If

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September 4, 2020

Ms. Cheryl Forberg
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RE: Verification of Secondary Use of the Biological Resource Assessment Conducted for the Forberg Vineyard Project; July 13, 2017

Dear Ms. Forberg,

It is our understanding that you are applying for a cannabis cultivation permit on the property that was subject to the biological resource assessment we completed July 13, 2017. It is our opinion that as long as this agricultural project is proposed within the project footprint covered by our 2017 assessment, the work should be transferable for this secondary use. Based on my review of the mitigation measures we proposed in that assessment, they should be applicable with possible minor modifications to your proposed cannabis cultivation project.

Good luck with your new project,

Steve Zalusky
Principal Biologist

BIOLOGICAL RESOURCE ASSESSMENT WITH BOTANICAL SURVEY and DELINEATION OF WATERS OF THE U.S.

for the

FORBERG VINEYARD PROJECT
KELSEYVILLE, LAKE COUNTY, CALIFORNIA

July 13, 2017

Prepared by
Northwest Biosurvey

BIOLOGICAL RESOURCE ASSESSMENT
WITH BOTANICAL SURVEY
and DELINEATION OF WATERS OF THE U.S.
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FORBERG VINEYARD PROJECT
KELSEYVILLE, LAKE COUNTY, CALIFORNIA

July 13, 2017

Prepared for: Cheryl Forberg
7661 S. State Hwy. 29
Kelseyville, CA 95451

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FIGURES AND TABLES

1.0 PROJECT DESCRIPTION

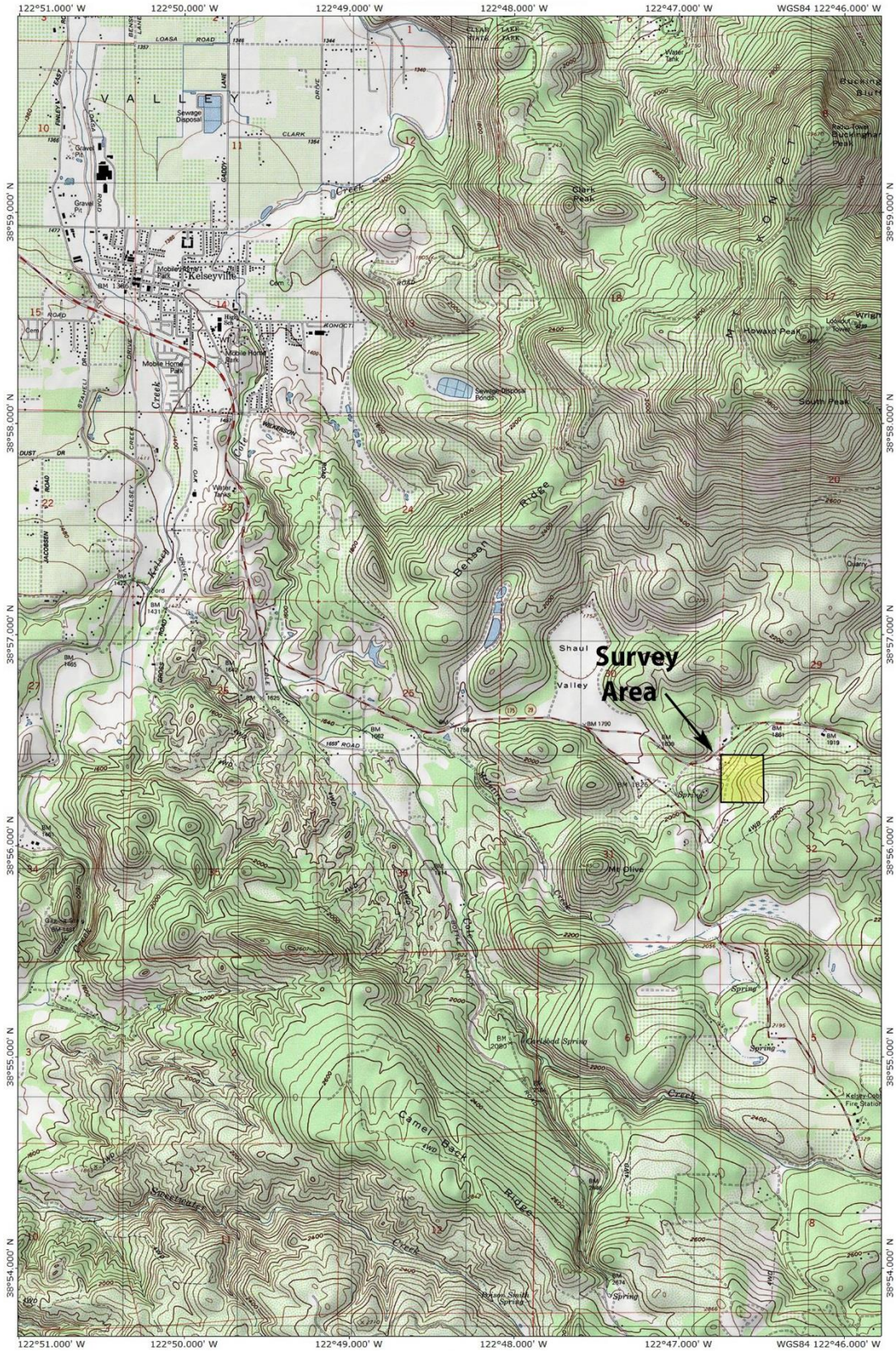
1.1 Proposed Project: This biological resource assessment and botanical survey covers approximately 40 acres proposed for vineyard development. The local permitting agency is requesting completion of a botanical survey and assessment of biological resources on the property as part of the California Environmental Quality Act (CEQA) review required for development of a vineyard.

The initial phase of this assessment will evaluate the potential of the property to contain sensitive plant and wildlife habitat. The second phase will consist of field surveys, including a botanical survey listing all plant taxa[1]. The biological resource assessment will determine whether the property contains sensitive plants or potentially contains sensitive wildlife requiring mitigation under the California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA). As used here, the terms sensitive plant or wildlife includes all state or federal rare, threatened, or endangered species and all species listed in the California Natural Diversity Database (CNDDB) list of "Special Status Plants, Animals, and Natural Communities".

A delineation of waters of the U.S. was conducted due to the presence of drainages within the project area. 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 in its own section (Section 6.0).

1.2 Location: The project site is located at 7661 South State Hwy. 29, Kelseyville, California (APN 009-022-33; T13N R8W, Kelseyville, Calif. 7½' Topographic Map). A location map is provided in **Figure 1**.

[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.



LOCATION MAP

Figure 1

2.0 ASSESSMENT METHODOLOGY

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

The analysis includes the following site characteristics:

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

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

- California Department of Fish and Wildlife (CDFW), *California Natural Diversity Database (CNDDB)*; RareFind 5, 2017
- California Native Plant Society's (CNPS) *Electronic Inventory of Rare and Endangered Vascular Plants of California*, 2017
- California Department of Fish and Wildlife, *California Wildlife Habitat Relationships System (CWHR)*, Version 8.2

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 site. The CNDDB report and overlay map for the Kelseyville 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"=150' aerial photo. Vegetation community names are based on an assessment of dominant cover species.

Plants occurring on the site were identified using *The Jepson Manual of Higher Plants of California*. Where necessary, species names were updated based on the 6th edition, *CNPS Inventory of Rare and Endangered Plants of California*. A map of the plant communities 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.

2.3 Survey Dates: Site visits for in-season floristic surveys, vegetation mapping, and the delineation were made on April 27 and July 11, 2017.

2.4 Biological Assessment Staff: The field surveys, plant taxonomy, vegetation mapping, and the delineation were conducted by Steve Zalusky, Northwest Biosurvey principal biologist. Mr. Zalusky has a Master of Science Degree in Biology from the California State University at Northridge and a Bachelor of Science Degree in Zoology from the University of California at Santa Barbara. Mr. Zalusky has over 30 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.

Field surveys, database review, and report preparation were conducted with the assistance of Danielle Zalusky, Northwest Biosurvey principal planner. Ms. Zalusky has over 20 years of experience as a planner in local government and the private sector. She has a Bachelor of Arts Degree and has completed all course work toward an M.A. Degree in Rural and Town Planning from Chico State University. Prior to joining Northwest Biosurvey in 2002, Ms. Zalusky served as a senior planner for the Lake County Community Development Department.

3.0 SITE CHARACTERISTICS

3.1 Topography and Drainage: The Forberg Vineyard property lies at the base of a series of low hills constituting the eastern edge of the Mayacamas Mountains at a point where the terrain again rises along the southern slope of Mount Konocti. This area of interface between these mountains forms a low corridor transited by State Highway 29 and composed of a series of small, often internally-drained valleys.

The northwestern half of the property drains to a small, internally-drained depression straddling Highway 29. The southwestern edge drains – apparently as sheet flow only occasionally within short segments of defined channels – to the Shaul Valley; another internally-drained depression. Consequently, the drainage from the parcel lacks continuity with drainages emptying into Clear Lake or with other waters of the U.S.

Elevations within the parcel range from 2,200 feet msl (mean sea level) at the southeastern corner of the of the property to 1,960 feet msl at the northwestern property corner. The topography is shown in **Figure 1**.

3.2 Soils: The entire survey area contains three soil units, described as follows:

- **Benridge-Konocti association, 15-30% slopes (soil unit 112):** This soil type occurs on the west side of the parcel. This map unit is on hills. It is comprised of 40% Benridge loam, 20% Konocti cobbly loam, and 20% Konocti stony loam. The Konocti soils are on the upper part of side slopes, on ridgetops, and in ravines. Some Rock outcrop and boulders are included in this association. Typical vegetation is brush on south- and east-facing slopes, and brush with scattered conifers and hardwoods on north- and west-facing slopes. Both soils are moderately deep to very deep and well-drained. They formed in materials derived from volcanic ash, andesite, basalt, or dacite. Permeability is moderately slow, runoff is rapid, and the hazard of erosion is severe.

- **Bottlerock-Glenview-Arrowhead complex, 5-30% slopes (soil unit 117):** Most of the parcel contains this soil type. This map unit is on volcanic hills. Vegetation is mainly brush, including manzanita and ceanothus, with scattered conifers. The complex consists of about 50% Bottlerock extremely gravelly loam, 20% Glenview very gravelly loam, and 15% Arrowhead extremely gravelly sandy loam. All soils are deep and well drained and formed in material weathered from obsidian. Permeability ranges from slow to moderately slow, runoff is rapid, and the hazard of erosion is moderate to severe.

- **Collayomi-Aiken-Whispering complex, 5-30% slopes (soil unit 127):** This map unit is on mountains. It occurs along the north edge of the parcel. The unit is about 35 percent Collayomi very gravelly loam, 35 percent Aiken loam, and 15 percent Whispering loam; small areas of Rock outcrop occur near ridges. All soils formed in material weathered from andesite, basalt, or dacite. Vegetation is mostly conifers and oaks. The Collayomi and Aiken soils are very deep and well drained. Permeability is moderate to moderately slow and the hazard of erosion is moderate. The Whispering soil is moderately deep and well drained. Permeability is moderate and the hazard of erosion is severe. Surface runoff is rapid on all three soils.

3.3 <u>Plant Communities:</u> This 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 below in **Table 1.** They are described below the tables and shown in the vegetation map provided in **Figure 2**.

TABLE 1. VEGETATION AND OTHER COVER TYPES PRESENT

COVER TYPE	ACREA (acres)	PERCENT OF TOTAL
California Black Oak Forest	7.143	18.06
Knobcone Pine Forest	2.064	5.22
Interior Live Oak Scrub	10.964	27.73
Mixed Chaparral	3.953	10.00
Chamise Chaparral	7.182	18.16
Ruderal (Disturbed Areas)	6.427	16.25
Landscape (Residential)	1.811	4.58
Total	**35.544**	**100.00%**

- **California Black Oak Forest:** This dense oak forest occupies the lower north-facing slopes of the survey area. It consists of an 80-100 percent upper canopy cover of mature black oak (*Quercus kelloggii*). The shrub layer consists of poison oak (*Toxicodendron diversilobum*), with scattered toyon (*Heteromeles arbutifolia*), shrubby California bay (*Umbellularia californica*), and interior live oak (*Quercus wislizeni var. frutescens*). Exposed community edges support birch-leaf mountain mahogany (*Cercocarpus betuloides var. betuloides*), and Konocti manzanita (*Arctostaphylos manzanita ssp. elegans*). The ground cover consists of woodland forbs and grasses; these include western buttercup (*Ranunculus occidentalis*), blue dicks (*Dichelostemma capitatum ssp. capitatum*), shining mule ears (*Wyethia glabra*),

Henderson's shooting star (*Dodecatheon hendersonii*), and checker lily (*Fritillaria affinis var. affinis*).

- **Knobcone Pine Forest:** Knobcone pine (*Pinus attenuata*) forest occupies portions of the less-shaded upper slopes of the survey area. Knobcone pines provide an upper canopy closure of approximately 75-percent. The community supports a subcanopy of California bay and interior live oak. The shrub layer is a continuation of the surrounding shrub communities (interior live oak shrub and chamise chaparral) with an emphasis on the more xeric (dry soil) species. These include: chamise (*Adenostoma fasciculatum*), white-leaf common manzanita (*Arctostaphylos manzanita ssp. glaucescens*), and toyon. The ground cover is similar to that of the surrounding shrub communities.

- **Interior Live Oak Shrub:** The exposed upper, north-facing slopes support a nearly homogenous cover of interior live oak trees/shrubs (*Quercus wislizeni var. wislizeni*) to a height of 25 feet. This vegetation type is characteristic of this region and consists of smaller specimens of the tree subspecies rather than shrubs and is apparently the result of limitations due to soil depth and moisture characteristics, but may also be the result of fire recovery. This dense, homogenous canopy cover is too dense to support a ground cover layer other than leaf litter.

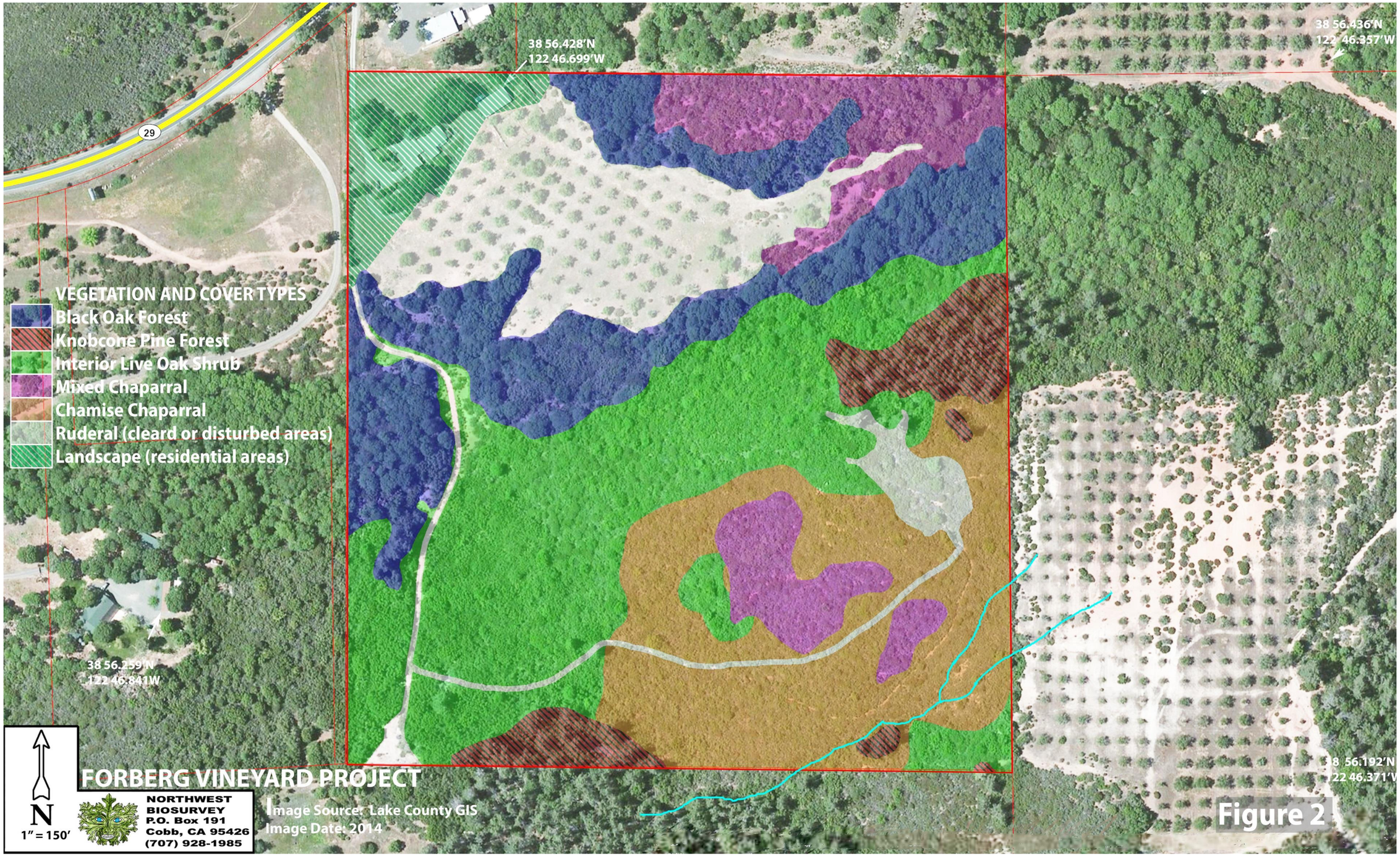
- **Mixed Chaparral:** This community intergrades with adjacent woodlands and chaparral communities. This is the most diverse community within the survey area. The shrub layer includes: birch-leaf mountain mahogany, Konocti manzanita, scrub oak (*Quercus berberidifolia*), poison oak, buckbrush (*Ceanothus cuneatus var. cuneatus*), Stanford manzanita (*Arctostaphylos stanfordiana ssp. stanfordiana*), wavy-leaf ceanothus (*Ceanothus foliosus var. foliosus*), toyon, and interior live oak shrub. Along the northern edge of the property, California ash (*Fraxinus dipetala*) forms a thin upper canopy. The tree and shrub canopy is generally too dense to support a ground cover layer other than leaf litter; however, community edges support Sonoma creeping sage (*Salvia sonomensis*), small-flowered star lily (formerly Fremont's death camas; *Zigadenus fremontii*), wavy-leaf soap plant (*Chlorogalum pomeridianum*), yerba santa (*Eriodictyon californicum*), woolly-fruited lomatium (*Lomatium dasycarpum ssp. dasycarpum*), and goldwire (*Hypericum concinnum*).

- **Chamise Chaparral:** This community occupies the most exposed upper slopes lacking shade during the summer months. It is heavily dominated by chamise (*Adenostoma fasciculatum*) chaparral which provides approximately 90-percent of the cover. The remaining cover is provided by a widely scattered mix of Stanford manzanita, buckbrush, interior live oak shrub, scrub oak, wavy-leaf ceanothus, and poison oak. The canopy cover is generally too dense to support a ground cover other than leaf

litter. Community edges support a ground cover similar to that of the mixed chaparral community.

- **Ruderal:** This consists of roadways and recently cleared areas including the former walnut orchard and a clearing at the top of the ridge along the eastern edge of the property.

- **Landscape:** This term refers to the residence and adjacent landscaping and parking areas.


38 56.428'N
122 46.699'W
38 56.436'N
122 46.357'W
29
VEGETATION AND COVER TYPES
Black Oak Forest
Knobcone Pine Forest
Interior Live Oak Shrub
Mixed Chaparral
Chamise Chaparral
Ruderal (cleard or disturbed areas)
Landscape (residential areas)
38 56.259'N
122 46.841'W
N
1" = 150'
NORTHWEST BIOSURVEY
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FORBERG VINEYARD PROJECT
Image Source: Lake County GIS
Image Date: 2014
8 56.192'N
22 46.371'W
Figure 2

4.0 PRE-SURVEY RESEARCH RESULTS

4.1 CNPS Electronic Inventory Analysis: A California Native Plant Society (CNPS) analysis was conducted for all plants with federal and state regulatory status, and all non-status plants on the CNPS Lists 1B through 4. The query included all plants within this area of Lake 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. It is important to note that this list includes species for which appropriate habitat is not present on the parcel (including serpentine and vernal pool species). The CNPS database search does not allow fine-tuning for specific soil types and many specific habitats.

4.2 California Natural Diversity Database: The California Natural Diversity Database (CNDDB) and CDFW RareFind 5 data and maps for the Kelseyville 7½' quadrangle were reviewed for this project. Table 3 presents a list of sensitive plant and wildlife species known to occur within this 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

Forberg Vineyard Project

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Ericaceae	perennial evergreen shrub	1B.3	None	None	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Ericaceae	perennial evergreen shrub	1B.1	None	None	Feb-Apr	Chaparral, Lower montane coniferous forest (openings)
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)
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual / perennial herb	4.2	None	None	Aug	Marshes and swamps (ponds, slow water)
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	2B.3	None	None	Jun-Sep	Marshes and swamps (freshwater)
Calyptridium quadripetalum	four-petaled pussypaws	Montiaceae	annual herb	4.3	None	None	Apr-Jun	Chaparral, Lower montane coniferous forest
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Onagraceae	annual herb	4.2	None	None	Apr-Jul	Chaparral (openings, usually serpentinite)
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
Cryptantha dissita	serpentine cryptantha	Boraginaceae	annual herb	1B.2	None	None	Apr-Jun	Chaparral (serpentinite)

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Eriastrum brandegeeae	Brandegee's eriastrum	Polemoniaceae	annual herb	1B.1	None	None	Apr-Aug	Chaparral, Cismontane woodland
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2	CE	None	Apr-Aug	Marshes and swamps (lake margins), Vernal pools
Hesperolinon adenophyllum	glandular western flax	Linaceae	annual herb	1B.2	None	None	May-Aug	Chaparral, Cismontane woodland, Valley and foothill grassland
Horkelia bolanderi	Bolander's horkelia	Rosaceae	perennial herb	1B.2	None	None	(May)Jun-Aug	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland
Lasthenia burkei	Burke's goldfields	Asteraceae	annual herb	1B.1	CE	FE	Apr-Jun	Meadows and seeps (mesic), Vernal pools
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	1B.2	None	None	Apr-May	Chaparral, Cismontane woodland, Valley and foothill grassland
Legenere limosa	legenere	Campanulaceae	annual herb	1B.1	None	None	Apr-Jun	Vernal pools
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	4.2	None	None	Apr-Jul	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland
Limnanthes floccosa ssp. floccosa	woolly meadowfoam	Limnanthaceae	annual herb	4.2	None	None	Mar-May(Jun)	Chaparral, Cismontane woodland, Valley and foothill grassland, Vernal pools

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	1B.2	None	None	Mar-Jun	Broadleaved 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
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Polemoniaceae	annual herb	1B.1	CT	FE	May-Jun	Vernal pools (volcanic ash flow)
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	Polemoniaceae	annual herb	1B.2	CE	FE	May-Jun	Vernal pools (volcanic ash flow)
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	1B.1	CE	FT	May-Sep(Oct)	Vernal pools
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	Malvaceae	perennial herb	1B.2	None	None	(Jun)Jul-Aug	Meadows and seeps, Riparian forest
Streptanthus barbiger	bearded jewelflower	Brassicaceae	annual herb	4.2	None	None	May-Jul	Chaparral (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

TABLE 2 KEY:

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
4.2 = 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
CT = California Threatened
FE = Federal Endangered

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

Habitat Type	Habitat Present
Clear Lake Drainage Cyprinid/Catostomid Stream	no
Clear Lake Drainage Resident Trout Stream	no
Clear Lake Drainage Seasonal Lakefish Spawning Stream	no
Northern Volcanic Ash Vernal Pool	no

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Chaparral, cismontane woodland, lower montane conif. forest/volcanic; --/--/1B.3	March-May everg. shrub	**yes-found during surveys**
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	Chaparral, lower montane coniferous forest/rocky, often; --/--/1B.1	Feb.-April ann. herb	yes
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	moderate
Azolla microphylla	Mexican mosquito-fern	Marshes and swamps (ponds, slow water); --/--/4.2	August ann./per. herb	no
Brasenia schreberi	watershield	Marshes & swamps/freshwater; --/--/2.3	June-Sept. rhizom. herb, aquatic	no
Calyptridium quadripetalum	four-petaled pussypaws	Chaparral, lower montane coniferous forest/sandy or gravelly, usually serpentinite; --/--/4.3	April-June ann. herb	no
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Chaparral (openings, usually serpentinite); --/--/4.2	April-June ann. herb	poor
Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	Closed-cone coniferous forest, chaparral, cismontane woodland/usually serpentinite; --/--/4.3	July-Aug. ann. herb	moderate
Eriastrum brandegeeae	Brandegee's eriastrum	Chaparral, cismontane woodland, valley & foothill grassland/often serpentinite; --/--/1B.1	April-Aug. ann. herb	moderate

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Gratiola heterosepala	Boggs Lake hedge-hyssop	Freshwater marsh, marsh & swamp, vernal pool, wetland; --/SE/1B.2	April-Aug. ann. herb	no
Hesperolinon adenophyllum	glandular western flax	Chaparral, cismontane woodland, valley & foothill grassland/serpentinite; --/--/1B.2	May-Aug. ann. herb	no
Horkelia bolanderi	Bolander's horkelia	Cismontane woodland, lower montane conif. forest, meadows & seeps, valley & foothill grassland/edges; --/ --/1B.2	June-Aug. per. herb	poor
Lasthenia burkei	Burke's goldfields	Meadows and seeps, vernal pools, wetland; FE/SE/1B.1	April-June ann. herb	no
Layia septentrionalis	Colusa layia	Chaparral, cismontane woodland, valley & foothill grassland/sandy, serpent.; --/--/1B.2	April-May, ann. herb	poor
Legenere limosa	legenere	Vernal pools; --/--/1B.1	April-June ann. herb	no
Leptosiphon acicularis	bristly leptisiphon	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; --/--/4.2	April-July ann. herb	moderate
Limnanthes floccosa ssp. floccosa	woolly meadowfoam	Chaparral, cismontane woodland, valley & foothill grassland, vernal pools/vernally mesic; --/--/4.2	March-May (June) ann. herb	no
Micropus amphibolus	Mt. Diablo cottonweed	Broadleaved upland forest, chaparral, cismontane woodland, valley & foothill grassland /rocky; --/--/3.2	March-May ann. herb	moderate
Monardella viridis	green monardella	Broadleaved upland forest, chaparral, cismontane woodland; --/--/4.3	June-Sept. rhizom. herb	moderate
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Volcanic ash flow vernal pools, wetlands; FE/ST/1B.1	May-June ann. herb	no
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	Volcanic ash flow vernal pools, wetlands; FE/SE/1B.2	May-June ann. herb	no
Orcuttia tenuis	slender orcutt grass	Vernal pools; FT/SE/1B.1	May-Oct. ann. herb	no

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Potamogeton zosteriformis	eel-grass pondweed	Marshes & swamps, wetlands; --/--/2B.2	June-July ann. herb aquatic	no
Streptanthus barbiger	bearded jewel flower	Chaparral/serpentine; --/--/4.2	May-July ann. herb	no
Trichostema ruygtii	Napa bluecurls	Chaparral, cismontane woodland, lower montane conif. forest, valley & foothill grassland, vernal pools; --/--/1B.2	June-Oct. ann. herb	poor

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
Calasellus californica	an isopod	Aquatic: freshwater wells & springs. One occurrence from Kelseyville in 1931; G2/S2	year-round	no
Linderiella occidentalis	California linderiella	Freshwater fairy shrimp found in seasonally ponded habitat types such as vernal pools, ephemeral drainages, stock ponds, reservoirs, ditches, and vehicle ruts; G3G4/S2S3	year-round	no
Bombus caliginosus	obscure bumble bee	A black and yellow bee found in California, Oregon, Washington; G3G4/CA-SNR	year-round	no
*Hydrochara ricksecker*i	Ricksecker's water scavenger beetle	Aquatic beetle that lives in slow-flowing streams, shallow open water, springs, stagnant ponds, & vernal pools; G2/S2	year-round	no
Lavinia exilicauda chi	Clear Lake hitch	Riparian/aquatic: partly-shaded, shallow streams & riffles with a rocky substrate in variety of habitats; SSC/ST/G4/S1	year-round	no
Rana boylii	foothill yellow-legged frog	Riparian/aquatic: partly-shaded, shallow streams & riffles with a rocky substrate in variety of habitats; SSC/G3/S2S3	year-round	no
Taricha rivularis	red-bellied newt	Occurs near high to moderate gradient streams and rivers, riffles, pools. Burrows in soil or debris near water, emerges during fall rains to water to breed; G4/SNR	year-round	no

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat 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	moderate
Pandion haliaetus	osprey	Large, fish-bearing waters usually in mixed conifer habitats; WL/G5/S4	sometimes migratory	poor
Progne subis	purple martin	Open woodland near water; SSC/G5/S3	migratory in winter	poor

*See CNPS Table 2 list for key

TABLE 3 KEY:

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

NatureServe Conservation Status:

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

4.3 Wildlife Habitat Analysis Results: The California Wildlife Habitat Relations analysis did not identify additional sensitive species potentially occurring on this site.

4.4 Wildlife Assessment: Based on the pre-survey research conducted for this study, a total of ten sensitive wildlife species need to be accounted for within the project area. These consist of the species identified as present within the Kelseyville quadrangle by the CNDDB. 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.

- ***Calasellus californicus* (a freshwater isopod);**
- **California linderiella (*Linderiella occidentalis*):**
  Both of these invertebrates are found in freshwater or pond habitats. Suitable habitat does not occur in the project area.

- **Obscure bumble bee (*Bombus oliginosus*):**
  This bumblebee is native to the west coast; in the Coast Range it inhabits meadows. It is similar in appearance and co-exists with the common *Bombus vosnesenskii* and may be mistaken for this bee. *B. oliginosus* is threatened by climate change and loss of habitat, and does not thrive in developed urban or agricultural areas. Suitable habitat for this species does not occur on the site.

- **Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*):**
  This species is known from accounts in the San Francisco Bay Area. It occupies ponds and shallow waters of streams, lakes, or marshes. This species is listed here because it was identified near Boggs Lake in Lake County. There is no suitable habitat for this beetle within the project area.

- **Clear Lake hitch (*Lavinia exilicauda chi*):**
  Clear Lake hitch are a California Species of Concern and currently have State Threatened Species status. Hitch are fish of lakes and slow-moving streams. There are no perennial streams in the project area and the site is far from Clear Lake.

- **Foothill yellow-legged frog (*Rana boylii*):**
  These frogs are relatively common along the shaded banks of perennial headwater streams. They are heavily dependent on the presence of perennial water and are seldom far from pools where they can seek shelter from predation. The larvae require three to four months to mature, making most ephemeral (seasonal) streams unsuitable as breeding sites. There are no perennial or long-duration streams within the project area and this species would not occur here.

- **Red-bellied newt (*Taricha rivularis*):**
  This species is often found under rocks, logs, soil or duff, or in rodent burrows in coastal woodlands and redwood forests. Newts occur near high to moderate gradient streams and rivers, in riffles, and pools. They usually breed in flowing water. These animals burrow in soil or debris near water, and emerge to water during fall rains to breed; they may migrate up to a mile or more between terrestrial habitat and stream breeding sites. They have been identified in the Cobb Mountain area along Bottle Rock Road. Appropriate habitat does not occur on the project site.

- **Western pond turtle (*Actinemys marmorata*):**
  These turtles prefer slow or ponded water with sheltering vegetation but will range widely through less suitable habitat in search of these sites. Eggs are laid on land in sheltered nests. Young overwinter in the nest and emerge the following spring in Northern California. When present, pond turtles are readily observed basking along shorelines or on logs in shallow water. There are no ponds within the survey area, and the on-site ephemeral channels have no continuity with off-site ponds or waterways.

- **Osprey (*Pandion haliaetus*):**
  This species occurs near large, fish-bearing waters in ponderosa pine or mixed conifer habitats where it feeds on open waters for fish, although it also takes small birds and mammals. It hunts over wide expanses of open water and usually nests in the tops of large isolated trees near shorelines. Nests are made on platforms of sticks on top of large snags, dead-topped trees, or man-made structures, usually within close proximity of large fish-producing water bodies. The stick nests constructed by this species are readily apparent when present. This site lacks suitable habitat for the osprey. This species' sensitive status pertains to nesting pairs. This species no longer has sensitive status, but is protected under the Migratory Bird Treaty Act and California Department of Fish and Game code.

- **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. Most tree nest sites are located in the upper slopes of hilly and mountainous terrain and Northwest Biosurvey staff has found this species in habitat meeting these requirements in the Geysers area of Lake and Napa Counties. There is a slight potential for it to be present in the oak forest on the property, but the lack of available water through the nesting season within the survey area makes it unlikely that this project site provides good habitat for this species.

5.0 FIELD SURVEY RESULTS

5.1 <u>Botanical Field Survey Results</u>: Table 4 presents the results of the floristic-level botanical survey within the survey area. Each of the sensitive plant taxa potentially occurring at the sites and listed in Tables 2 and 3 was specifically searched for during the survey. The survey identified a total 87 plant taxa on the property, including native and introduced plants.

Two plant taxa with sensitive regulatory status were found during the survey:

- **Northern California black walnut (*Juglans hindsii)***: English walnut occurs on the property as part of a former walnut orchard (shown as Ruderal on the Vegetation Map). In its native state, this is a CNPS Rare Plant Rank 1B.1 species, defined as "R*are, threatened, or endangered in California and elsewhere; seriously threatened in California.*" Due to the widespread loss of these natural populations throughout Northern California, Northern California black walnut is listed as a CNPS List 1B species. However, the walnut trees on this property were cultivated as a walnut orchard. Northern California black walnut was commonly used as a graft for English walnut trees in these orchards because their roots are largely immune to attack by native root parasites. The black walnut naturalized trees from the orchard do not qualify as sensitive and no special review or mitigation is required for them.

- **Konocti manzanita (*Arctostaphylos manzanita ssp. elegans*):** Konocti manzanita is a California Native Plant Society (CNPS) Rare Plant Rank 1B species. Plants ranked 1B are considered by regulatory agencies to qualify as rare under Section 15380(d) of the California Environmental Quality Act (CEQA) and thus require consideration and subsequent mitigation during CEQA review. Konocti manzanita occurs throughout the mixed chaparral and California black oak communities shown in Figure 2.

TABLE 4. FLORA OF THE FORBERG VINEYARD PROJECT

Habit	Species	Common Name	Family	Origin
fern	*Pentagramma triangularis ssp. triangularis*	gold-back fern	Pteridaceae	N
forb	*Lomatium dasycarpum ssp. dasycarpum*	woolly-fruited lomatium	Apiaceae	N
forb	*Petroselinum crispum*	parsley	Apiaceae	A
forb	*Sanicula bipinnata*	poison sanicle	Apiaceae	N
forb	*Sanicula crassicaulis*	Pacific sanicle, Pacific blacksnakeroot	Apiaceae	N
forb	*Scandix pecten-veneris*	Venus' needle	Apiaceae	A
forb	*Tauschia kelloggii*	Kellogg's tauschia	Apiaceae	N
forb	*Torilis nodosa*	hedge parsley	Apiaceae	A
forb	*Achillea millefolium*	common yarrow	Asteraceae	N
forb	*Centaurea solstitialis*	yellow star thistle	Asteraceae	A
forb	*Grindelia hirsutula var. davyi*	Davy's gumweed	Asteraceae	N
forb	*Hypochaeris glabra*	smooth cat's ear	Asteraceae	A
forb	*Hypochaeris radicata*	rough cat's-ear	Asteraceae	A
forb	*Micropus californicus var. californicus*	cottontop, slender cottonweed	Asteraceae	N
forb	*Wyethia glabra*	green mule ears, shining mule ears	Asteraceae	N
forb	*Cynoglossum grande*	grand hound's tongue	Boraginaceae	N
forb	*Cerastium glomeratum*	mouse-ear chickweed, sticky mouse-ear	Caryophyllaceae	A
forb	*Acmispon brachycarpus (Former: Lotus humistratus)*	shortpodded lotus, hill lotus	Fabaceae	N
forb	*Lathyrus jepsonii var. californicus*	California tule pea	Fabaceae	N
forb	*Lupinus bicolor*	miniature lupine	Fabaceae	N
forb	*Trifolium willdenovii*	tomcat clover	Fabaceae	N
forb	*Vicia sativa ssp. nigra*	narrow-leaved vetch	Fabaceae	A
forb	*Vicia villosa*	winter vetch	Fabaceae	A
forb	*Erodium cicutarium*	red-stem storksbill	Geraniaceae	A
forb	*Nemophila menziesii*	baby blue eyes	Hydrophyllaceae	N
forb	*Hypericum concinnum*	gold-wire	Hypericaceae	N
forb	*Iris macrosiphon*	bowl-tubed iris	Iridaceae	N
forb	*Juncus bufonius var. bufonius*	toad rush	Juncaceae	N
forb	*Salvia sonomensis*	Sonoma creeping sage	Lamiaceae	N

Habit	Species	Common Name	Family	Origin
forb	*Calochortus amabilis*	Diogenes lantern, golden fairy lantern	Liliaceae	N
forb	*Chlorogalum pomeridianum*	wavyleaf soap plant	Liliaceae	N
forb	*Dichelostemma capitatum ssp. capitatum*	blue dicks	Liliaceae	N
forb	*Fritillaria affinis var. affinis*	checker lily	Liliaceae	N
forb	*Zigadenus fremontii*	small-flowered star lily (former: Fremont's death camas)	Liliaceae	N
forb	*Clarkia gracilis ssp. gracilis*	graceful clarkia	Onagraceae	N
forb	*Eschscholzia californica*	California poppy	Papaveraceae	N
forb	*Leptosiphon minimus (former: L. bicolor*	true baby stars	Polemoniaceae	N
forb	*Linanthus androsaceus*	false baby stars	Polemoniaceae	N
forb	*Navarretia mellita*	skunk navarretia	Polemoniaceae	N
forb	*Calandrinia ciliata*	red maids	Portulacaceae	N
forb	*Dodecatheon hendersonii*	Henderson's shooting stars	Primulaceae	N
forb	*Ranunculus occidentalis*	western buttercup	Ranunculaceae	N
forb	*Galium porrigens var. porrigens*	climbing bedstraw, graceful bedstraw	Rubiaceae	N
forb	*Lithophragma parviflorum var. parviflorum*	smallflower woodland star	Saxifragaceae	N
forb	*Verbascum thapsus*	woolly mullein	Scrophulariaceae	A
forb	*Nicotiana acuminata var. multiflora*	many-flowered tobacco	Solanaceae	A
forb	*Plectritis ciliosa ssp. ciliosa*	long-spurred plectritis	Valerianaceae	N
forb	*Viola lobata ssp. integrifolia*	pine violet, delta leaved forest violet	Violaceae	N
grass	*Aira caryophyllea*	silver European hairgrass	Poaceae	A
grass	*Avena barbata*	slender wild oat	Poaceae	A
grass	*Bromus commutatus*	meadow brome, hairy chess	Poaceae	A
grass	*Bromus diandrus*	ripgut brome, ripgut grass	Poaceae	A
grass	*Bromus hordeaceus*	soft chess	Poaceae	A
grass	*Bromus madritensis ssp. rubens*	red brome	Poaceae	A
grass	*Festuca myuros*	rattail sixweeks grass	Poaceae	A
grass	*Poa bulbosa*	bulbous bluegrass	Poaceae	A
grass	*Poa secunda ssp. secunda*	one-sided bluegrass	Poaceae	N
grass	*Stipa (former: Achnatherum) lemmonii var. lemmonii*	Lemmon's needle-grass	Poaceae	N
shrub	*Rhus trilobata*	basket bush, skunkbrush	Anacardiaceae	N

Habit	Species	Common Name	Family	Origin
shrub	*Toxicodendron diversilobum*	poison oak	Anacardiaceae	N
shrub	*Baccharis pilularis*	coyote brush, chaparral broom	Asteraceae	N
shrub	*Sambucus nigra ssp. caerulea*	blue elderberry	Caprifoliaceae	N
shrub	***Arctostaphylos manzanita ssp. elegans***	**Konocti manzanita, CNPS Rank 1B.3**	**Ericaceae**	**N**
shrub	*Arctostaphylos manzanita ssp. glaucescens*	white-leaf common manzanita	Ericaceae	N
shrub	*Arctostaphylos stanfordiana ssp. stanfordiana*	Stanford manzanita	Ericaceae	N
shrub	*Cercis occidentalis*	western redbud	Fabaceae	N
shrub	*Rupertia physodes*	California tea	Fabaceae	N
shrub	*Quercus berberidifolia*	California scrub oak	Fagaceae	N
shrub	*Quercus wislizeni var. frutescens*	interior live oak	Fagaceae	N
shrub	*Eriodictyon californicum*	California yerba santa	Hydrophyllaceae	N
shrub	*Lepechinia calycina*	pitcher sage	Lamiaceae	N
shrub	*Ceanothus cuneatus var. cuneatus*	buckbrush	Rhamnaceae	N
shrub	*Ceanothus foliosus var. foliosus*	wavy-leaf ceanothus	Rhamnaceae	N
shrub	*Adenostoma fasciculatum*	chamise	Rosaceae	N
shrub	*Cercocarpus betuloides var. betuloides*	birch-leaf mountain mahogany	Rosaceae	N
shrub	*Heteromeles arbutifolia*	toyon	Rosaceae	N
tree	*Quercus kelloggii*	California black oak	Fagaceae	N
tree	*Quercus wislizeni var. wislizeni*	interior live oak	Fagaceae	N
tree	***Juglans hindsii***	**Northern California black walnut; CNPS Rank 1B.1**	**Juglandaceae**	**N**
tree	*Umbellularia californica*	California bay	Lauraceae	N
tree	*Fraxinus dipetala*	California ash	Oleaceae	N
tree	*Pinus attenuata*	knobcone pine	Pinaceae	N
tree	*Pinus sabiniana*	ghost pine, foothill pine	Pinaceae	N
vine	*Symphoricarpos mollis*	tripvine, creeping snowberry	Caprifoliaceae	N
vine	*Calystegia collina ssp. collina*	hillside morning-glory	Convolvulaceae	N
vine	*Marah fabaceus*	California manroot	Cucurbitaceae	N

Origin: *N = Native, A = Alien*

6.0 WETLAND DELINEATION

6.1 Purpose of Delineation: This delineation has been conducted at the request of the local permitting agencies in order to determine the extent of possible waters of the U.S. on the property. Measurements were taken using GIS mapping methods[2] verified in the field.

6.2 Delineation Procedure: This delineation has been conducted as prescribed in the *Corps of Engineers Wetlands Delineation Manual*, January 1987, and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, 2008.* Waters of the U.S. on this parcel are defined as "other waters" consisting of the ephemeral channels. The delineated boundaries of waters of the U.S. within the survey area are mapped in **Figure 3;** the area of these waters is provided below in **Table 5**.

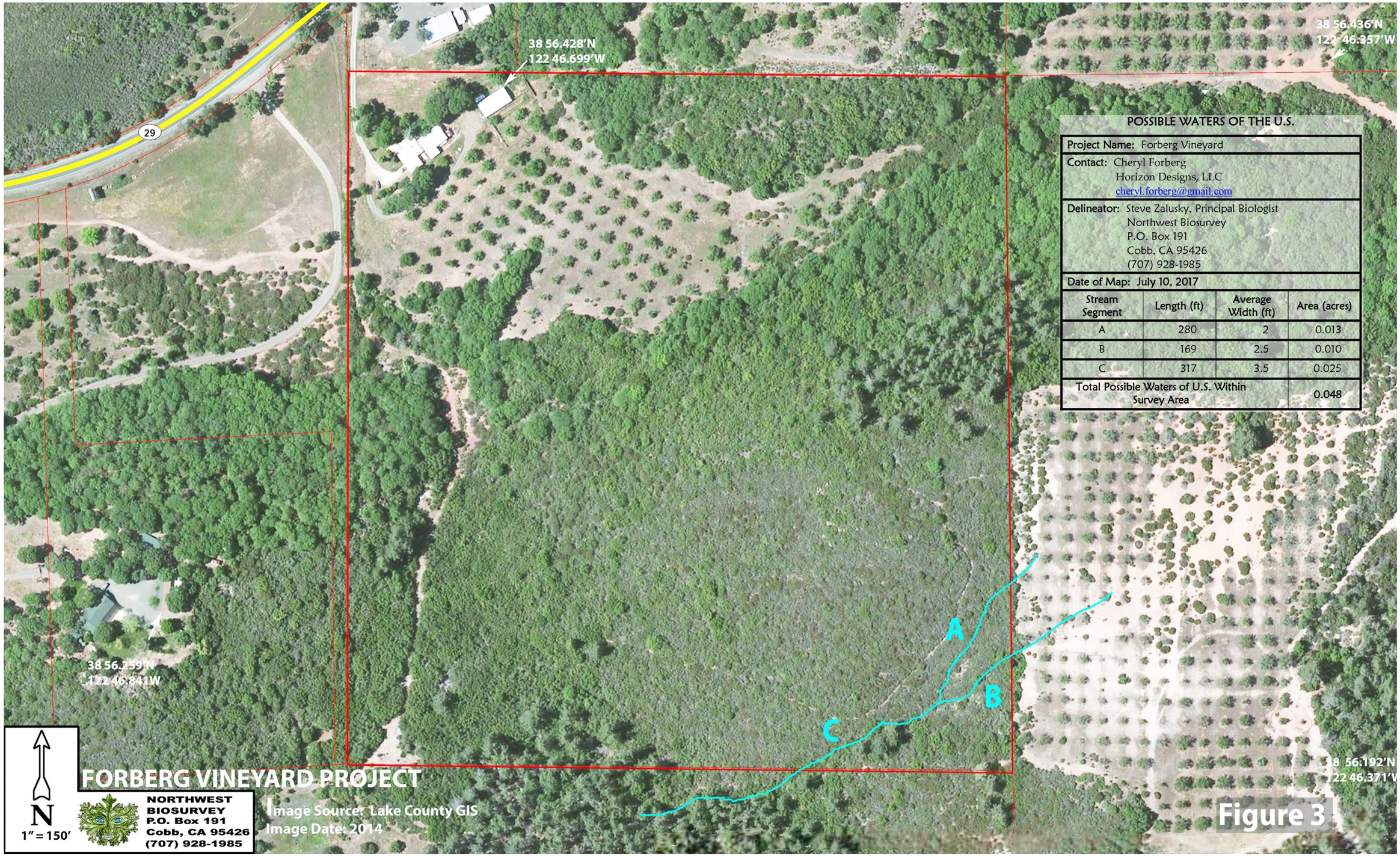
6.3 Location, Drainage, and Soil Type: These subjects are discussed in detail in Section 1.2 (Location), Section 3.1 (Topography and Drainage), and Section 3.2 (Soil map) in the biological resource assessment report in which this delineation is included.

6.4 Delineation Results: Three waterways were delineated within the southeastern part of the parcel with a total area of **0.048 acre**; however, as noted in Section 3.1 "Topography and Drainage", offsite drainage continually transitions between channelized flow and sheet flows until reaching one of two nearby, internally-drained depressions. One of these straddles State Highway 20 directly north of the project site, while the other consists of the Shaul Valley slightly northwest of the site. Consequently, site drainage is not contiguous with Waters of the U.S. and onsite channels may not qualify as Waters of the U.S.

TABLE 5. POSSIBLE WATERS OF THE U.S.

Stream Segment	Length (ft)	Average Width (ft)	Area (acres)
A	280	2	0.013
B	169	2.5	0.010
C	317	3.5	0.025
Total Possible Waters of U.S. Within Survey Area			**0.048**

[2] ((Pixels/feature)/(dpi of image)) x (map scale in acres/square inch).



POSSIBLE WATERS OF THE U.S.

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Date of Map: July 10, 2017

Stream Segment	Length (ft)	Average Width (ft)	Area (acres)
A	280	2	0.013
B	169	2.5	0.010
C	317	3.5	0.025
Total Possible Waters of U.S. Within Survey Area			0.048

Figure 3

7.0 SUMMARY AND RECOMMENDATIONS

7.1 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 *On-line Inventory of Rare and Endangered Vascular Plants of California,* and the California Department of Fish and Wildlife's *Wildlife Habitat Relations System*
- Vegetation mapping
- Delineation of waters of the U.S.

Sensitive Plants: A total of 87 native and introduced plant taxa were identified on the property during the in-season, floristic-level botanical surveys. Two CNPS Rare Plant Rank 1B plant species, Northern California black walnut (Rank 1B.1) and Konocti manzanita (Rank 1B.3), occur within the survey area. However, the black walnut is present as planted rootstock for English walnut trees and does not qualify as a sensitive plant in this instance.

The CNPS defines Rank 1B plants as "Rare, threatened, or endangered in California and elsewhere". Plants with this status are considered by regulatory agencies to qualify as rare under Section 15380(d) of the California Environmental Quality Act (CEQA) and thus the Konocti manzanita requires consideration and subsequent mitigation during CEQA review.

Sensitive Wildlife: A total of ten sensitive wildlife species were assessed for potential occurrence at the site because of inclusion in the CNDDB database for the Kelseyville quadrangle and the CWHR database. The property does not provide suitable habitat for these species and they are unlikely to occur here.

Sensitive Habitat: The CNDDB overlay for Kelseyville lists ***Clear Lake Drainage Cyprinid/Catostomid Stream, Clear Lake Drainage Resident Trout Stream,*** and ***Clear Lake Drainage Seasonal Lakefish Spawning Stream*** as sensitive habitats in this area. These habitats do not occur within the survey area.

Possible Waters of the U.S.: A delineation of waters of the U.S. was conducted on this site. The waterway within the survey areas contain 0.048 acre in the southeastern corner of

the parcel. However, these stream segments do not appear to have connectivity with any water of the U.S. and may not qualify as a water of the U.S.

7.2 <u>Recommendations</u>: The property owner has not provided a proposed vineyard block layout and it is therefore not possible to provide a quantifiable assessment of impacts to sensitive plants (Konocti manzanita) or to woodland habitat (California black oak forest). It is possible, however, to provide a "per-acre" estimate of loss of Konocti manzanita and a "percent of community" loss for woodland for use in vineyard block design.

1. Konocti manzanita:

<u>Potential Impact</u>: Konocti manzanita occurs primarily within the California black oak forest and mixed chaparral communities on the property although scattered individuals also occur within the chamise chaparral community. Within the black oak community these shrubs make up roughly 5-percent of the shrub cover beneath the upper woodland canopy and can conservatively be estimated at 5-percent of overall ground cover per acre of woodland. Similarly, these shrubs make up approximately 10-percent of the overall ground cover within the mixed chaparral community. If these shrubs are assumed to have an average crown diameter of 10 feet, the following losses of Konocti manzanita per acre of community can be estimated:

- **California black oak forest**: (5% of 43,560 ft^2) / 78.5 ft^2per crown = <u>28 shrubs per acre</u>
- **Mixed chaparral:** (10% of 43,560 ft^2) / 78.5 ft^2 per crown = <u>56 shrubs per acre</u>

<u>Proposed mitigation</u>: If the lead agency determines that this loss is significant within the context of the CEQA Guidelines, typical mitigation for these non-listed taxa (taxa subject to CEQA review pursuant to Section 15380(d) of the CEQA Guidelines) consists of establishment of permanently protected conservation sites (usually on-site) at a ratio determined in consultation with the California Department of Fish and Wildlife.

2. California Black Oak Forest:

<u>Potential Impact</u>: The property contains 7.14 acres of California black oak forest. While an estimate of the number and diameter of trees per acre can be completed following a subsequent on-site woodland assessment, the true habitat value of these woodlands is as intact communities rather than as numbers of individual trees.

Due to the "linear" structure of these woodlands on the property (an apparent artifact of the historic woodland removal for walnut orchard planting in the 1940's and 50's) the core habitat value[3] of these woodlands is moderate (see **Figure 2**). However, where these woodlands adjoin larger intact woodland on adjacent properties to the west and east they contribute to woodlands with high core woodland value.

Proposed Mitigation: As previously noted, a vineyard block design has not been provided and it is therefore not known whether oak woodland will be removed as part of vineyard development. In the event that oak woodland is proposed for removal, then consistent with the Oak Woodlands Conservation Act, the lead agency will need to determine whether loss of some or all of the mature California black oak forest constitutes a significant adverse impact on the environment. If it is determined that the impact is significant, the following mitigation should be considered:

A. Exclude California black oak forest from vineyard development. This provides the added advantage of providing habitat connectivity for woodland species to the east and west (reduces habitat fragmentation).

   - or -

B. Preserve black oak forest west of the western access road and the portion of black oak forest along the eastern boundary into the property for a distance of 300 feet. In both locations, these forests abut extensive existing California black oak forest on adjoining properties and contribute to excellent core woodland habitat

3. Habitat Fragmentation:

Potential Impact: Use of vineyard deer exclusion fencing beyond the perimeter of vineyard blocks has the potential to disrupt wildlife movement within and through the property. Additionally, the strip of California black oak woodland through the property provides needed cover and habitat continuity for large and moderate sized wildlife moving along the "east-west" corridor between the base of Mount Konocti and the northern edge of the Mayacamas foothills. This corridor of small, often internally-drained valleys and woodlands provides a valuable movement corridor and year-round habitat for a number of large and moderate-

[3] Core habitat is habitat that retains the essential habitat characteristics of the parent plant community without the direct influence of surrounding edge habitat with adjacent plant communities. Core oak forest/woodland habitat is essential for many species of herptiles (reptiles and amphibians), birds, and small mammals.

sized wildlife species. Loss of this strip of woodland habitat has the potential to disrupt wildlife movement along the "Highway 29 valley corridor".

Proposed Mitigation: In order to reduce the effects of habitat fragmentation within the property boundaries and between habitats on the property and those of the surrounding area, vineyard fencing should be limited to vineyard blocks. Additionally, project design should exclude loss of California black oak woodland in order to minimize disruption of wildlife movement corridors and habitat fragmentation. Near the middle of this corridor, where its width is less than 100 feet, the corridor should be widened to 100 feet through inclusion of interior live oak shrub community along its southern edge.

Use of former walnut orchard and of chamise chaparral and, to a lesser extent, interior live oak shrub habitat for vineyard development would minimize habitat fragmentation and impacts to wildlife movement corridors.

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APPENDIX A

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

Surrounding 9-Quad List: Kelseyville Quadrangle

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Asti	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
Asti	Rana boylii	foothill yellow-legged frog	None	None	SSC	-
Asti	Taricha rivularis	red-bellied newt	None	None	SSC	-
Asti	Ardea herodias	great blue heron	None	None	-	-
Asti	Lavinia symmetricus ssp. 4	Clear Lake - Russian River roach	None	None	SSC	-
Asti	Hysterocarpus traski pomo	Russian River tule perch	None	None	SSC	-
Asti	Oncorhynchus mykiss irideus	steelhead - central California coast DPS	Thrt	None	-	-
Asti	Oncorhynchus tshawytscha	chinook salmon - California coastal ESU	Thrt	None	-	-
Asti	Bombus caliginosus	obscure bumble bee	None	None	-	-
Asti	Antrozous pallidus	pallid bat	None	None	SSC	-
Asti	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Asti	Lasiurus blossevillii	western red bat	None	None	SSC	-
Asti	Myotis yumanensis	Yuma myotis	None	None	-	-
Asti	Emys marmorata	western pond turtle	None	None	SSC	-
Asti	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Asti	Cypripedium montanum	mountain lady's-slipper	None	None	-	4.2
Clearlake Highlands	Rana boylii	foothill yellow-legged frog	None	None	SSC	-
Clearlake Highlands	Rana draytonii	California red-legged frog	Thrt	None	SSC	-
Clearlake Highlands	Haliaeetus leucocephalus	bald eagle	Delisted	End	FP	-
Clearlake Highlands	Ardea alba	great egret	None	None	-	-
Clearlake Highlands	Ardea herodias	great blue heron	None	None	-	-
Clearlake Highlands	Coccyzus americanus occidentalis	western yellow-billed cuckoo	Thrt	End	-	-
Clearlake Highlands	Strix occidentalis caurina	northern spotted owl	Thrt	Thrt	SSC	-
Clearlake Highlands	Archoplites interruptus	Sacramento perch	None	None	SSC	-
Clearlake Highlands	Lavinia exilicauda chi	Clear Lake hitch	None	Thrt	-	-
Clearlake Highlands	Hedychridium milleri	Borax Lake cuckoo wasp	None	None	-	-
Clearlake Highlands	Dubiraphia brunnescens	brownish dubiraphian riffle beetle	None	None	-	-
Clearlake Highlands	Antrozous pallidus	pallid bat	None	None	SSC	-
Clearlake Highlands	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Clearlake Highlands	Myotis lucifugus	little brown bat	None	None	-	-
Clearlake Highlands	Myotis yumanensis	Yuma myotis	None	None	-	-
Clearlake Highlands	Pyrgulopsis ventricosa	Clear Lake pyrg	None	None	-	-
Clearlake Highlands	Emys marmorata	western pond turtle	None	None	SSC	-
Clearlake Highlands	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
Clearlake Highlands	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Clearlake Highlands	Northern Basalt Flow Vernal Pool	Northern Basalt Flow Vernal Pool	None	None	-	-
Clearlake Highlands	Northern Volcanic Ash Vernal Pool	Northern Volcanic Ash Vernal Pool	None	None	-	-
Clearlake Highlands	Eryngium constancei	Loch Lomond button-celery	End	End	-	1B.1

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Clearlake Highlands	Harmonia hallii	Hall's harmonia	None	None	-	1B.2
Clearlake Highlands	Hemizonia congesta ssp. calyculata	Mendocino tarplant	None	None	-	4.3
Clearlake Highlands	Lasthenia burkei	Burke's goldfields	End	End	-	1B.1
Clearlake Highlands	Viburnum ellipticum	oval-leaved viburnum	None	None	-	2B.3
Clearlake Highlands	Sedella leiocarpa	Lake County stonecrop	End	End	-	1B.1
Clearlake Highlands	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Clearlake Highlands	Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	None	None	-	1B.1
Clearlake Highlands	Calochortus uniflorus	pink star-tulip	None	None	-	4.2
Clearlake Highlands	Limnanthes floccosa ssp. floccosa	woolly meadowfoam	None	None	-	4.2
Clearlake Highlands	Hesperolinon bicarpellatum	two-carpellate western flax	None	None	-	1B.2
Clearlake Highlands	Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	-	1B.2
Clearlake Highlands	Toxicoscordion fontanum	marsh zigadenus	None	None	-	4.2
Clearlake Highlands	Calyptridium quadripetalum	four-petaled pussypaws	None	None	-	4.3
Clearlake Highlands	Piperia michaelii	Michael's rein orchid	None	None	-	4.2
Clearlake Highlands	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
Clearlake Highlands	Antirrhinum virga	twig-like snapdragon	None	None	-	4.3
Clearlake Highlands	Gratiola heterosepala	Boggs Lake hedge-hyssop	None	End	-	1B.2
Clearlake Highlands	Imperata brevifolia	California satintail	None	None	-	2B.1
Clearlake Highlands	Eriastrum brandegeeae	Brandegee's eriastrum	None	None	-	1B.1
Clearlake Highlands	Leptosiphon acicularis	bristly leptosiphon	None	None	-	4.2
Clearlake Highlands	Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	-	1B.1
Clearlake Highlands	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	End	Thrt	-	1B.1
Clearlake Highlands	Navarretia leucocephala ssp. plieantha	many-flowered navarretia	End	End	-	1B.2
Clearlake Highlands	Potamogeton zosteriformis	eel-grass pondweed	None	None	-	2B.2
Clearlake Highlands	Myosurus minimus ssp. apus	little mousetail	None	None	-	3.1
Clearlake Highlands	Horkelia bolanderi	Bolander's horkelia	None	None	-	1B.2
Clearlake Oaks	Haliaeetus leucocephalus	bald eagle	Delisted	End	FP	-
Clearlake Oaks	Pandion haliaetus	osprey	None	None	WL	-
Clearlake Oaks	Archoplites interruptus	Sacramento perch	None	None	SSC	-
Clearlake Oaks	Lavinia exilicauda chi	Clear Lake hitch	None	Thrt	-	-
Clearlake Oaks	Dubiraphia brunnescens	brownish dubiraphian riffle beetle	None	None	-	-
Clearlake Oaks	Antrozous pallidus	pallid bat	None	None	SSC	-
Clearlake Oaks	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Clearlake Oaks	Myotis yumanensis	Yuma myotis	None	None	-	-
Clearlake Oaks	Gonidea angulata	western ridged mussel	None	None	-	-
Clearlake Oaks	Emys marmorata	western pond turtle	None	None	SSC	-
Clearlake Oaks	Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	None	None	-	-
Clearlake Oaks	Hemizonia congesta ssp. calyculata	Mendocino tarplant	None	None	-	4.3
Clearlake Oaks	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Clearlake Oaks	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Clearlake Oaks	Erythronium helenae	St. Helena fawn lily	None	None	-	4.2
Clearlake Oaks	Calyptridium quadripetalum	four-petaled pussypaws	None	None	-	4.3
Clearlake Oaks	Potamogeton zosteriformis	eel-grass pondweed	None	None	-	2B.2
Highland Springs	Rana boylii	foothill yellow-legged frog	None	None	SSC	-
Highland Springs	Taricha rivularis	red-bellied newt	None	None	SSC	-
Highland Springs	Aquila chrysaetos	golden eagle	None	None	FP ; WL	-
Highland Springs	Artemisiospiza belli belli	Bell's sage sparrow	None	None	WL	-
Highland Springs	Agelaius tricolor	tricolored blackbird	None	Cand End	SSC	-
Highland Springs	Lavinia exilicauda chi	Clear Lake hitch	None	Thrt	-	-
Highland Springs	Oncorhynchus mykiss irideus	steelhead - central California coast DPS	Thrt	None	-	-
Highland Springs	Emys marmorata	western pond turtle	None	None	SSC	-
Highland Springs	Calycadenia micrantha	small-flowered calycadenia	None	None	-	1B.2
Highland Springs	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Highland Springs	Amsinckia lunaris	bent-flowered fiddleneck	None	None	-	1B.2
Highland Springs	Cryptantha dissita	serpentine cryptantha	None	None	-	1B.2
Highland Springs	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	-	4.2
Highland Springs	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Highland Springs	Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	None	None	-	1B.1
Highland Springs	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Highland Springs	Trichostema ruygtii	Napa bluecurls	None	None	-	1B.2
Highland Springs	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Highland Springs	Hesperolinon adenophyllum	glandular western flax	None	None	-	1B.2
Highland Springs	Calyptridium quadripetalum	four-petaled pussypaws	None	None	-	4.3
Highland Springs	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
Highland Springs	Antirrhinum subcordatum	dimorphic snapdragon	None	None	-	4.3
Highland Springs	Horkelia bolanderi	Bolander's horkelia	None	None	-	1B.2
Kelseyville	Rana boylii	foothill yellow-legged frog	None	None	SSC	-
Kelseyville	Taricha rivularis	red-bellied newt	None	None	SSC	-
Kelseyville	Pandion haliaetus	osprey	None	None	WL	-
Kelseyville	Progne subis	purple martin	None	None	SSC	-
Kelseyville	Calasellus californicus	An isopod	None	None	-	-
Kelseyville	Linderiella occidentalis	California linderiella	None	None	-	-
Kelseyville	Lavinia exilicauda chi	Clear Lake hitch	None	Thrt	-	-
Kelseyville	Bombus caliginosus	obscure bumble bee	None	None	-	-
Kelseyville	Hydrochara rickseckeri	Ricksecker's water scavenger beetle	None	None	-	-
Kelseyville	Emys marmorata	western pond turtle	None	None	SSC	-
Kelseyville	Clear Lake Drainage Cyprinid/Catostomid Stm	Clear Lake Drainage Cyprinid/Catostomid Stm	None	None	-	-
Kelseyville	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
Kelseyville	Clear Lake Drg Seasonal Lakefish Spawn Stm	Clear Lake Drg Seasonal Lakefish Spawn Stm	None	None	-	-
Kelseyville	Northern Volcanic Ash Vernal Pool	Northern Volcanic Ash Vernal Pool	None	None	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Kelseyville	Lasthenia burkei	Burke's goldfields	End	End	-	1B.1
Kelseyville	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Kelseyville	Micropus amphibolus	Mt. Diablo cottonweed	None	None	-	3.2
Kelseyville	Azolla microphylla	Mexican mosquito fern	None	None	-	4.2
Kelseyville	Streptanthus barbiger	bearded jewelflower	None	None	-	4.2
Kelseyville	Brasenia schreberi	watershield	None	None	-	2B.3
Kelseyville	Legenere limosa	legenere	None	None	-	1B.1
Kelseyville	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Kelseyville	Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	None	None	-	1B.1
Kelseyville	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Kelseyville	Monardella viridis	green monardella	None	None	-	4.3
Kelseyville	Trichostema ruygtii	Napa bluecurls	None	None	-	1B.2
Kelseyville	Limnanthes floccosa ssp. floccosa	woolly meadowfoam	None	None	-	4.2
Kelseyville	Hesperolinon adenophyllum	glandular western flax	None	None	-	1B.2
Kelseyville	Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	-	1B.2
Kelseyville	Calyptridium quadripetalum	four-petaled pussypaws	None	None	-	4.3
Kelseyville	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
Kelseyville	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
Kelseyville	Gratiola heterosepala	Boggs Lake hedge-hyssop	None	End	-	1B.2
Kelseyville	Orcuttia tenuis	slender Orcutt grass	Thrt	End	-	1B.1
Kelseyville	Eriastrum brandegeeae	Brandegee's eriastrum	None	None	-	1B.1
Kelseyville	Leptosiphon acicularis	bristly leptosiphon	None	None	-	4.2
Kelseyville	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	End	Thrt	-	1B.1
Kelseyville	Navarretia leucocephala ssp. plieantha	many-flowered navarretia	End	End	-	1B.2
Kelseyville	Potamogeton zosteriformis	eel-grass pondweed	None	None	-	2B.2
Kelseyville	Horkelia bolanderi	Bolander's horkelia	None	None	-	1B.2
Lakeport	Elanus leucurus	white-tailed kite	None	None	FP	-
Lakeport	Haliaeetus leucocephalus	bald eagle	Delisted	End	FP	-
Lakeport	Pandion haliaetus	osprey	None	None	WL	-
Lakeport	Ardea alba	great egret	None	None	-	-
Lakeport	Ardea herodias	great blue heron	None	None	-	-
Lakeport	Egretta thula	snowy egret	None	None	-	-
Lakeport	Nycticorax nycticorax	black-crowned night heron	None	None	-	-
Lakeport	Agelaius tricolor	tricolored blackbird	None	Cand End	SSC	-
Lakeport	Phalacrocorax auritus	double-crested cormorant	None	None	WL	-
Lakeport	Archoplites interruptus	Sacramento perch	None	None	SSC	-
Lakeport	Lavinia exilicauda chi	Clear Lake hitch	None	Thrt	-	-
Lakeport	Andrena blennospermatis	Blennosperma vernal pool andrenid bee	None	None	-	-
Lakeport	Bombus occidentalis	western bumble bee	None	None	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Lakeport	Dubiraphia brunnescens	brownish dubiraphian riffle beetle	None	None	-	-
Lakeport	Pekania pennanti	fisher - West Coast DPS	Prop Thrt	Cand Thrt	SSC	-
Lakeport	Taxidea taxus	American badger	None	None	SSC	-
Lakeport	Emys marmorata	western pond turtle	None	None	SSC	-
Lakeport	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Lakeport	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Lakeport	Tracyina rostrata	beaked tracyina	None	None	-	1B.2
Lakeport	Amsinckia lunaris	bent-flowered fiddleneck	None	None	-	1B.2
Lakeport	Cryptantha dissita	serpentine cryptantha	None	None	-	1B.2
Lakeport	Plagiobothrys lithocaryus	Mayacamas popcornflower	None	None	-	1A
Lakeport	Brasenia schreberi	watershield	None	None	-	2B.3
Lakeport	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Lakeport	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Lakeport	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Lakeport	Hesperolinon adenophyllum	glandular western flax	None	None	-	1B.2
Lakeport	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
Lakeport	Antirrhinum virga	twig-like snapdragon	None	None	-	4.3
Lakeport	Ranunculus lobbii	Lobb's aquatic buttercup	None	None	-	4.2
Lucerne	Rana draytonii	California red-legged frog	Thrt	None	SSC	-
Lucerne	Taricha rivularis	red-bellied newt	None	None	SSC	-
Lucerne	Haliaeetus leucocephalus	bald eagle	Delisted	End	FP	-
Lucerne	Pandion haliaetus	osprey	None	None	WL	-
Lucerne	Ardea alba	great egret	None	None	-	-
Lucerne	Ardea herodias	great blue heron	None	None	-	-
Lucerne	Falco mexicanus	prairie falcon	None	None	WL	-
Lucerne	Phalacrocorax auritus	double-crested cormorant	None	None	WL	-
Lucerne	Archoplites interruptus	Sacramento perch	None	None	SSC	-
Lucerne	Lavinia exilicauda chi	Clear Lake hitch	None	Thrt	-	-
Lucerne	Dubiraphia brunnescens	brownish dubiraphian riffle beetle	None	None	-	-
Lucerne	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Lucerne	Lasionycteris noctivagans	silver-haired bat	None	None	-	-
Lucerne	Margaritifera falcata	western pearlshell	None	None	-	-
Lucerne	Anodonta oregonensis	Oregon floater	None	None	-	-
Lucerne	Gonidea angulata	western ridged mussel	None	None	-	-
Lucerne	Emys marmorata	western pond turtle	None	None	SSC	-
Lucerne	Clear Lake Drainage Cyprinid/Catostomid Stm	Clear Lake Drainage Cyprinid/Catostomid Stm	None	None	-	-
Lucerne	Clear Lake Drg Seasonal Lakefish Spawn Stm	Clear Lake Drg Seasonal Lakefish Spawn Stm	None	None	-	-
Lucerne	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-	-
Lucerne	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Lucerne	Amsinckia lunaris	bent-flowered fiddleneck	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Lucerne	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Lucerne	Lupinus antoninus	Anthony Peak lupine	None	None	-	1B.3
Lucerne	Hesperolinon adenophyllum	glandular western flax	None	None	-	1B.2
Lucerne	Hesperolinon bicarpellatum	two-carpellate western flax	None	None	-	1B.2
Lucerne	Potamogeton zosteriformis	eel-grass pondweed	None	None	-	2B.2
Lucerne	Ceanothus divergens	Calistoga ceanothus	None	None	-	1B.2
The Geysers	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
The Geysers	Rana boylii	foothill yellow-legged frog	None	None	SSC	-
The Geysers	Taricha rivularis	red-bellied newt	None	None	SSC	-
The Geysers	Progne subis	purple martin	None	None	SSC	-
The Geysers	Lavinia symmetricus ssp. 4	Clear Lake - Russian River roach	None	None	SSC	-
The Geysers	Hysterocarpus traski pomo	Russian River tule perch	None	None	SSC	-
The Geysers	Oncorhynchus mykiss irideus	steelhead - central California coast DPS	Thrt	None	-	-
The Geysers	Bombus occidentalis	western bumble bee	None	None	-	-
The Geysers	Emys marmorata	western pond turtle	None	None	SSC	-
The Geysers	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
The Geysers	Asclepias solanoana	serpentine milkweed	None	None	-	4.2
The Geysers	Layia septentrionalis	Colusa layia	None	None	-	1B.2
The Geysers	Cryptantha dissita	serpentine cryptantha	None	None	-	1B.2
The Geysers	Streptanthus barbiger	bearded jewelflower	None	None	-	4.2
The Geysers	Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	None	None	-	1B.2
The Geysers	Streptanthus glandulosus ssp. hoffmanii	Hoffman's bristly jewelflower	None	None	-	1B.3
The Geysers	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	-	4.2
The Geysers	Calystegia collina ssp. tridactylosa	three-fingered morning-glory	None	None	-	1B.2
The Geysers	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
The Geysers	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
The Geysers	Astragalus clevelandii	Cleveland's milk-vetch	None	None	-	4.3
The Geysers	Lupinus sericatus	Cobb Mountain lupine	None	None	-	1B.2
The Geysers	Erythronium helenae	St. Helena fawn lily	None	None	-	4.2
The Geysers	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
The Geysers	Hesperolinon adenophyllum	glandular western flax	None	None	-	1B.2
The Geysers	Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	-	1B.2
The Geysers	Calyptridium quadripetalum	four-petaled pussypaws	None	None	-	4.3
The Geysers	Clarkia gracilis ssp. tracyi	Tracy's clarkia	None	None	-	4.2
The Geysers	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
The Geysers	Antirrhinum virga	twig-like snapdragon	None	None	-	4.3
The Geysers	Calamagrostis ophitidis	serpentine reed grass	None	None	-	4.3
The Geysers	Panicum acuminatum var. thermale	Geysers panicum	None	End	-	1B.2
The Geysers	Collomia diversifolia	serpentine collomia	None	None	-	4.3
The Geysers	Eriastrum brandegeeae	Brandegee's eriastrum	None	None	-	1B.1

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
The Geysers	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	End	Thrt	-	1B.1
The Geysers	Ceanothus confusus	Rincon Ridge ceanothus	None	None	-	1B.1
Whispering Pines	Dicamptodon ensatus	California giant salamander	None	None	SSC	-
Whispering Pines	Rana boylii	foothill yellow-legged frog	None	None	SSC	-
Whispering Pines	Rana draytonii	California red-legged frog	Thrt	None	SSC	-
Whispering Pines	Taricha rivularis	red-bellied newt	None	None	SSC	-
Whispering Pines	Progne subis	purple martin	None	None	SSC	-
Whispering Pines	Bombus occidentalis	western bumble bee	None	None	-	-
Whispering Pines	Antrozous pallidus	pallid bat	None	None	SSC	-
Whispering Pines	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC	-
Whispering Pines	Lasiurus blossevillii	western red bat	None	None	SSC	-
Whispering Pines	Lasiurus cinereus	hoary bat	None	None	-	-
Whispering Pines	Myotis evotis	long-eared myotis	None	None	-	-
Whispering Pines	Myotis thysanodes	fringed myotis	None	None	-	-
Whispering Pines	Emys marmorata	western pond turtle	None	None	SSC	-
Whispering Pines	Sceloporus graciosus graciosus	northern sagebrush lizard	None	None	-	-
Whispering Pines	Central Valley Drg Rainbow Trout/Cyprinid Stm	Central Valley Drg Rainbow Trout/Cyprinid Stm	None	None	-	-
Whispering Pines	Clear Lake Drainage Resident Trout Stm	Clear Lake Drainage Resident Trout Stm	None	None	-	-
Whispering Pines	Grimmia torenii	Toren's grimmia	None	None	-	1B.3
Whispering Pines	Mielichhoferia elongata	elongate copper moss	None	None	-	4.3
Whispering Pines	Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	-	1B.2
Whispering Pines	Eryngium constancei	Loch Lomond button-celery	End	End	-	1B.1
Whispering Pines	Asclepias solanoana	serpentine milkweed	None	None	-	4.2
Whispering Pines	Erigeron greenei	Greene's narrow-leaved daisy	None	None	-	1B.2
Whispering Pines	Helianthus exilis	serpentine sunflower	None	None	-	4.2
Whispering Pines	Layia septentrionalis	Colusa layia	None	None	-	1B.2
Whispering Pines	Amsinckia lunaris	bent-flowered fiddleneck	None	None	-	1B.2
Whispering Pines	Cryptantha dissita	serpentine cryptantha	None	None	-	1B.2
Whispering Pines	Arabis blepharophylla	coast rockcress	None	None	-	4.3
Whispering Pines	Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	None	None	-	1B.2
Whispering Pines	Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	None	None	-	1B.2
Whispering Pines	Streptanthus hesperidis	green jewelflower	None	None	-	1B.2
Whispering Pines	Legenere limosa	legenere	None	None	-	1B.1
Whispering Pines	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	-	4.2
Whispering Pines	Sedella leiocarpa	Lake County stonecrop	End	End	-	1B.1
Whispering Pines	Carex praticola	northern meadow sedge	None	None	-	2B.2
Whispering Pines	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	-	1B.3
Whispering Pines	Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	None	None	-	1B.1
Whispering Pines	Astragalus breweri	Brewer's milk-vetch	None	None	-	4.2
Whispering Pines	Astragalus clevelandii	Cleveland's milk-vetch	None	None	-	4.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED.	CAL.	CDFG	CNPS
Whispering Pines	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	None	None	-	1B.2
Whispering Pines	Lupinus sericatus	Cobb Mountain lupine	None	None	-	1B.2
Whispering Pines	Erythronium helenae	St. Helena fawn lily	None	None	-	4.2
Whispering Pines	Fritillaria purdyi	Purdy's fritillary	None	None	-	4.3
Whispering Pines	Hesperolinon adenophyllum	glandular western flax	None	None	-	1B.2
Whispering Pines	Hesperolinon bicarpellatum	two-carpellate western flax	None	None	-	1B.2
Whispering Pines	Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	-	1B.2
Whispering Pines	Calyptridium quadripetalum	four-petaled pussypaws	None	None	-	4.3
Whispering Pines	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	None	None	-	4.3
Whispering Pines	Antirrhinum subcordatum	dimorphic snapdragon	None	None	-	4.3
Whispering Pines	Antirrhinum virga	twig-like snapdragon	None	None	-	4.3
Whispering Pines	Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	-	1B.3
Whispering Pines	Calamagrostis ophitidis	serpentine reed grass	None	None	-	4.3
Whispering Pines	Imperata brevifolia	California satintail	None	None	-	2B.1
Whispering Pines	Panicum acuminatum var. thermale	Geysers panicum	None	End	-	1B.2
Whispering Pines	Collomia diversifolia	serpentine collomia	None	None	-	4.3
Whispering Pines	Leptosiphon jepsonii	Jepson's leptosiphon	None	None	-	1B.2
Whispering Pines	Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	-	1B.1
Whispering Pines	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	End	Thrt	-	1B.1
Whispering Pines	Navarretia leucocephala ssp. plieantha	many-flowered navarretia	End	End	-	1B.2
Whispering Pines	Eriogonum nervulosum	Snow Mountain buckwheat	None	None	-	1B.2
Whispering Pines	Delphinium uliginosum	swamp larkspur	None	None	-	4.2
Whispering Pines	Ceanothus confusus	Rincon Ridge ceanothus	None	None	-	1B.1
Whispering Pines	Ceanothus divergens	Calistoga ceanothus	None	None	-	1B.2
Whispering Pines	Horkelia bolanderi	Bolander's horkelia	None	None	-	1B.2

KEY:

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

KEY (cont.):

SE/ST/SD=State Endangered/Threatened/Delisted
SC/SCD=State Candidate for Listing/Delisting
SSC=CDFW Species of Special Concern
SFP=State 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

Thrt=Threatened
End=Endangered
Cand=Candidate
Prop=Proposed