil is on hill slopes. The Forward series consists of well drained soils on uplands. These soils formed in material weathered from rhyolite. The plant cover is mainly Douglas firs and ponderosa pines. Runoff is medium and the hazard of erosion is severe.

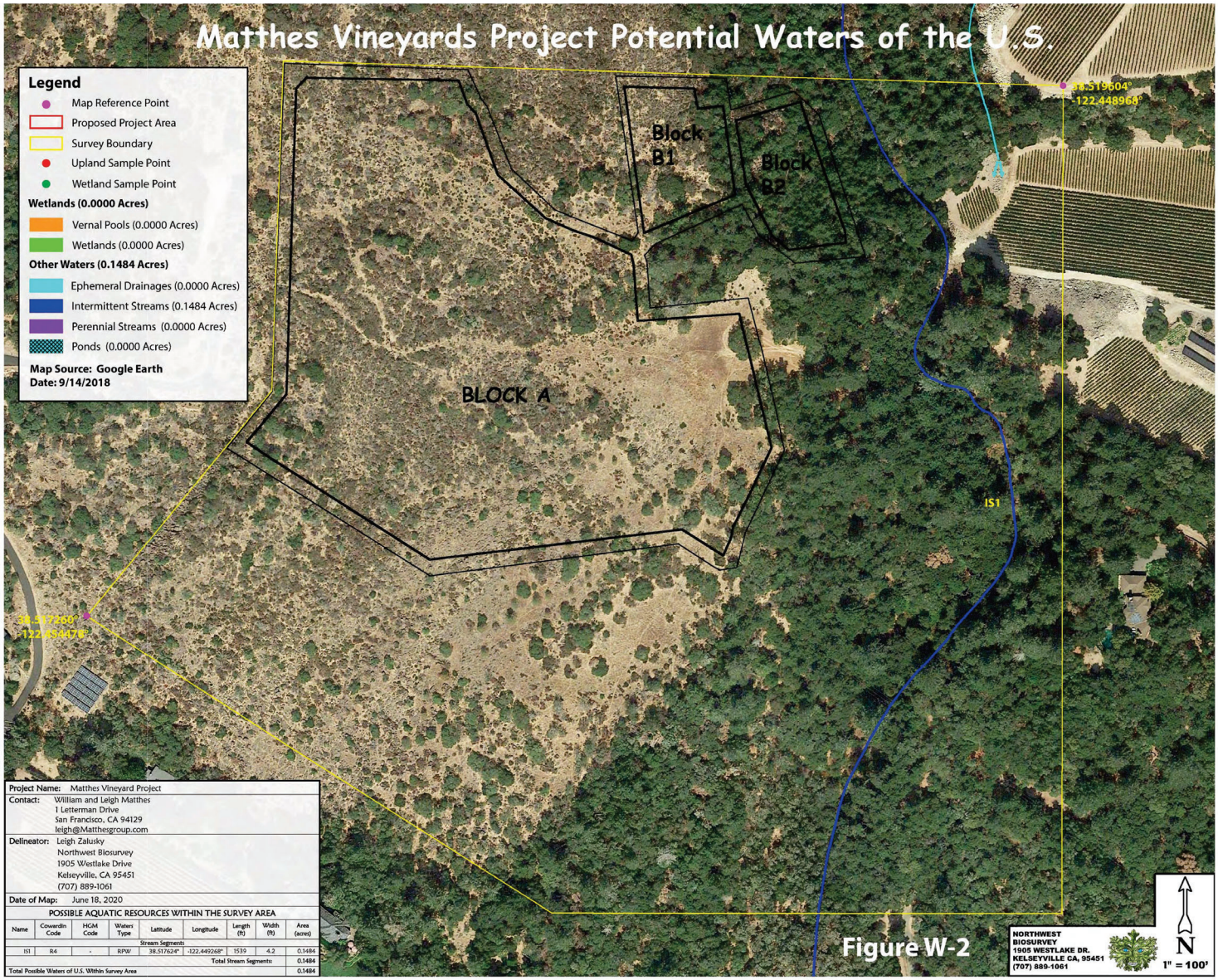
- **Rock outcrop-Kidd complex, 50-75% slopes:**
  This complex consists of areas of Rock outcrop and soils on south-facing slopes. Elevation is 1,000 to 3,000 feet. The areas of Rock outcrop and soils are so intermingled that it was not practical to map them separately at the scale used in mapping. The soils formed in material weathered from basic igneous rock and rhyolite. This complex is about 70 percent Rock outcrop, 25 percent Kidd soils, and 5 percent Hambright, Boomer, and Forward soils. The Kidd soils are described below. Rock outcrop is in areas 1 to 5 acres in size. It consists of basic igneous boulders and massive rhyolitic escarpments, stones, and outcrops. Runoff is rapid. The hazard of erosion is very high.

3.0 Aquatic Resources Results

3.1 Waters of the U.S: Waters of the U.S. within the property consist of two unnamed ephemeral drainages. No wetlands were delineated. The total area of all delineated waters is **0.1484 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)
Stream Segments								
IS1	R4	-	RPW	38.517624°	-122.449268°	1539	4.2	0.1484
							Total Stream Segments:	0.1484
Total Possible Waters of U.S. Within Survey Area								0.1484


Matthes Vineyards Project Potential Waters of the U.S.
Legend
Map Reference Point
Proposed Project Area
Survey Boundary
Upland Sample Point
Wetland Sample Point
Wetlands (0.0000 Acres)
Vernal Pools (0.0000 Acres)
Wetlands (0.0000 Acres)
Other Waters (0.1484 Acres)
Ephemeral Drainages (0.0000 Acres)
Intermittent Streams (0.1484 Acres)
Perennial Streams (0.0000 Acres)
Ponds (0.0000 Acres)
Map Source: Google Earth
Date: 9/14/2018
Block B1
Block B2
BLOCK A
IS1
38.519604°
-122.448968°
38.517260°
-122.453478°
Project Name: Matthes Vineyard Project
Contact: William and Leigh Matthes
1 Letterman Drive
San Francisco, CA 94129
leigh@Matthesgroup.com
Delineator: Leigh Zalusky
Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 95451
(707) 889-1061
Date of Map: June 18, 2020
POSSIBLE AQUATIC RESOURCES WITHIN THE SURVEY AREA
Name | Cowardin Code | HGM Code | Waters Type | Latitude | Longitude | Length (ft) | Width (ft) | Area (acres)
Stream Segments
IS1 | R4 | - | RPW | 38.517624° | -122.449268° | 1539 | 4.2 | 0.1484
Total Stream Segments: 0.1484
Total Possible Waters of U.S. Within Survey Area 0.1484
Figure W-2
NORTHWEST BIOSURVEY
1905 WESTLAKE DR.
KELSEYVILLE CA, 95451
(707) 889-1061
N
1" = 100'

APPENDIX E

Potential Impact of Vineyard Development on Grasslands used as Raptor Hunting Habitat

Response to Napa County Review Comments for the "---------- Vineyard" Project (2018)

i. A discussion of the quality and value of potentially suitable foraging habitat for special status bird species (particularly special-status raptors) the site's grasslands provide, and an analysis of the potential impacts associated with the loss of foraging habitat due to the conversion of grassland to vineyard. As proposed, and in conjunction with existing vineyard development, a majority of the grasslands within the parcel would be converted to vineyard.

Response: This is an interesting question that is typically not addressed in the regulatory review of agricultural conversions of grassland. Regulatory agencies focus on birds in their "sensitive nesting state", which is interpreted during the review process to focus on the preservation of active nests. This avoids the problem of determining that a site needs to be protected because it has been visited by a bird with sensitive regulatory status (i.e. a parcel does not become sensitive habitat because a bald eagle has visited it). On the other hand, this approach avoids addressing the issue of possible cumulative habitat loss of foraging areas.

Little directly-pertinent research has been conducted to address the effects of grassland conversion to vineyards in this region. A number of related studies assessing conversion to vineyard habitat have been conducted in the California Central Valley over the past 20 years[2]. However, these focus primarily on winter habitat of specific raptors of interest (northern harrier, Swainson's hawk, and American kestrel). Other, more generalized studies that have been conducted in the U.S. mid-west and east[3] address comparisons of cropland vs. rangeland. Most "knowledge" of this issue is anecdotal and based on intuitive assumptions regarding the value of natural vs. manmade habitats.

Based on a review of research available to us, the impact of converting grasslands to vineyard may vary depending on a number of factors. These would include species addressed, season (winter vs. nesting habitats), and availability and diversity of surrounding habitats (raptors in particular have very large home ranges and foraging habitats are not necessarily correlated to

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[2] Swolgaard et al, "Foraging by Swainson's Hawks in a Vineyard-Dominated Landscape," Journal of Raptor Research 2008, 42(3):188-196.

[3] Massey et al, "Habitat Use by Foraging Harriers on Nantucket Island, Massachusetts" 2009 The Wilson Journal of Ornithology 121(4): 765-769;

Williams et al, "A comparison of Raptor Densities and Habitat use in Kansas Cropland and Rangeland Ecosystems" Journal of Raptor Research 2000, 34:203-209.

nest proximity[4]). As an example, osprey commonly use nest platforms miles away from the lakes where these fish-eating birds hunt.

Based on our experience within the region over the past 25+ years, all of the raptors found in natural habitats in this region are commonly present around vineyards and are common within the Napa Valley (which has undergone very dense conversion to vineyard habitat and has little grassland habitat remaining). We do not know if these birds have maintained historic nesting habitat but incorporate broader home ranges to include remaining grasslands, or if they have modified their diets to focus on small mammals and birds inhabiting vineyards. It seems likely that both of these behaviors may occur. It is clear that vineyard operators encourage the presence of raptors (particularly owls) through the placement of nest boxes. Apparently, the vine height and placement does not discourage the use of vineyards as foraging sites.

The best response to this lack of knowledge is a quantitative, long-term, institutional study within the Napa Valley and or northern wine country in general[5]. The study should focus on the change in prey species available between grassland and vineyard (perhaps a simple comparison of regional native grassland species vs. a listing of vineyard "pests"), and a comparison of raptor use of vineyard vs. grassland (for the full spectrum of raptor species in the region). Such a study would qualify as basic research that would be beyond the time, effort, and financial resources fundable by individual vineyard applicants.

With all of the above as a caveat, the grasslands available at the western end of the Matthes property support the introduced annual grasses and forbs common to grasslands throughout this region and are the same as those available to hunting raptors elsewhere in the Napa Valley. Without trapping studies, it is assumed that the same cross-section of raptor prey species is available here as in other local grasslands.

The question of whether the conversion of this grassland to vineyard will significantly adversely impact local raptors may depend on species, the unique character of the surrounding habitats, the availability of prime nesting sites, and whether the affected raptors in this region of intense vineyard development have become accustomed to prey available in vineyard habitat.

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[4] ibid footnote 2

[5] Such studies should be "region specific" due to the significant differences in the amount of agricultural development, the cross-section of raptor species, and types of habitat available. For example, the California Central Valley maintains extensive tracts of grassland and cropland (a habitat commonly hunted by raptors). The Napa Valley has little grassland left and now consists primarily of vineyard and residential development.