EXHIBIT B

BIOLOGICAL RESOURCE ASSESSMENT
WITH BOTANICAL SURVEYS
AND DELINEATION OF WATERS OF THE U.S.
for the
HARDTEN VINEYARD PROJECT

3393 Atlas Peak Road, Napa, California
(APN 033-010-056)

September 24, 2019

Prepared by

Northwest Biosurvey

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1.0 PROJECT DESCRIPTION

1.1 Proposed Project: This Biological Resource Assessment was conducted for a proposed vineyard expansion project that would add three vineyard blocks totaling approximately 3.9 acres on a 13.7-acre parcel. Vegetation types are mapped for the entire property. Much of the property is currently developed with residential and agricultural uses. The local permitting agency is requesting completion of an assessment of biological resources on the property as part of the California Environmental Quality Act (CEQA) review required for vineyard development on the property. This property was burned in the Atlas Fire in 2017.

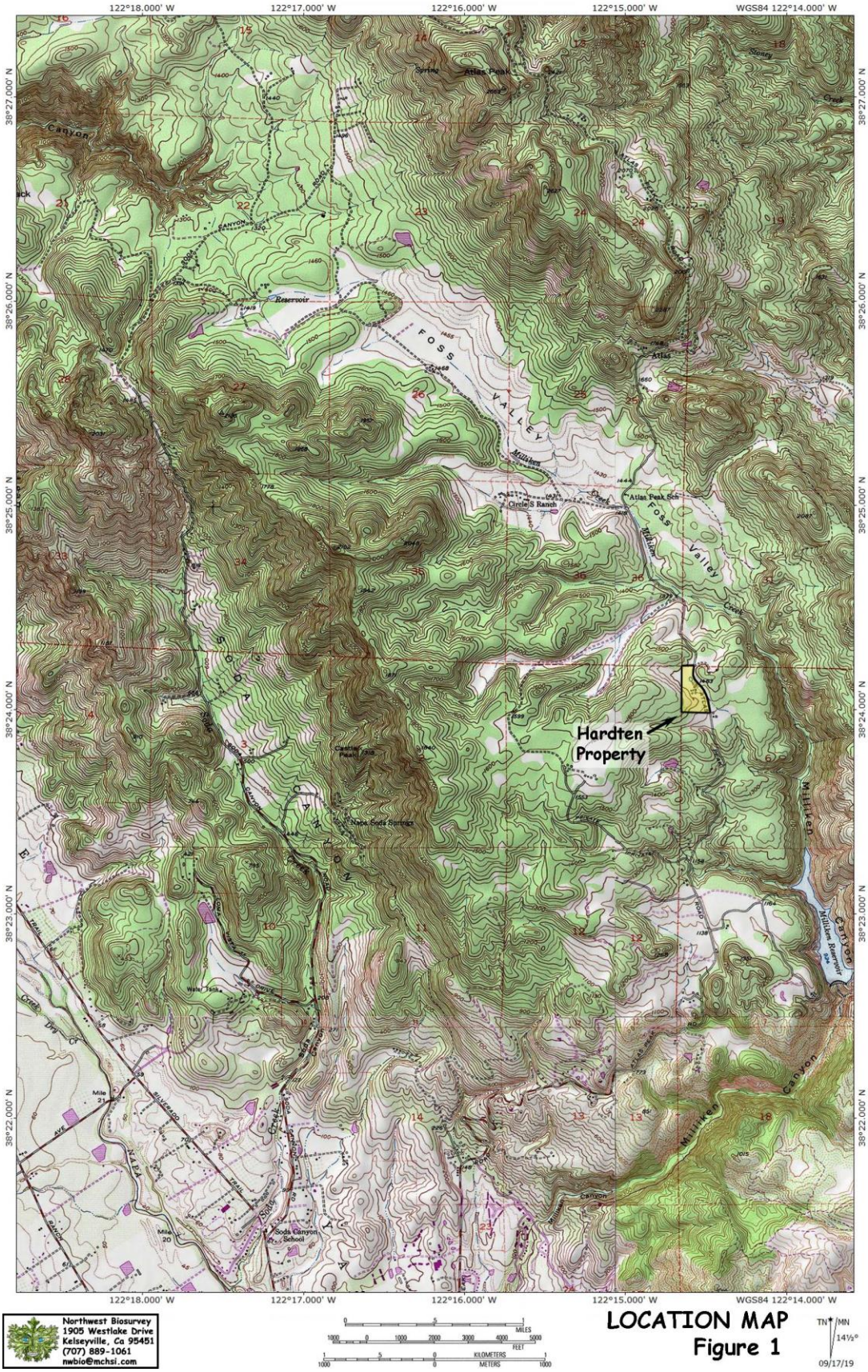
The initial phase of this assessment evaluates the potential of the parcel to contain sensitive plant and wildlife habitat. The second phase consists of a floristic-level botanical survey listing all plant taxa[1] within the property boundaries. The assessment will determine whether the property contains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

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

A delineation of waters of the U.S. was conducted due to the presence of streams within the parcel. Because wetland delineations are prepared with a standard format for U.S. Army Corps of Engineers review, the delineation is provided as a separate report in **Appendix D**.

1.2 Location: The property is located at 3393 Atlas Peak Road, Napa, California (APN 033-010-056); T06N R03W/04W, Capell Valley, 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.


122°18.000' W
122°17.000' W
122°16.000' W
122°15.000' W
WGS84 122°14.000' W
38°27.000' N
38°26.000' N
38°25.000' N
38°24.000' N
38°23.000' N
38°22.000' N
Hardten Property
FOSS VALLEY
Foss Valley
Milliken
Milliken Canyon
Milliken Reservoir
Atlas Peak
Reservoir
Circle S Ranch
Napa Soda Springs
Soda Canyon School
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MILES
FEET
KILOMETERS
METERS
LOCATION MAP
Figure 1
TN
MN
14½°
09/17/19

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

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. CNDDB information and maps for the Capell Valley 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"=75' aerial photo. Vegetation community names are based on an assessment of dominant cover species.

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

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

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

2.4 Woodland Assessment Methods: The proposed vineyard blocks contain a single distinct woodland type which is discussed in Section 3.3, Vegetation Types; this is California Black Oak Woodland. One study plot was selected based on community structure and identifiable geographic references (woodland boundaries, etc.). Trees within the study plot were mapped with a GPS waypoint and a record was made of their species, diameter at breast height (DBH), and any unique characteristics (dead, hollow, acorn storage tree, etc.). The methodology is discussed in detail in **Section 6.0** of this report.

2.5 Survey Dates: Site visits for botanical surveys, habitat assessments, the delineation, and mapping were made by Northwest Biosurvey staff on May 17 and August 19, 2019.

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

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

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

3.0 SITE CHARACTERISTICS

3.1 <u>Topography and Drainage:</u> The Hardten property occupies an east-facing slope in the interior Howell Mountain Range between the Napa Valley and Milliken Creek, which drains south from the Foss Valley. Terrain to the east levels into a sloping plateau extending to the western edge of Milliken Canyon. Elevations range from 1,580 feet msl (mean sea level) in the southwest corner to 1,420 feet msl in the southeast corner where an unnamed tributary leaves the property and drains southeast to Milliken Creek. Milliken Creek drains through the excessively steep-sided Milliken Canyon to Milliken Reservoir before continuing southwest to the Napa River in the Napa Valley.

3.2 <u>Soils:</u> The property contains the following soil types:

- **Aiken loam, 2-15% slopes;**
- **Aiken loam, 30-50% slopes:**

  These gently sloping to strongly sloping well-drained soils are mainly on foot slopes and hillsides on uplands. Aiken loam formed in material weathered from basic volcanic rock. Permeability of the Aiken soil is moderately slow. Runoff is medium to rapid, and the hazard of erosion is slight on gentler slopes and high on steep slopes. The natural vegetation consists of ponderosa pines, oaks, redwoods in moist draws, annual grasses, and brush in small areas that had been cleared. Most of the northern three-fifths of the property contain this soil type.

- **Hambright-Rock outcrop complex, 30-75% slopes:**

  This complex consists of areas of rock outcrop and steep and very steep soils on uplands. The soils formed in material weathered from basic volcanic rock. This complex is about 50 percent Hambright soils, 30 to 40 percent rock outcrop, and 10 to 20 percent Forward, Guenoc, Henneke, Kidd, and Sobrante soils. The Hambright series consists of well drained soils on uplands. The vegetation is annual grasses and forbs and oaks on gentler slopes. Most of the areas are brushy and rocky. Permeability is moderate. Rock outcrop occurs in areas 1 to 5 acres in size. It consists of cobbles, stones, rhyolitic masses, or outcrops. Runoff is rapid to very rapid. The hazard of erosion is high. Part of the southwestern proposed vineyard block is within this complex.

3.3 Vegetation Types: The entire parcel was mapped for vegetation in order to provide project context. The project contains three 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.**

- **California Black Oak Woodland:**

  This community is dominated by California black oak (*Quercus kelloggii*) which reaches a canopy density of 100-percent on the upper slopes to the west and north. Along the narrow valley bottom to the east, coast live oak (*Quercus agrifolia*) is present and reaches a level of co-dominance in some locations. Pacific madrone (*Arbutus menziesii*), Douglas fir (*Pseudotsuga menziesii var. menziesii*), California bay (*Umbellularia californica*), and ghost pine (*Pinus sabiniana*) are widely scattered within this woodland.

  The pre-fire shrub layer was thin and consisted of scattered California coffeeberry (*Frangula californica ssp. californica*) and an unidentified[2] common manzanita subspecies (most likely *Arctostaphylos manzanita ssp. manzanita*).

  The ground cover within the woodland consists of ripgut grass (*Bromus diandrus*), rattail sixweeks grass (*Festuca myuros*), soft chess (*Bromus hordeaceus*), hedgehog dogtail (*Cynosurus echinatus*), slender wild oat (*Avena barbata*), spring vetch (*Vicia sativa ssp. sativa*), and sour clover (*Melilotus indicus*). The post-fire condition also includes patches of bare ground. The most shaded areas include California tea (*Rupertia physodes*), smooth mule ears (*Wyethia glabra*), grand hound's tongue (*Cynoglossum grande*), and blue wild rye (*Elymus glaucus ssp. glaucus*).

- **Chamise Chaparral:**

  This relatively open chaparral community is heavily dominated by chamise (*Adenostoma fasciculatum*) but includes toyon (*Heteromeles arbutifolia*) and an unidentified manzanita[3]. The ground cover is primarily bare ground with invading wild oat grassland due to the burned open shrub canopy.

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[2] Manzanita shrubs on the property were heavily impacted by the Atlas Fire and were not identifiable during the 2019 surveys. However, based on identifiable manzanita from other properties in the valley, it is likely to be *Arctostaphylos manzanita ssp. manzanita*, a non-sensitive taxon.

[3] ibid footnote 2.

- **Wild Oat Grassland:**

  This grassland occurs throughout the open undeveloped areas of the property and forms the ground cover within more open portions of the oak woodland. It is dominated by slender wild oat in rocky areas but elsewhere dominance shifts to soft chess, ripgut grass, and perennial ryegrass (*Festuca perennis*). Most forbs and grasses listed in the table of botanical survey results are found in this community.

- **Vineyard:**

  Existing vineyard extends throughout the parcel.

- **Ruderal:**

  A one-plus acre area in the south part of the parcel contained structures, driveways, and landscaping that was burned during the Atlas Fire.

- **Open Water:** The property contains a small man-made pond along the southeastern property line. This pond captures runoff from the vineyard and then drains to a tributary to Milliken Creek.

TABLE 1. PLANT COMMUNITIES AND OTHER COVER TYPES PRESENT

COVER TYPE	Acres of Cover Type on Property	Percent of Property Supporting Cover Type	Acres of Cover Type in Potential Vineyard Blocks			Total Acres of Cover Types in Vineyard Blocks	Percent of Cover Types in Vineyard Blocks
			west	east	north		
California black oak woodland	2.04	14.91	1.11	0.36	-	1.47	72.06
Chamise chaparral	0.51	3.73	0.50	-	-	0.50	98.04
Wild oat grassland	1.98	14.47	1.43	0.07	-	1.50	75.76
Vineyard	8.16	59.65	0.02	-	-	0.02	0.25
Open Water	0.07	0.51	-	0.07***	-	0.07	100.00
Ruderal (disturbed)	0.64	4.68	0.04	-	-	0.04	6.25
Burned-unrecovered	0.28	2.05	-	-	0.28	0.28	100.00
Total Acres of Cover Type	**13.68**	**100%**	**3.10**	**0.50**	**0.28**	**3.88**	**28.38****

* Formerly 0.28 acres, now burned, unrecovered

**Percent of total property in proposed vineyard blocks

*** Actual area of surface water, not total area of Waters of the U.S. (average high water in pond)

38.403953°
-122.243782°

North Block

VEGETATION TYPES
California Black Oak Woodland
Chamise Chaparral
Wild Oat Grassland
Vineyard
Ruderal (disturbed areas)
Open Water

Tree Survey Waypoints

Potential Bat Habitat Tree

West Block

East Block

38.400266°
-122.241283°

N
1" = 75'

NORTHWEST BIOSURVEY
1905 WESTLAKE DR.
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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 Capell Valley 7½' quadrangle map were reviewed for this project. **Table 3** presents a list of sensitive plant and wildlife species known to occur within the quadrangle. In addition to listing the species present within the quadrangle, the table provides a brief descriptor of the habitat requirements and blooming season, along with an assessment of whether the project area contains the necessary habitat requirements for each species. **Appendix A** at the end of this report lists the species within the nine quadrangles in the vicinity of this property.

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

Selected CNPS Plants by Scientific Name

Hardten Vineyard Property

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat/Micro-Habitat
Antirrhinum virga	twig-like snapdragon	Plantaginaceae	perennial herb	4.3	None	None	Jun-Jul	Chaparral, Lower montane coniferous forest; rocky, openings, often serpentinite
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	1B.2	None	None	May-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland; volcanic
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
Castilleja ambigua var. meadii	Mead's owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	1B.1	None	None	Apr-May	Meadows and seeps, Vernal pools; Gravelly, volcanic, clay
Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	None	None	Feb-Jun	Chaparral, Cismontane woodland; volcanic, rocky
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
Cryptantha dissita	serpentine cryptantha	Boraginaceae	annual herb	1B.2	None	None	Apr-Jun	Chaparral (serpentinite)
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	2B.2	None	None	Mar-May	Valley and foothill grassland (mesic), Vernal pools
Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	annual herb	1B.2	None	None	May-Jul	Chaparral (serpentinite)
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	None	None	May-Jul	Chaparral, Cismontane woodland, Valley and foothill grassland; usually serpentinite
Hesperolinon sharsmithiae	Sharsmith's western flax	Linaceae	annual herb	1B.2	None	None	May-Jul	Chaparral; serpentinite

Scientific Name	Common Name	Family	Lifeform	CRPR	CESA	FESA	Blooming Period	Habitat/Micro-Habitat
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	1B.1	None	None	Apr-May	Riparian forest, Riparian woodland
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	None	FE	Mar-Jun	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools; mesic
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	1B.2	None	None	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland; usually volcanic
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Polemoniaceae	annual herb	1B.1	CT	FE	May-Jun	Vernal pools (volcanic ash flow)
Senecio clevelandii var. clevelandii	Cleveland's ragwort	Asteraceae	perennial herb	4.3	None	None	Jun-Jul	Chaparral (serpentinite seeps)
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	1B.1	None	FE	Apr-May(Jun)	Cismontane woodland, Valley and foothill grassland; serpentinite, clay
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
CT = State Threatened
SSC = CDFW Species of Special Concern
WL = CDFW Watch List
FT = Federal Threatened
CE = State Endangered.
CD = State Delisted
FP = CDFW Fully Protected
FE = Federal Endangered
FD = Federal Delisted

TABLE 3. CNDDB SENSITIVE PLANT AND WILDLIFE SPECIES WITHIN THE CAPELL VALLEY, 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
Antirrhinum virga	twig-like snapdragon	Chaparral, lower montane coniferous forest/rocky, openings, often serpentinite; --/--/4.3	June-July per. herb	Poor habitat present
Brodiaea leptandra	narrow-anthered brodiaea	Broadleaved upland forest, chaparral, lower montane conif. forest, valley & foothill grassland/volcanic; --/--/1B.2	May-July per. herb	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	Mesic habitat not present
Castilleja ambigua ssp. meadii	Mead's owl's clover	Meadows & seeps, vernal pools/gravelly, volcanic, clay; --/--/1B.1	April-May ann. herb	Mesic habitat not present
Ceanothus purpureus	holly-leaved ceanothus	Chaparral, cismontane woodland/volcanic, rocky; --/--/1B.2	Feb.-June everg. shrub	Habitat not present
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Chaparral (openings, usually serpentinite); --/--/4.2	April-June ann. herb	Habitat not present
Collomia diversifolia	serpentine collomia	Chaparral, cismontane woodland/serpentinite, rocky or gravelly; --/--/4.3	May-June ann. herb	Serpentine habitat not present
Cryptantha dissita	serpentine cryptantha	Chaparral/serpentine outcrops; --/--/1B.2	April-June ann. herb	Serpentine habitat not present
Downingia pusilla	dwarf downingia	Valley & foothill grassland, vernal pools/mesic; --/--/2B.2	March-May ann. herb	Mesic habitat not present
Erigeron greenei	Greene's narrow-leaved daisy	Chaparral/serpentine and volcanic, generally in shrubby vegetation; --/--/1B.2	May-Sept. per. herb	Habitat may be present

Plant Species	Common Name	Habitat Requirements, Fed/State/CNPS* Status	Blooming Season	Habitat Present
Harmonia hallii	Hall's harmonia	Chaparral/serpentine hills & ridges, open rocky areas; --/--/1B.2/G2/S2	April-June ann. herb	Serpentine habitat not present
Hesperolinon breweri	Brewers western flax	Chaparral, cismontane woodland, valley & foothill grassland/rocky serpentine; --/--/1B.2	May-July ann. herb	Serpentine habitat not present
Hesperolinon sharsmithiae	Sharsmith's western flax	Chaparral, serpentinite; --/--/1B.2	May-July ann. herb	Serpentine habitat not present
Juglans hindsii	Northern California black walnut	Riparian scrub, riparian woodland/deep alluvial soil associated with creek or stream; --/--/1B.1	April-May decid. tree	Habitat not present
Lasthenia conjugens	Contra Costa goldfields	Cismontane woodland, alkali playas, valley & foothill grassland, vernal pools, wetlands; FE/--/1B.1	March-June ann. herb	Mesic habitat not present
Leptosiphon acicularis	bristly leptisiphon	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; --/--/4.2	April-July ann. herb	Habitat is present
Leptosiphon jepsonii	Jepson's leptisiphon	Chaparral, cismontane woodland, grassy slopes/ volcanic or serpentine edge; --/--/1B.2	May-July ann. herb	Habitat may be present
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Volcanic ash flow vernal pools; FE/ST/1B.1	May-June ann. herb	Mesic habitat not present
Sidalcea keckii	Keck's checkerbloom	Cismontane woodland, valley & foothill grassland/serpentinite, clay; --/--/1B.3	April-May(June) ann. herb	Serpentine habitat not present
Trichostema ruygtii	Napa bluecurls	Chaparral, cismontane woodland, lower montane conif. forest, valley & foothill grassland, vernal pools; --/--/1B.2	June-Oct. ann. herb	Habitat not present

*See CNPS list for key

Wildlife Species	Common Name	Habitat Requirements, Status	Season Present	Habitat Present
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Riparian woodland and shrub habitat of the Central Valley. (Typical riparian habitat, woodland etc., adjacent to streams and rivers); FT/G3/S2	year-round	Elderberry shrubs are 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 is not present
Rana draytonii	California red-legged frog	Generally slow or ponded water, riparian; FT/SSC/G2G3/S2S3	year-round	Poor habitat on site
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	Poor habitat on site
Antrozous pallidus	pallid bat	Open, dry habitats, forest habitats, in caves, tunnels, buildings, bridges; sensitive to human disturbance; SSC/G5/S3	local migrant	Habitat may be present
Lasiurus blossevillii	western red bat	Forests and woodlands, riparian, chaparral. Roosts primarily in trees; SSC/G5/S3	year-round	Habitat is not present

KEY FOR TABLE 3:

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

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

4.3 Wildlife Habitat Analysis Results: The California Wildlife Habitat Relationships analysis listed a large number of 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 10 sensitive wildlife species need to be accounted for within the project area. These consist of the species identified as present within the Capell Valley quadrangle by the CNDDB and/or listed in the CWHR analysis. Four additional species included in the Napa County BDR or the CWHR 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 not found on the property. These species include:

- Valley elderberry longhorn beetle
- Foothill yellow-legged frog
- California red-legged frog
- Western pond turtle
- Western red bat

The segment of stream within the property boundaries is a short-duration ephemeral stream lacking the long-term cold water flows necessary to support fish or aquatic herptiles (reptiles and amphibians). The small pond is short-duration and does not have the aquatic vegetation required to support frogs or turtles.

The potential for occurrence of the remaining wildlife species is addressed below. The sensitive wildlife species with a potential to occur on this property are either found in the woodland or grassland habitats. The vineyard blocks are proposed within the black oak woodland, grassland, and chaparral habitats. The lack of perennial water may limit some of the species' presence to certain times of the year.

- Potential habitat for the following species are present on this property**:**

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

    These passerine (perching birds) prefer to nest in the dense foliage of oaks in dry open woodland near brushy and grassy areas or chaparral. Proximity to water is important. Their diet consists primarily of seeds but includes some insects. They frequently nest near other pairs during a breeding season that extends from late

March through July, with birds migrating south in August. There is nesting habitat for this bird in oak woodlands within the survey area.

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

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

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

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

- **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 California Fully Protected status of these raptors pertains to nesting pairs with an emphasis on protecting nesting habitat. This species is also protected under the Migratory Bird Treaty Act.

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

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

5.0 FIELD SURVEY RESULTS

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

<u>Results of bat habitat survey</u>: Two fire-damaged oaks with hollows and potential habitat were identified. These trees are mapped in Figure 2 as Waypoints 100 and 107. No indication of current or past use by bats was observed at this tree. Photos are provided below:

5.2 <u>Botanical Field Survey Results</u>: Table 4 presents the results of the floristic-level botanical survey of the proposed vineyard blocks. Each of the sensitive plant taxa potentially occurring at within the property and listed in Tables 2 and 3 was specifically searched for during the surveys. A total of 104 native and introduced plant taxa were identified. No plants with sensitive regulatory status 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 HARDTEN VINEYARD PROPERTY

Habit	Species	Common Name	Family	Origin
fern	*Pteridium aquilinum var. pubescens*	bracken fern	Dennstaedtiaceae	N
forb	*Pimpinella anisum*	anise	Apiaceae	A
forb	*Torilis arvensis*	field hedge parsley	Apiaceae	A
forb	*Achillea millefolium*	common yarrow	Asteraceae	N
forb	*Agoseris grandiflora var. grandiflora*	giant mountain dandelion	Asteraceae	N
forb	*Anthemis cotula*	dog-fennel, mayweed	Asteraceae	A
forb	*Chamomilla suaveolens*	pineapple weed	Asteraceae	A
forb	*Cirsium brevistylum*	clustered thistle, Indian thistle	Asteraceae	N
forb	*Eriophyllum lanatum var. arachnoideum*	common woolly sunflower, spiderweb sunflower	Asteraceae	N
forb	*Logfia gallica*	daggerleaf cottonrose	Asteraceae	A
forb	*Psilocarpus tenellus*	slender woolly marbles	Asteraceae	N
forb	*Sonchus asper*	spiny sow thistle	Asteraceae	A
forb	*Sonchus oleraceus*	common sow thistle	Asteraceae	A
forb	*Wyethia glabra*	smooth mule ears	Asteraceae	N
forb	*Amsinckia menziesii*	small-flowered fiddleneck, rancher's fireweed	Boraginaceae	N
forb	*Cynoglossum grande*	grand hound's tongue	Boraginaceae	N
forb	*Barbarea orthoceras*	American wintercress	Brassicaceae	N
forb	*Brassica nigra*	black mustard	Brassicaceae	A
forb	*Thysanocarpus curvipes*	lace pod	Brassicaceae	N
forb	*Cerastium glomeratum*	mouse-ear chickweed, sticky mouse-ear	Caryophyllaceae	A
forb	*Silene gallica*	common catchfly	Caryophyllaceae	A
forb	*Cyperus eragrostis*	tall flat sedge	Cyperaceae	N
forb	*Dipsacus fullonum*	fuller's teasel	Dipsacaceae	A
forb	*Lathyrus jepsonii var. californicus*	California tule pea	Fabaceae	N
forb	*Lathyrus vestitus var. vestitus*	perennial sweet pea, common Pacific pea	Fabaceae	N
forb	*Lupinus bicolor*	miniature lupine	Fabaceae	N
forb	*Melilotus indicus*	sour clover, yellow sweet clover	Fabaceae	A
forb	*Trifolium hirtum*	rose clover	Fabaceae	A
forb	*Trifolium willdenovii*	tomcat clover	Fabaceae	N

Habit	Species	Common Name	Family	Origin
forb	*Vicia sativa ssp. sativa*	spring vetch	Fabaceae	A
forb	*Erodium cicutarium*	red-stem storksbill	Geraniaceae	A
forb	*Geranium dissectum*	cut-leaved geranium	Geraniaceae	A
forb	*Geranium robertianum*	Robert's geranium	Geraniaceae	A
forb	*Juncus covillei var. obtusatus*	Coville's rush	Juncaceae	N
forb	*Juncus oxymeris*	pointed rush	Juncaceae	N
forb	*Juncus tenuis*	poverty rush	Juncaceae	N
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	*Dichelostemma congestum*	fork-toothed ookow	Liliaceae	N
forb	*Zigadenus fremontii*	small-flowered star lily	Liliaceae	N
forb	*Sidalcea hartwegii*	Hartweg's checkerbloom	Malvaceae	A
forb	*Sidalcea hirsuta*	hairy checkerbloom	Malvaceae	N
forb	*Camissonia ovata*	coast suncup	Onagraceae	N
forb	*Clarkia purpurea ssp. quadrivulnera*	purple clarkia, winecup clarkia, four-spot	Onagraceae	N
forb	*Eschscholzia californica*	California poppy	Papaveraceae	N
forb	*Plantago lanceolata*	English plantain	Plantaginaceae	A
forb	*Polygala californica*	California milkwort	Polygalaceae	N
forb	*Rumex acetosella*	sheep sorrel	Polygonaceae	A
forb	*Rumex crispus*	curly dock	Polygonaceae	A
forb	*Lysimachia (Anagalis) arvensis*	scarlet pimpernel	Primulaceae	A
forb	*Delphinium variegatum ssp. variegatum*	royal larkspur	Ranunculaceae	N
forb	*Ranunculus occidentalis*	western buttercup	Ranunculaceae	N
forb	*Galium aparine*	goose grass, common bedstraw	Rubiaceae	N
forb	*Verbascum thapsus*	woolly mullein	Scrophulariaceae	A
forb	*Viola pedinculata*	Johnny jump-up	Violaceae	N
grass	*Aegilops triuncialis*	barbed goatgrass	Poaceae	A
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 diandrus*	ripgut grass, ripgut brome	Poaceae	A
grass	*Bromus hordeaceus*	soft chess	Poaceae	A
grass	*Bromus laevipes*	woodland brome	Poaceae	N
grass	*Bromus madritensis ssp. rubens*	red brome	Poaceae	A
grass	*Cynosurus echinatus*	hedgehog dogtail, annual dogtail	Poaceae	A
grass	*Elymus caput-medusae*	medusahead	Poaceae	A
grass	*Elymus glaucus ssp. glaucus*	blue wildrye	Poaceae	N
grass	*Festuca arundinacea*	reed fescue, tall fescue	Poaceae	A
grass	*Festuca myuros*	rattail sixweeks grass	Poaceae	A
grass	*Festuca perennis*	perennial ryegrass, Italian rye grass	Poaceae	A
grass	*Phalaris aquatica*	Harding grass	Poaceae	A
grass	*Poa annua*	annual bluegrass	Poaceae	A
shrub	*Sambucus nigra ssp. caerulea*	blue elderberry	Adoxacaceae	N
shrub	*Toxicodendron diversilobum*	poison oak	Anacardiaceae	N
shrub	*Baccharis pilularis*	coyote brush, chaparral broom	Asteraceae	N
shrub	*Berberis aquifolium var. aquifolium*	Oregon grape	Berberidaceae	N
shrub	*Arctostaphylos manzanita ssp. manzanita*[4]	common manzanita	Ericaceae	N
shrub	*Rupertia physodes*	California tea	Fabaceae	N
shrub	*Quercus berberidifolia*	California scrub oak	Fagaceae	N
shrub	*Eriodictyon californicum*	California yerba santa	Hydrophyllaceae	N
shrub	*Mimulus aurantiacus ssp. aurantiacus*	bush monkeyflower, sticky monkeyflower	Phrymaceae	N
shrub	*Frangula californica ssp. californica*	California coffeeberry	Rhamnaceae	N
shrub	*Adenostoma fasciculatum*	chamise	Rosaceae	N
shrub	*Heteromeles arbutifolia*	toyon	Rosaceae	N
shrub	*Rosa californica*	California wild rose	Rosaceae	N
shrub	*Rubus armeniacus*	Himalayan blackberry	Rosaceae	A
shrub	*Salix lasiolepis*	arroyo willow	Salicaceae	N
shrub	*Solanum umbelliferum*	blue witch	Solanaceae	N

[4] All manzanita on property burned and are not identifiable to sub-species. Identification is based on manzanita on nearby properties.

Habit	Species	Common Name	Family	Origin
tree	*Calocedrus decurrens*	incense cedar	Cupressaceae	N
tree	*Arbutus menziesii*	Pacific madrone	Ericaceae	N
tree	*Robinia pseudoacacia*	black locust	Fabaceae	A
tree	*Quercus agrifolia*	coast live oak	Fagaceae	N
tree	*Quercus kelloggii*	California black oak	Fagaceae	N
tree	*Umbellularia californica*	California bay	Lauraceae	N
tree	*Pinus radiata*	Monterey Pine (landscaping)	Pinaceae	N
tree	*Pinus sabiniana*	ghost pine, foothill pine	Pinaceae	N
tree	*Pseudotsuga menziesii var. menziesii*	Douglas fir	Pinaceae	N
tree	*Salix babylonica*	weeping willow	Salicaceae	A
tree	*Salix exigua var. hindsiana*	narrow-leaved willow, sandbar willow	Salicaceae	N
vine	*Symphoricarpos mollis*	tripvine, creeping snowberry	Caprifoliaceae	N
vine	*Calystegia occidentalis ssp. occidentalis*	western morning-glory	Convolvulaceae	N
vine	*Lathyrus tingitanus*	Tangier pea	Fabaceae	A

Origin: N = Native, A = Alien

6.0 NAPA COUNTY WOODLAND ASSESSMENT

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

6.1 Procedure: The Hardten vineyard project proposes three vineyard blocks, which at least partially contain Black Oak Woodland. This community is discussed in detail in Section 3.3.

Two study plots were selected within the woodland. In each case, the location of the study area was based on how well it represented the community it was intended to sample. The size was based on the need to include enough trees to provide a meaningful statistical sample. The study plots are mapped with their waypoints in **Figure 2**.

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

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

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

This data is provided below for each woodland/forest type in **Table 5**.

TABLE 5. TREE SURVEY DATA SUMMARY – *CALIFORNIA BLACK OAK WOODLAND*

SPECIES	NUMBER IN SURVEY AREA	AVERAGE DBH (INCHES)	AVERAGE # OF TRUNKS PER ACRE[4]
BLAK	47	15.9	51.42
DF	1	22.0	1.09
CLO	9	13.9	9.85
MAD	1	5.0	1.09
APINE	1	11.0	1.09
RWILL	3	12.7	3.28
TOTAL	**62**	**15.3**	**67.82**
Total area of sample plot		39,819ft^2	
Average canopy size[1]		597ft^2	
Average distance between trunks[2]		25ft	
Canopy closure[3]		93%	

Key:

BLAK = Black Oak **CLO = Coast Live Oak** **MAD = Pacific Madrone**
RWILL = Red Willow **APINE = Alepo Pine** **DF = Douglas Fir**

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

Block	Number and Species of Trees					Total # of Trees per Block
	BLAK	DF	CLO	MAD	RWILL	
North	0	0	0	0	0	**0**
East	21	0	4	1	3	**29**
West	56	2	11	1	0	**70**
Total # Each Species	77	2	15	2	3	**Total estimated trees in all blocks = 99**

*In areas of high crown density, the average trunks per acre method was used to determine approximate species makeup. In sparse areas (especially post fire regions with high mortality) 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 Hardten property occupies an east-facing slope in the interior Howell Mountain Range east of the City of Napa; between the Soda Canyon and Milliken Creek, which drains south from the Foss Valley. Terrain to the east levels into a sloping plateau extending to the western edge of Milliken Canyon. Elevations range from 1,580 feet msl (mean sea level) in the southwest corner to 1,420 feet msl in the southeast corner where an unnamed ephemeral tributary leaves the property and drains southeast to Milliken Creek. Milliken Creek drains through the excessively steep-sided Milliken Canyon to Milliken Reservoir before continuing southwest to the Napa River in the Napa Valley.

As shown in the map of regional context provided in **Figure 3**, the Hardten property lies within a region of relatively natural but discontiunous habitat surrounded by large areas of residential and agricultural development. Development occurs throughout all valleys and gentler adjacent slopes throughout this portion of the interior Howell Mountain Range. Natural areas are restricted to steep slopes and deep and inaccessible creek canyons.

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.

Due to the small size of the parcel and the extensive cover by existing vineyards and small patch size (small size of existing plant communities as seen in **Figure 2**), the Hardten property lacks core habitat. **Appendix B** provides a list of wildlife species occupying the types of habitats present on the property and whose ranges include this region.

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

  On the Hardten property, moderate quality edge exists between remaining woodlands and adjacent grasslands, chaparral, and vineyards. The moderate quality is due to the loss of the woodland shrub cover due to the Atlas Fire, the intrusion of residential development into remaining woodlands, and the small patch size of all habitats on this small parcel.

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

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

While the property lies within an area of comparatively natural habitat to the west, north, and east, it is dominated by existing vineyard and the entire 13-acre property is fenced. These factors have effectively excluded it from surrounding habitats and excluded it from areas of local wildlife movement.

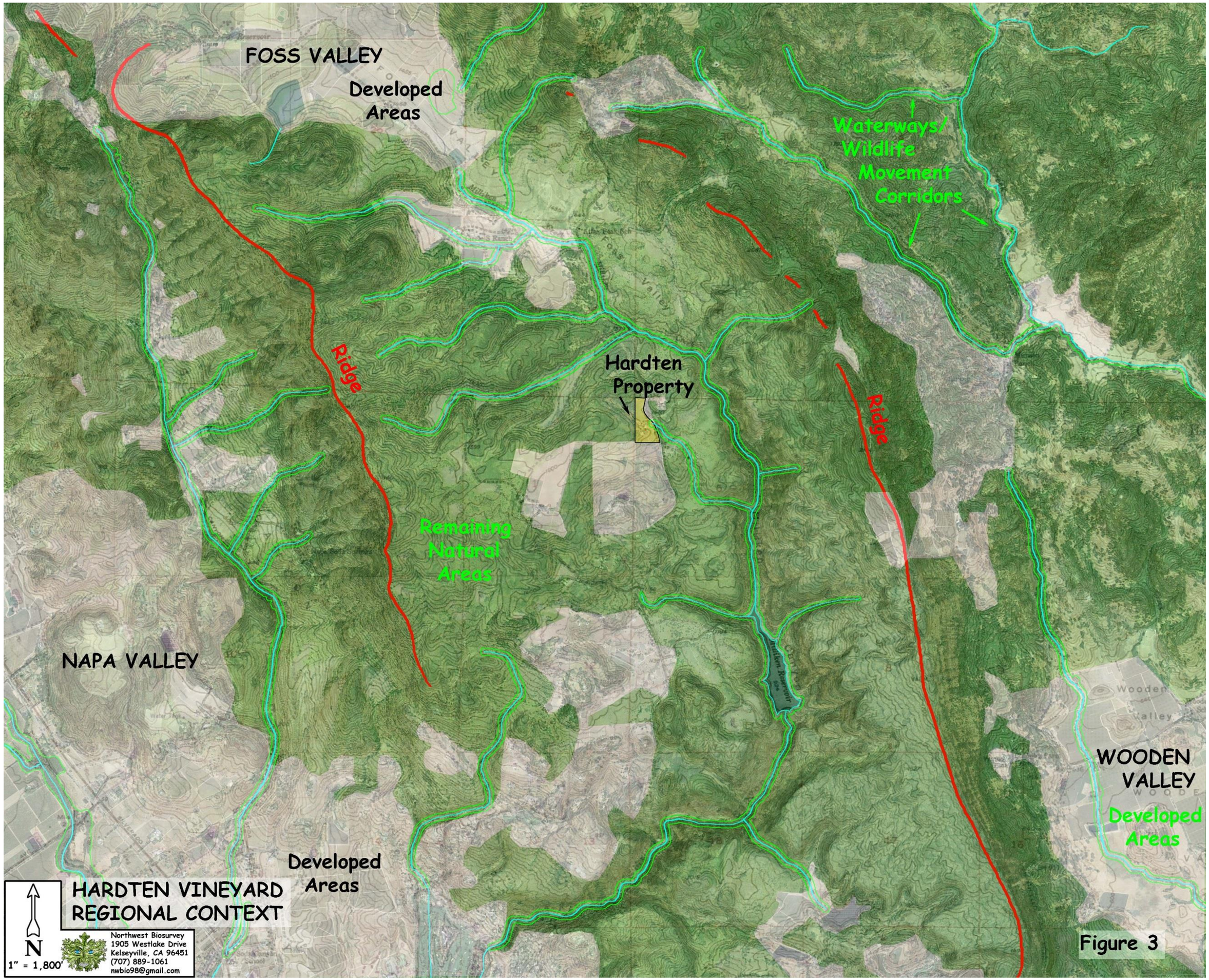
- **Presence of Critical Plant Community or Wildlife Resources:**

  Critical Plant Communities: The property does not contain plant communities considered sensitive in the Napa County Baseline Data Report.

  Critical Wildlife Resources: A survey for bat habitat was conducted as part of the field surveys for this project. The survey is discussed in Section 5.0 of this report. Two fire damaged and hollow oaks (Waypoints 100 and 107 shown in Figure 2) provide possible bat habitat although no sign of current bat use was observed during the surveys.

- **Woodland Age Class and Size:** A woodland assessment was conducted for this project (Section 7.0). Trees within potential vineyard blocks were individually counted and are mapped in Figure 2. Much of these woodlands and forests were burned during the Atlas Fire. Almost all oaks survived the fire and are recovering. Dead trees were not counted in the tree surveys. While young trees were particularly hard hit by the fire, due to their thin bark and lack of thermal mass, these forests and woodlands would recover as healthy communities over the following decades.

- **Trees with Unique Wildlife Value:** Woodlands on the property provide excellent wildlife value as discussed above in this section. Two burned and hollow oaks in the southwest Vineyard Block provide suitable potential habitat for bats (see Section 5.1). No bat sign was found at the time of the survey.


FOSS VALLEY
Developed Areas
Waterways/ Wildlife Movement Corridors
Ridge
Hardten Property
Ridge
Remaining Natural Areas
NAPA VALLEY
Developed Areas
WOODEN VALLEY
Developed Areas
HARDTEN VINEYARD
REGIONAL CONTEXT
N
1" = 1,800'
Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 96451
(707) 889-1061
nwbio98@gmail.com
Figure 3

7.0 CONFORMANCE WITH NAPA COUNTY BASELINE DATA REPORT (BDR)

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

7.1 Sensitive Biotic Communities: The property does not contain plant communities that qualify 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 Relations 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 plants with sensitive regulatory status were found on the property during the floristic-level botanical survey.

- Wildlife: The property provides potential habitat for the following wildlife species with sensitive regulatory status:
    - Pallid bat
    - Lawrence's gold finch
    - Loggerhead shrike
    - Lewis' woodpecker
    - White-tailed kite

7.3 Potential Wildlife Movement Corridors: The CalWild Linkage Map presented in Map 4-2 of the BDR was reviewed with respect to this project. The project area is not within a movement area as defined by the CalWild database. **Figure 3** provides a map of wildlife movement corridors within the region. The property is fenced and is dominated by existing vineyard. It does not serve as a portion of a wildlife corridor.

7.4 Fisheries Resources: The small, short-duration ephemeral stream on the property does not provide a fisheries resource.

8.0 SUMMARY, IMPACT ANALYSIS, AND RECOMMENDATIONS

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

- Review of current California Natural Diversity Database (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 *California Wildlife Habitat Relations System*.
- A California Department of Fish and Wildlife protocol, floristic-level field survey of the plants occurring within and in the immediate vicinity of the project.
- A delineation of waters of the U.S. conducted according to the *Corps of Engineers Wetlands Delineation Manual, January 1987* as updated by the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, 2008.*
- A bat habitat survey.
- Review of the Napa County Baseline Data Report (BDR), 2005.

Sensitive Plants: A total of 104 native and introduced plant taxa were identified on the property during the in-season, floristic-level botanical surveys. No plants with sensitive regulatory status were found. 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 10 sensitive wildlife species were assessed for potential occurrence at the site because of inclusion in the CNDDB database for the Capell Valley quadrangle, The Napa County BDR, or the presence of appropriate habitat on the site. Based on the habitat assessment, the following conclusions are made regarding species with sensitive regulatory status:

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

Possible Waters of U.S.: The total area of all delineated waters of the U.S. on the property is 0.084 acre. All Waters of the U.S. occurring within the survey area are defined as "other waters" consisting of an ephemeral stream and a pond, pursuant of Corps of Engineers Definitions. No federal jurisdictional wetlands were found within the survey area (see **Appendix D, Delineation Report**).

8.2 Potential Impacts and Proposed Mitigation for Biological Resources:

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

A. Habitat Fragmentation

Potential Impacts: The entire 13-acre parcel is fenced and dominated by existing vineyard. The proposed project will not result in additional habitat fragmentation

B. Woodland and Forest Resources

Potential Impact:

As shown in **Table 1**, the proposed vineyard project would result in the loss of 1.47 acres of California black oak woodland. As shown in Table 6, this would result in the estimated loss of 99 trees.

Proposed Mitigation for Impacts to Woodland and Forest:

***Measure 1*:** 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. If this ratio method is to be used, mitigation would need to be done off-site due to a lack of sufficient woodland resources on the property.

C. Sensitive Plants and Wildlife

Potential Impacts:

Plants: No plants with sensitive regulatory status were found on the property during the floristic-level botanical survey.

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

- Lawrence's gold finch
- Lewis's woodpecker
- Loggerhead shrike
- White-tailed kite
- Pallid bat

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

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

Proposed Mitigation for Birds with Sensitive or Protected Regulatory Status:

***Measure 2*:** In order to avoid impacts sensitive passerines and raptors protected under the Migratory Bird Treaty Act and California Fish and Wildlife Code, the following recommendation is made:

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

***Measure 3*:** In order to avoid impacts to bats with sensitive regulatory status for work after 2019, the following recommendation is made:

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

D. Waters of the U.S.

Potential Impacts:

Possible waters of the U.S. mapped in the Delineation Report provided in Appendix D include a 0.0836-acre, in-channel, man-made sediment pond within the eastern vineyard block. Placement of fill within any of the possible waters of the U.S. mapped in **Appendix D, Figure 2** would be regulated under the Clean Water Act.

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

***Measure 4*:** Placement of fill within Waters of the U.S. may require a Nationwide Permit by the Corps of Engineers (possibly a non-reporting permit under the Nationwide Permit Program), along with a 401 Water Quality Certification from the Regional Water Quality Control Board, and 1604 Stream Alteration Agreement from the California Department of Fish and Wildlife. The County of Napa may require stream setbacks.

E. Erosion Control

Potential Impacts:

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

Proposed Mitigation for impacts due to Erosion and Sedimentation:

***Measure 5*:** All work in or near tributaries to Milliken Creek should incorporate extensive erosion control measures consistent with Napa County Grading Regulations in order to avoid erosion and the potential for transport of sediments to local creeks and the Napa River. Coverage under the National Pollutant Discharge Elimination System (NPDES), General Permit for Storm Water Discharges associated with a Construction Activity (General Permit) and a Storm Water Pollution Prevention Plan (SWPPP) may be required.

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APPENDIX A

CNDDB SENSITIVE PLANT AND WILDLIFE SPECIES WITHIN THE

SURROUNDING CALIF. 7½' QUADS.

Surrounding 9-Quad List: Capell Valley Quadrangle

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Capell Valley	*Rana boylii*	foothill yellow-legged frog	None	Cand Threat	SSC	-
Capell Valley	*Rana draytonii*	California red-legged frog	Threat	None	SSC	-
Capell Valley	*Ardea herodias*	great blue heron	None	None	-	-
Capell Valley	*Oncorhynchus mykiss irideus pop. 8*	steelhead - central California coast DPS	Threat	None	-	-
Capell Valley	*Desmocerus californicus dimorphus*	valley elderberry longhorn beetle	Threat	None	-	-
Capell Valley	*Antrozous pallidus*	pallid bat	None	None	SSC	-
Capell Valley	*Lasiurus blossevillii*	western red bat	None	None	SSC	-
Capell Valley	*Emys marmorata*	western pond turtle	None	None	SSC	-
Capell Valley	*Northern Vernal Pool*	Northern Vernal Pool	None	None	-	-
Capell Valley	*Antirrhinum virga*	twig-like snapdragon	None	None	-	4.3
Capell Valley	*Brodiaea leptandra*	narrow-anthered brodiaea	None	None	-	1B.2
Capell Valley	*Castilleja ambigua var. ambigua*	johnny-nip	None	None	-	4.2
Capell Valley	*Castilleja ambigua var. meadii*	Mead's owls-clover	None	None	-	1B.1
Capell Valley	*Ceanothus purpureus*	holly-leaved ceanothus	None	None	-	1B.2
Capell Valley	*Clarkia gracilis ssp. tracyi*	Tracy's clarkia	None	None	-	4.2
Capell Valley	*Collomia diversifolia*	serpentine collomia	None	None	-	4.3
Capell Valley	*Cryptantha dissita*	serpentine cryptantha	None	None	-	1B.2
Capell Valley	*Downingia pusilla*	dwarf downingia	None	None	-	2B.2
Capell Valley	*Erigeron greenei*	Greene's narrow-leaved daisy	None	None	-	1B.2
Capell Valley	*Harmonia nutans*	nodding harmonia	None	None	-	4.3
Capell Valley	*Hesperolinon breweri*	Brewer's western flax	None	None	-	1B.2
Capell Valley	*Hesperolinon sharsmithiae*	Sharsmith's western flax	None	None	-	1B.2
Capell Valley	*Juglans hindsii*	Northern California black walnut	None	None	-	1B.1
Capell Valley	*Lasthenia conjugens*	Contra Costa goldfields	End	None	-	1B.1
Capell Valley	*Leptosiphon acicularis*	bristly leptosiphon	None	None	-	4.2
Capell Valley	*Leptosiphon jepsonii*	Jepson's leptosiphon	None	None	-	1B.2
Capell Valley	*Navarretia leucocephala ssp. pauciflora*	few-flowered navarretia	End	Threat	-	1B.1
Capell Valley	*Sidalcea keckii*	Keck's checkerbloom	End	None	-	1B.1
Capell Valley	*Trichostema ruygtii*	Napa bluecurls	None	None	-	1B.2
Cordelia	*Rana boylii*	foothill yellow-legged frog	None	Cand Threat	SSC	-
Cordelia	*Rana draytonii*	California red-legged frog	Threat	None	SSC	-
Cordelia	*Agelaius tricolor*	tricolored blackbird	None	Threat	SSC	-
Cordelia	*Aquila chrysaetos*	golden eagle	None	None	FP ; WL	-
Cordelia	*Ardea alba*	great egret	None	None	-	-
Cordelia	*Ardea herodias*	great blue heron	None	None	-	-
Cordelia	*Athene cunicularia*	burrowing owl	None	None	SSC	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Cordelia	*Buteo swainsoni*	Swainson's hawk	None	Threat	-	-
Cordelia	*Coturnicops noveboracensis*	yellow rail	None	None	SSC	-
Cordelia	*Egretta thula*	snowy egret	None	None	-	-
Cordelia	*Elanus leucurus*	white-tailed kite	None	None	FP	-
Cordelia	*Falco peregrinus anatum*	American peregrine falcon	Delisted	Delisted	FP	-
Cordelia	*Haliaeetus leucocephalus*	bald eagle	Delisted	End	FP	-
Cordelia	*Melospiza melodia maxillaris*	Suisun song sparrow	None	None	SSC	-
Cordelia	*Nycticorax nycticorax*	black-crowned night heron	None	None	-	-
Cordelia	*Oncorhynchus mykiss irideus pop. 8*	steelhead - central California coast DPS	Threat	None	-	-
Cordelia	*Bombus occidentalis*	western bumble bee	None	None	-	-
Cordelia	*Desmocerus californicus dimorphus*	valley elderberry longhorn beetle	Threat	None	-	-
Cordelia	*Speyeria callippe callippe*	callippe silverspot butterfly	End	None	-	-
Cordelia	*Myotis yumanensis*	Yuma myotis	None	None	-	-
Cordelia	*Reithrodontomys raviventris*	salt-marsh harvest mouse	End	End	FP	-
Cordelia	*Sorex ornatus sinuosus*	Suisun shrew	None	None	SSC	-
Cordelia	*Taxidea taxus*	American badger	None	None	SSC	-
Cordelia	*Emys marmorata*	western pond turtle	None	None	SSC	-
Cordelia	*Serpentine Bunchgrass*	Serpentine Bunchgrass	None	None	-	-
Cordelia	*Balsamorhiza macrolepis*	big-scale balsamroot	None	None	-	1B.2
Cordelia	*Castilleja affinis var. neglecta*	Tiburon paintbrush	End	Threat	-	1B.2
Cordelia	*Centromadia parryi ssp. parryi*	pappose tarplant	None	None	-	1B.2
Cordelia	*Erigeron biolettii*	streamside daisy	None	None	-	3
Cordelia	*Eryngium jepsonii*	Jepson's coyote-thistle	None	None	-	1B.2
Cordelia	*Helianthella castanea*	Diablo helianthella	None	None	-	1B.2
Cordelia	*Iris longipetala*	coast iris	None	None	-	4.2
Cordelia	*Isocoma arguta*	Carquinez goldenbush	None	None	-	1B.1
Cordelia	*Leptosiphon acicularis*	bristly leptosiphon	None	None	-	4.2
Cordelia	*Symphyotrichum lentum*	Suisun Marsh aster	None	None	-	1B.2
Cordelia	*Trifolium amoenum*	two-fork clover	End	None	-	1B.1
Cordelia	*Trifolium hydrophilum*	saline clover	None	None	-	1B.2
Cuttings Wharf	*Rana boylii*	foothill yellow-legged frog	None	Cand Threat	SSC	-
Cuttings Wharf	*Rana draytonii*	California red-legged frog	Threat	None	SSC	-
Cuttings Wharf	*Agelaius tricolor*	tricolored blackbird	None	Threat	SSC	-
Cuttings Wharf	*Aquila chrysaetos*	golden eagle	None	None	FP ; WL	-
Cuttings Wharf	*Ardea alba*	great egret	None	None	-	-
Cuttings Wharf	*Ardea herodias*	great blue heron	None	None	-	-
Cuttings Wharf	*Athene cunicularia*	burrowing owl	None	None	SSC	-
Cuttings Wharf	*Buteo regalis*	ferruginous hawk	None	None	WL	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Cuttings Wharf	*Buteo swainsoni*	Swainson's hawk	None	Threat	-	-
Cuttings Wharf	*Charadrius alexandrinus nivosus*	western snowy plover	Threat	None	SSC	-
Cuttings Wharf	*Charadrius montanus*	mountain plover	None	None	SSC	-
Cuttings Wharf	*Circus hudsonius*	northern harrier	None	None	SSC	-
Cuttings Wharf	*Egretta thula*	snowy egret	None	None	-	-
Cuttings Wharf	*Elanus leucurus*	white-tailed kite	None	None	FP	-
Cuttings Wharf	*Geothlypis trichas sinuosa*	saltmarsh common yellowthroat	None	None	SSC	-
Cuttings Wharf	*Hydroprogne caspia*	Caspian tern	None	None	-	-
Cuttings Wharf	*Laterallus jamaicensis coturniculus*	California black rail	None	Threat	FP	-
Cuttings Wharf	*Melospiza melodia samuelis*	San Pablo song sparrow	None	None	SSC	-
Cuttings Wharf	*Nycticorax nycticorax*	black-crowned night heron	None	None	-	-
Cuttings Wharf	*Passerculus sandwichensis alaudinus*	Bryant's savannah sparrow	None	None	SSC	-
Cuttings Wharf	*Phalacrocorax auritus*	double-crested cormorant	None	None	WL	-
Cuttings Wharf	*Rallus obsoletus obsoletus*	California Ridgway's rail	End	End	FP	-
Cuttings Wharf	*Riparia riparia*	bank swallow	None	Threat	-	-
Cuttings Wharf	*Sternula antillarum browni*	California least tern	End	End	FP	-
Cuttings Wharf	*Branchinecta lynchi*	vernal pool fairy shrimp	Threat	None	-	-
Cuttings Wharf	*Syncaris pacifica*	California freshwater shrimp	End	End	-	-
Cuttings Wharf	*Acipenser transmontanus*	white sturgeon	None	None	SSC	-
Cuttings Wharf	*Hypomesus transpacificus*	Delta smelt	Threat	End	-	-
Cuttings Wharf	*Hysterocarpus traskii traskii*	Sacramento-San Joaquin tule perch	None	None	-	-
Cuttings Wharf	*Lampetra ayresii*	river lamprey	None	None	SSC	-
Cuttings Wharf	*Oncorhynchus mykiss irideus pop. 8*	steelhead - central California coast DPS	Threat	None	-	-
Cuttings Wharf	*Oncorhynchus tshawytscha pop. 13*	chinook salmon - Central Valley fall / late fall-run ESU	None	None	SSC	-
Cuttings Wharf	*Pogonichthys macrolepidotus*	Sacramento splittail	None	None	SSC	-
Cuttings Wharf	*Spirinchus thaleichthys*	longfin smelt	Cand	Threat	-	-
Cuttings Wharf	*Antrozous pallidus*	pallid bat	None	None	SSC	-
Cuttings Wharf	*Reithrodontomys raviventris*	salt-marsh harvest mouse	End	End	FP	-
Cuttings Wharf	*Sorex ornatus sinuosus*	Suisun shrew	None	None	SSC	-
Cuttings Wharf	*Taxidea taxus*	American badger	None	None	SSC	-
Cuttings Wharf	*Emys marmorata*	western pond turtle	None	None	SSC	-
Cuttings Wharf	*Coastal Brackish Marsh*	Coastal Brackish Marsh	None	None	-	-
Cuttings Wharf	*Northern Coastal Salt Marsh*	Northern Coastal Salt Marsh	None	None	-	-
Cuttings Wharf	*Northern Vernal Pool*	Northern Vernal Pool	None	None	-	-
Cuttings Wharf	*Astragalus tener var. tener*	alkali milk-vetch	None	None	-	1B.2
Cuttings Wharf	*Carex lyngbyei*	Lyngbye's sedge	None	None	-	2B.2
Cuttings Wharf	*Castilleja ambigua var. ambigua*	johnny-nip	None	None	-	4.2
Cuttings Wharf	*Chloropyron molle ssp. molle*	soft salty bird's-beak	End	Rare	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Cuttings Wharf	*Downingia pusilla*	dwarf downingia	None	None	-	2B.2
Cuttings Wharf	*Eleocharis parvula*	small spikerush	None	None	-	4.3
Cuttings Wharf	*Extriplex joaquinana*	San Joaquin spearscale	None	None	-	1B.2
Cuttings Wharf	*Lasthenia conjugens*	Contra Costa goldfields	End	None	-	1B.1
Cuttings Wharf	*Lathyrus jepsonii var. jepsonii*	Delta tule pea	None	None	-	1B.2
Cuttings Wharf	*Legenere limosa*	legenere	None	None	-	1B.1
Cuttings Wharf	*Lessingia hololeuca*	woolly-headed lessingia	None	None	-	3
Cuttings Wharf	*Lilaeopsis masonii*	Mason's lilaeopsis	None	Rare	-	1B.1
Cuttings Wharf	*Polygonum marinense*	Marin knotweed	None	None	-	3.1
Cuttings Wharf	*Ranunculus lobbii*	Lobb's aquatic buttercup	None	None	-	4.2
Cuttings Wharf	*Symphyotrichum lentum*	Suisun Marsh aster	None	None	-	1B.2
Cuttings Wharf	*Trifolium amoenum*	two-fork clover	End	None	-	1B.1
Cuttings Wharf	*Trifolium hydrophilum*	saline clover	None	None	-	1B.2
Mt. George	*Dicamptodon ensatus*	California giant salamander	None	None	SSC	-
Mt. George	*Rana boylii*	foothill yellow-legged frog	None	Cand Threat	SSC	-
Mt. George	*Ardea herodias*	great blue heron	None	None	-	-
Mt. George	*Falco mexicanus*	prairie falcon	None	None	WL	-
Mt. George	*Haliaeetus leucocephalus*	bald eagle	Delisted	End	FP	-
Mt. George	*Oncorhynchus mykiss irideus pop. 8*	steelhead - central California coast DPS	Threat	None	-	-
Mt. George	*Desmocerus californicus dimorphus*	valley elderberry longhorn beetle	Threat	None	-	-
Mt. George	*Taxidea taxus*	American badger	None	None	SSC	-
Mt. George	*Emys marmorata*	western pond turtle	None	None	SSC	-
Mt. George	*Agrostis hendersonii*	Henderson's bent grass	None	None	-	3.2
Mt. George	*Arabis modesta*	modest rockcress	None	None	-	4.3
Mt. George	*Brodiaea leptandra*	narrow-anthered brodiaea	None	None	-	1B.2
Mt. George	*Calandrinia breweri*	Brewer's calandrinia	None	None	-	4.2
Mt. George	*Ceanothus purpureus*	holly-leaved ceanothus	None	None	-	1B.2
Mt. George	*Centromadia parryi ssp. rudis*	Parry's rough tarplant	None	None	-	4.2
Mt. George	*Downingia pusilla*	dwarf downingia	None	None	-	2B.2
Mt. George	*Erigeron biolettii*	streamside daisy	None	None	-	3
Mt. George	*Erigeron greenei*	Greene's narrow-leaved daisy	None	None	-	1B.2
Mt. George	*Harmonia nutans*	nodding harmonia	None	None	-	4.3
Mt. George	*Hesperolinon breweri*	Brewer's western flax	None	None	-	1B.2
Mt. George	*Leptosiphon acicularis*	bristly leptosiphon	None	None	-	4.2
Mt. George	*Lessingia hololeuca*	woolly-headed lessingia	None	None	-	3
Mt. George	*Lilium rubescens*	redwood lily	None	None	-	4.2
Mt. George	*Lomatium repostum*	Napa lomatium	None	None	-	4.3
Mt. George	*Monardella viridis*	green monardella	None	None	-	4.3

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Mt. George	*Ranunculus lobbii*	Lobb's aquatic buttercup	None	None	-	4.2
Mt. George	*Rhynchospora californica*	California beaked-rush	None	None	-	1B.1
Mt. George	*Sidalcea hickmanii ssp. napensis*	Napa checkerbloom	None	None	-	1B.1
Mt. George	*Trichostema ruygtii*	Napa bluecurls	None	None	-	1B.2
Mt. George	*Triteleia lugens*	dark-mouthed triteleia	None	None	-	4.3
Mt. George	*Viburnum ellipticum*	oval-leaved viburnum	None	None	-	2B.3
Napa	*Dicamptodon ensatus*	California giant salamander	None	None	SSC	-
Napa	*Rana boylii*	foothill yellow-legged frog	None	Cand Threat	SSC	-
Napa	*Rana draytonii*	California red-legged frog	Threat	None	SSC	-
Napa	*Accipiter cooperii*	Cooper's hawk	None	None	WL	-
Napa	*Ardea alba*	great egret	None	None	-	-
Napa	*Ardea herodias*	great blue heron	None	None	-	-
Napa	*Baeolophus inornatus*	oak titmouse	None	None	-	-
Napa	*Buteo swainsoni*	Swainson's hawk	None	Threat	-	-
Napa	*Egretta thula*	snowy egret	None	None	-	-
Napa	*Elanus leucurus*	white-tailed kite	None	None	FP	-
Napa	*Geothlypis trichas sinuosa*	saltmarsh common yellowthroat	None	None	SSC	-
Napa	*Melospiza melodia samuelis*	San Pablo song sparrow	None	None	SSC	-
Napa	*Nycticorax nycticorax*	black-crowned night heron	None	None	-	-
Napa	*Pandion haliaetus*	osprey	None	None	WL	-
Napa	*Riparia riparia*	bank swallow	None	Threat	-	-
Napa	*Setophaga petechia*	yellow warbler	None	None	SSC	-
Napa	*Calasellus californicus*	An isopod	None	None	-	-
Napa	*Syncaris pacifica*	California freshwater shrimp	End	End	-	-
Napa	*Entosphenus tridentatus*	Pacific lamprey	None	None	SSC	-
Napa	*Hypomesus transpacificus*	Delta smelt	Threat	End	-	-
Napa	*Hysterocarpus traskii pomo*	Russian River tule perch	None	None	SSC	-
Napa	*Lampetra ayresii*	river lamprey	None	None	SSC	-
Napa	*Mylopharodon conocephalus*	hardhead	None	None	SSC	-
Napa	*Oncorhynchus mykiss irideus pop. 8*	steelhead - central California coast DPS	Threat	None	-	-
Napa	*Pogonichthys macrolepidotus*	Sacramento splittail	None	None	SSC	-
Napa	*Spirinchus thaleichthys*	longfin smelt	Cand	Threat	-	-
Napa	*Bombus occidentalis*	western bumble bee	None	None	-	-
Napa	*Antrozous pallidus*	pallid bat	None	None	SSC	-
Napa	*Taxidea taxus*	American badger	None	None	SSC	-
Napa	*Emys marmorata*	western pond turtle	None	None	SSC	-
Napa	*Allium peninsulare var. franciscanum*	Franciscan onion	None	None	-	1B.2
Napa	*Astragalus tener var. tener*	alkali milk-vetch	None	None	-	1B.2

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Napa	*Brodiaea leptandra*	narrow-anthered brodiaea	None	None	-	1B.2
Napa	*Calandrinia breweri*	Brewer's calandrinia	None	None	-	4.2
Napa	*Castilleja ambigua var. ambigua*	johnny-nip	None	None	-	4.2
Napa	*Clarkia gracilis ssp. tracyi*	Tracy's clarkia	None	None	-	4.2
Napa	*Downingia pusilla*	dwarf downingia	None	None	-	2B.2
Napa	*Eleocharis parvula*	small spikerush	None	None	-	4.3
Napa	*Erigeron greenei*	Greene's narrow-leaved daisy	None	None	-	1B.2
Napa	*Erythronium helenae*	St. Helena fawn lily	None	None	-	4.2
Napa	*Extriplex joaquinana*	San Joaquin spearscale	None	None	-	1B.2
Napa	*Harmonia nutans*	nodding harmonia	None	None	-	4.3
Napa	*Juglans hindsii*	Northern California black walnut	None	None	-	1B.1
Napa	*Lasthenia conjugens*	Contra Costa goldfields	End	None	-	1B.1
Napa	*Lathyrus jepsonii var. jepsonii*	Delta tule pea	None	None	-	1B.2
Napa	*Leptosiphon acicularis*	bristly leptosiphon	None	None	-	4.2
Napa	*Leptosiphon jepsonii*	Jepson's leptosiphon	None	None	-	1B.2
Napa	*Lilaeopsis masonii*	Mason's lilaeopsis	None	Rare	-	1B.1
Napa	*Ranunculus lobbii*	Lobb's aquatic buttercup	None	None	-	4.2
Napa	*Symphyotrichum lentum*	Suisun Marsh aster	None	None	-	1B.2
Napa	*Trichostema ruygtii*	Napa bluecurls	None	None	-	1B.2
Napa	*Trifolium amoenum*	two-fork clover	End	None	-	1B.1
Napa	*Trifolium hydrophilum*	saline clover	None	None	-	1B.2
Rutherford	*Dicamptodon ensatus*	California giant salamander	None	None	SSC	-
Rutherford	*Rana boylii*	foothill yellow-legged frog	None	Cand Threat	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	Threat	-	-
Rutherford	*Cypseloides niger*	black swift	None	None	SSC	-
Rutherford	*Elanus leucurus*	white-tailed kite	None	None	FP	-
Rutherford	*Haliaeetus leucocephalus*	bald eagle	Delisted	End	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	Threat	None	-	-
Rutherford	*Bombus caliginosus*	obscure bumble bee	None	None	-	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
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	End	Threat	-	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
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
Sears Point	*Dicamptodon ensatus*	California giant salamander	None	None	SSC	-
Sears Point	*Rana draytonii*	California red-legged frog	Threat	None	SSC	-
Sears Point	*Agelaius tricolor*	tricolored blackbird	None	Threat	SSC	-
Sears Point	*Aquila chrysaetos*	golden eagle	None	None	FP ; WL	-
Sears Point	*Ardea alba*	great egret	None	None	-	-
Sears Point	*Ardea herodias*	great blue heron	None	None	-	-
Sears Point	*Athene cunicularia*	burrowing owl	None	None	SSC	-
Sears Point	*Buteo swainsoni*	Swainson's hawk	None	Threat	-	-
Sears Point	*Elanus leucurus*	white-tailed kite	None	None	FP	-
Sears Point	*Falco peregrinus anatum*	American peregrine falcon	Delisted	Delisted	FP	-
Sears Point	*Geothlypis trichas sinuosa*	saltmarsh common yellowthroat	None	None	SSC	-
Sears Point	*Lanius ludovicianus*	loggerhead shrike	None	None	SSC	-
Sears Point	*Laterallus jamaicensis coturniculus*	California black rail	None	Threat	FP	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Sears Point	*Melospiza melodia maxillaris*	Suisun song sparrow	None	None	SSC	-
Sears Point	*Melospiza melodia pusillula*	Alameda song sparrow	None	None	SSC	-
Sears Point	*Melospiza melodia samuelis*	San Pablo song sparrow	None	None	SSC	-
Sears Point	*Nycticorax nycticorax*	black-crowned night heron	None	None	-	-
Sears Point	*Passerculus sandwichensis alaudinus*	Bryant's savannah sparrow	None	None	SSC	-
Sears Point	*Rallus obsoletus obsoletus*	California Ridgway's rail	End	End	FP	-
Sears Point	*Riparia riparia*	bank swallow	None	Threat	-	-
Sears Point	*Sternula antillarum browni*	California least tern	End	End	FP	-
Sears Point	*Entosphenus tridentatus*	Pacific lamprey	None	None	SSC	-
Sears Point	*Oncorhynchus mykiss irideus pop. 8*	steelhead - central California coast DPS	Threat	None	-	-
Sears Point	*Spirinchus thaleichthys*	longfin smelt	Cand	Threat	-	-
Sears Point	*Adela oplerella*	Opler's longhorn moth	None	None	-	-
Sears Point	*Andrena blennospermatis*	Blennosperma vernal pool andrenid bee	None	None	-	-
Sears Point	*Danaus plexippus pop. 1*	monarch - California overwintering population	None	None	-	-
Sears Point	*Speyeria callippe callippe*	callippe silverspot butterfly	End	None	-	-
Sears Point	*Speyeria zerene sonomensis*	Sonoma zerene fritillary	None	None	-	-
Sears Point	*Antrozous pallidus*	pallid bat	None	None	SSC	-
Sears Point	*Reithrodontomys raviventris*	salt-marsh harvest mouse	End	End	FP	-
Sears Point	*Sorex ornatus sinuosus*	Suisun shrew	None	None	SSC	-
Sears Point	*Taxidea taxus*	American badger	None	None	SSC	-
Sears Point	*Coastal Brackish Marsh*	Coastal Brackish Marsh	None	None	-	-
Sears Point	*Northern Coastal Salt Marsh*	Northern Coastal Salt Marsh	None	None	-	-
Sears Point	*Northern Vernal Pool*	Northern Vernal Pool	None	None	-	-
Sears Point	*Blennosperma bakeri*	Sonoma sunshine	End	End	-	1B.1
Sears Point	*Castilleja ambigua var. ambigua*	johnny-nip	None	None	-	4.2
Sears Point	*Centromadia parryi ssp. parryi*	pappose tarplant	None	None	-	1B.2
Sears Point	*Chloropyron molle ssp. molle*	soft salty bird's-beak	End	Rare	-	1B.2
Sears Point	*Downingia pusilla*	dwarf downingia	None	None	-	2B.2
Sears Point	*Eleocharis parvula*	small spikerush	None	None	-	4.3
Sears Point	*Leptosiphon acicularis*	bristly leptosiphon	None	None	-	4.2
Sears Point	*Ranunculus lobbii*	Lobb's aquatic buttercup	None	None	-	4.2
Sears Point	*Trifolium hydrophilum*	saline clover	None	None	-	1B.2
Sonoma	*Dicamptodon ensatus*	California giant salamander	None	None	SSC	-
Sonoma	*Rana draytonii*	California red-legged frog	Threat	None	SSC	-
Sonoma	*Taricha rivularis*	red-bellied newt	None	None	SSC	-
Sonoma	*Coturnicops noveboracensis*	yellow rail	None	None	SSC	-
Sonoma	*Cypseloides niger*	black swift	None	None	SSC	-
Sonoma	*Falco columbarius*	merlin	None	None	WL	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Sonoma	*Melospiza melodia samuelis*	San Pablo song sparrow	None	None	SSC	-
Sonoma	*Passerculus sandwichensis alaudinus*	Bryant's savannah sparrow	None	None	SSC	-
Sonoma	*Riparia riparia*	bank swallow	None	Threat	-	-
Sonoma	*Selasphorus rufus*	rufous hummingbird	None	None	-	-
Sonoma	*Spinus lawrencei*	Lawrence's goldfinch	None	None	-	-
Sonoma	*Syncaris pacifica*	California freshwater shrimp	End	End	-	-
Sonoma	*Oncorhynchus mykiss irideus pop. 8*	steelhead - central California coast DPS	Threat	None	-	-
Sonoma	*Bombus caliginosus*	obscure bumble bee	None	None	-	-
Sonoma	*Bombus occidentalis*	western bumble bee	None	None	-	-
Sonoma	*Antrozous pallidus*	pallid bat	None	None	SSC	-
Sonoma	*Emys marmorata*	western pond turtle	None	None	SSC	-
Sonoma	*Allium peninsulare var. franciscanum*	Franciscan onion	None	None	-	1B.2
Sonoma	*Amorpha californica var. napensis*	Napa false indigo	None	None	-	1B.2
Sonoma	*Antirrhinum virga*	twig-like snapdragon	None	None	-	4.3
Sonoma	*Balsamorhiza macrolepis*	big-scale balsamroot	None	None	-	1B.2
Sonoma	*Blennosperma bakeri*	Sonoma sunshine	End	End	-	1B.1
Sonoma	*Brodiaea leptandra*	narrow-anthered brodiaea	None	None	-	1B.2
Sonoma	*Calandrinia breweri*	Brewer's calandrinia	None	None	-	4.2
Sonoma	*Ceanothus confusus*	Rincon Ridge ceanothus	None	None	-	1B.1
Sonoma	*Ceanothus sonomensis*	Sonoma ceanothus	None	None	-	1B.2
Sonoma	*Downingia pusilla*	dwarf downingia	None	None	-	2B.2
Sonoma	*Erigeron biolettii*	streamside daisy	None	None	-	3
Sonoma	*Harmonia nutans*	nodding harmonia	None	None	-	4.3
Sonoma	*Hemizonia congesta ssp. congesta*	congested-headed hayfield tarplant	None	None	-	1B.2
Sonoma	*Horkelia tenuiloba*	thin-lobed horkelia	None	None	-	1B.2
Sonoma	*Leptosiphon acicularis*	bristly leptosiphon	None	None	-	4.2
Sonoma	*Lilium rubescens*	redwood lily	None	None	-	4.2
Sonoma	*Lomatium repostum*	Napa lomatium	None	None	-	4.3
Sonoma	*Lupinus sericatus*	Cobb Mountain lupine	None	None	-	1B.2
Sonoma	*Monardella viridis*	green monardella	None	None	-	4.3
Sonoma	*Sidalcea hickmanii ssp. napensis*	Napa checkerbloom	None	None	-	1B.1
Sonoma	*Triteleia lugens*	dark-mouthed triteleia	None	None	-	4.3
Sonoma	*Viburnum ellipticum*	oval-leaved viburnum	None	None	-	2B.3
Yountville	*Rana boylii*	foothill yellow-legged frog	None	Cand Threat	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	-

QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FEDERAL	CALIF	CDFW	CNPS
Yountville	*Haliaeetus leucocephalus*	bald eagle	Delisted	End	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	Threat	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
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	End	End	-	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	End	Threat	-	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	-	1B.2

KEY FOR 9-QUAD LIST:

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

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

APPENDIX B

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM RESULTS

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

SPECIES SUMMARY REPORT

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

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

ID	Species Name	Status	Native/ Introduced
A020	SPECKLED BLACK SALAMANDER		NATIVE
B052	GREAT EGRET	CD	NATIVE
B057	CATTLE EGRET		NATIVE
B058	GREEN HERON		NATIVE
B059	BLACK-CROWNED NIGHT HERON		NATIVE
B072	ROSS' S GOOSE	HA	NATIVE
B075	CANADA GOOSE	HA	NATIVE
B077	GREEN-WINGED TEAL	HA	NATIVE
B079	MALLARD	HA	NATIVE
B080	NORTHERN PINTAIL	HA	NATIVE
B082	BLUE-WINGED TEAL	HA	NATIVE
B086	EURASIAN WIGEON	HA	NATIVE
B108	TURKEY VULTURE		NATIVE
B111	WHITE-TAILED KITE	CF BL	NATIVE
B114	NORTHERN HARRIER	SC	NATIVE
B115	SHARP-SHINNED HAWK		NATIVE
B116	COOPER'S HAWK		NATIVE
B119	RED-SHOULDERED HAWK		NATIVE
B123	RED-TAILED HAWK		NATIVE
B124	FERRUGINOUS HAWK		NATIVE
B125	ROUGH-LEGGED HAWK		NATIVE
B127	AMERICAN KESTREL		NATIVE
B128	MERLIN		NATIVE
B131	PRAIRIE FALCON		NATIVE
B141	MOUNTAIN QUAIL	HA	NATIVE
B159	MOUNTAIN PLOVER	SC BL	NATIVE
B168	WILLET		NATIVE
B170	SPOTTED SANDPIPER		NATIVE
B172	WHIMBREL		NATIVE
B173	LONG-BILLED CURLEW		NATIVE
B200	WILSON'S PHALAROPE		NATIVE

B251	BAND-TAILED PIGEON		HA	NATIVE
B260	GREATER ROADRUNNER			NATIVE
B264	WESTERN SCREECH OWL			NATIVE
B265	GREAT HORNED OWL			NATIVE
B267	NORTHERN PYGMY OWL			NATIVE
B272	LONG-EARED OWL	SC		NATIVE
B273	SHORT-EARED OWL	SC		NATIVE
B274	NORTHERN SAW-WHET OWL			NATIVE
B277	COMMON POORWILL			NATIVE
B286	BLACK-CHINNED HUMMINGBIRD			NATIVE
B287	ANNA'S HUMMINGBIRD			NATIVE
B289	CALLIOPE HUMMINGBIRD			NATIVE
B291	RUFOUS HUMMINGBIRD			NATIVE
B292	ALLEN'S HUMMINGBIRD			NATIVE
B294	LEWIS' S WOODPECKER			NATIVE
B299	RED-BREASTED SAPSUCKER			NATIVE
B302	NUTTALL'S WOODPECKER			NATIVE
B303	DOWNY WOODPECKER			NATIVE
B304	HAIRY WOODPECKER			NATIVE
B307	NORTHERN FLICKER			NATIVE
B309	OLIVE-SIDED FLYCATCHER	SC		NATIVE
B311	WESTERN WOOD-PEWEE			NATIVE
B318	DUSKY FLYCATCHER			NATIVE
B320	PACIFIC-SLOPE FLYCATCHER			NATIVE
B326	ASH-THROATED FLYCATCHER			NATIVE
B333	WESTERN KINGBIRD			NATIVE
B337	HORNED LARK			NATIVE
B338	PURPLE MARTIN	SC		NATIVE
B339	TREE SWALLOW			NATIVE
B340	VIOLET-GREEN SWALLOW			NATIVE
B346	STELLER'S JAY			NATIVE
B348	WESTERN SCRUB-JAY			NATIVE
B352	YELLOW-BILLED MAGPIE			NATIVE
B353	AMERICAN CROW		HA	NATIVE
B357	CHESTNUT-BACKED CHICKADEE			NATIVE
B358	OAK TITMOUSE			NATIVE
B360	BUSHTIT			NATIVE
B361	RED-BREASTED NUTHATCH			NATIVE
B362	WHITE-BREASTED NUTHATCH			NATIVE
B364	BROWN CREEPER			NATIVE
B368	BEWICK'S WREN	SC		NATIVE
B369	HOUSE WREN			NATIVE

B370	WINTER WREN			NATIVE
B375	GOLDEN-CROWNED KINGLET			NATIVE
B376	RUBY-CROWNED KINGLET			NATIVE
B377	BLUE-GRAY GNATCATCHER			NATIVE
B381	MOUNTAIN BLUEBIRD			NATIVE
B385	SWAINSON'S THRUSH			NATIVE
B386	HERMIT THRUSH			NATIVE
B389	AMERICAN ROBIN			NATIVE
B390	VARIED THRUSH			NATIVE
B391	WRENTIT			NATIVE
B393	NORTHERN MOCKINGBIRD			NATIVE
B398	CALIFORNIA THRASHER			NATIVE
B404	AMERICAN PIPIT			NATIVE
B407	CEDAR WAXWING			NATIVE
B408	PHAINOPEPLA			NATIVE
B410	LOGGERHEAD SHRIKE	FE	SC	NATIVE
B415	CASSIN'S VIREO			NATIVE
B417	HUTTON'S VIREO		SC	NATIVE
B418	WARBLING VIREO			NATIVE
B425	ORANGE-CROWNED WARBLER			NATIVE
B426	NASHVILLE WARBLER			NATIVE
B430	YELLOW WARBLER		SC	NATIVE
B435	YELLOW-RUMPED WARBLER			NATIVE
B436	BLACK-THROATED GRAY WARBLER			NATIVE
B437	TOWNSEND'S WARBLER			NATIVE
B438	HERMIT WARBLER			NATIVE
B460	MACGILLIVRAY'S WARBLER			NATIVE
B461	COMMON YELLOWTHROAT		SC	NATIVE
B463	WILSON'S WARBLER			NATIVE
B471	WESTERN TANAGER			NATIVE
B475	BLACK-HEADED GROSBEAK			NATIVE
B477	LAZULI BUNTING			NATIVE
B483	SPOTTED TOWHEE		SC	NATIVE
B484	CALIFORNIA TOWHEE	FT CE		NATIVE
B489	CHIPPING SPARROW			NATIVE
B493	BLACK-CHINNED SPARROW			NATIVE
B494	VESPER SPARROW		SC	NATIVE
B495	LARK SPARROW			NATIVE
B497	BELL'S SPARROW	FT	SC	NATIVE
B499	SAVANNAH SPARROW	CE	SC	NATIVE
B501	GRASSHOPPER SPARROW		SC	NATIVE
B504	FOX SPARROW			NATIVE

B505	SONG SPARROW		SC			NATIVE
B506	LINCOLN'S SPARROW					NATIVE
B509	GOLDEN-CROWNED SPARROW					NATIVE
B510	WHITE-CROWNED SPARROW					NATIVE
B512	DARK-EYED JUNCO					NATIVE
B521	WESTERN MEADOWLARK					NATIVE
B522	YELLOW-HEADED BLACKBIRD		SC			NATIVE
B524	BREWER'S BLACKBIRD					NATIVE
B528	BROWN-HEADED COWBIRD					NATIVE
B532	BULLOCK'S ORIOLE					NATIVE
B536	PURPLE FINCH					NATIVE
B539	RED CROSSBILL					NATIVE
B542	PINE SISKIN					NATIVE
B543	LESSER GOLDFINCH					NATIVE
B544	LAWRENCE'S GOLDFINCH					NATIVE
B545	AMERICAN GOLDFINCH					NATIVE
B546	EVENING GROSBEAK					NATIVE
B554	PLUMBEOUS VIREO					NATIVE
B699	BARRED OWL					NATIVE
B773	AMERICAN REDSTART					NATIVE
B798	WHITE-THROATED SPARROW					NATIVE
B799	HARRIS'S SPARROW					NATIVE
B809	INDIGO BUNTING					NATIVE
B864	CACKLING GOOSE					NATIVE
M006	ORNATE SHREW	FE	SC			NATIVE
M012	TROWBRIDGE'S SHREW					NATIVE
M033	WESTERN RED BAT		SC	FS		NATIVE
M034	HOARY BAT					NATIVE
M037	TOWNSEND'S BIG-EARED BAT		SC	BL FS		NATIVE
M045	BRUSH RABBIT	FE CE			HA	NATIVE
M047	AUDUBON'S COTTONTAIL				HA	NATIVE
M051	BLACK-TAILED JACKRABBIT		SC		HA	NATIVE
M059	SONOMA CHIPMUNK					NATIVE
M077	WESTERN GRAY SQUIRREL				HA	NATIVE
M113	WESTERN HARVEST MOUSE					NATIVE
M116	CALIFORNIA MOUSE					NATIVE
M117	DEER MOUSE		SC			NATIVE
M119	BRUSH MOUSE					NATIVE
M120	PINYON MOUSE					NATIVE
M127	DUSKY-FOOTED WOODRAT	FE	SC			NATIVE
M134	CALIFORNIA VOLE	FE CE	SC	BL		NATIVE
M146	COYOTE				HA	NATIVE

M149	GRAY FOX							HA	NATIVE
M151	BLACK BEAR							HA	NATIVE
M152	RINGTAIL			CF					NATIVE
M165	MOUNTAIN LION					SC			NATIVE
M166	BOBCAT							HA	NATIVE
M177	ELK							HA	NATIVE
M181	MULE DEER							HA	NATIVE
R022	WESTERN FENCE LIZARD								NATIVE
R040	SOUTHERN ALLIGATOR LIZARD								NATIVE
R042	NORTHERN ALLIGATOR LIZARD								NATIVE
R046	NORTHERN RUBBER BOA		CT				FS		NATIVE
R053	STRIPED RACER	FT	CT						NATIVE
R061	COMMON GARTERSNAKE	FE	CE	CF		SC			NATIVE
R071	DESERT NIGHTSNAKE								NATIVE

Total Number of Species: 171

Query Parameters

Included Locations
Napa Co

Included Location Seasons
Migrant, Summer, Winter, Yearlong

Included Habitats & (Stages)
Annual Grassland, Chamise-redshank Chaparral, Douglas-fir, Montane Hardwood, Vineyard

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

Included Habitat Seasons
Migrant, Summer, Winter, Yearlong

Excluded Elements
Algae, Aquatics - Emergent, Aquatics - Submerged, Bank, Barren, Bogs, Brush Pile, Buildings, Burrow, Campground, Cave, Cliff, Dump, Fences, Fish, Grain, Jetty, Kelp, Lakes, Lithic, Mine, Mud Flats, Nest Box, Nest Island, Nest Platform, Pack Stations, Riparian Inclusion, Rivers, Rock, Salt Ponds, Sand Dune, Soil - Friable, Soil - Gravelly, Soil - Organic, Soil - Saline, Soil - Sandy, Springs, Springs - Hot, Springs - Mineral, Steep Slope, Streams - Intermittent, Streams - Permanent, Talus, Tidepools, Transmission Lines, Vernal Pools, Water, Water - Created Body, Water - Fast, Water - Slow, Wharf

Included Species All Species Included

Included Special Statuses **Native**

APPENDIX C

TREE SURVEY DATA

TREE SURVEY DATA – *BLACK OAK WOODLAND*		
WAYPOINT	**SPECIES**	**DIAMETER AT BREAST HEIGHT (DBH) (in.)**
90	BLAK	23
91	DF	22
92	BLAK	20
93	BLAK	10
94	BLAK	4
95	BLAK	3
96	BLAK	16
97	CLO	5
98	BLAK	13
99	BLAK	8
100	BLAK	24 (Bat Tree)
101	BLAK	22
102	BLAK	13
103	BLAK	16
104	CLO	5
105	CLO	27
106	BLAK	24
107	BLAK	18 (Bat Tree)
108	APINE	11
109	BLAK	25
110	BLAK	11
111	BLAK	15
112	BLAK	19
113	BLAK	9
114	BLAK	11
115	BLAK	19
116	MAD	5
117	BLAK	14
118	BLAK	23
119	BLAK	19
120	BLAK	20
121	BLAK	12
122	BLAK	18
123	BLAK	13
124	CLO	28
125	CLO	3
126	RWILL	13
127	BLAK	21
128	BLAK	15
129	CLO	10
130	CLO	19
131	BLAK	14
132	BLAK	10
133	BLAK	30
134	RWILL	15
135	RWILL	10
136	BLAK	14

TREE SURVEY DATA – *BLACK OAK WOODLAND*			
WAYPOINT	**SPECIES**	**DIAMETER AT BREAST HEIGHT (DBH) (in.)**	
137	BLAK	12	
138	CLO	11	
139	BLAK	11	
140	BLAK	17	
141	BLAK	16	
142	BLAK	24	
143	BLAK	16	
144	BLAK	13	
145	BLAK	16	
146	CLO	17	
147	BLAK	12	
148	BLAK	15	
149	BLAK	16	
150	BLAK	15	
151	BLAK	16	
SPECIES	**NUMBER IN SURVEY AREA**	**AVERAGE DBH (INCHES)**	**STD DEVIATION OF DBH (INCHES)**
BLAK	**47**	**15.9**	**5.5**
DF	**1**	**22.0**	**NA**
CLO	**9**	**13.9**	**9.4**
MAD	**1**	**5.0**	**NA**
APINE	**1**	**11.0**	**NA**
RWILL	**3**	**12.7**	**2.5**
TOTAL	**62**	**15.3**	**NA**

Key:

CLO = Coast Live Oak
BLAK = Black Oak
MAD = Pacific Madrone
RWILL = Red Willow
DF = Douglas Fir
APINE = Alepo Pine

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 17, 2019.

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

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

2.0 Existing Conditions

2.1 Location: The property is located at 3393 Atlas Peak Road, Napa, California (APN 033-010-056); T06N R03W/04W, Capell Valley, Calif. 7½' Topographic Map). A location map is provided in **Figure 1**.

2.2 Site Topography and Drainage: The Hardten property occupies an east-facing slope in the interior Howell Mountain Range between the Napa Valley and Milliken Creek, which drains south from the Foss Valley. Terrain to the east levels into a sloping plateau extending to the western edge of Milliken Canyon. Elevations range from 1,580 feet msl (mean sea level) in the southwest corner to 1,420 feet msl in the southeast corner where an unnamed tributary leaves the property and drains southeast to Milliken Creek. Milliken Creek drains through the excessively steep-sided Milliken Canyon to Milliken Reservoir before continuing southwest to the Napa River in the Napa Valley.

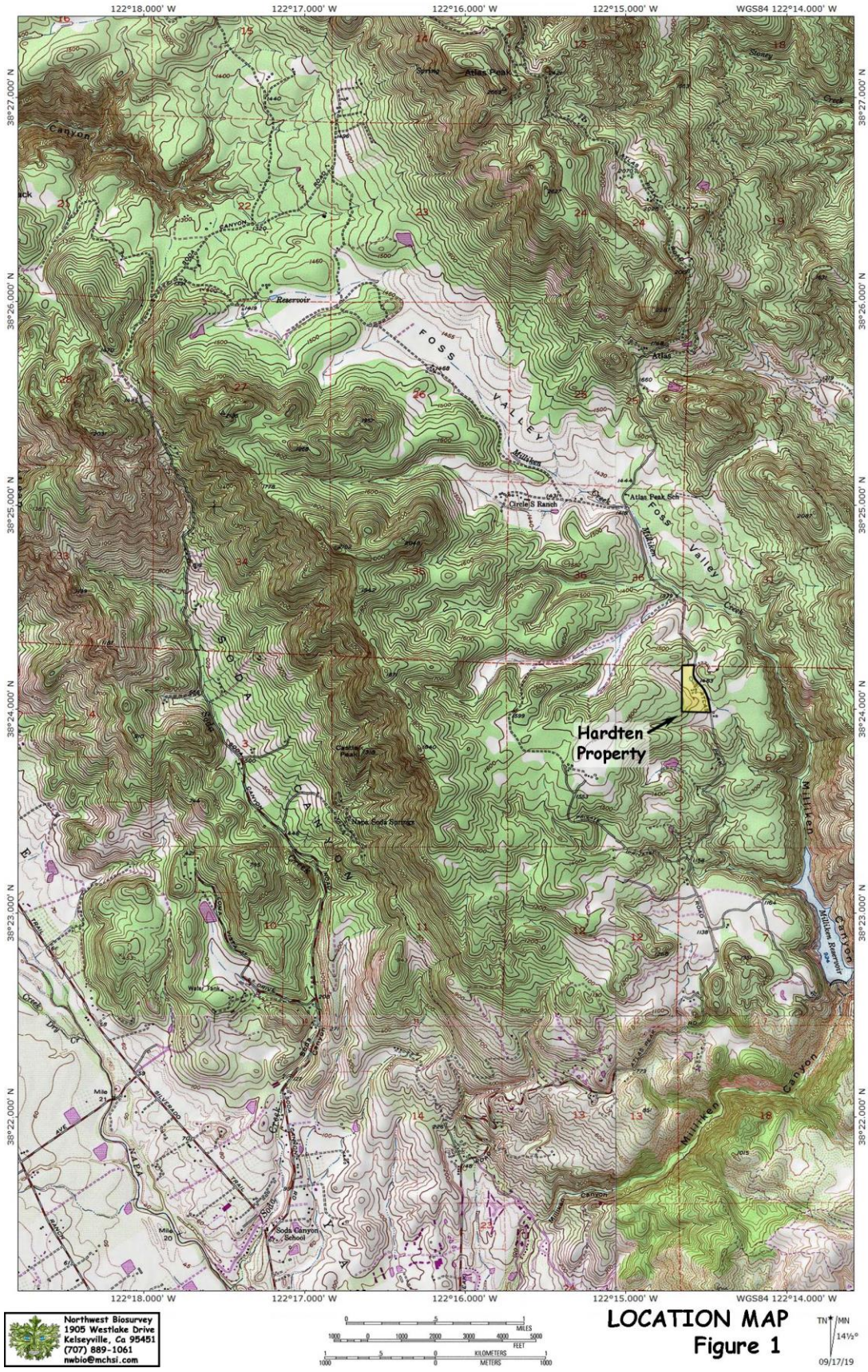
2.3 Soils: The property contains the following soil types:

- **Aiken loam, 2-15% slopes;**
- **Aiken loam, 30-50% slopes:**

  These gently sloping to strongly sloping well-drained soils are mainly on foot slopes and hillsides on uplands. Aiken loam formed in material weathered from basic volcanic rock. Permeability of the Aiken soil is moderately slow. Runoff is medium to rapid, and the hazard of erosion is slight on gentler slopes and high on steep slopes. The natural vegetation consists of ponderosa pines, oaks, redwoods in moist draws, annual grasses, and brush in small areas that had been cleared.

- **Hambright-Rock outcrop complex, 30-75% slopes:**

  This complex consists of areas of rock outcrop and steep and very steep soils on uplands mainly in the Atlas Peak area. The soils formed in material weathered from basic volcanic rock. This complex is about 50 percent Hambright soils, 30 to 40 percent rock outcrop, and 10 to 20 percent Forward, Guenoc, Henneke, Kidd, and Sobrante soils. The Hambright series consists of well drained soils on uplands. The vegetation is annual grasses and forbs and oaks on gentler slopes. Most of the areas are brushy and rocky. Fractured basic igneous bedrock is at a depth of 12 inches. Permeability is moderate. Rock outcrop occurs in areas 1 to 5 acres in size. It consists of cobbles, stones, rhyolitic masses, or outcrops. Runoff is rapid to very rapid. The hazard of erosion is high.


122°18.000' W
122°17.000' W
122°16.000' W
122°15.000' W
WGS84 122°14.000' W
38°27.000' N
38°26.000' N
38°25.000' N
38°24.000' N
38°23.000' N
38°22.000' N
Hardten Property
FOSS VALLEY
SODA CANYON
Atlas Peak
Reservoir
Circle S Ranch
Soda Canyon School
Northwest Biosurvey
1905 Westlake Drive
Kelseyville, Ca 95451
(707) 889-1061
nwbio@mchsi.com
MILES
FEET
KILOMETERS
METERS
LOCATION MAP
Figure 1
TN
MN
14½°
09/17/19

3.0 Aquatic Resources Results

3.1 Waters of the U.S: Waters of the U.S. within the property consist of an ephemeral stream channel and a pond, as shown on Figure W-2. No wetlands were delineated. The total area of all delineated waters is **0.836 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)
ED1	R6	NA	NRPW	38.401497°	-122.241845°	37	2.5	0.0021
Total Stream Segments:								**0.0021**
Ponds								
P1	PAB	-	IMP	38.401394°	-122.241743°	-	-	0.0815
Total Ponds:								**0.0815**
Total Possible Waters of U.S. Within Survey Area:								**0.0836**

HARDTEN VINEYARD POTENTIAL WATERS OF THE U.S.

38.403953°
-122.243782°

North Block

Legend

- Map Reference Point
- Proposed Vineyard Blocks
- Survey Boundary
- Upland Sample Point
- Wetland Sample Point
- Culvert

Wetlands (0.0000 Acres)

- Vernal Pools (0.0000 Acres)
- Wetlands (0.0000 Acres)

Other Waters (0.0836 Acres)

- Ephemeral Drainages (0.0021 Acres)
- Intermittent Streams (0.0000 Acres)
- Perennial Streams (0.0000 Acres)
- Ponds (0.0815 Acres)

Map Source: Google Earth
Date: 9/1/2018
75'

Project Name: Hardten Vineyard Project

Contact: Mr. Drew Aspegren, P.E.
Napa Valley Vineyard Engineers, Inc.
nvvedla@covad.net

Delineator: Steve Zalusky
Northwest Biosurvey
1905 Westlake Drive
Kelseyville, CA 95451
(707) 889-1061

Date of Map: September 24, 2019

POSSIBLE AQUATIC RESOURCES WITHIN THE SURVEY AREA

Name	Cowardin Code	HGM Code	Waters Type	Latitude	Longitude	Length (ft)	Width (ft)	Area (acres)
ED1	R6	NA	NRPW	38.401497°	-122.241845°	37	2.5	0.0021
							Total Stream Segments:	0.0021
Ponds								
P1	PAB	-	IMP	38.401394°	-122.241743°	-	-	0.0815
							Total Ponds:	0.0815
Total Possible Waters of U.S. Within Survey Area:								0.0836

ED1

P1

East Block

West Block

38.400266°
-122.241283°

N
1" = 75'

NORTHWEST BIOSURVEY
1905 WESTLAKE DR.
KELSEYVILLE CA, 95451
(707) 889-1061

Figure W-2