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Biological Studies

Containing the Following:

- MUSCI Natural Resource Assessment, August 31, 2014, Biological Resources Survey and Special Status Plant Reconnaissance, Anthem Winery.
- MUSCI Natural Resource Assessment, May 21, 2015, Addendum to the August 2014 Biological Resources Survey and Special Status Plant Reconnaissance, Anthem Winery.
- Firstcarbon Solutions, October 13, 2017, Biological Resources Assessment, Anthem Winery and Vineyards, Road Project.
- Kjeldsen Biological Consulting, September 2012, Arbuckle Vineyard.

Anthem Winery P14-00320-MOD and Exception to Road and Street Standards,
Variance P14-00321-VAR and Viewshed, and
Agricultural Erosion Control Plan P14-00322-ECPA
Planning Commission Hearing Date (Wednesday, October 3, 2018)

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ANTHEM WINERY

BIOLOGICAL RESOURCES RECONNAISSANCE SURVEY AND SPECIAL STATUS PLANT RECONNAISSANCE

3454 REDWOOD ROAD
(APN 035-470-020-000)
NAPA COUNTY

RECEIVED
OCT 0 3 2014
Napa County Planning, Building & Environmental Services

(MUSCI JOB# BS-14-147)

31 August 2014

This report presents information on natural resources, especially sensitive native plants, on lands of Arbuckle Winery proposed for construction of a winery and accessory uses. The site is located at 3454 AND 3456 Redwood Road, on the ridge between Redwood Road and Dry Creek Road in Napa County (APN 035-470-020-000). The area surveyed for this report is indicated on Aerial Map, Figure 1 (outlined in yellow)(winery site indicated by yellow "X").

FIGURE 2: AERIAL OF SURVEY AREA
[Survey area indicated by yellow boundary]
[Winery site indicated by yellow "X"]
[Spoils site indicated by red boundary]
[adapted from Google Earth]

The purpose of the survey and study is to determine whether there are significant biological resources which may be adversely affected by the proposed winery development. This report incorporates information to satisfy County of Napa requirements for both the Biological Resources Reconnaissance Survey and the Special Status Plant Study.

PROJECT DESCRIPTION

This request is to modify Anthem Winery's existing Winery Use Permit (#96006-UP) to build a larger winery facility, a tasting room, offices, and caves on a property located at 3454 Redwood Rd., Napa, California 94558 with an Assessor Parcel Number of 035-470-020 (the "subject property").

Background:
Anthem Winery and Vineyards, LLC is owned by Justin and Julie Arbuckle, Trustees of the Arbuckle Family Trust. They acquired the subject property in July of 2006 along with its existing winery facility and Winery Use Permit. The current use permit is limited to 30,000 gallons and an indoor wine production area of 1600 square feet, and does not permit tastings by appointment as the prior owner did not request them. The subject property is 27.13 acres, 6 acres of which is planted to vineyards that Anthem Winery and Vineyards, LLC has been harvesting to produce its own wines since 2009. Additionally, Anthem Winery and Vineyards, LLC has an approved erosion control plan to plant an additional 3.72 acres of vineyards on the subject property, and adjoining parcel (3123 Dry Creek Rd.), which it purchased in April 2010.

In addition to the existing winery facility, there is currently an existing residence, two barns, and two accessory buildings on the subject property. There is also a 0.6 mile access road from Redwood Rd., across Redwood Creek, and to the residence and winery facility that is 10 feet wide and has four turnouts.

The property is in an area with very few visible neighbors and is very difficult to see from the floor of the Napa Valley although parts of it are located on a minor ridgeline overlooking Dry Creek Road.

The Project:

Winery: Anthem Winery is proposing to build an 11,350 square foot state of the art wine making facility, along with a 1000 square foot mechanical building. The winery, which has been designed by renowned Napa Valley architects Howard Backen and John Taft, will be divided into two buildings with a round bottle room connecting the two buildings. The crush pad will be located in front of the winery buildings. This application requests to produce 50,000 gallons of wine per year. All of the grapes grown on the property will be crushed at the winery.

Hospitality: Anthem Winery's tasting room and guest relations building is separate from the winery building. This 1800 square foot structure will offer guests the opportunity to taste Anthem Winery's wines in a beautiful, natural, and relaxed setting. As allowed by law, wine purchased at the winery may be consumed on premises.

Anthem Winery plans to entertain 60 people per day on weekends, and 40 people per day on weekdays. In addition, the winery plans to host 4 food and wine events per month with a maximum of 30 people, and 2 events per month with a maximum of 100 people. Additionally, the winery plans to host 2 larger events with 300 people per year. Parking for events will be in front of the winery, on site next to the vineyard blocks, and off site utilizing shuttle service.

Administration/Office Building: The administrative offices for the winery will be adjacent to the tasting room. This 1600 square foot office structure will house the offices for the winery's staff and owners, and will include a commercial kitchen where food for events can be prepared.

Caves: Anthem Winery plans to store the wine produced at the winery in barrels located in underground caves that connect to the back of the winery's bottle room. The caves will total 22,000 square feet, including two 635 square foot private tasting rooms for guests.

Parking: Employees and guests will park in front of the winery. There will be several parking spaces, 2 new ADA parking spaces, and 1 new parking space for electric vehicles only with an electric vehicle charging station.

Employees: Anthem Winery will employ 7 full time and 5 part time employees.

Site Improvements: Anthem Winery will utilize its existing wells for water, but will construct a new waste water/septic system. The entry road for the winery, tasting room and offices will be re-routed to the existing driveway at 3123 Dry Creek Rd., which has better visibility and access for emergency vehicles. The existing driveway at 3123 Dry Creek Rd. will be updated and improved with additional turnouts. Additionally, Anthem Winery will install solar panels on the rooftops of the winery production buildings, as well as a rainwater collection system to supply electricity and water to the winery facilities.

Variance(s) Requested: Anthem Winery will request a variance from the setback of 300 feet from any shared driveway on the grounds that: (1) it owns both parcels that will share the 3123 Dry Creek Rd. driveway, thus the driveway is not actually shared with any neighbor and the setback's purpose of protecting neighbors who share a driveway serving a winery would not be served; and (2) the topography of and existing vineyards and structures on the subject property make it unfeasible to comply with a setback of 300 feet. Instead, Anthem Winery will request winery placement within the 300 foot driveway setback.

Additionally, Anthem Winery will request a variance from the winery driveway width standard based on: (1) the property boundary lines, topography, and existing trees prohibit widening the Dry Creek Rd. driveway to 18 feet, but where feasible, Anthem Winery will construct turnouts and widen the driveway to 18 feet; and (2) Anthem Winery's existing already approved 10 foot wide Redwood Rd. driveway provides substantially inferior access and lines of site to the winery than the proposed Dry Creek Rd. driveway will provide.

Winery Entrance and Signage: Anthem Winery will request a new winery sign and entrance off of 3123 Dry Creek Rd.

FIELD SURVEY

Field reviews were on 11 May 2014 by Stephen P. Rae, PhD of MUSCI, and Ellen Dean, PhD curator of University of California Davis Center for Plant Diversity. Stephen Rae returned 21 May 2014 for additional field reviews. The survey area (see Figure 1, outlined in yellow) encompasses lands of Arbuckle, includes acreage already impacted by previous activities (subject to erosion control plan), residential uses and native vegetation. The survey area also extends along the existing paved access route and the proposed winery access extension to the proposed winery and cave sites.

Pre-survey preparation included consultation with knowledgeable professionals, examination of herbarium specimens of the target sensitive plant species and review of published references and agency occurrence databases. Additional information was obtained from published and unpublished sources. We examined aerial photographs of the project site using Google Earth, and consulted the National Resource Conservation Service Soil Survey for Napa County to better understand the soils of the project site (NRCS 2014). A list of special-status plant species with potential to occur on the project site was then compiled by performing database searches of the California Native Plant Society's (CNPS') Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2014). The Napa, Sonoma, Yountville, and U.S. Geological Survey (USGS) 7.5 minute quadrangles were included in the searches.

About eight hours were committed to field survey, with an additional eight hours spent identifying collected materials. Selected plant specimens were collected, in several developmental stages.

All plants encountered during the survey were identified to the highest taxonomic level necessary (Table 1). Nomenclature used follows *The Jepson Manual: Vascular Plants of California* (Baldwin 2012, ed.). The vegetation of the site was classified using *A Manual of California Vegetation* (Sawyer et al. 2009).

SURVEY RESULTS AND SITE DESCRIPTION

Soils

The soils on the project site are mapped as Fagan Clay Loam, 30-50 percent slopes and Felton Gravelly Loam, 30-50 percent slopes. Both soil types are derived from sedimentary sandstone and shale. No serpentinite-derived soils, volcanic-derived soils, or vernal pool clay soils – soil types that commonly support many of the special-status plants of Napa County – are found on the project site.

Vegetation Types

The project site is located northwest of the main part of the city of Napa on the lower and east slopes of the Mayacamas Mountains of the Inner Coast Ranges of California. Elevations on the project site range from approximately 375 to 450 feet above sea level. The areas of the project site where the winery and tunnels are to be constructed has open meadow, woody vegetation, a trailer pad with a trailer, a guesthouse, and vineyards. The vegetation types present on the project site are *Quercus lobata/Quercus agrifolia/Toxicodendron diversilobum* association, *Quercus agrifolia/Umbellularia californica/Toxicodendron diversilobum* association, *Quercus lobata/Quercus kelloggii* association, *Nassella pulchra* association, and Wild Oats Grasslands (Sawyer et al. 2009). In addition, there are vineyards and the remains of an old orchard. A description of the vegetation types follows, and the list of plant species documented on the project site is provided below (Table 1).

Woodland Alliances: Quercus lobata/Quercus agrifolia/Toxicodendron diversilobum association, Quercus agrifolia/Umbellularia californica/Toxicodendron diversilobum association, Quercus lobata/Quercus kelloggii Association

In the northeastern corner of the project site where the winery is planned for construction, there is a woodland with an unusual mixture of native trees including valley oak (*Quercus lobata*), black oak (*Quercus kelloggii*), coast live oak (*Quercus agrifolia*), and California Bay (*Umbellularia californica*). The valley oaks are often the tallest trees of the overstory of this mixture, with the bay and black oak most common along the eastern edge of the woodland and the coast live oak present in the understory. The shorter woody understory has the natives poison oak (*Toxicodendron diversilobum*), climbing bedstraw (*Galium porrigens*), and pink honeysuckle (*Lonicera hispidula*), as well as the remains of an old orchard of cherry plum (*Prunus cerasifera*). The ground layer is dominated by nonnative grasses and forbs such as purple false brome (*Brachypodium distachyon*), ripgut brome (*Bromus diandrus*), and herb Robert (*Geranium purpureum*). However, there are numerous native plants present, such as blue wild rye (*Elymus glaucus*), gamble weed (*Sanicula crassicaulis*), abundant soap plant (*Chlorogalum pomeridianum*), roughleaf aster (*Eurybia radulina*), western buttercup (*Ranunculus occidentalis*), yarrow (*Achillea millefolium*), and ookow (*Dichelostemma congestum*).

Nassella pulchra Alliance: Nassella pulchra Association

The open meadow at the northern end of the project site (to the west of the footprint of the proposed winery buildings) is dominated by the native, perennial, bunchgrass purple needle grass (*Nassella pulchra,* now called *Stipa pulchra*). Also growing in this meadow are dozens of plants of chick lupine (*Lupinus microcarpus*). Between the lupines and the purple needle grass, typical nonnatives such as hairy cats ear (*Hypochaeris radicata*), rose clover (*Trifolium hirtum*), foothill filaree (*Erodium brachycarpum*), and soft chess (*Bromus hordeaceus*) are present. A smaller stand of this alliance is also present on the eastern side of the meadow at the southern side of the project site. Both stands of needle grass had been mowed before our visit, making it difficult to identify all the plants that were present at the time of our visit. The occurrence of purple needle grass throughout onsite meadows and within associated vineyards is due to seed mixtures used to control runoff subject to County of Napa Erosion Control Plan.

Wild Oats Grasslands Alliance

The meadow at the southern end of the project site is dominated by a mixture of nonnative grasses. This vegetation type is best described as Wild Oats Grasslands Alliance. Dominant nonnative grasses in this grassland are ripgut brome (*Bromus diandrus*), slender wild oats (*Avena barbata*), and Italian ryegrass (*Festuca/Lolium perenne*). Many different nonnative forbs are present, such as hairy catsear (*Hypochaeris radicata*), bristly oxtongue (*Picris echioides*), scarlet pimpernel (*Anagallis arvensis*), and narrow-leaved plantain (*Plantago lanceolata*). This vegetation is also found between the rows of grapevines in the vineyards on the project site. In all cases, this vegetation type had been mowed prior to our visit, making it difficult to identify all the plants present at the time of our visit.

Significant Non-Native Trees

A line of Scarlet Oaks (*Quercus coccinea*) defines the parcel boundary between the proposed winery site and the existing cave. Over 24 inches in diameter, these trees comprise a significant overstory along the fence line. The winery footprint within the woodland alliance along the ridge crest includes an abandoned cherry plum (*Prunus cerasifera*) stand. Taken together, the presence of the two introduced tree species suggest intensive prior use of the site.

Special-Status Plants

We evaluated the property for its potential to support occurrences of special-status plants. Special-status plants are defined as plants that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. Special-status plant taxa are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status: 1) officially listed by California or the federal government as endangered, threatened, or rare; a candidate for state or federal listing as endangered, threatened, or rare; 2) taxa that meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines; 3) taxa designated as a special-status, sensitive, or declining species by other state or federal agencies or non-governmental organizations; and 4) taxa considered by CNPS and the DFG to be "rare, threatened, or endangered in California" (for purposes of this document, the relevant inventories include California Rare Plant Rank List 1A, 1B, 2A and 2B).

We examined soil maps and confirmed that the soils on the project site are not derived from serpentinite or igneous/volcanic rock types which support many of the special-status plants found in Napa County. In addition, there are no vernal pools, marshes, and plants typical of saline habitats found on the project site. The following is a list of special-status plants that could grow on the project site but were not encountered during our May 11 visit:

Amorpha californica var. napensis Napa false indigo
Trifolium amoenum Two fork clover
Hemizonia congesta ssp. congesta Pale yellow hayfield tarplant
Horkelia tenuiloba Thin-loabed horkelia
Viburnum ellipticum Oval-leaved viburnum

RESOURCE-AT-RISK ISSUES AND MITIGATION RECOMMENDATIONS

Based on field survey results, there are no sensitive plant resource-at-risk issues associated with the proposed winery development and associated access improvements. However, sensitive plant species are reported within this portion of Napa County. Multi-year surveys may provide additional confidence that such species, including the five listed above, do not occur here.

There are no significant native bunch grass or woodland vegetation stands associated with the proposed winery development or associated access improvements.

There are no recommended mitigation measures pertinent to the winery development and proposed access improvements.

SURVEY LIMITATIONS

In the absence of comprehensive floristic research and a published flora for Napa County there may still be potential for discovery of new species and range extensions.

However, we do not recommend any additional surveys (animal or plant) relative to this proposed project.

Stephen P. Rae

STEPHEN P. RAE, Ph.D.
MANAGING PARTNER

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Table 1. Plants Observed on the Project Site During the May 11, 2014 Survey

Scientific Name	Common Name[2]
Achillea millefolium	yarrow
*Anagallis arvensis**	scarlet pimpernel
Aster radulinus	roughleaf aster
*Avena barbata**	slender oats
Baccharis pilularis	coyote bush
*Brachypodium distachyon**	purple false brome
*Briza minor**	little quaking grass
*Bromus diandrus**	riggut brome
*Bromus hordeaceus**	soft chess
*Bromus sterilis**	sterile brome
*Carduus pycnocephalus**	Italian thistle
Chlorogalum pomeridianum	soap plant
*Cirsium vulgare**	bull thistle
Claytonia parviflora	miner's lettuce
Croton setiger	turkey mullein
*Cynosurus echinatus**	bristly dogtail grass
Danthonia californica var. *californica*	California oatgrass
Dichelostemma congestum	ookow
Elymus glaucus	blue wild rye
Epilobium brachycarpum	panicle willowherb
*Erodium brachycarpum**	foothill filaree
*Erodium cicutarium**	redstem filaree
Eurybia radulina	roughleaf aster
*Festuca arundinacea**	tall fescue
*Festuca perenne**	Italian ryegrass
Galium aparine	bedstraw
Galium porrigens	climbing bedstraw
*Geranium dissectum**	cutleaf geranium
*Geranium molle**	dovefoot geranium
*Geranium purpureum**	herb Robert
*Hordeum murinum**	foxtail barley
*Hypochaeris glabra**	smoot cat's ear
*Hypochaeris radicata**	hairy cat's ear
Juncus occidentalis	western rush
Kickxsia elatine	sharp-pointed fluvellin
Lonicera hispidula var. *vacillans*	pink honeysuckle
Lupinus microcarpus	chick lupine
*Malva parviflora**	cheeses
*Matricaria discoidea**	pineapple weed
*Medicago polymorpha**	burclover
*Olea europaea**	olive
*Picris echioides**	bristly oxtongue
*Plantago lanceolata**	English plantain
*Prunus cerasifera**	cherry plum
Quercus douglasii	blue oak
Quercus kelloggii	black oak
Quercus lobata	valley oak
Quercus wislizeni	interior live oak

Table 1. Plants Observed on the Project Site During the May 11, 2014 Survey

Scientific Name	Common Name[2]
Ranunculus occidentalis	western buttercup
*Rhagadiolus stellatus**	endive daisy
*Rubus armeniacus**	Himalayan blackberry
Rubus ursinus	California blackberry
*Rumex acetosella**	sheep sorrel
Rumex salicifolia	willow dock
Sanicula crassicaulis	gamble weed
Sanicula bipinnatafida	purple sanicle
Scandix pectin-veneris	shepard's needles
Sisyrinchium bellum	blue-eyed grass
*Sonchus asper**	spiny sowthistle
*Sonchus oleraceus**	sowthistle
Stachys rigida var. *quercetorum*	hedge nettle
Stipa pulchra	purple needle grass
*Stellaria media**	chickweed
*Torilis arvensis**	hedge parsley
Toxicodendron diversilobum	poison oak
*Trifolium hirtum**	roseclover
*Trifolium subterranean**	subterranean clover
Triteleia hyacinthina	wild hyacinth
Triteleia laxa	Ithurial spear
*Triticum aestivum**	wheat
Umbellularia californica	California bay
*Veronica arvensis**	common speedwell
*Vicia sativa**	common vetch
*Vicia villosa**	hairy vetch
*Vitis vinifera**	cultivated grape

SYMBOLS:

(*) Species is not native to California (CalFlora 2014)
(2) Source for common names: CalFlora 2014

Table 2. Special-Status Plants with Potential to Occur on the Project Site						
Scientific Name	Rare Plant Rank	CESA	FESA	Habitat	Blooming time	Potential to Occur on Project Site
Allium peninsulare var. franciscanum Franciscan onion	1B.2	None	None	Valley and foothill grassland, cismontane woodland. Clay, volcanic, often serpentinite. 52-300 m.	May-June	Unlikely. Preferred habitat not present on the project site.
Alopecurus aequalis var. sonomensis Sonoma alopecurus	1B.1	None	FE	Marshes and swamps (freshwater), riparian scrub. 5-365 m.	May - July	None. No marshes or swamps occur on the project site.
Amorpha californica var. napensis Napa false indigo	1B.2	None	None	Broadleafed upland forest. Cismontane woodland. Chaparral. 120-2000 m.	April-July	Possible, but this species was not encountered during the survey.
Amsinckia lunaris bent-flowered fiddleneck	1B.2	None	None	Cismontane woodland, grassland. Sometimes serpentine. 3-500 m.	March-June	Unlikely. Preferred habitat not present on the project site.
Anomobryum julaceum slender silver moss	2.2	None	None	Broadleaf upland forest. Lower montane coniferous forest. North Coast coniferous forest. Damp rock and soil on outcrops, usually on roadcuts. 100-1000 m.		Unlikely. Preferred habitat not present on the project site.
Antirrhinum virga twig-like snapdragon	4.3	None	None	Chaparral, lower montane coniferous forest. Rocky openings, serpentinite, 100-2015 m.	June-July	Unlikely. Preferred habitat not present on the project site.
Arctostaphylos bakeri ssp. bakeri Baker's manzanita	1B.1	CR	None	Broadleaved upland forest, chaparral. Often serpentinite. 75-300 m.	February-April	None. No manzanitas were encountered during the survey.
Arctostaphylos canescens ssp. sonomensis Sonoma canescent manzanita	1B.2	None	None	Chaparral, lower monante coniferous forest. Often serpentinite. 180-1675 m.	January-June	None. No manzanitas were encountered during the survey.
Arctostaphylos manzanita ssp. elegans Konocti manzanita	1B.3	None	None	Chaparral, cismontane woodland, lower montane coniferous forest. Volcanic. 395-1615 m.	March-May	None. No manzanitas were encountered during the survey.
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	1B.1	None	None	Chaparral, cismontane woodland. Rhyolite. 75-370 m.	February-May	None. No manzanitas were encountered during the survey.
Asclepias solanoana serpentine milkweed	4.2	None	None	Chaparral, cismontane woodland, lower montane coniferous forest. Serpentine barrens. 230-1860 m.	May-August	None. Serpentine barrens habitat does not occur on project site.
Astragalus breweri Brewer's milk-vetch	4.2	None	None	Chaparral, cismontane woodland, grassland. Often serpentine or volcanic seeps, open,	April-June	None. Preferred gravelly habitat of this species does not occur on the project site.

					gravelly. 90-730 m.		
Astragalus claranus Clara Hunt's milk-vetch		1B.1	CT	FE	Chaparral, cismontane woodland, grassland. Often serpentine or volcanic clay. 75-275 m.	March-May	Unlikely. Preferred soil types for this species not present on the project site.
Astragalus clevelandii Cleveland's milk-vetch		4.3	None	None	Chaparral, cismontane woodland, riparian forest. Serpentine riparian zones. 200-1500 m.	June-September	None. No serpentine riparian zones occur on the project site.
Astragalus rattanii var. jepsonianus Jepson's milk-vetch		1B.2	None	None	Chaparral, cismontane woodland, valley and foothill grassland. Often serpentine. 320-700 m.	March-June	Unlikely. This species prefers rocky serpentine soils not found on the project site.
Balsamorhiza macrolepis var. macrolepis big-scale balsamroot		1B.2	None	None	Chaparral, cismontane woodland, valley and foothill grassland. Sometimes serpentine soil. 90-1555 m.	March-June	None. Species was not encountered during the survey (and would have been obvious).
Blennosperma bakeri Sonoma sunshine		1B.1	CE	FE	Vernal pools. 10-110 m.		None. Preferred vernal pool habitat of this species does not occur on the project site.
Brodiaea leptandra narrow-anthered California brodiaea		1B.2	None	None	Chaparral, cismontane woodland, lower montane coniferous forest, broadleaved forest, valley and foothill grassland. Volcanics. 110-915 m.	May-July	Unlikely. Preferred soil type does not occur on project site.
Calamagrostis ophitidis serpentine reed grass		4.3	None	None	Chaparral, cismontane woodland, valley and foothill grassland, lower montane coniferous forest. Meadows and seeps. Rocky, serpentine soil. 90-1065 m.	April-July	None. This species prefers rocky serpentine soils not found on the project site.
Calandrinia breweri Brewer's calandrinia		4.2	None	None	Chaparral. Disturbed sites and burns. 10-1220 m.	March-June	Unlikely. Area has not been burned recently, and species not encountered during survey.
Calycadenia micrantha Small-flowered calycadenia		1B.2	None	None	Chaparral, valley and foothill grassland, meadows and seeps, rocky talus, scree, roadsides. 5-1500 m.	June-September	Unlikely. Rocky habitat not present on project site.
Calystegia collina ssp. oxyphylla Mt. Saint Helena morning-glory		4.2	None	None	Chaparral, valley and foothill grassland, lower montane coniferous forest. Serpentine. 279-1010 m.	April-June	None. Preferred serpentine habitat not present on the project site.
Carex albida Sonoma white sedge		1B.1	CE	FE	Freshwater marsh. 15-90 m.	May-July	None. Preferred marsh habitat of this species does not occur on the project site.
Castilleja ambigua vars. Ambigua and meadii Rincon Ridge ceanothus		4.2/ 1B.1	None	None	Coastal prairie/scrub, mesic sites/vernal pools. 0-475 m.	March-May	None. Mesic vernal pool areas do not occur on the project site.
Ceanothus confusus Rincon Ridge		1B.1	None	None	Chaparral, cismontane woodland, serpentine or	February-June	None. No Ceanothus shrubs were encountered during

ceanothus					volcanics. 75-1065 m.		survey.
Ceanothus divergens Calistoga ceanothus		1B.2	None	None	Chaparral. Serpentine or volcanic, rocky. 170-950 m.	February-May	None. No Ceanothus shrubs were encountered during survey..
Ceanothus purpureus holly-leaved ceanothus		1B.2	None	None	Chaparral, cismontane woodland, serpentine or volcanics. 120-640 m.	February-June	None. No Ceanothus shrubs were encountered during survey.
Ceanothus sonomensis Sonoma ceanothus		1B.2	None	None	Chaparral. Sandy, serpentine or volcanic. 215-800 m.	February-April	None. No Ceanothus shrubs were encountered during survey.
Centromadia parryi ssp. parryi pappose tarplant		1B.2	None	None	Chaparral, meadows and seeps, valley and foothill grassland (vernally mesic). Often on alkaline soils. 2 - 420 m.	May - November	None. Preferred alkaline soil habitat of this species does not occur on the project site.
Chorizanthe valida Sonoma spineflower		1B.1	CE	FE	Coastal prairie, sandy soils. 10-305 m.	June- August	None. Preferred sandy habitat not present on the project site.
Clarkia breweri Brewer's clarkia		4.2	None	None	Chaparral, woodland, coastal scrub, often on serpentine. 215-1115 m.	April-June	Unlikely. Serpentine soils not present on project site.
Clarkia gracilis ssp. tracyi Tracy's clarkia		4.2	None	None	Chaparral. Openings in serpentine. 65-650 m.	April-July	Unlikely. Serpentine soils not present on project site.
Cryptantha dissita serpentine cryptantha		1B.1	None	None	Chaparral. Serpentinite soils. 395 - 580 m.	April-June	None. Rocky serpentine soils not present on the project site.
Downingia pusilla dwarf downingia		2.2	None	None	Vernal pools. 1-445 m.	April-May	None. Vernal pool habitat not present on the project site.
Erigeron biolettii streamside daisy		3	None	None	Broadleafed upland forest, cismontane woodland, and north Coast coniferous forest. Rocky mesic soils. 30 - 1100 m.	June-October	Unlikely. Very mesic habitat preferred by this species does not occur on the project site.
Erigeron greenei Greene's narrow-leaved daisy		1B.2	None	None	Chaparral. Serpentinite or volcanic soils. 80 - 1005 m.	May-September	None. Preferred habitat and soils of this species do not occur on the project site.
Eriogonum nervulosum Snow Mountain buckwheat		1B.2	None	None	Chaparral. Rocky serpentine barrens. 300-1005 m.	June-September	None. Rocky serpentine soil habitat of this species does not occur on the project site.
Eryngium constancei Loch Lomond button-celery		1B.1	CE	FE	Vernal pools. 460-855 m.	May-June	None. Preferred vernal pool habitat of this species does not occur on the project site.
Eryngium pinnatisectum Tuolumne button-celery		1B.2	None	None	Vernal pools. 70-915 m.	May-June	None. Preferred vernal pool habitat of this species does not occur on the project site.
Erythronium helenae St. Helena fawn lily		4.2	None	None	Chaparral, cismontane woodland, valley and foothill grassland, lower montane coniferous forest. Serpentine or volcanic soil. 350-1220 m.	March-May	None. Preferred soils of this species do not occur on the project site.
Fritillaria liliacea fragrant fritillary		1B.2	None	None	Cismontane woodland, valley and foothill grassland. Often on serpentine. 3-410 m.	February-April	Unlikely. Preferred soils of this species not found on the project site.
Fritillaria pluriflora adobe-lily		1B.2	None	None	Chaparral, cismontane woodland, valley and	February-April	None. Deep clay alluvial or colluvial soils preferred by

					foothill grassland. Adobe clay soil. 60-705 m.		this species not present on the project site.
Fritillaria purdyi Purdy's fritillary		4.3	None	None	Chaparral, cismontane woodland, lower montane coniferous forest. Serpentine soil. 175-2255 m.	March-June	None. Serpentine soils not found on project site.
Harmonia hallii Hall's harmonia		1B.2	None	None	Chaparral. Rocky serpentine. 500-975 m.	April-June	None. Preferred rocky habitat of this species does not occur on the project site.
Harmonia nutans nodding harmonia		4.3	None	None	Chaparral, cismontane woodland, rocky gravelly soil. 75-975 m.	March-May	None. Preferred rocky habitat of this species does not occur on the project site.
Hemizonia congesta ssp. congesta pale yellow hayfield tarplant		1B.2	None	None	Valley and foothill grassland. Roadsides. 20-560 m.	April-Nov.	Possible, but species not encountered during survey.
Hesperolinon bicarpellatum two-carpellate western flax		1B.2	None	None	Chaparral. Rocky serpentine soils. 60 - 1005 meters.	May-July	None. Preferred rocky, serpentine habitat of this species does not occur on the project site.
Hesperolinon serpentinum Napa western flax		1B.1	None	None	Chaparral, cismontane woodland, valley and foothill grassland. Usually rocky serpentinite soils. 30 - 900 meters.	May-July	None. Preferred rocky, serpentine habitat of this species does not occur on the project site.
Hesperolinon tehamense Tehama western flax		1B.3	None	None	Chaparral, cismontane woodland,. Serpentinite soils. 100 - 1250 meters.	May-July	None. Preferred rocky, serpentine habitat of this species does not occur on the project site.
Horkelia tenuiloba Thin-lobed horkelia		1B.2	None	None	Chaparral, broadleaved upland forest, valley and foothill grassland. Mesic, sandy soils. 50-500 m.	May-August	Possible. But not encountered during survey
Iris longipetala coast iris		4.2	None	None	Lower montane coniferous forest, meadows and seeps. 0-600 m.	March-May	Unlikely. Wet seeps and preferred habitat do not occur on the project site.
Juncus luciensis Santa Lucia dwarf rush		1B.2	None	None	Vernal pools. 300-2040 m.		None. Preferred vernal pool habitat of this species does not occur on the project site.
Lasthenia burkei Burke's goldfields		1B.1	CE	FE	Vernal pools. 15-600 m.		None. Preferred vernal pool habitat of this species does not occur on the project site.
Lasthenia conjugens Contra Costa goldfields		1B.1	None	FE	Vernal pools. 0-470 m.		None. Preferred vernal pool habitat of this species does not occur on the project site.
Layia septentrionalis Colusa layia		1B.2	None	None	Chaparral, cismontane woodland, valley and foothill grassland. Sandy or serpentinite soils. 100-1095 m.	April-May	Unlikely. Based on survey botanist's experience, this species occurs on rocky slopes in undisturbed habitat.
Leptosiphon acicularis bristly leptosiphon		4.2	None	None	Chaparral, cismontane woodland. Usually on volcanic soils. 100 - 500 meters.	March-May	Unlikely. Volcanic soils do not occur on the project site.
Leptosiphon jepsonii Jepson's leptosiphon		1B.2	None	None	Chaparral, cismontane woodland. Often on serpentine soils. 55 - 1500 meters.	April-July	Unlikely. This species is often on serpentine soils, and it was not encountered during the survey.

Leptosiphon latisectus Broad-leaved leptosiphon		4.3	None	None	Cismontane woodland, broadleaved upland forest. Often on serpentine. 170 - 1500 meters.	April-June	Unlikely. This species is often on serpentine soils, and it was not encountered during the survey.
Lessingia hololeuca woolly-headed lessingia		3	None	None	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Clay or serpentinite soils. 15 - 305 m.	June-October	None. Preferred soil type of this species not found on the project site.
Lilium rubescens Redwood lily		4.2	None	None	Broadleafed upland forest, chaparral, lower and upper montane coniferous forest. Sometimes serpentinite soils. Sometimes roadsides. 30-1910 m.	April-September	None. Preferred soils and habitat do not occur on the project site.
Limnanthes floccosa ssp. floccose woolly meadowfoam		4.2	None	None	Vernal pools. 60-1095 m.	March-June	None. Preferred vernal pool habitat of this species does not occur on the project site.
Limnanthes vinculans Sebastopol meadowfoam		1B.1	CE	FE	Vernal pools. 15-305 m.	April-May	None. Preferred vernal pool habitat of this species does not occur on the project site.
Lomatium repostum Napa lomatium		4.3	None	None	Chaparral, cismontane woodland. Serpentine. 90-830 m.	March-June	None. Preferred soils and habitat do not occur on the project site.
Lupinus sericatus Cobb Mountain lupine		1B.2	None	None	Broadleafed upland forest, lower montane coniferous forest, chaparral, cismontane woodland, often on volcanics. 275-1525 m.	March-June	Unlikely. Elevations on project site are below those where the species occurs.
Micropus amphibolus Mt. Diablo cottonweed		3.2	None	None	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Rocky soils. 45 - 825 meters. 45-825 m.	March-May	Unlikely. Rocky soils preferred by this species are not present on the project site.
Microseris paludosa marsh microseris		1B.2	None	None	Cismontane woodland, valley and foothill grassland. Moist drainages and vernal pools. 5-300 m.	April-July	Unlikely. Moist habitat not present on the project site.
Monardella viridis ssp. viridis green monardella		4.3	None	None	Cismontane woodland, broadleaved upland forest, chaparral. 100-1010 m.	June-September	None. Preferred habitat for this species not present on the project site.
Navarretia jepsonii Jepson's navarretia		4.3	None	None	Cismontane woodland, chaparral, valley and foothill grassland. Serpentine. 174-855 m.	April-June	None. Preferred soils for this species not present on the project site.
Navarretia leucocephala ssp. bakeri Baker's navarretia		1B.1	None	None	Vernal pools. 5-1740 m.		None. Preferred vernal pool habitat of this species does not occur on the project site.
Navarretia leucocephala ssp. plieantha		1B.2	CE	FE	Vernal pools. 30-950 m.		None. Preferred vernal pool habitat of this species does not occur on the project site.

many-flowered navarretia							
Navarretia myersii ssp. deminuta small pincushion navarretia		1B.1	None	None	Vernal pools. 355 m.	April-May	None. Preferred vernal pool habitat of this species does not occur on the project site.
Navarretia rosulata Marin County navarretia		1B.2	None	None	Chaparral. Rocky, serpentine. 200-635 m.	May-July	None. Preferred soil type of this species does not occur on the project site.
Orobanche valida ssp. howellii Howell's broomrape		4.3	None	None	Chaparral. Rocky, volcanic or serpentine. 180-1740 m.	June-September	None. Preferred soils of this species do not occur on the project site.
Penstemon newberryi var. sonomensis Sonoma beardtongue		1B.3	None	None	Chaparral. Rocky. 700-1370 m.	April-August	None. Preferred habitat of this species not present on the project site.
Plagiobothrys strictus Calistoga popcorn-flower		1B.1	CT	FE	Vernal pools. 90-160 m.	March-June	None. Vernal pool habitat not present on the project site.
Poa napensis Napa blue grass		1B.1	CE	FE	Alkaline, near thermal springs. 100-200 m.	May-August	None. No thermal springs occur on the project site.
Ranunculus lobbii Lobb's aquatic buttercup		4.2	None	None	Vernal pools. 15-470 m.	February-May	None. Vernal pool habitat of this species does not occur on the project site.
Senecio clevelandii var. clevelandii Cleveland's ragwort		4.3	None	None	Chaparral. Rocky serpentine seeps and drainages. 365-900 m.	June-July	None. Serpentine seeps and drainages do not occur on the project site.
Sidalcea hickmanii ssp. napensis Napa checkerbloom		1B.1	None	None	Chaparral. Rhyolitic soils. 415 - 610 m.	April-June	None. Preferred habitat and soils of this species not present on the project site.
Sidalcea oregana ssp. hydrophila marsh checkerbloom		1B.2	None	None	Riparian forest, meadows and seeps. 1100-2300 m.	July-August	None. The active seeps and streams required by this species are not present on the project site.
Sidalcea oregana ssp. valida Kenwood Marsh checkerbloom		1B.1	CE	FE	Freshwater marsh. 115-150 m.	June-September	None. Preferred marsh habitat of this species does not occur on the project site.
Streptanthus batrachopus Tamalpais jewel-flower		1B.3	None	None	Chaparral. Serpentine. 305-650 m.	April-July	None. Serpentine soils not present on the project site.
Streptanthus brachiatus ssp. brachiatus Socrates Mine jewel-flower		1B.2	None	None	Chaparral, woodland. Serpentine. 545-1000 m.	May-July	None. Serpentine soils not present on the project site.
Streptanthus brachiatus ssp. hoffmanii Freed's jewel-flower		1B.2	None	None	Chaparral, woodland. Serpentine. 490-1220 m.	May-July	None. Serpentine soils not present on the project site.
Streptanthus hesperidis green jewel-flower		1B.2	None	None	Chaparral, woodland. Serpentine, rocky. 130-760 m.	May-July	None. Serpentine soils not present on the project site.
Streptanthus morrisonii ssp. elatus Three Peaks jewel-flower		1B.2	None	None	Chaparral. Serpentine. 90-815 m.	May-June	None. Serpentine soils not present on the project site.

Streptanthus morrisonii ssp. kruckebergii Kruckeberg's jewel-flower		1B.2	None	None	Woodland, serpentine. 215-1035 m.	April-July	None. Serpentine soils not present on the project site.
Streptanthus vernalis early jewel-flower		1B.2	None	None	Chaparral. Serpentine. 610 m.	March-May	None. Serpentine soils not present on the project site.
Stuckenia filiformis slender-leaved pondweed		2.2	None	None	Freshwater marsh. 300-2150 m.	May-July	None. Preferred marsh habitat of this species does not occur on the project site.
Toxicoscordion fontanum marsh zigadenus		4.2	None	None	Chaparral, woodland, forest, freshwater marsh, seeps. 15-1000 m.	April-July	None. Marshes and seeps not present on the project site.
Trichostema ruygtii Napa bluecurls		1B.2	None	None	Vernal pools. 30-680 m.		None. Preferred habitat of this species does not occur on the project site.
Trifolium amoenum two-fork clover		1B.1	None	FE	Valley and foothill grassland. 5-415 m.	April-June	Possible but not encountered during the project survey.
Trifolium hydrophilum saline clover		1B.2	None	None	Vernal pools. 0-300 m.		None. Vernal pools not present on the project site.
Triquetrella californica coastal triquetrella		1B.2	None	None	Coastal bluffs and scrub. 10-100 m.		None. Preferred habitat not present on the project site.
Viburnum ellipticum oval-leaved viburnum		2.3	None	None	Cismontane woodland, lower montane coniferous forest. Chaparral. 215 - 1400 m.		Possible but not encountered during the project survey.

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ADDENDUM TO MUSCI NATURAL RESOURCE ASSESSMENT BIOLOGICAL RESOURCES RECONNAISSANCE SURVEY AND SPECIAL STATUS PLANT RECONNAISSANCE DATED AUGUST 31, 2014 FOR NAPA COUNTY APN 035-470-020

In response to Napa County Planning's request for a "discussion and recommendation of any minimum buffers or setbacks that should be observed from populations of native grasses found on-site and project activities including stockpiles," we find that conservation of and setbacks from individual or small groups (5-10) bunchgrass plants serve little purpose as their seeds are small and easily distributed via wind and wildlife. In addition, the grass has been long established in the immediate area. An abundant seed source is present in area soils and generated every year by nearby plants. The already approved mitigation measure of including the native bunch grass in the cover crop for the already approved vineyards should further improve the continued existence of the grasses in and around the project area. There is no value in establishing setbacks or buffers around individual plants and little value in similarly protecting small bunches of the grass. Retention of the herbaceous vegetation associated with the oak overstory remaining on the parcels and in the surrounding area should provide adequate seed sources and long term habitat for the bunchgrasses of concern.

Although each plant may be long lived, survival of a specific individual plant rarely determines the viability of a population. It is the long term retention of self-sustaining oak woodlands and mixed evergreen forests in Napa County that will determine the future of native bunchgrass populations.

Dated: 21 May 2015

Stephen P. Rae, Ph.D.
Managing Partner
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(Project BS-14-147)

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Biological Resources Assessment
Anthem Winery and Vineyards, Road Project
Unincorporated Area, Napa County, California

Prepared for:
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October 13, 2017

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Table of Contents

List of Exhibits

EXECUTIVE SUMMARY

At the request of Anthem Winery and Vineyards, LLC, FirstCarbon Solutions (FCS) conducted a Biological Resources Assessment to document the existing biological conditions and analyze any potential impacts to biological resources within the proposed project located in Napa County, California.

The project site would widen an existing paved road and build a new driveway to the winery. Particular attention was given to Drainage Crossing Option 2, a proposed road realignment to avoid a neighboring parcel.

Analysis of the biological resources associated with the project site began with a thorough review of relevant literature followed by a field review to determine potential impacts to special-status species or other sensitive biological resources. The project site consists of approximately 2,000 linear feet of roadway. The site is characterized by vineyards and bay/oak woodland with a poison oak understory.

The road crosses an ephemeral drainage at engineered Station #317+50 on the original road alignment and Station #77+70 on Option 2.

Based upon the literature review, engineered drawings dated December 6, 2016, the field review, and the proposed mitigation measures, no sensitive species or waters of the United States will be impacted by this project.

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SECTION 1: INTRODUCTION

At the request of the Anthem Winery and Vineyards, LLC, FCS conducted a biological resources assessment for the Anthem Winery and Vineyards (Anthem) road widening project. The purpose of this assessment is to describe on-site vegetation communities, identify potentially jurisdictional waters of the U.S., and assess the potential for occurrence of special-status plant and wildlife species within the project site.

1.1 - Project Site Location

The site is located in an unincorporated area of Napa County in-between Dry Creek Road and Redwood Road. The approximate 2,000-foot lineal road project consists of two Assessor's Parcel Numbers (APNs): 035-470-046 and 035-460-038 west of the unincorporated community of Salvador (Exhibit 1). The project is mapped within the Napa, California, United States Geological Survey (USGS) 7.5-minute topographic quadrangle map (Exhibit 2) (USGS 2015), specifically located west of Dry Creek Road and east of Redwood Road. The project currently consists of a mostly undeveloped property (Exhibit 2) that is bordered by vineyards (Exhibit 2).

The site can be accessed from Dry Creek Road on the eastern boundary of the site.

1.2 - Project Description

The project site would upgrade the existing paved road. Drainage Crossing Option 2 would build a new, approximately 400-foot, spur road to avoid APN 035-460-024. The site is designated Agricultural Watershed by the Napa County Conservation, Development and Planning Department.

1.3 - Regulatory Framework

This section provides an overview of the laws and regulations that influence biological resources. Many of these regulations will not apply to the project if sensitive biological resources are avoided.

1.4 - Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over species listed as threatened or endangered under the Federal Endangered Species Act (FESA). Section 9 of FESA protects listed species from "take," which is broadly defined as actions taken to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." FESA protects threatened and endangered plants and animals and their critical habitat. Candidate species are those proposed for listing; these species are usually treated by resource agencies as if they were actually listed during the environmental review process. Procedures for addressing impacts to federally listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the FESA for all terrestrial species. The first pathway, Section 10(a) incidental take permit, applies to situations where a non-federal government entity must resolve potential adverse impacts to

species protected under the FESA. The second pathway, Section 7 consultation, applies to projects directly undertaken by a federal agency or private projects requiring a federal permit or approval.

1.5 - Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the Fish and Game Code (FGC).

All raptors and their nests are protected from take or disturbance under the MBTA (16 United States Code [USC], Section 703, et seq.) and California statute (FGC Section 3503.5). The golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) are also afforded additional protection under the Eagle Protection Act, amended in 1973 (16USC, Section 669, et seq.).

1.6 - Bald and Golden Eagle Protection Act

With few exceptions, this act (16 USC 668–668d) prohibits take of bald eagles and golden eagles. Unlike the MBTA, which defines "take" to mean only direct killing or taking of birds or their body parts, eggs, and nests, the Bald and Golden Eagle Protection Act defines take in a manner similar to FESA as including "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing," with "disturb" further defined (50 CFR 22.3) as ''to agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, based on the best scientific information available; (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.'' Therefore, the requirements for guarding against impacts to eagles generally are far more stringent than those required by the MBTA alone.

1.7 - Executive Order 13112—Invasive Species

Executive Order (EO) 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, the USFWS and United States Army Corps of Engineers (USACE) would issue permits and therefore would be responsible for ensuring that the proposed action complies with EO 13112 and does not contribute to the spread of invasive species.

1.8 - Clean Water Act Section 404

The USACE and the United States Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the U.S., including wetlands, under Section 404 of the Clean

Water Act (CWA). Waters of the U.S. include wetlands, lakes, and rivers, streams, and their tributaries. Wetlands that fall under the jurisdiction of the USACE (referred to as jurisdictional wetlands) are defined as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Areas not considered jurisdictional waters include, for example, non-tidal drainage and irrigation ditches excavated on dry land; artificially irrigated or created bodies such as small ponds, lakes or swimming pools; and water-filled depressions (33 CFR 328.3; 40 CFR 230.3).

Project proponents must obtain a permit from USACE for all discharges of fill material into waters of the U.S., including jurisdictional wetlands, before proceeding with a proposed action. If wetlands are jurisdictional and could be filled as part of the project, USACE may issue either an individual permit or a general permit. Individual permits are prepared on a project-specific basis for projects that are expected to have adverse effects on the aquatic environment. General permits are pre-authorized permits issued to cover similar activities that are expected to cause only minimal individual and cumulative adverse environmental effects.

A Section 404 permit may not be required if the project avoids the discharge of any fill material into waters of the U.S., including wetlands. If the project cannot be designed to avoid the discharge of fill or excavating in waters of the U.S., including wetlands, a Section 404 permit must be obtained.

1.9 - Clean Water Act Section 401

The CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board (RWQCB) regulates Section 401 requirements.

1.10 - California Fish and Game Code

Under the CESA, the CDFW has the responsibility for maintaining a list of endangered and threatened species (FGC 2070). Sections 2050 through 2098 of the FGC outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the FGC prohibits the taking of plants and animals listed under the CESA. Section 2081 established an incidental take permit program for state-listed species. CDFW maintains a list of "candidate species," which it formally notices as being under review for addition to the list of endangered or threatened species.

In addition, the Native Plant Protection Act of 1977 (FGC Section 1900, et seq.) prohibits the taking, possessing, or sale within the State of any plants with a state designation of rare, threatened, or endangered (as defined by CDFW). An exception to this prohibition in the Native Plant Protection Act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify CDFW and give that state agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. (FGC Section 1913 exempts from "take" prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way.") Project impacts to these species

are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

CDFW also maintains lists of "Species of Special Concern" that serve as species "watch lists." The CDFW has identified many Species of Special Concern. Species with this status have limited distribution or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under CEQA and thereby warrant specific protection measures.

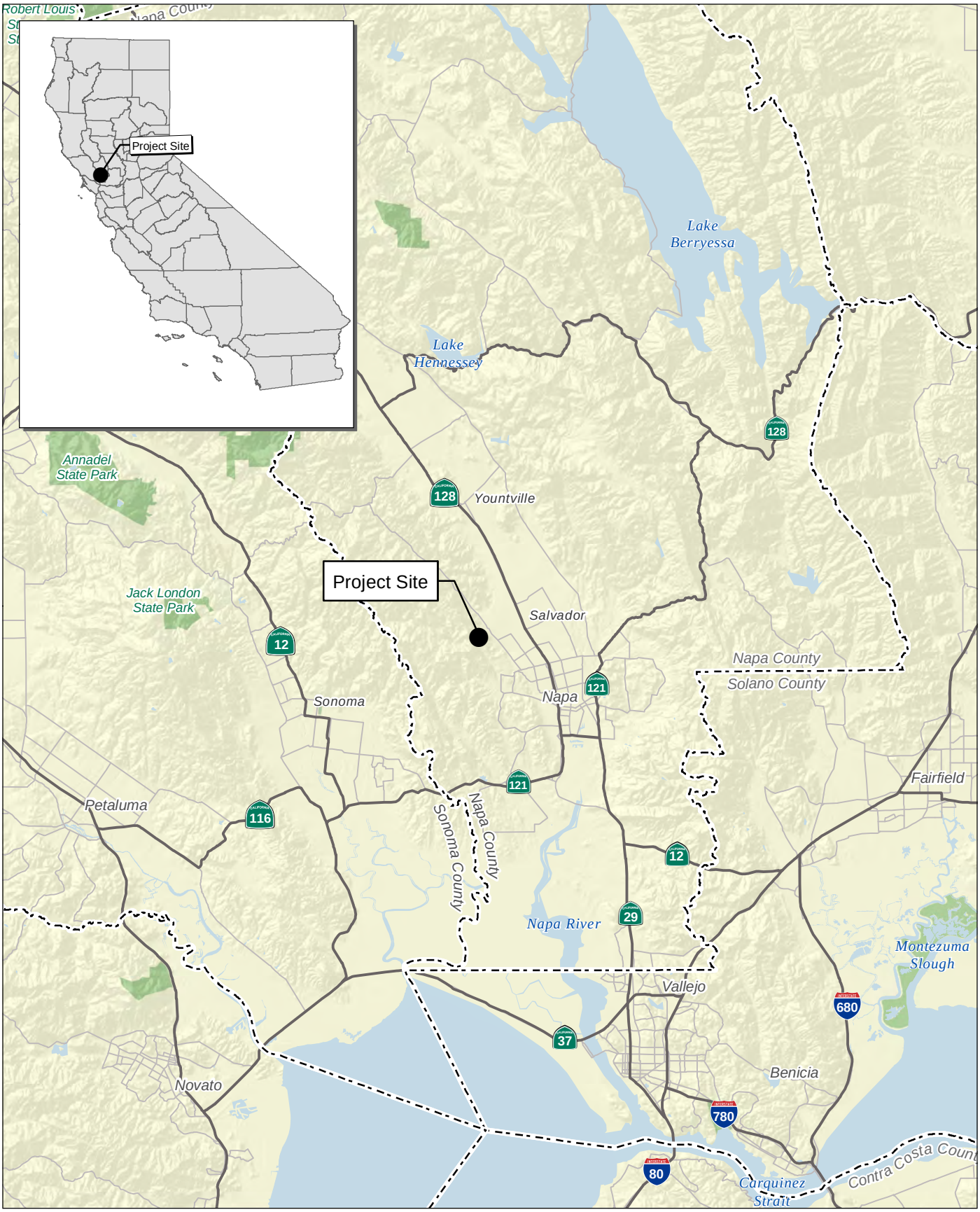
Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society's (CNPS's) Lists 1A, 1B, and 2 would typically be considered under CEQA.

Sections 3500 to 5500 of the FGC outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Under Section 3503.5 of the FGC, it is unlawful to take, possess, or destroy any birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. To comply with the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project study area and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. "Take" of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from CDFW would be in the form of an Incidental Take Permit.

Section 1602 of the FGC requires any entity to notify CDFW before beginning any activity that "may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake" or "deposit debris, waste, or other materials that could pass into any river, stream, or lake." "River, stream, or lake" includes waters that are episodic and perennial; and ephemeral streams, desert washes, and watercourses with a subsurface flow. A Lake or Streambed Alteration Agreement will be required if CDFW determines that project activities may substantially adversely affect fish or wildlife resources through alterations to a covered body of water.



Source: Census 2000 Data, The CaSIL, FCS GIS 2016.

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Exhibit 1
Regional Location Map

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Source: Bing Imagery

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Exhibit 2
Local Vicinity Map
Aerial Base

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1.11 - California Porter-Cologne Water Quality Control Act

The RWQCB has regulatory authority over wetlands and waterways under both the CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the RWQCB has regulatory authority over actions in waters of the U.S., through the issuance of water quality certifications under Section 401 of the CWA in conjunction with permits issued by the USACE under Section 404 of the CWA. When the RWQCB issues Section 401 certifications, it simultaneously issues general Waste Discharge Requirements for the project under the Porter-Cologne Water Quality Control Act. Activities in areas that are outside of the jurisdiction of the USACE (e.g., isolated wetlands, vernal pools, seasonal streams, intermittent streams, channels that lack a nexus to navigable waters, or stream banks above the ordinary high water mark) are regulated by the RWQCB under the authority of the Porter-Cologne Water Quality Control Act. Activities that lie outside of USACE jurisdiction may require the issuance of either individual or general waste discharge requirements.

1.12 - Local Ordinances

The County of Napa Municipal Code (Ord. 1307 § 1 (part), 2008) contains the following restrictions for all proposed activities within any riparian zone:

- The proposed activity will not, with regard to the riparian zones along a channel, remove more than the following:
  - A native tree eighteen inches diameter at breast-height (DBH) per one hundred linear feet of riparian zone on each side of the floodplain, or
  - Three native trees twelve inches DBH per one hundred linear feet of riparian zone on each side of the floodplain, or
  - Six native trees six inches DBH per one hundred linear feet of riparian zone on each side of the floodplain, or
  - Five hundred square feet of vegetation in riparian zones beyond ten feet from the top of the bank, or
  - The temporary removal of a portion of riparian vegetation not more than fifteen feet wide beyond ten feet from the top of the bank, where replanting of such strip is a part of the project; and
- The proposed activity will not involve the locating of any facility or structure within ten feet from the top of the bank; and
- Will not result in a cut or fill slope that would remain unprotected by slope reseeding and bank stabilization replanting at the end of the project, thereby making the slope susceptible to erosion.

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SECTION 2: METHODOLOGY

Analysis of the biological resources associated with the project site began with a thorough review of relevant literature followed by a field review to determine if suitable habitat is present for special-status plants and wildlife. The survey area included the entire project site as well as a survey buffer area that extended approximately 100 feet from the project site boundary to accommodate any changes to project limits and project design that may occur during project development.

The primary objective of the survey was to document existing site conditions and to determine the potential presence of any special-status biological resources.

For the purpose of this report, special-status species refers to all species formally listed as threatened and/or endangered under FESA or CESA; California Species of Special Concern; designated as Fully Protected by CDFW; given a status of 1A, 1B, or 2 by CNPS; or designated as special-status by city, county, or other regional planning documents. Federal and state listed threatened and/or endangered species are legally protected under FESA/CESA. The designated special-status species listed by CNPS have no direct legal protection, but they require an analysis of the significance of potential impacts under CEQA guidelines.

2.1 - Literature Review

The literature review provides a baseline from which to evaluate the biological resources potentially occurring on the project site as well as the surrounding area.

2.1.1 - Existing Environmental Documentation

As part of the literature review, an FCS biologist examined existing environmental documentation for the project site and local vicinity. This documentation included literature pertaining to habitat requirements of special-status species potentially occurring in the region and vicinity of the site, and federal register listings, protocols, and species data provided by the USFWS and CDFW. These and other documents are listed in the references section of this report.

2.1.2 - Topographic Maps and Aerial Photographs

An FCS biologist reviewed current USGS 7.5-minute topographic quadrangle map(s) and aerial photographs as a preliminary analysis of the existing conditions within the project site and immediate vicinity. Information obtained from the review of the topographic maps included elevation range, general watershed information, and potential drainage feature locations (USGS 1986). Aerial photographs provide a perspective of the most current site conditions relative to on-site and off-site land use, plant community locations, and potential locations of wildlife movement corridors.

2.1.3 - Soil Surveys

The United States Department of Agriculture (USDA) has published soil surveys that describe the soil series (a group of soils with similar profiles) occurring within a particular area (USDA 1980). These profiles include major horizons with similar thickness, arrangement, and other important

characteristics. These series are further subdivided into soil mapping units that provide specific information regarding soil characteristics. Many special-status plant species have a limited distribution based exclusively on soil type. Therefore, pertinent USDA soil survey maps were reviewed to determine the existing soil mapping units within the project site and to establish if soil conditions on-site are suitable for any special-status plant species (Soil Survey Staff 2017).

2.1.4 - Special-status Species Database Search

An FCS biologist compiled a list of threatened, endangered, and otherwise special-status species previously recorded within the general project vicinity, as shown in Exhibit 3. The list was based on a search of the CDFW's California Natural Diversity Database (CNDDB; CDFW 2017), a special-status species and plant community account database, and the CNPS's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California database (CNPS 2017) for the Napa California USGS 7.5-minute topographic quadrangle map.

The CNDDB Biogeographic Information and Observation System (BIOS 5; CDFW 2005) database was used to determine the distance between known recorded occurrences of special-status species and the project site.

2.1.5 - Trees

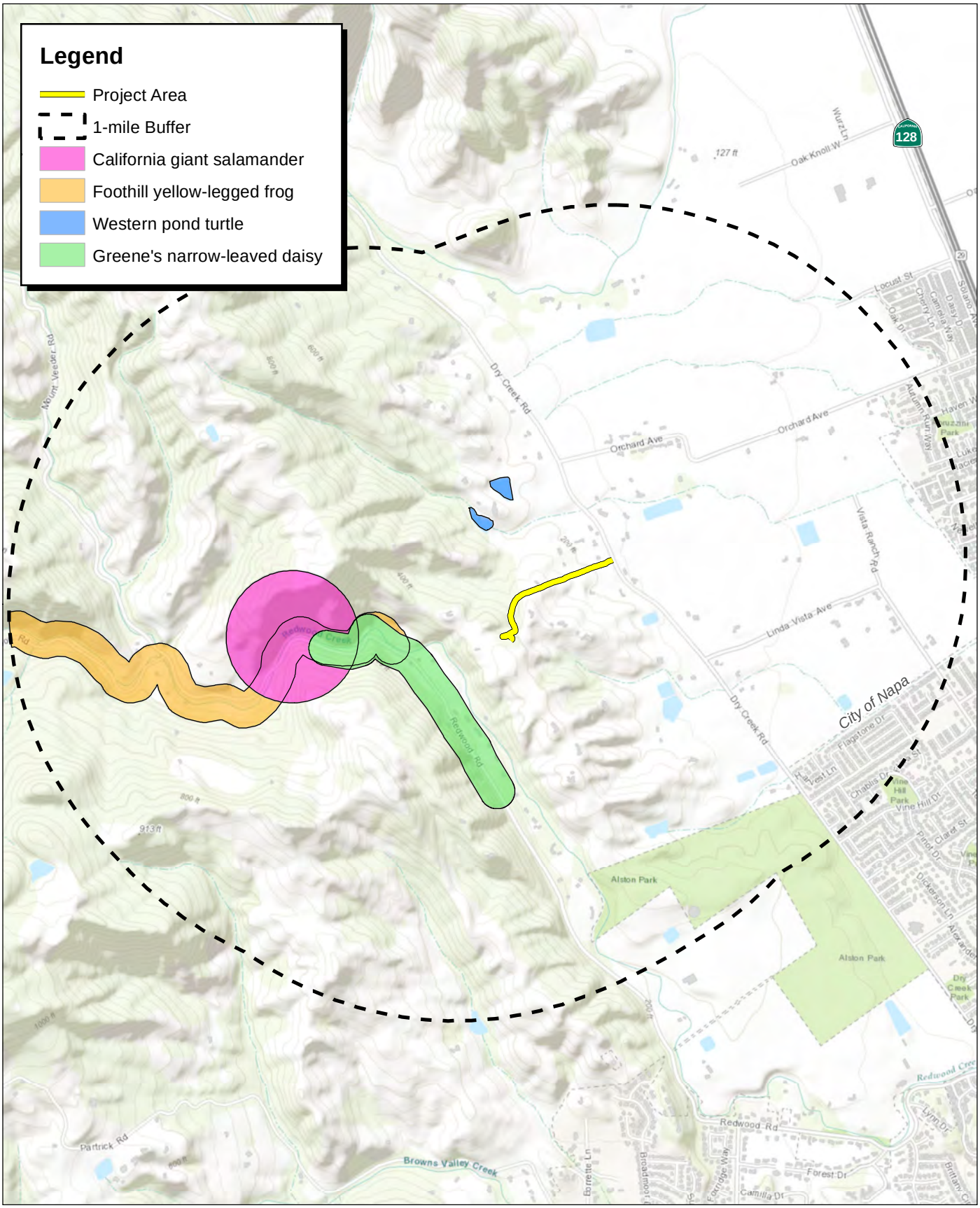
Prior to conducting the surveys, FCS's biologist reviewed the applicable county ordinances pertaining to tree preservation and protective measures and their tree replacement conditions or permits required. Species listed in any applicable ordinances identified on-site were noted and the location recorded using a handheld GPS unit and identified on a topographic map.

2.1.6 - Jurisdictional Waters and Wetlands

Prior to conducting the surveys, FCS's biologists reviewed USGS topographic maps and aerial photography to identify any potential natural drainage features and water bodies. In general, all surface drainage features identified as blue-line streams on USGS maps and linear patches of vegetation are expected to exhibit evidence of flows and considered potentially subject to state and federal regulatory authority as "waters of the U.S. and/or State." A preliminary assessment was conducted to determine the location of any existing drainages and limits of project-related grading activities, to aid in determining if a formal delineation of waters of the U.S. or State is necessary.

2.2 - Focused Field Surveys

FCS Senior Biologist Adam Klatzker conducted the focused assessment on September 27, 2017. Surveys were conducted on foot during daylight hours. The purpose of the survey was not to extensively search for every species occurring within the project site, but to ascertain general site conditions and identify potentially suitable habitat areas for various special-status plant and wildlife species. Special-status or unusual biological resources identified during the literature review were ground-truthed during the reconnaissance-level survey for mapping accuracy. Special attention was paid to sensitive habitats and areas potentially supporting special-status species.



Source: CNDDB September, 2017

FIRSTCARBON SOLUTIONS™

2,000 1,000 0 2,000 Feet

Exhibit 3
Special-status Species Occurrences within 1-mile of Project Site

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2.2.1 - Plant Species

Common plant species observed during surveys were identified by visual characteristics and morphology in the field and recorded in a field notebook. Any uncommon and less familiar plants were identified in a similar fashion augmented by the use of taxonomical guides, such as Clarke et al. (2007), Hitchcock (1971), McAuley (1996), and Munz (1974). Taxonomic nomenclature used in this study follows Baldwin et al. (2012). Common plant names, when not available from Baldwin et al. (2012), were taken from other regionally specific references.

2.2.2 - Wildlife Species

Wildlife species detected during the survey by sight, calls, tracks, scat, or other signs were recorded in a field notebook. Notations were made regarding suitable habitat for those special-status species determined to potentially occur within the project site (CDFW 2017). Appropriate field guides were used to assist with species identification during surveys, such as Peterson (2010), Reid (2006), and Stebbins (2003).

2.2.3 - Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Urbanization and the resulting fragmentation of open space areas create isolated “islands” of wildlife habitat, forming separated populations. Corridors act as an effective link between populations.

The project site was evaluated for evidence of a wildlife movement corridor during the reconnaissance-level survey. However, the scope of the biological resources study did not include a formal wildlife movement corridor study utilizing track plates, camera stations, scent stations, or snares. Therefore, the focus of this study was to determine if the change of current land use of the project site may have significant impacts on the regional movement of wildlife. These conclusions are based on the information compiled during the literature review, including aerial photographs, USGS topographic maps and resource maps for the vicinity, the field survey conducted, and professional knowledge of desired topography and resource requirements for wildlife potentially utilizing the project site and vicinity.

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SECTION 3: EXISTING CONDITIONS

The focused special-status species field survey was conducted on September 27, 2017 from 0830 to 1100 hours. Weather conditions during the field survey were clear and sunny with a range of 75 to 80 degrees Fahrenheit.

3.1 - Environmental Setting

The project site is an approximately 2,000-foot roadway widening project that climbs from Dry Creek Road up to the winery on top of a hill for a total elevation gain of approximately 300 feet. The project site consists of an existing paved road that traverses through vineyards on the east end and meanders up the hill through an oak/bay forest to the winery.

3.2 - Soils

Soils within the project site are predominantly soil type Fegan clay loam 30 to 50 percent slopes. This soil series consists of well drained clay and sandy clay loams that have a substrate of weathered bedrock formed in sandstone and shale. This soil series is considered not prime farmland. The remaining areas within the site consist of soil types Felton gravelly loam, 30 to 50 percent slopes and Yolo loam, 0 to 10 percent slopes. No serpentinite or volcanic-derived soils or vernal pool clay soils are found on-site.

3.3 - Vegetation Communities and Land Cover Types

A search of the USFWS Critical Habitat Portal revealed that the project does not contain identified critical habitat for any federally listed species (USFWS 2011). The nearest USFWS Critical Habitat is in the nearby Redwood Creek for steelhead. This road project is on the other side of a ridgeline from Redwood Creek and will have no impacts on any USFWS designated Critical Habitat.

There are no designated refuges within the project boundaries.

The predominant natural vegetation community in the project area is Blue oak woodland with the vineyard areas exhibiting non-native grassland features. A complete description of the community or land cover type is based on Holland (1986), and the extent to which it occurs on and within the project is provided below.

3.3.1 - Non-Native Annual Grassland

The Annual Grassland and Forbs is an upland habitat area dominated by non-native invasive weedy grasses and herbaceous species. Common non-native species include soft chess brome (*Bromus hordeaceous*), medusahead (*Taeniatherum caput-medusa),* Italian rye grass (*Festuca perennis*), wild oats (*Avena fatua*), and herbaceous forb species such as Italian thistle (*Carduus pycnocephalus*), yellow star-thistle (*Centaurea solstitialis*), and thistle (*Cirsium* sp.).

3.3.2 - Blue Oak woodland

A highly variable climax woodland dominated by blue oak (*Quercus douglasii*), but usually including individuals of several other oaks. Stands vary from open savannas with grassy understories (usually at lower elevations) to fairly dense woodlands with shrubby understories.

The blue oak woodland found on-site has complementary bay laurel (*Umbellularia californica*) with a poison oak, fern and non-native grasses understory. The oak and bay trees are mature and may provide roosting and nesting habitat to nesting raptor species in the project vicinity.

3.4 - Wildlife

The vegetation community and land cover types discussed above provide habitat for a limited number of local wildlife species. Wildlife activity was low during the field survey and consisted of primarily avian species. Wildlife species on or near the site were common species typically found in urban and rural areas of Napa County. Common birds observed on-site include wild turkey (*Meleagris gallopavo intermedia*), California scrub-jay (*Aphelocoma californica*), dark-eyed junco *(Junco hyemalis)*, and turkey vulture (*Cathartes aura*).

A limited variety of common mammals most likely occur within the project vicinity: striped skunk (*Mephitis mephitis*), California ground squirrel (*Spermophilus beecheyi*), raccoon (*Procyon lotor*), and Virginia opossum (*Didelphis virginiana*). These species are expected to occur in the greater project vicinity and may occasionally wander through the site.

3.5 - Trees

As mentioned above, blue oak (*Quercus douglasii*) and bay laurel (*Umbellularia californica*) make up the majority of the trees on the project site. California live oak (*Quercus agrifolia*), white oak (*Quercus lobata*) and madrone *(Arbutus menziesii)* are also present.

3.6 - Jurisdictional Waters and Wetlands

An assessment of potentially jurisdictional features was conducted as part of the literature review and site assessment for the project site. An ephemeral stream bisects the project at engineering Station #317+50 on the original road alignment and Station #77+70 on Option 2. Ephemeral streams have flowing water for brief periods during localized rain events. The proposed project, as currently engineered, does not appear to affect the streambed or bank of this feature; thus, permits for fill under the federal Clean Water Act sections 401 and 404 will not be required for this project.

SECTION 4: SENSITIVE BIOLOGICAL RESOURCES

The following section discusses the existing site conditions and potential for special-status biological resources to occur within the project site.

4.1 - Special-status Plant Communities

Special-status plant communities are considered sensitive biological resources based on federal, state, or local laws regulating their development, limited distributions, and habitat requirements of special-status plant or wildlife species that occur within them.

No special-status plant communities occur within the project site.

4.2 - Special-status Plant Species

The Special-status Plant Species Table (Appendix B.1) identifies special-status plant species that have been recorded to occur within 1 mile of the project site, as recorded by the CNDDB and CNPSEI (CDFW 2017; CNPS 2017). The table also includes the species' status, required habitat, and potential to occur within the project site. All special-status plant species were evaluated were determined unlikely to occur on-site, primarily based on the absence of suitable habitat and lack of findings. These species are shown in Appendix B.1.

4.3 - Special-status Wildlife Species

The Special-status Wildlife Species Table (Appendix B.2) identifies federal and state listed threatened and/or endangered wildlife species, and state Species of Special Concern that have been recorded in the CNDDB (CDFW 2017) as occurring within 1 mile of the project site. The table also includes the species' status, required habitat, and potential to occur within the project site. All special-status wildlife species determined unlikely to occur on-site, primarily based on the absence of suitable habitat, have also been included in the table in Appendix B.2.

4.3.1 - Threatened or Endangered Species

Because of lack of suitable habitat, none of the sensitive species identified in the desktop review are expected to occur in the project area.

4.3.2 - California Species of Special Concern

California Species of Special Concern do not have legal protection under FESA or CESA, but they are recognized as sensitive by CDFW, and therefore require an independent assessment under the CEQA process to determine if project-related impacts are significant. Special-status species are known to occur within 1 mile of the project site (see Appendix B.2).

4.4 - Nesting Birds

The trees and some low lying shrubs found in the project area provide suitable nesting habitat for birds protected under the MBTA, and other special-status birds, including raptors covered by FGC Section 3503.5.

4.5 - Wildlife Movement Corridors

Based upon the results of our field review, the ephemeral drainage running through the project site has the potential to be utilized by regional wildlife as a corridor from open lands to the east to the forested habitat and Redwood Creek west of the project area.

4.6 - Jurisdictional Waters and Wetlands

An assessment of potential jurisdictional features was conducted as part of the literature review followed by a focused assessment of the project site. The proposed project, as currently engineered, does not appear to affect the streambed or bank of this feature; thus, permits for Clean Water Act Sections 401 and 404 will not be required for this project.

SECTION 5: DISCUSSION AND RECOMMENDATIONS

The following discussion addresses potential impacts to special-status biological resources resulting from the proposed project and recommends mitigation measures where appropriate to minimize those impacts to a level of "less than significant" under CEQA.

5.1 - Special-status Plant Species and Communities

Based on plant surveys and suitability of habitat for special-status plants or communities within the project site, the presence of special-status plants is unlikely and, therefore, no further studies or mitigation measures are necessary.

5.2 - Special-status Wildlife Species

Suitable habitat for Western pond turtle, foothill yellow-legged frog and California giant salamander is not present in or near the project site. All of these species require aquatic habitat not found in the vicinity of the project.

Given these findings, no focused surveys for these species are recommended prior to or during the construction phase.

5.3 - Nesting Birds

Potential impacts could occur to resident and migratory species during project construction, which would render the project temporarily unsuitable for nesting birds because of the noise, vibrations, and increased activity levels associated with various construction activities. These activities could potentially subject birds to risk of death or injury, and they are likely to avoid using the area until such construction activities have dissipated or ceased. Relocation, in turn, could cause hunger or stress among individual birds by displacing them into adjacent territories belonging to other individuals.

Construction activities that occur during the nesting season (generally March 1 to August 31) would disturb nesting sites for birds protected by the MBTA and FGC. No action is necessary if no active nests are found or if construction occurs during the non-breeding season (generally September 1 through February 14).

Implementation of the following avoidance and minimization measures would reduce impacts to raptors and other nesting birds:

- To prevent impacts to MBTA-protected birds, nesting raptors, and their nests, removal of trees will be limited to only those necessary to construct the proposed project.
- If any tree removal is necessary, then it will occur outside the nesting season between September 1 and February 14. If trees cannot be removed outside the nesting season, pre-construction surveys will be conducted prior to tree removal to verify the absence of active nests.

- If an active nest is located during pre-construction surveys, USFWS and/or CDFW (as appropriate) shall be notified regarding the status of the nest. Construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned or the agencies deem disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 100 feet around an active raptor nest and a 50-foot radius around an active migratory bird nest) or alteration of the construction schedule.
- A qualified biologist will delineate the buffer using Environmentally Sensitive Area fencing, pin flags, and or yellow caution tape. The buffer zone will be maintained around the active nest site(s) until the young have fledged and are foraging independently.

5.4 - Wildlife Movement Corridors

Potential Constraints to Development Due to Local Ordinances

Napa County's General Plan has specific requirements regarding setbacks from waterways, access to natural areas, conservation of natural resources, habitat protection and wildlife corridors, to name a few.

The proposed project will not have a long-term effect on wildlife movements through the area.

5.6 - Jurisdictional Waters and Wetlands

According to the engineering drawings, the stream bed or banks of the ephemeral stream mentioned throughout this report will not be disturbed. If, in the event that the road alignment changes or the plans involve disturbance to the bed or banks below the ordinary high water mark (OHM), Clean Water Act Section 401 and 404 permit applications will likely be required to be submitted to the RWQCB and USACE, respectively.

Because of the removal of trees within the bed and banks of the ephemeral stream, a CDFW Lake or Streambed Alteration Agreement (LSAA) will be required for the Drainage Crossing, Option 2 alternative.

SECTION 6: CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: October 6, 2017 Signed: 

Adam Klatzker, Senior Biologist
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

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SECTION 7: REFERENCES

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Appendix A: Site Photographs

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Photograph 1: Looking west from east end.

Photograph 2: Looking southwest at existing road through oak/bay forest.

Photograph 3: Looking west at start of drainage crossing (Option 2).

Photograph 4: Looking east across ephemeral drainage crossing (Option 2).

	
Photograph 5: Looking up hill along proposed driveway to winery.	Photograph 6: Looking north along proposed new driveway route from winery.

Appendix B:
Sensitive Species Tables

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B.1 - Special-status Plant Species Table

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Table 1: Special-status Plant Species Potentially Occurring within the Project

Scientific Name Common Name	Regulatory Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Erigeron greenei Greene's narrow-leaved daisy	—	—	1B.2	Perennial herb found in chaparral on volcanic or serpentinite soils. Bloom period: May-September Elevation 80 to 1005 meters.	**Unlikely to occur**: No suitable habitat is present within the project and none were observed during September 2017 surveys.	Yes

Code Designations

[1] Federal Status: 2015 USFWS Listing	[2] State Status: 2015 CDFW Listing	[3] CNPS: 2015 CNPS-California Rare Plant Ranks (CRPR)
FE = Listed as endangered under the Endangered Species Act **FT** = Listed as threatened under the Endangered Species Act **FC** = Candidate for listing (threatened or endangered) under Endangered Species Act **FD** = Delisted in accordance with the Endangered Species Act — = Not federally listed	**SE** = Listed as endangered under the California Endangered Species Act **ST** = Listed as threatened under the California Endangered Species Act **SSC** = Species of Special Concern as identified by CDFW **CFP** = Listed as fully protected under FGC **CR** = Species identified as rare by CDFW — = Not state listed	**1A** = Plants species that presumed extinct in California. **1B** = Plant species that are rare, threatened, or endangered in California and elsewhere. **List 2** = Plant species that are rare, threatened, or endangered in California, but more common elsewhere. **Blooming period:** Months in parentheses are uncommon.

[4] **Habitat description:** Habitat description adapted from CNDDB (CDFW 2015) and CNPS online inventory (CNPS 2015)

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B.2 - Special-status Wildlife Species Table

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Table 2: Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Regulatory Status USFWS[1]	Regulatory Status CDFW[2]	Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
Reptiles					
Emys marmorata Western pond turtle		SSC	Individuals normally associate with permanent ponds, lakes, streams, irrigation ditches or permanent pools along intermittent streams. Associated with permanent or nearly permanent water in a wide variety of habitats.	**Unlikely to Occur**: No suitable habitat present within the project.	No
Amphibians					
Rana boylii foothill yellow-legged frog	—	CT	Foothill yellow-legged frogs are found in or near rocky streams in a variety of habitats. Unlike most other ranid frogs in California, this species is rarely encountered (even on rainy nights) far from permanent water.	**Unlikely to Occur:** No suitable habitat present within the project.	No
Dicamptodon ensatus California giant salamander	—	SSC	Usually found in cool, moist, forest habitat and associated with rocky streams and springs	**Unlikely to Occur:** No suitable habitat present within the project.	No

Code Designations

[1] Federal Status: 2015 USFWS Listing			[2] State Status: 2015 CDFW Listing		
ESU	=	Evolutionary Significant Unit is a distinctive population.	**SE**	=	Listed as endangered under the CESA.
FE	=	Listed as endangered under the FESA.	**ST**	=	Listed as threatened under the CESA.
FT	=	Listed as threatened under the FESA.	**SSC**	=	Species of Special Concern as identified by the CDFW.
FC	=	Candidate for listing (threatened or endangered) under FESA.	**CT**	=	Candidate for listing as threatened under CESA
FD	=	Delisted in accordance with the FESA.	**CFP**	=	Listed as fully protected under FGC.
FPD	=	Federally Proposed to be Delisted.	**CR**	=	Rare in California.
MBTA	=	protected by the Migratory Bird Treaty Act	**FGC**	=	Protected by FGC 3503.5
—	=	Not federally listed	—	=	Not state listed

[3] **Habitat description:** Habitat description adapted from CNDDB (CDFW 2015a).

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Biological Resource Reconnaissance Survey

Arbuckle Vineyard
APN # 035-160-027 and 035-470-020
Napa County, CA

Prepared
For

Justin and Julie Arbuckle

By
Kjeldsen Biological Consulting
923 St. Helena Ave.
Santa Rosa, CA 95404

September 2012

Biological Resource Reconnaissance Survey
Arbuckle Vineyard
APN # 035-160-027 and 035-470-020
Napa County, CA

PROJECT NAME:

Arbuckle Vineyards
3123 Dry Creek Road
Napa, CA 94558

PROJECT OWNER:

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EROSION CONTROL PLAN:

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PERIOD OF STUDY:

August 7th and 20th , 2012

Biological Resource Reconnaissance Survey
Arbuckle Vineyard
APN # 035-160-027 and 035-470-020
Napa County, CA

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Biological Resource Reconnaissance Survey
Arbuckle Vineyard
APN # 035-160-027 and 035-470-020
Napa County, CA

Executive Summary

This study was conducted at the request of Riechers Spence & Associates and the property owners. This study and report are provided as background information for securing permits from Napa County Conservation, Development and Planning Department for the proposed project.

The property is located at 3123 Dry Creek road northwest of the city of Napa. The survey area (approximately 6 acres) is within a larger parcel that consists of fallow agricultural grasslands, residence with infrastructure, landscape/agricultural plantings, and oak woodlands. The study site is within the Napa USGS Quadrangle. The surrounding land use consists of vineyards, rural residential housing, grasslands and oak woodlands.

The project proposes the development of vineyard within the approximately 6 acres survey area. The project vineyard blocks are within fallow grasslands (semi-natural herbaceous grassland stands) surrounded by oak woodlands.

The purpose of the study and report is to identify biological resources that may be impacted by the proposed project. This study follows the Napa County Guidelines.

Findings:

- No potential habitat for special-status plants or animal species was found during our surveys of the project site and surrounding area. The historic land use and recent fire and weed control reasonably precludes presence of special-status species. The habitat types present and as well as our field results, indicate that the proposed project will have a less that significant impact on local or regional special-status species;
- The DFG California Natural Diversity Data Base five-mile search does not show any records of special-status species associated with the project footprint or immediate surrounding area;
- No sensitive wildlife species were detected on or surrounding the project site. Large oak trees on the site have the potential for bat roosting/breeding;
- The project footprint is primarily within a ruderal grassland that has been mowed for fire and weed control. The plant communities or alliances on the project site are classified as Semi-natural Herbaceous Grassland, Native Grassland *Stipa pulchra =Nassella pulchra* Herbaceous Alliance Purple needle grass grassland and Woodland Alliance *Quercus agrifolia* Woodland Alliance Coast live Oak Woodland;

- The proposed project will not substantially interfere with native wildlife species, migratory corridors, and or native wildlife nursery sites. The loss of habitat, which will result from the project, for local wildlife is incremental but on a regional or local scale will be less than significant;
- There is no need for any additional protocol-level wildlife surveys. There is no evidence to indicate that the project will significantly result in wildlife habitat loss, or impact any of the regional special-status species;
- The proposed project will not impact riparian habitat or wetlands including vernal pools;
- No significant cumulative impacts to wildlife populations are expected by the proposed project;
- On-site biological resources consists of large Valley Oaks and Native bunch grasslands. Valley oaks over 24 inches DBH on site are considered to be biological resources due to their size. There are three areas along the edge of the proposed project that support populations of native grasses. The Napa County Baseline Data Report as well as the California Department of Fish and Game Natural Diversity Data Base (DFG CNDDB) recognize these as Sensitive Biotic Communities. Native bunch grass grasslands are considered sensitive plant communities or alliances:
- No State or Federal biological permits are required for the development of vineyard within the survey area;
- There are three drainages "Tributaries to Waters of the State" that begin out side of the study area down-slope of the proposed project; and
- With recommendations implemented into the project potential biological impacts will reduced to a less than significant level pursuant to the California Environmental Quality Act (CEQA).

Recommendations

The construction phase of the project will require best management practices to prevent impacts of dust and erosion from the project.

The "Tributaries to Waters of the State" which begin downslope from the study area off site must be avoided.

The sensitive native bunch grass grasslands along the edge of the project should be avoided.

Large valley oaks (*Quercus lobata*) greater than 24 in DBH on the project site are significant biological resources. We recommend that these large trees be avoided (See Plate IV for location) and their root zone preserved (directly below the canopy). Soil compaction or cutting of roots has the potential for damaging the continued existence of the tree. If trees cannot be avoided then they should be mitigated for as per Napa County requirements.

If tree removal is to be conducted between (March 1 through July 31) a pre-construction raptor survey should be conducted. The preconstruction survey shall consider all potential nesting habitat for birds within 500 feet of earthmoving activities and related project construction activities. A qualified wildlife biologist shall be hired to conduct survey, which shall

determine through field inspection whether occupied raptor nests are present within the proximity of the project site (i.e. within a minimum 500 feet of the areas disturbed).

Oaks on the project site, if any are to be removed, should be removed after August 31 and before October 15 or after February 28, and before April 15 of any year to prevent any potential impacts to roosting bats if present.

Biological Resource Reconnaissance Survey
Chafen Vineyard
State Highway 128
Napa County, CA

A PROJECT DESCRIPTION

This study was conducted at the request of Riechers Spence & Associates and the property owners. This study and report are provided as background studies necessary for securing permits from Napa County Conservation, Development and Planning Department for the proposed project.

The property is located at 3123 Dry Creek Road northwest of the city of Napa. The survey area (approximately 6 acres) consists of fallow agricultural grasslands, residence with infrastructure, landscape/agricultural plantings, and oak woodlands. The study site is within the Napa USGS Quadrangle. The surrounding land use consists of vineyards, rural residential housing and upland oak woodlands.

Plate I provides a site and location map of the property. Plate III provides an aerial photograph of the property. The attached Site Plan illustrates the project.

A.1 Purpose

The purpose of this report is to:

- Determine the presence of or potential for special-status animals or plants,
- Identify habitat for special-status animals or plants on the property,
- Identify habitat types present on and adjacent to the project site,
- Delineate any wildlife movement corridors within and across the property,
- Determine if there is a need for additional protocol-level wildlife surveys as per U.S. Fish and Wildlife
- Assess the impacts of the proposed project on any on-site or off-site biological resources, and,
- Identify any State or Federal permits required by the proposed project.

A.2 Definitions

Definitions used in this report are attached in Appendix B.

B SURVEY METHODOLOGY

B.1 Project Scoping

The scoping for the project considered location, type of habitat and vegetation types present on the property or associated with potential special-status plant species known for the Quadrangles, surrounding Quadrangles the County or the region. Our scoping also considered records in the most recent version of the Department of Fish and Game California Natural Diversity Data Base (DFG CNDDB Rare Find-3) and the California Native Plant Society (CNPS) Electronic Inventory of Rare or Endangered Plants. "Target" special-status species are those listed by the State, the Federal Government or the California Native Plant Society or considered threatened in the region. Our scoping is also a function of our familiarity with the local flora and fauna as well as previous projects on other properties in the area.

Section 15380 of the California Environmental Quality Act [CEQA (September, 1983)] has a discussion regarding non-listed (State) taxa. This section states that a plant (or animal) must be treated as Rare or Endangered even if it is not officially listed as such. If a person (or organization provides information showing that a taxa meets the State's definitions and criteria, then the taxa should be treated as such.

Tables I and II present target special-status species (see also Appendix C).

B.2 Field Survey Methodology

Our study was made by walking transects through and around the project site by two personnel. Our fieldwork focused on locating target organisms or suitable habitat for target organisms, or indications that such habitat exists on the site. Surveys were conducted on August 7 and 20, 2012.

Plants Field surveys were conducted recording and identifying all species on the site and in the near proximity. Transects through the proposed project sites were made methodically by foot. Transects were established and scrutinized to cover topographic and vegetation variations within the study area. The Intuitive Controlled approach calls for the qualified surveyor to conduct a survey of the area by walking through it and around its perimeters, and closely examining portions where target species are especially likely to occur. The open nature of the site, historic and on going agricultural practices, and small size of the proposed development footprint facilitated our field studies.

The fieldwork for identifying special-status plant species is based on our knowledge and many years of experience in conducting special-status plant species surveys in the region. Plants were identified in the field or reference material was collected, when necessary, for verification using laboratory examination with a binocular microscope and reference materials. Herbarium specimens from plants collected on the project site were made when relevant. Voucher material for selected individuals is in the possession of the authors. All plants observed (living and/or remains from last season's growth) were recorded in field notes.

Typically, blooming examples are required for identification however; it is not the only method for identifying the presence of or excluding the possibility of rare plants. Vegetative morphology and dried flower or fruit morphology, which may persist long after the blooming period, may also be used. Skeletal remains from previous season's growth can also be used for identification. Some species do not flower each year or only flower at maturity and therefore must be identified from vegetative characteristics. Algae, fungi, mosses, lichens, ferns, Lycophyta and Sphenophyta have no flowers and there are representatives from these groups that are now considered to be special-status species, which require non-blooming identification. For some plants unique features such as the aromatic oils present are key indicator. For some trees and shrubs with unique vegetative characteristics flowering is not needed for proper identification. The vegetative evaluation as a function of field experience can be used to identify species outside of the blooming period to verify or exclude the possibility of special-status plants in a study area.

Habitat is also a key characteristic for consideration of special-status species in a study area. Many special-status species are rare in nature because of their specific and often very narrow habitat or environmental requirements. Their presence is limited by specific environmental conditions such as: hydrology, microclimate, soils, nutrients, interspecific and intraspecific competition, and aspect or exposure. In some situations special-status species particularly annuals may not be present each year and in this case one has to rely on skeletal material from previous years. A site evaluation based on habitat or environmental conditions is therefore a reliable method for including or excluding the possibility of special-status species in an area.

Animals. Our field techniques consisted of surveying the area with binoculars and walking the perimeter of the project site. Existing site conditions were used to identify habitat, which could potentially support special status species. Animals were identified in the field by their sight, sign, or call. All animal life was recorded and is presented in Appendix A.

Trees were surveyed to determine whether occupied raptor nests were present within the proximity of the project site (i.e., within a minimum 500 feet of the areas to be disturbed). Surveys consisted of scanning the trees on the property with binoculars searching for nest or bird activity. Our search was conducted from the property and by walking under existing trees looking for droppings or nest scatter from nests that may be present that were not observable by binoculars. Potential bat breeding habitat was surveyed for within 200 feet of the proposed project, by looking for roosting habitat rock outcrops, crevasses, and evidence of roosting.

Aerial photos were reviewed to look at the habitat surrounding the site and the potential for wildlife movement, or wildlife corridors from adjoining properties onto or through the site.

Wetlands The project site was reviewed to determine from existing environmental conditions with a combination of vegetation, soils, and hydrologic information if seasonal wetlands were present. Wetlands were evaluated using the ACOE's three-parameter approach: Vegetation, Hydrology, and Soils.

Tributaries to Waters of the US Tributaries to Waters of the US are determined by the evaluation of continuity and "ordinary high water mark." The ordinary high water mark of the creek was determined based on the top of scour marks and high flow impacts on vegetation.

B.3 Qualifications of Field Investigators

Chris K. Kjeldsen, Ph.D., Botany, Oregon State University, Corvallis, Oregon. He has over forty years of professional experience in the study of California flora. He was a member of the Sonoma County Planning Commission and Board of Zoning (1972 to 1976). He has over thirty years of experience in managing and conducting environmental projects involving impact assessment and preparation of compliance documents, Biological Assessments, DFG Habitat Assessments, DFG Mitigation projects, ACOE Mitigation projects and State Parks and Recreation Biological Resource Studies. Experience includes conducting special-status species surveys, jurisdictional wetland delineations, general biological surveys, 404 and 1600 permitting, and consulting on various projects. He taught Plant Taxonomy at Oregon State University and numerous botanical science and aquatic botany courses at Sonoma State University including sections on wetlands and wetland delineation techniques. He has supervised numerous graduate theses, NSF, DOE and local agency grants and served as a university administrator. He has a valid DFG collecting permit.

Daniel T. Kjeldsen, B. S., Natural Resource Management, California Polytechnic State University, San Luis Obispo, California. He spent 1994 to 1996 in the Peace Corps managing natural resources in Honduras, Central America. His work for the Peace Corps in Central America focused on watershed inventory, mapping and the development and implementation of a protection plan. He has over ten years of experience in conducting Biological Assessments, DFG Habitat Assessments, ACOE wetland delineations, wetland rehabilitation, and development of and implementation of mitigation projects and mitigation monitoring. He has received 3.2 continuing education units MCLE 27 hours in Determining Federal Wetlands Jurisdiction from the University of California Berkeley Extension. Attended Wildlife Society Workshop Falconiformes of Northern California Natural History and Management California Tiger Salamander 2003, Natural History and Management of Bats Symposium 2005, Western Pond Turtle Workshop 2007, and Western Section Bat Workshop 2011. Laguna Foundation & The Wildlife Project Rare Pond Species Survey Techniques 2009. A full resume is available upon request

C BIOLOGICAL SETTING

The property is located above the Napa Valley within the inner North Coast Range Mountains, a geographic subdivision of the larger California Floristic Province (Hickman, 1993) which is strongly influenced by the Pacific Ocean. The region is in climate Zone 14 "Ocean influenced Northern and Central California" characterized as an inland area with ocean or cold air influence. The climate of the region is characterized by hot, dry summers and cool, wet winters, with precipitation that varies regionally from less than 30 to more than 60 inches per year. This climate regime is referred to as a "Mediterranean Climate." The average annual temperature ranges from 45 to 90 degrees Fahrenheit. The variations of abiotic conditions including geology results in a high level of biological diversity per unit area in the region.

The existing site conditions consist of an entrance road off of Dry Creek road, a residence with landscape plantings, oak woodlands, and fallow mowed grasslands.

Figures 1 to 5 illustrate the site conditions and the project area.

The property is at an elevation ranging from 400 feet 450 feet. The parcel drains by sheet flow into unnamed tributaries of Dry Creek thence the Napa River or into unnamed tributaries of Redwood Creek thence the Napa River.

C.1 Site Description and Biological Resources Evaluation Area

Our survey focused on the areas proposed for vineyard development and immediate surrounding habitat. The aerial photo illustrates the site (see Plate III) and the photographs that follow further document existing conditions of the project sites.

The vegetation of California has been considered to be a mosaic with major changes present from one area to another often with distinct vegetation changes within short distances. The variation in vegetation is a function of topography, geology, climate and biotic factors. It is generally convenient to refer to the vegetation associates on a site as a plant community or alliance. Typically plant communities or vegetation alliances are identified or characterized by the dominant vegetation form or plant species present. There have been numerous community classification schemes proposed by different authors using different systems for the classification of vegetation. A basic premise for the designation of plant communities, associations or alliances is that in nature there are distinct plant populations occupying a site that are stable at any one time (climax community is a biotic association, that in the absence of disturbance maintains a stable assemblage over long periods of time). There is also evidence that vegetation on the site is part of a continuum without well-defined boundaries. There is no agreement as to which system of nomenclature to use for describing plant communities.

Biotic Communities integrate the concept of assemblages of plants and animals in a discrete area of the landscape associated with particular soils climate and topographic conditions.

The Plant Community on the parcel would be classified by the California Native Plant Society (CNPS) and Department of Fish and Game California Natural Diversity Data Base (CNDDB) as: Valley and Foothill Grassland and, upland non-project woodlands as Cismontane Woodland.

In general terminology one would refer to the habitat on the property as Agricultural, Ruderal Grassland, Landscape Plantings and Oak Woodland. In the sections below the vegetation and habitat on the property is further categorized with the new system of vegetation classification by Sawyer et al (2009). A Manual of California Vegetation Second Edition classifies the vegetation on the project sites as Grassland Semi-natural Stands with Herbaceous Layer and a *Quercus agrifolia* Woodland Alliance. This classification is the presently preferred system that over time will replace existing classification systems.

Native Grassland Alliance

Stipa pulchra =Nassella pulchra Herbaceous Alliance Purple needle grass grassland; *Nassella pulchra* is dominant or characteristically present in the herbaceous layer with other perennial grasses, including *Elymus glaucus, Festuca californica, Hordeum brachyantherum, Koeleria macrantha, Lolium perenne, Melica californica, M. imperfecta, N. lepida (Stipa), N. ceruna, and Poa secunda* and with perennials, such as *Calochortus* ssp., *Calystegia* ssp., *Sanicula* ssp. and *Sisyrinchium bellum*. Annual herbs, including *Astragalus* ssp., *Avena barbata, A. fatua, Bromus hordeaceus, B. rubens, Clarkia* ssp., *Cryptantha* ssp., *Eremocarpus setigerus, Erodium* ssp., *Hirschfeldia incana, Holocarpha virgata, Lasthenia* ssp., *Lepidium nitidum, Lupinus* ssp., *Plantago* ssp., and *Trifolium* ssp., are common (Membership Rules *Nassella pulchra* > 10% relative cover of the herbaceous layer or *Nassella pulchra* >5% absolute cover as a characteristic of dominant species in the herbaceous layer). Emergent *Artimesia californica, Eriogonum fasiculatum, Hazarded squarosa,* and other shrubs and trees may be present at low cover. Herbs<1m; cover is open to continuous.

The California Natural Diversity Database's rarity ranking for the *Nassella pulchra* Herbaceous Alliance is G4 S3? (G4: global greater than 100 variable occurrence worldwide/statewide, and /or more than 12,950 hectares; S3?: no current threat known).

Grassland Semi-Natural Herbaceous Stand with Herbaceous Layer (Annual Grasslands)

This stand is with the proposed project footprint. It is apparent that the property and project site has had a long history of agricultural and residential use and appears to have been regularly maintained and or mowed for weed and fire control.

Semi-Natural Herbaceous Grasslands are a result of decades of agriculture and the introduction of non-native grasses and herbs. Sawyer uses the term "Semi-natural Stands to refer to non-native introduced plants that have become established and coexist with native species. This includes what can be termed weeds, aliens, exotics or invasive plants in agricultural and nonagricultural settings. The Semi-natural Herbaceous Stands cannot be mapped due to the small size but if one searches the site one can find small patches of the following;

Avena ssp. Semi-natural Herbaceous Stand, Wild oats grasslands. The membership rules require *Avena ssp.* to be> 50% relative cover of the herbaceous layer. Semi-natural stands are those dominated by non-native species that have become naturalized primarily as a result of historic agricultural practices and fire suppression or management practices for weed abatement and fire suppression.

Bromus diandrus Semi-Natural Herbaceous Stands Annual brome grassland; (Membership Rules *Bromus diandrus* >*60%* relative cover with other non-natives in the herbaceous layer). *Bromus diandrus* is dominant or co-dominant with non-native in the herbaceous layer. Emergent trees and shrubs may be present at low cover Herbs<75 cm tall are intermittent to continuous. Ripgut brome is an annual grass from Eurasia. This alliance accounts for the largest acreage of grassland vegetation in cismontane California. Stands in our area contain *Aria caryophylla, Cynosurus echinatus, Dichelostemma multiflorum, Erodium botrys, Limnanthes douglasii, Taeniantherum caput-medusae,* and *Baccharis pilularis* shrubs

Lolium perenne Semi-Natural Herbaceous Stands Perennial Rye Grass Field; (Membership Rules *Lolium perenne*> %50 relative cover, native plants< 15% relative cover). *Lolium perenne* is a non-native grass from Europe introduced into temperate regions throughout the world. It is an annual or a perennial, cool-season bunch grass.

Forest Or Woodland Alliances (Cismontane Woodland or Oak Woodland)

Woodland Alliances are characterized by a dominant tree overstory and different degrees of understory development. Fire management, canopy age and degree of closure, windfalls, historic use, substrate base, aspect and rainfall are variables that control the degree of understory shrubs, herbs and tree recruitment.

Quercus agrifolia Woodland Alliance Coast live Oak Woodland; *Quercus agrifolia* is dominant or co-dominant tree in the canopy with *Acer macrophyllum, A. negundo, Arbutus menziesii, Juglans californica, Platanus racemosa, Populus fremontii, Quercus douglasii, Q. lobata, Q engelmannii, Q. kelloggii, Salix lasiolepis* and *Umbellularia californica* (membership rules *Quercus agrifolia* > 50% relative cover of the tree canopy; if *Umbellularia californica* trees are present, then >33% cover in the tree canopy). Trees > 30m tall; canopy is intermittent. Herbaceous layer is sparse to intermittent. Herbaceous layer is sparse or grassy. *Quercus agrifolia* is a drought resistant evergreen. Stands of this alliance vary from upland savannas and woodlands to bottomland riparian forests with closed tree canopies.

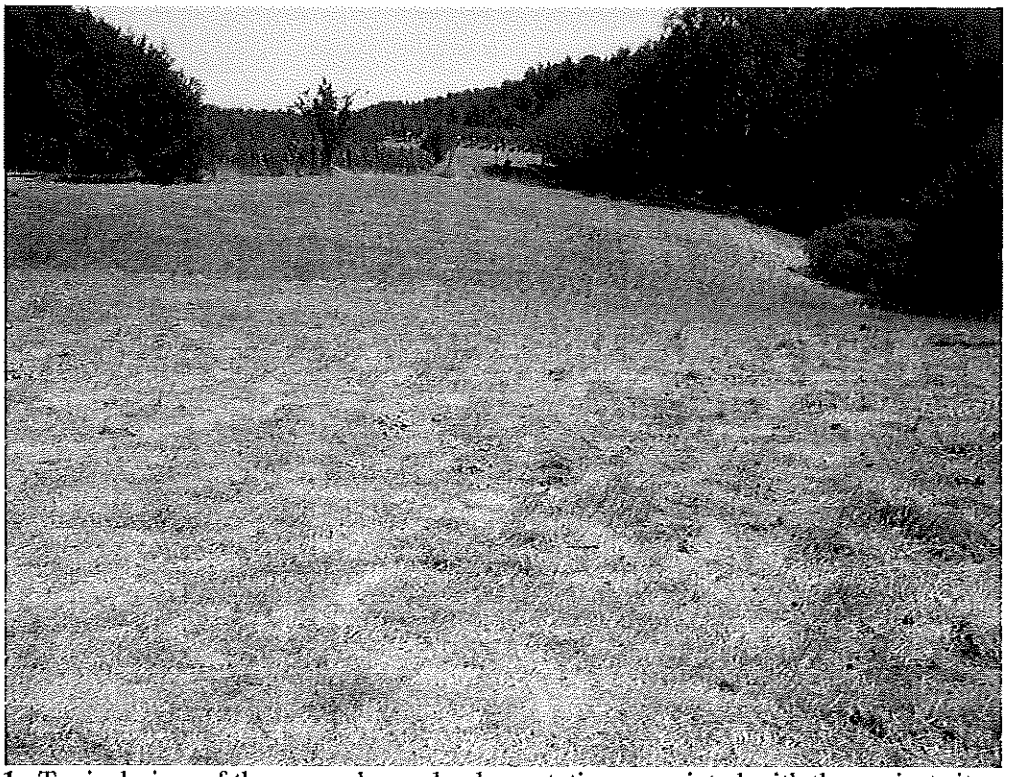

Photo 1. Typical view of the mowed grassland vegetation associated with the project site.

Photo 2. Evidence of Native Grasses on the project site. The bunch grasses are *Stipa pulchra* =*Nassella pulchra* Herbaceous Alliance Purple needle grass grassland

Photo 3. Typical semi-natural herbaceous grassland stands and Oak woodland alliance surrounding the project site.

Photo 3. North side of survey area.

Photo 4. Mowed grassland on project site.

Photo 5 North edge of project site an area that was un-mowed.

C.2 Surrounding Biological Resources

The aerial photograph Plate III, illustrates the site and the surrounding environment. The environmental setting of the project site consists of:

- On the north side of the project – Rural residential, Oak Woodlands:
- On the east side of the project – Oak Woodlands, Grassland, vineyards, rural residential;
- On the south side of the project –Oak Woodlands, Grassland, Vineyards; and
- On the west side of the project –Grassland and Oak Woodlands.

C.3 Napa County Defined Drainage

The project site is on a ridge above the floor of the Napa Valley. The parcel drains by sheet flow into unnamed tributaries of Dry Creek thence the Napa River or into unnamed tributaries of Redwood Creek thence the Napa River.

Napa County Defined Drainage definition is a watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey maps most recently published, or any replacement to that symbol, and or any watercourse which has a well-defined channel with a depth greater that four feet and banks steeper that 3:1 and contains hydrophilic vegetation, riparian vegetation or woody-vegetation including tree species greater that ten feet in height.

There were no Napa County Defined Drainages on the project site. Three drainages begin just off of the survey area which contain a definable bed and bank and would be considered "Tributaries to Waters of the State" these drainages may develop condition beyond the project limits and would be Napa County Defined Drainages as they develop off of the project site (the depth and slope were not measured down-slope of the project).

D RESULTS AND FINDINGS

The results and findings discussed below are based on our on-site field review and background materials available for the project.

D.1 Special-Status Species

A map from the DFG CNDDB for the records of special-status species known for proximity of the project is shown on Plate II. These taxa listed as well as those listed in Appendix C constitute "Target Species" or Organisms that are part of the scoping for the project site and property. Species listed in Appendix C are those that are within the Quadrangle and surrounding Quadrangles. Reference sites were reviewed as part of our scoping for some of the "Target" Organisms.

Tables I and II below provide a list of potential "target" species that are known to occur (DFG CNDDB- 5 mile search) and the results of our field studies. The table includes an analysis / justification for concluding absence as supported by our fieldwork.

Table I. Target species known to occur DFG CNDDB five-mile search. Columns are arranged alphabetically by scientific name.

Scientific Name Common Name	**Species Habitat Association or Plant Community**	**Habitat present on Project Site**	**Bloom Time**	**Obs. on or Near Site**	**Justification for Concluding Absence on Project Site**
Amorpha californica var. *napensis* Napa False Indigo	Cismontane Woodland	No	April-July	No	Absence of requisite habitat on project site.
Brodiaea leptandra Narrow-anthered California Brodiaea	Cismontane Woodland	No	May-June	No	Absence of typical habitat and historic agricultural use of project site
Ceanothus sonomensis Sonoma Ceanothus	Chaparral, Serpentinite or rocky Volcanic	No	Feb.-March	No	Absence of typical habitat and vegetation associates.
Erigeron greenei Green's Narrow-leaved Daisy	Chaparral, Serpentinite	No	May-Sept.	No	Absence of edaphic conditions required for presence.
Horkelia tenuiloba Thin-lobed (=Santa Rosa) Horkelia	Broadleaved upland forest, chaparral, valley and foothill grassland, mesic (wet) openings, sandy soils.	No	May-July	No	Absence of typical habitat and vegetation associates. Present on adjacent parcels.

Scientific Name Common Name	Species Habitat Association or Plant Community	Habitat present on Project Site	Bloom Time	Obs. on or Near Site	Justification for Concluding Absence on Project Site
Juglands hindsii Northern California Black Walnut	Riparian Woodland	No	April-May	No	Absence of requisite habitat or substrate on the project site
Lasthenia conjugens Contra Costa Goldfields	Vernal Pools	No	March–June	No	Requisite aquatic habitat absent on the site or in the immediate vicinity.
Lathyrus jepsonii var. jepsonii Delta Tule Pea	Marshes and swamps (Fresh Water Brackish	No	May-Sept.	No	Requisite aquatic habitat absent on the site or in the immediate vicinity.
Leptosiphon jepsonii Jepson's Leptosiphon	Chaparral, Cismontane Woodland, Valley and Foothill Grassland.	No	April-May	No	Requisite habitat absent on the site or in the immediate vicinity.
Lilaeopsis masonii Mason's Lilaeopsis	Mud Flats of Tidal Waters	No	April-July	No	Lack of requisite habitat.
Lupinus sericatus Cobb Mountain Lupine	Broadleaved upland forest, chaparral, cismontane woodland	Yes	March-June	No	Absence of requisite vegetation precludes presence.
Trichostema ruygtii Napa Bluecurls, Vinegar Weed	Grassland	Yes	No	June-Aug.	Absence of requisite vegetation precludes presence.
Trifolium amoenum, Showy Rancheria Clover	Coastal bluff scrub, valley and foothill grassland (sometimes serpentinite)	No	April-June	No	Historical use of the site precludes presence. This species is vulnerable to disturbance and livestock grazing.
Viburnum ellipticum Oval-leaved Viburnum	Chaparral, Cismontane Woodland, Lower Coniferous Forest	No	May-June	No	Requisite habitat absent on the site or in the immediate vicinity.

We found no evidence of, or potential habitat for, the above listed taxa associated within the project footprint.

Table II below provides a summary of our field results for "target" special-status animal species and justification for negative findings.

Table II. Target species known to occur DFG CNDDB five-mile search. Columns are arranged alphabetically by scientific name.

Scientific Name Common Name	**Habitat**	**Potential for Project Site**	**Obs. on or Near Project Site**	**Justification for Negative Findings on project site.**
Antrozous pallidus Pallid Bat	Roosts in Buildings and Overhangs, woodlands	Yes in large Valley Oaks area removed.	No	Large Valley Oaks on the project site contain limited potential habitat if removed by the project.
Calasellus californicus Isopod	Fresh Water Wells or Springs	No	No	Lack of habitat associated with the proposed project footprint.
Cypseloides niger Black swift	Nests in crevices on cliffs near waterfalls.	No	No	No lack large snags on project site.
Emys marmorata Western Pond Turtle	Slow moving water or ponds	No	No	Potential habitat is not associated with the proposed project.
Geothlypis trichas sinuosa Saltmarsh Common Yellowthroat	Salt Marsh Tule Habitat	No	No	Lack of habitat.
Rana boylii Foothill Yellow-legged Frog	Streams with pools	No	No	There are no creeks or habitat within the project footprint.
Syncaris pacifica California Freshwater Shrimp	Creeks and Estuaries below 300 ft.	No	No	Requisite habitat required for presence lacking.
Taxidea taxus American Badger	Grasslands with food source of ground squirrels	No	No	Absence of food sources required for presence. No burrows observed

We did not find any suitable habitat for special-status animal species that are listed in DFG California Natural Diversity Database five-mile search or special-status species known for the Quadrangle surrounding Quadrangles or for the region associated with the proposed project. The present conditions of the project site are such that there is little reason to expect the occurrence of any special-status animal species within the footprint of the project.

Habitat impacted by the proposed project is such that it will not substantially reduce or restrict the

range of listed animals. Listed animals do not have the potential to utilize habitat at the project site because of the lack of potential roosting habitat for bats, the absence of suitable aquatic habitat, and the historic development and use of the property.

D.2 Sensitive Biotic Communities

The Napa County Baseline Data Report defines Biotic communities as the characteristic assemblages of plants and animals that are found in a given range of soil, climate, and topographic conditions across a region. Sensitive biotic communities in the County were identified using a two-step process for the Napa County Baseline Data Report. The two steps were:

1. An existing list of sensitive biotic communities prepared by the California Department of Fish and Game (DFG) (2003a) was first reviewed by senior Jones & Stokes biologists, and those communities that may occur in the County were identified. Because the community names in the DFG list (2003a) did not correspond directly with the names used in the Land Cover Layer, a determination was made as to which land cover types on the Land Cover Layer correspond to the communities on the DFG list.

2. The aerial extent of each land cover types mapped in the County was generated from the land cover layer. Those biotic communities with an areal extent of less than 500 acres in the County (approximately 0.1% of the County) were identified. These communities were discussed with local experts and their conservation importance established. Those that were not already on the original DFG list and that were determined to be worthy of conservation were added to the list.

The Napa County Baseline Data Report as well as the California Department of Fish and Game Natural Diversity Data Base (DFG CNDDB) lists recognized Sensitive Biotic Communities. The Napa County Baseline Data Report lists twenty-three communities which are considered sensitive by DFG due to their rarity, high biological diversity, and/or susceptibility to disturbance or destruction. The CNDDB communities in Napa County are the following:

Serpentine bunchgrass grassland,
Wildflower field (located within native grassland),
Creeping ryegrass grassland,
Purple Needlegrass grassland,
One-sided bluegrass grassland,
Mixed serpentine chaparral,
McNab cypress woodland,
Oregon white oak woodland,
California bay forests and woodlands,
Fremont cottonwood riparian forests,
Arroyo willow riparian forests,
Black willow riparian forests,
Pacific willow riparian forests,
Red willow riparian forests,
Narrow willow riparian forests,
Mixed willow riparian forests,
Sargent cypress woodland,

Douglas-fir-ponderosa pine forest (old-growth),
Redwood forest,
Coastal and valley freshwater marsh,
Coastal brackish marsh,
Northern coastal salt marsh, and
Northern vernal pool.

Napa County biotic communities of limited distribution that are sensitive include:
Native grassland;
Tanbark oak alliance;
Brewer willow alliance;
Ponderosa pine alliance;
Riverine, lacustrine, and tidal mudflats; and
Wet meadow grasses super alliance.

The majority of the grasslands within the footprint of the project do not consist of any of the sensitive grassland communities listed by the County Baseline Data Report or DFG. The edges of portions of the project area contain Native Grassland *Stipa pulchra =Nassella pulchra* Herbaceous Alliance Purple needle grass grassland. Native perennial bunch grass grasslands are considered a sensitive vegetation type.

Stands of native bunch grasses (***Stipa pulchra =Nassella pulchra*** Herbaceous Alliance Purple needle grass grassland) adjacent to and within the project area should be avoided.

The DFG CNDDB search shows that the Northern Vernal Pool is the only sensitive plant community for the region. Vernal Pools are a unique habitat known for the region.

There are no vernal pools associated with the project site.

D.3 Biological Resources

Distinct biological resources that are limited in nature include, wetlands, Waters of the US, riparian corridors or riparian vegetation, tree and vegetation layers, vegetation diversity, drainages, creeks, springs and seeps provide seasonal water that will support wildlife as well as distinct assemblages of plants that require high moisture. The project footprint is primarily within a developed landscape. See Plate IV for the identified biological resources associated with the property.

Seasonal Wetland generally denotes areas where the soil is seasonally saturated and/or inundated by fresh water for a significant portion of the wet season, and then dry out during the dry season. To be classified as "Wetland," the duration of saturation and/or inundation must be long enough to cause the soils and vegetation to become altered and adapted to the wetland conditions. Varying degrees of pooling or ponding, and saturation will produce different edaphic and vegetative responses. These soil and vegetative clues, as well as hydrological features, are used to define the wetland type. Seasonal wetlands typically take the form of shallow depressions and swales that may be intermixed with a variety of upland habitat types. Seasonal wetlands fall under the

jurisdiction of the U.S. Army Corps of Engineers. There are no seasonal wetlands associated with the project footprint.

"Tributaries to Waters of the State" include drainages which are characterized by the presence of definable bed and bank that meet ACOE, and RWQCB definitions and or jurisdiction. Any discharge of storm water into "Waters of the State" or "Tributaries to Waters of the State" will require ACOE, DFG, and RWQCB permits

The unnamed drainages on the west side of the project site would be considered "Tributaries to Waters of the State"

Riparian Vegetation is by all standards considered sensitive. Riparian Vegetation functions to control water temperature, regulate nutrient supply (biofilters), bank stabilization, rate of runoff, wildlife habitat (shelter and food), release of allochthonous material, release of woody debris which functions as habitat and slow nutrient release, and protection for aquatic organisms. Riparian vegetation is also a moderator of water temperature has a cascade effect in that it relates to oxygen availability.

The project will not impact any riparian vegetation.

Trees – There are native trees within the proposed vineyard area. Large mature valley oaks (*Quercus lobata*) on the project site are significant biological resources (See Plate IV). The valley oak grows in deep soils that are typically converted to agriculture and as such have been eliminated from much of the California landscape. We recommend that these large Valley Oaks be avoided. If trees cannot be avoided then they should be mitigated for as per Napa County requirements.

The project should strive to preserve and conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland communities.

A portion of the study site is within a "Tree Easement Zone" as represented on site map provided by Riechers Spence & Associates.

D.4 Wildlife Habitat and Wildlife Corridors

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

The non-native grassland and ruderal habitat at the site does not provide much habitat value for wildlife. Very few burrows were observed, but small mammals and songbirds most likely utilize these habitats at the site for foraging and cover.

The project as proposed will not negatively impact any migratory corridors or migratory fish on or off site provided standard erosion control measures are implemented.

D.5 Raptor Nests, Bird Rookeries, Bat Roosts, Wildlife Dens or Burrows

We found no indications of nesting raptors on the property or in the near vicinity of the project sites. We did not observe any nests, whitewash or nest droppings, perching associated with the project site.

No bird rookeries were present on the property or within the project footprint. No raptor nests or whitewash from nests was observed. Large Oak trees within and near the project footprint have potential for raptors nests.

The site does not contain any significant natural roosting habitat for bat species (i.e. mines, caves, riparian woodlands). Mature oaks on the property have the potential to support limited roosting habitat.

No evidence of bat roosting was observed. Large mature oaks trees with significant cavities on the project site have the potential to contain roosting habitat for Bats if removed.

Oaks on the project site, if any are to be removed, should be removed after August 31 and before October 15 or after February 28, and before April 15 of any year to prevent any potential impacts to roosting bats if present.

Very few burrows were observed, but small mammals and songbirds likely utilize habitats on the project site for foraging and cover.

No significant wildlife dens or burrows were observed.

D.6 Unique Species that are Endemic, Rare or Atypical for the Area

The flora and fauna present are typical for fallow pasturelands and woodlands of region. We found no evidence that would indicate the proposed project footprint would impact any unique species or local endemic populations.

There were no unique species, endemic populations of plants or animals or species that are rare or atypical for the area present on the project site other than the native bunch grass grasslands referenced above.

D.7 Habitat Fragmentation

The proposed project is located adjacent to a highway and developed landscape. The footprint of the project is within a historically developed landscape.

The project will not result in habitat fragmentation.

D.8 Cumulative Biological Effects

Cumulative biological effects are the result of incremental losses of biological resources within a region. The site location, historic development and use of the area within the footprint of the project negate the potential for cumulative biological resource effects. The project development is proposed for an area of the property that has had a long historic use. There is nothing to indicate that there will be any cumulative biological impacts of the project.

There is no evidence that any negative cumulative biological effects will result from the proposed project.

D.9 State and Federal Permits Needed

Any impact to the bed or bank of "Waters of the State" or "Tributaries to Waters of the State" will require consultation and permits from the Army Corps of Engineers (ACOE), Department of Fish and Game (DFG), and Regional Water Quality Control Boards (RWQCB).

No state or federal biological permits are required for the development of vineyard with in the survey area.

E. RECOMMENDATIONS

E.1 Recommendations

In the sections below impacts or potential impacts based on the project and findings identified above are presented as well as recommendations where impacts are of potential significance.

The property and project site conditions are such that there is no reason to expect any impacts to special-status species on-site or off-site provided standard construction practices are utilized and the erosion control plan is implemented.

Recommendation 1.1 Ensure that Construction Best Management Practices are adopted in order to minimize the amount of sediment and other pollutants leaving the site during construction activities. An erosion and sediment control plan for the vineyard will eliminate erosion from agricultural activities.

No raptor nests were observed on the project site. We did observe an active raptor adjacent to the project site. Although no raptor nests were observed, raptors have the potential to begin nesting at the site. If raptors move into the site close to construction activities there is the potential to disturb them during nesting.

Recommendation 1.2 For ground disturbing activities occurring during the breeding season (February 15 to August 31)), a qualified wildlife biologist should conduct pre-construction surveys of all potential nesting habitat for birds within 500 feet of earthmoving activities. Surveys should be conducted within 14 days prior to tree removal and or ground-breaking activities on the project site. If active bird nests are found during preconstruction surveys the project applicant should consult and obtain approval for appropriate buffers with the California Department of Fish and Game prior to tree removal and or ground-breaking activities or until it is determined that all young have fledged.

Large Oaks on the project have the potential to provide roosting habitat for bats. Removal of maternal roosts during construction has the potential to impact bat species.

Recommendation 1.3 Large Oaks on the project site, if any are to be removed, should be removed after August 31 and before October 15 or after February 28, and before April 15 of any year to prevent any potential impacts to roosting bats if present.

Site development has the potential to impact biological resources without appropriate avoidance and protection measures. Biological resources present include "Tributaries to Waters of the State" and Large Valley Oaks. The proposed project has the potential to result in direct impacts "Tributaries to Waters of the State" and Large Valley Oaks by fill or altering hydrology or direct removal or by injury during construction of project.

Recommendation 1.4 Valley Oaks greater than 24in DBH on the project site should be avoided and preserved (See Plate IV). If trees cannot be avoided then they should be mitigated for as per Napa County requirements.

Recommendation 1.5 The project should try conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland communities.

Recommendation 1.6 Oak woodlands surrounding the project site are a local biological resource. Construction activities must be limited to the project footprint. Trees that are avoided must have their roots protected from heavy equipment during the installation of the vineyard. The contractor must avoid soil disturbance within the canopy of avoided trees during construction activities. Tree canopies out side of the project site should be noted on project plans and labeled Tree Sensitive Area.

Recommendation 1.7 Drainages off of the project site ("Tributaries to Waters of the State") *must be avoided. Any impact to the bed and or bank will require consultation with the California Department of Fish and Game. There were no Napa County Defined Drainages on the project site. Setbacks from Napa County Defined Drainages must be followed if they meet the County's definition as they develop off of the project site.*

Vineyard development has the potential to impact sensitive biotic communities as per Napa County baseline report.

Recommendation 1.8. Ensure that native grassland areas identified along the edge of the project footprint are avoided.

There are no identifiable wildlife corridors through the project site. The project will reduce a small amount of wildlife habitat on the property. Significant areas of wetlands, grasslands, and woodlands on the property are outside of the project footprint. On a regional scale the loss will be less than significant. The proposed project has avoided significant portions of the property, which will remain and continue to provide habitat for wildlife in the area.

No cumulative impacts to wildlife populations are expected by the proposed project. The loss of habitat is less than significant. The surrounding habitat and the topography is such that there are extensive areas of similar habitat as that which will be impacted.

F. SUMMARY

This study is provided as background information necessary for the assessment on the proposed project on local Biological Resources. The project site is within mowed grassland with fringing native grasses and oak woodlands. The site appears to have been used for pasturelands in the past as indicated by fencing and the abundance of non-native annual grasses. Most recently the site has apparently been mowed for fire and weed control.

We find that the project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, California Native Plant Society, or U.S. Fish and Wildlife Service.

The project will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

The project must avoid the native bunchgrass areas in order to have no substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.

In order for the proposed project to not conflict with any local policies or ordinances protecting biological resources, the project must comply with Napa County Defined Drainages setbacks along the west side of the project site.

We consider the large valley oaks (*Quercus lobata*) greater than 24in DBH on the project site to be significant biological resources. We recommend that these large trees be avoided (See Plate IV for location) and their root zone preserved (directly below the canopy). Soil compaction or cutting of roots has the potential for damaging the continued existence of the tree. If trees cannot be avoided then they should be mitigated for as per Napa County requirements.

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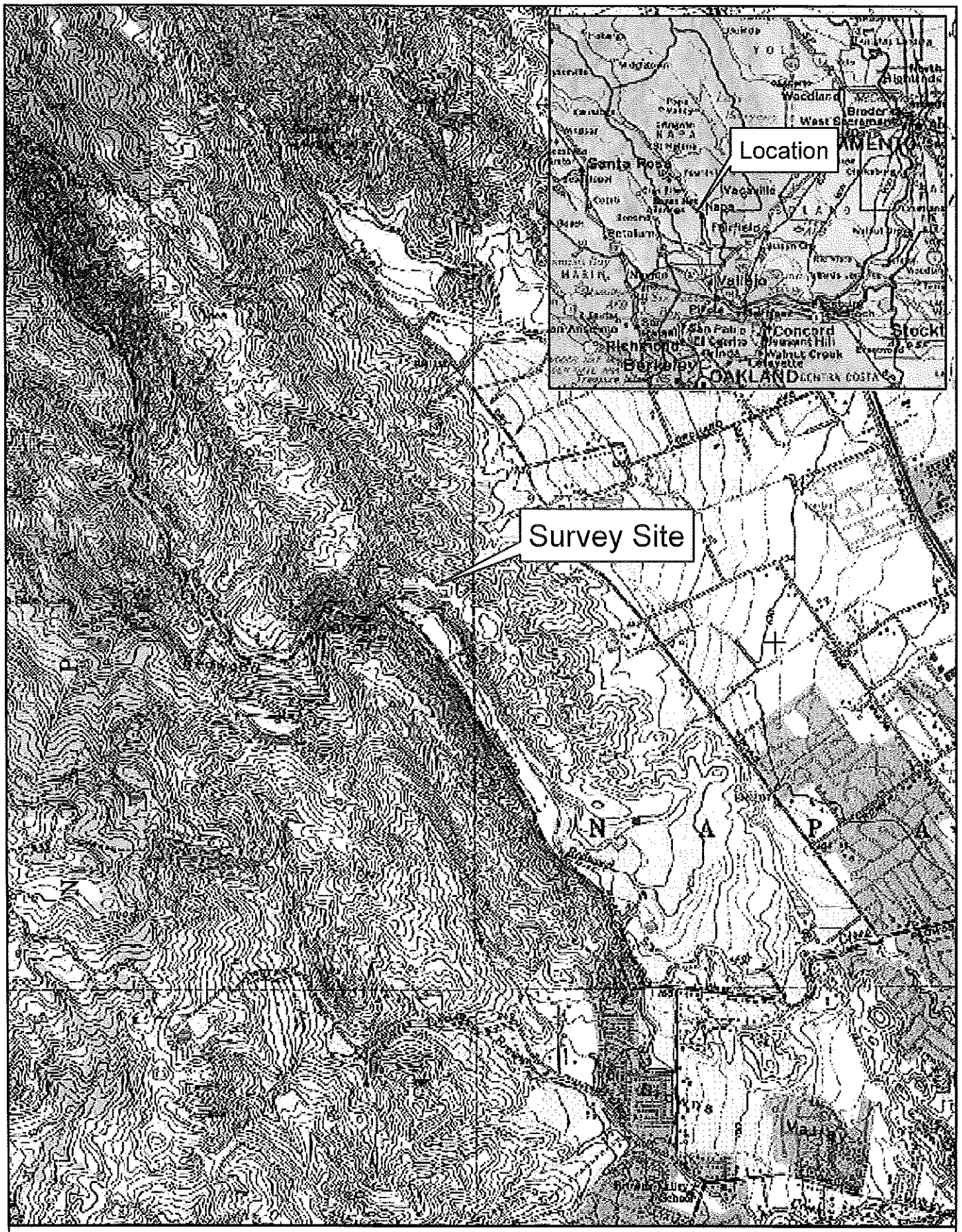
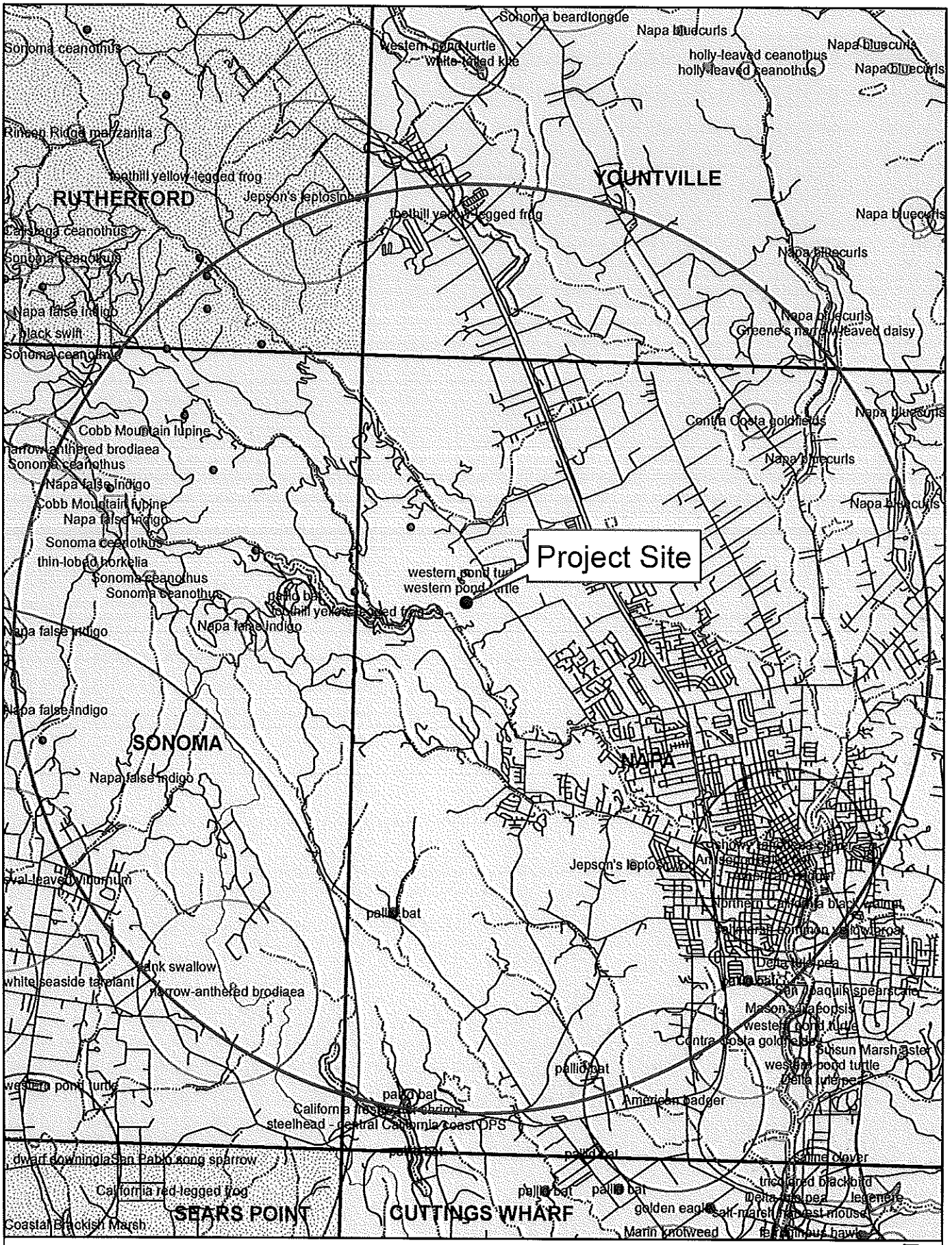


Plate I. Site / Location Map (Napa Quadrangle)


Project Site
RUTHERFORD
YOUNTVILLE
SONOMA
NAPA
SEARS POINT
CUTTINGS WHARF
Sonoma beardtongue
Napa bluecurls
Sonoma ceanothus
western pond turtle
white-tailed kite
holly-leaved ceanothus
Rincon Ridge manzanita
foothill yellow-legged frog
Jepson's leptosiphon
Carneros ceanothus
Napa false indigo
black swift
Cobb Mountain lupine
narrow-anthered brodiaea
pallid bat
Contra Costa goldfields
Greene's narrow-leaved daisy
thin-lobed horkelia
Napa blue-eyed grass
bank swallow
white seaside tarplant
California red-legged frog
Coastal Brackish Marsh
dwarf downingia
San Pablo song sparrow
California clapper rail
steelhead - central California coast DPS
American badger
Suisun Marsh aster
Delta tule pea
Mason's lilaeopsis
Marin knotweed
golden eagle
salt-marsh harvest mouse
Plate II DFG CNDDB 5-Mile Search
0 0.5 1 2 Miles
(Data Date September 2012)

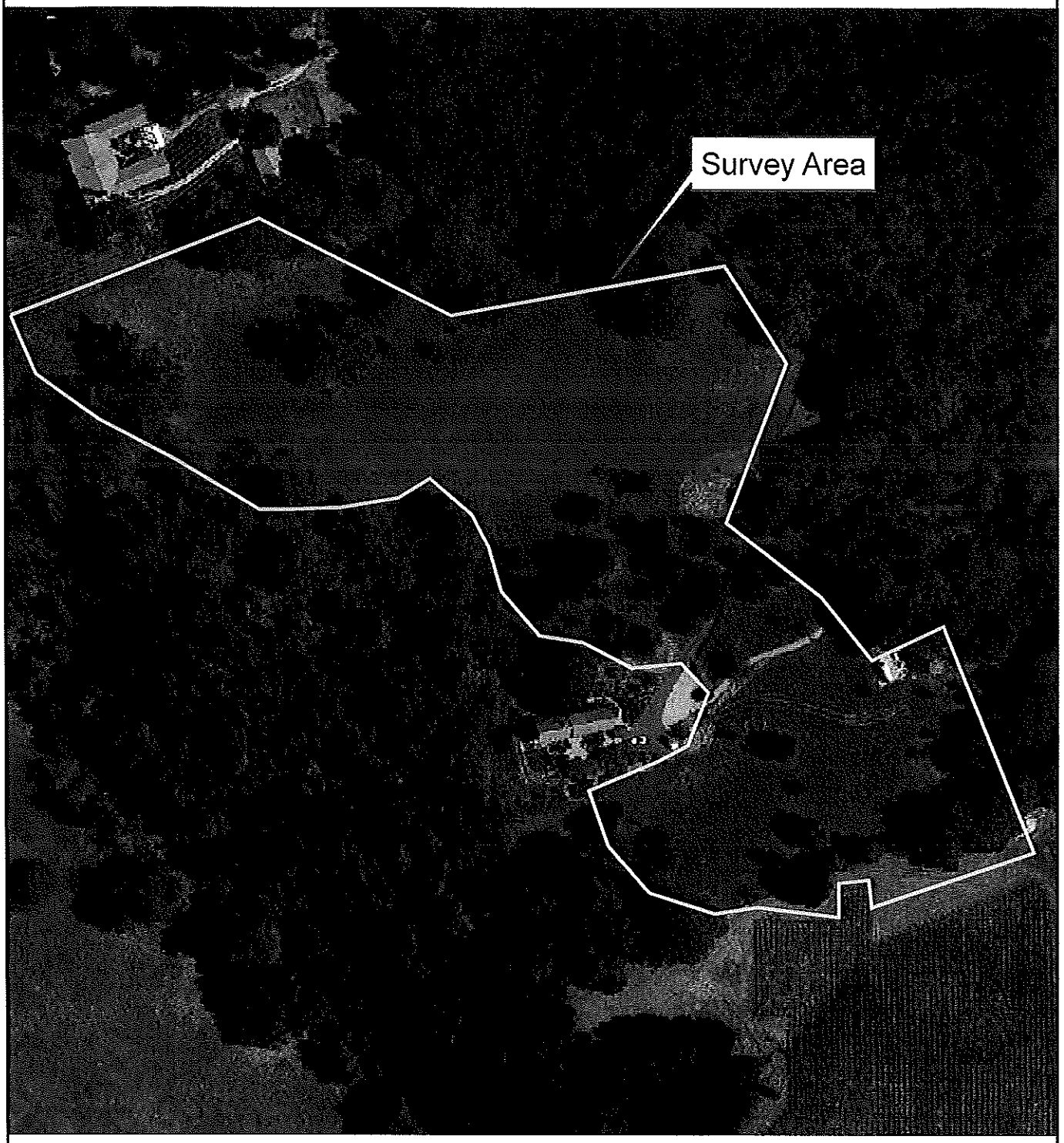


Plate III. Aerial Photo / Survey Area

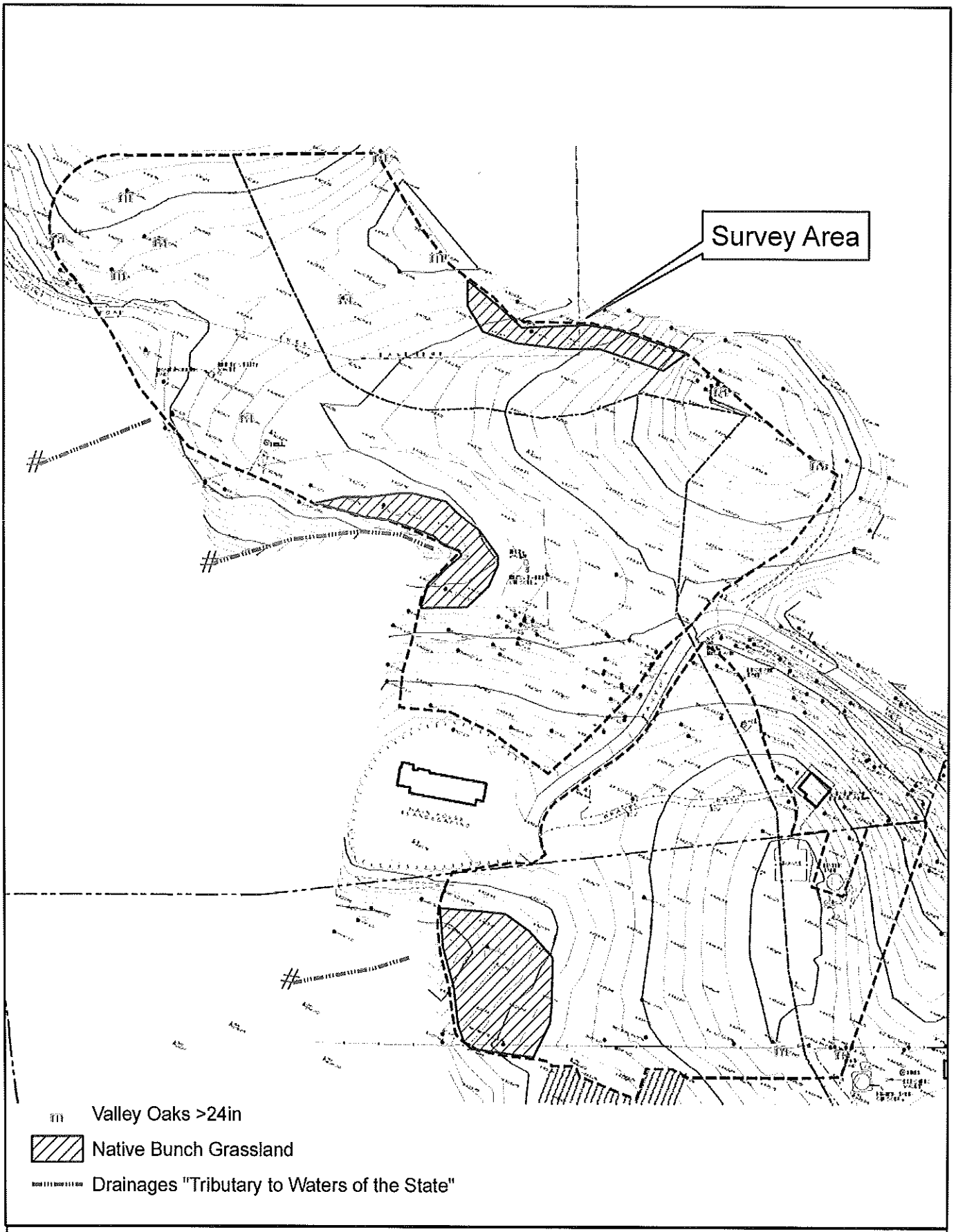


Plate IV. Biological Resources

APPENDIX A
Plants and Animals Observed Associated With The Project Site

PLANTS

The nomenclature for the list of plants found on the project site and the immediate vicinity follows: Brodo, Irwin M., Sylvia Duran Sharnoff and Stephen Sharnoff, 2001, for the lichens; Arora -1985, for the fungi; S Norris and Shevrock - 2004, for the mosses; Doyle and Stotler - 2006 for liverworts and hornworts and Baldwin, B.G., D.H. Goldman, D.J.Keil, R.Patterson, T.J.Rosati, and D.H.Wilkens, editors, 2012 - for the vascular plants.. The plant list is organized by major plant group.

Habitat type indicates the general associated occurrence of the taxon on the project site or in nature.

Abundance refers to the relative number of individuals on the project site or in the region.

MAJOR PLANT GROUP **Family** **Genus** **Common Name**	**Habitat Type**	**Abundance**

NCN = No Common Name, * = Non-native, @= Voucher Specimen

FUNGI

Basidiomycota- Club Fungi

POLYPORACEAE

Oxyporus corticola=Poria corticola NCN	On Hardwoods	Occasional
Trametes versicolor Turkey Tail	Woodlands on Dead Wood	Common

MOSSES

MINACEAE

Alsia californica (W.J.Hooker&Arnott) Sullivant NCN	Coastal Forests On Trees	Common
Dendroalsia abietina (Hook.) Brit. NCN	Woodlands	Common
Homalothecium nuttallii (Wilson) Jaeger NCN	Epiphytic on Trees Near Coast-Inland	Common
Orthotrichum lyellii Hook & Tayl. NCN	Woodlands, Upper Canopy	Common
Scleropodium touretii (Brid.) L Koch. NCN	Woodlands	Common

LICHENS

FOLIOSE

Flavoparmelia caperata (L.) Hale NCN	Oaks	Common
Flavopunctilia flaventor (Stirt.) Hale NCN	On Oaks	Common
Xanthoria polycarpa (Hoffm.) Rieber Pin-cushion Sunburst Lichen	On Oaks Young Twigs	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

NCN = No Common Name, * = Non-native, @= Voucher Specimen

Evernia prunastri (L.) Ach. NCN	On Oaks	Common
Ramalina farinacea (L.) Ach. NCN	On Oaks	Common
@*Ramalina leptocarpha* Tuck. NCN	On Oaks	Common
@*Ramalina menziesii* Taylor non Tuck. Lace Lichen, Old Man's Beard	On Oaks	Common
@*Teloschistes chrysophthalmus* (L.) Th. Fr. NCN	On Oaks	Common
Usnea intermedia=U. arizonica NCN	On Oaks	Common
CRUSTOSE		
Buellia ssp. NCN	On Oaks	Common
Leconora caesiorubella Ach. NCN	On Oaks	Common
Ochrolechia orgonensis H. Magn. NCN	On Bark	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--DICOTYLEDONAE- TREES

MAGNOLIIDS

LAURACEAE		
Umbellularia californica (Hook.&Arn.) Nutt. California Laurel, Sweet Bay, Pepperwood, California Bay	Conifer&Oak Woodlands	Occasional

EUDICOTS

ERICACEAE Heath Family		
Arbutus menziesii Pursh Madrone	Woodlands	Common
FAGACEAE Oak Family		
Quercus agrifolia Nee Live Oak	Woodlands	Common
Quercus kelloggii Newb. Black Oak	Woodlands	Common
Quercus lobata Nee. Valley Oak	Valley Grasslands	Common
OLEACEAE Olive Family		
**Olea europaea* L. Olive	Domestic Ruderal	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

NCN = No Common Name, * = Non-native, @= Voucher Specimen

ROSACEAE Rose Family		
Prunus domestica L. Prune	Escape, Ruderal	Occasional
SAPINDACEAE Soapberry Family		
Aesculus californica (Spach) Nutt. California Buckeye	Woodlands, Riparian	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--DICOTYLEDONAE-SHRUBS AND WOODY VINES

EUDICOTS

ANACARDIACEAE Sumac Family		
Toxicodendron diversilobum (Torry&Gray) E.Green Poison Oak	Woodlands	Common
ASTERACEAE (Compositae) Sunflower Family		
Baccharis pilularis deCandolle Coyote Brush	Woodlands, Grasslands	Common
CAPRIFOLIACEAE Honeysuckle Family		
Symphoricarpos albus (L.) SF Blake *var. laevigatus* Snowberry	Riparian, Shrub/Scrub Woodlands	Common
ROSACEAE Rose Family		
Heteromeles arbutifolia (Lind.) M. Rome. Christmas Berry, Toyon	Shrub/Scrub	Common
Rubus armeniacus Focke Himalayan Blackberry	Ruderal	Common
Rubus leucodermis Torr.&A. Gray Western Raspberry	Woodlands	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--DICOTYLEDONAE-HERBS

EUDICOTS

APIACEAE (Umbelliferae) Carrot Family		
Perideridia kelloggii (A.Grey)Mathias Kellogg's Yampah, Squaw Root	Grasslands	Common
Sanicula crassicaulis DC. Pacific Sanicle	Woodlands	Common
Torilis arvensis (Huds.) Link Hedge-parsley	Grasslands Woodlands	Common
ASCLEPIADACEAE		
Asclepias fascicularis Deene. Narrow-leaf Milkweed	Ruderal Along Washes	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

NCN = No Common Name, * = Non-native, @= Voucher Specimen

ASTERACEAE (Compositae) Sunflower Family		
Achillea millefolium L. Yarrow	Ruderal	Common
**Carduus pycnocephalus* L.subsp.*pycnocephalus* Italian Thistle	Woodlands	Common
**Centaurea solstitalis* L. Yellow Star Thistle	Grasslands, Ruderal	Common
Circium occidentale (Nutt.) Jeps. var. *occidentale* Cobwebby Thistle	Grasslands, Oak Woodland	Common
**Circium vulgare* (Savi) Ten. Bull Thistle	Grasslands, Ruderal	Common
**Helminthotheca echioides* (L.) Holub Ox-tongue (=*Picris echioides)*	Ruderal	Common
**Hypochaeris glabra* L. Cat's Ear	Ruderal	Common
**Hypochaeris radicata* L. Harry Cat's Ear	Ruderal	Common
**Rhagadiolus stellatus* (L.) Green Wild Endive	Shaded understory invasive	Common
**Tragopogon porrifolius* L. Salsify	Grasslands	Occasional
CONVOLVULACEAE Morning-glory Family		
Convolvulus arvensis L. Morning-glory, Bindweed	Grasslands	Common
EUPHORBIACEAE Spurge Family		
Croton setigerus Hook. Turkey Mullein, Dove Weed (=*Eremocarpus setigerus)*	Ruderal	Common
FABACEAE (Leguminosae) Legum Family		
@*Lupinus formosus* Green var. *formosus* Pale Summer Lupine	Grasslands	Occasional
**Trifolium hirtum* All. Rose Clover	Ruderal	Common
**Vicia sativa* L. subsp. *nigra* Narrow Leaved-vetch	Grasslands, Ruderal	Common
GENTIANACEAE Gentianaceae Family		
Centaurium muehlenbergii (Griseb.) Mans. Centaury	Ruderal/Woodlands	Common
LAMIACEAE (Labiatae) Mint Family		
Stachys ajugoides Benth. Hedge-nettle	Moist Open Places	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

NCN = No Common Name, * = Non-native, @= Voucher Specimen

PLANTAGINACEAE Plantain Family		
Kickxia spuria (L.) Dumort. Fluellin	Ruderal	Occasional
Plantago major L. Common Plantain	Grasslands	Common
POLYGONACEAE Buckwheat Family		
Rumex acetosella L. Sheep Sorrel	Ruderal	Common
ROSACEAE Rose Family		
Fragaria vesca L. Wood Strawberry	Woodlands/Grasslands	Common
RUBIACEAE Madder Family		
Galium parisiense Wall Bedstraw	Grasslands, Woodlands	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--MONOCOTYLEDONAE-GRASSES

POACEAE Grass Family		
Avena barbata Link. Slender Wild Oat	Grasslands	Common
Briza maxima L. Large Quaking Grass, Rattlesnake Grass	Grasslands, Ruderal	Common
Briza minor L. Small Quaking Grass	Grasslands, Ruderal	Common
Bromus carinatus Hook& Arn.var. *carinatus* California Brome	Grasslands, Woodlands, Ruderal	Common
Bromus diandrus Roth Ripgut Grass	Ruderal, Grasslands	Common
Cynosurus echinatus L. Hedgehog, Dogtail	Ruderal	Common
Dactylis glomerata L. Orchard Grass	Grasslands	Occasional
Elymus glaucus Buckley ssp. *glaucus* Blue Wildrye	Woodlands	Common
Festuca bromoides L. Six-weeks Fescue *(=Vulpia bromoides)*	Ruderal, Moist Flats become Dry	Common
Festuca perennis (L.) Columubus & Sm. Perennial Rye Grass (=*Lolium multiflorum, L. perenne)*	Grasslands	Common
Stipa pulchra Hitchc. Purple Needle Grass (=*Nassella pulchra)*	Oak Woodland, Grasslands, Chaparral	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

NCN = No Common Name, * = Non-native, @= Voucher Specimen

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--MONOCOTYLEDONAE-HERBS

AGAVACEAE Centuray Plant Family		
Chlorogalum *pomeridianum* (DC.) Kunth var. *pomeridianum* Soap Plant	Woodlands, Grasslands	Common
IRIDACEAE Iris Family		
Sisyrinchium bellum Watson Blue-eyed Grass	Grasslands	Common

Fauna Species Observed in the Vicinity of the Project Site

The nomenclature for the animals found on the project site and in the immediate vicinity follows: Mc Ginnis –1984, for the fresh water fishes; Stebbins -1985, for the reptiles and amphibians; and Udvardy and Farrand – 1998, for the birds; and Jameson and Peeters -1988 for the mammals.

AVES		
ORDER		
Common Name	**Genus**	**Observed**
AVES		
Acorn Woodpecker	*Melanerpes fomicivorus*	*X*
Barn Owl	*Tyto alba*	Feather
Scrub Jay	*Aphelocoma coerulescens*	X
Turkey Vulture	*Cathartes aura*	X

MAMMALS		
ORDER		
Common Name	**Genus**	**Observed**
CERVIDAE		
Black-tailed Deer	*Odocoileus hemionus*	Sight
RODENTIA		
Pocket Gopher	*Thomomys bottae*	Sight

APPENDIX B

Definitions (Not all are relevant to this project)

Absolute Cover. The percentage of ground covered by the vertical projection of the plant crowns of a species or defined set of plants as viewed from above The absolute cover of herbaceous plants includes any standing (attached to a living palnt, and not lying on the grouns) plant parts, whether alive or dead; this deviniton escludes litter and other searated plant material. The cover may include mosses, lichens and recognizable cryptogamic crusts.

Best Management Practices. Best management practices represent the construction or agricultural practices that are consistent with regulatory laws or industry standards which are prudent and consistent with site conditions.

Confidence Interval. The California Department of Fish and Game (DFG) California Natural Diversity Data Base (CNDDB) uses map polygon projections for indicating potential for occurrence of special-status plant populations around a recorded occurrence.

Critical Habitat. Critical habitat is by definition a designated by U.S. Fish and Wildlife Service as essential for the existence of a particular population of species. The U.S. Fish and Wildlife Service designates critical habitat for special-status species as an area or region within which a species may be found. "Critical habitat" is defined as areas essential for the "conservation" of the species in question.

Habitat Fragmentation. The issue of habitat fragmentation is of concern locally, nationally, and globally. The term habitat fragmentation refers to the loss of connections within the biosphere such that the movement, genetic exchange, and dispersal of native populations is restricted or prevented. Anthropogenic habitat fragmentation can be the result of a road construction, logging, agriculture, or urban growth. The practice of retaining or planning for "Corridors" is an attempt to address this issue. Corridors that allow movement of wildlife through and around a site include stream and riparian areas and also areas that connect two or more sites of critical wildlife habitat.

Habitat Types. Habitat types are used by DFG to categorize elements of nature associated with the physical and biological conditions in an area. These are of particular importance for the wildlife they support, and they are important as indicators of the potential for special-status species.

Relative Cover. A measure of the cover of a species in relation to that of other species within a set area or sample of vegetation. This is usually calculated for species that occur in the same layer (stratum) of vegetation, and this measure can be calculated across a group of samples.

Riparian Corridor. Riparian corridors can be defined as the stream channel between the low-water and high-water marks plus the terrestrial landscape above the high water-mark (where vegetation

may be influenced by elevated water tables or extreme flooding and by the ability of the soils to hold water; Naiman, et. al. 1993).

Riparian Corridor or Riparian Ecosystem. Riparian ecosystems occupy the ecotone between upland and lotic aquatic realms. Riparian corridors can be defined as the stream channel between the low- and high-water marks plus the terrestrial landscape above the high water-mark (where vegetation may be influenced by elevated water tables or extreme flooding and by the ability of the soils to hold water; Naiman, et. al. 1993).

Ruderal Habitat. Ruderal habitat is characterized by disturbance and the establishment and dominance of non-native introduced weed species. Ruderal plant communities are a function of or result of agricultural or logging practices. This habitat is typically found along graded roads, erosional surfaces or sites influenced by agricultural animal populations.

Sensitive Habitat. DFG Natural Diversity Data Base uses environmentally sensitive plant communities for plant populations that are rare or threatened in nature. Sensitive habitat is defined as any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting "rare and endangered" species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes. Sensitive Habitat also includes wetlands and tributaries to "Waters of the US" as defined by the Corps of Engineers (ACOE) and DFG seasonal streams DFG.

Serpentinite. Serpentinite or serpentine consists of ultramafic rock outcrops that due to the unique mineral composition support a unique flora often of endemics. Kruckeberg, 1984, indicates that the taxonomy and evolutionary responses to serpentines include "1) taxa endemic to serpentine, 2) local or regional indicator taxa, largely confined to serpentine in parts of their ranges, 3) indifferent or "bodenvag" taxa that range on and off serpentine, and 4) taxa that are excluded from serpentine." Serpentine outcrops or serpentinites support numerous special-status plant taxa.

Special-status Species. Special-status organisms are plants or animals that have been designated by Federal or State agencies as rare, endangered, or threatened. We have also included plant species listed by the CNPS as "target organisms." The target species for the Quadrangle are discussed below. Section 15380 of the California Environmental Quality Act [CEQA (September, 1983)] has a discussion regarding non-listed (State) taxa. This section states that a plant (or animal) must be treated as Rare or Endangered even if it is not officially listed as such. If a person (or organization provides information showing that a taxa meets the State's definitions and criteria, then the taxa should be treated as such.

Standard Agricultural Practices. Standard agricultural practices are best management practices which are prudent as applied in the agricultural industry such as the use of regulated pesticides, methods of and timing of weed control, appropriate fertilizer application, irrigation management,

frost protection, erosion control and soil conservation and management, and dust control among other practices.

Streams. The DFG definition of stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports wildlife, fish, or other aquatic life. This includes watercourses having a surface or subsurface flow that support or have supported riparian vegetation. DFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

Target organisms. Special-status species that are listed by: the California Department of Fish and recorded in the Natural Diversity Data Base for the Quadrangle and surrounding Quadrangles of the project site; the California Native Plant Society for the habitat present on the project site Quadrangle and surrounding Quadrangles; Federal Endangered and Threatened Species that Occur in the U.S.G.S. 7 1/2 Minute Quadrangle; our experience with the local flora and fauna; any species identified by local individuals that are considered to be rare in the region; and DFG Five Mile radius CNDDB Rarefind 3 search (See Plate II).

Wetlands. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands.

Vernal Pools. Vernal pools are a type of seasonal wetland distinct for California and the western US. Typically they are associated with seasonal rainfall or "Mediterranean climate" and have a distinct flora and fauna, an impermeable or slowly permeable substrate and contain standing water for a portion of the year. They are characterized by a variable aquatic and dry regime with standing water during the spring plant growth regime. They have a high degree of endemism of flora and fauna.

Federal Regulations

Federal Endangered Species Act Pursuant to the federal Endangered Species Act (ESA), the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA), have authority over projects that may affect the continued existence of a species that is federally listed as threatened or endangered. Section 9 of ESA prohibits the take of a federally listed species; take is defined, in part, as killing, harming, or harassment and includes habitat modification or degradation where it actually results in death or injury to wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering.

Section 404 of the Clean Water Act Section 404 of the Clean Water Act establishes a requirement to obtain a permit before any activity that involves any discharge of dredged or fill material into "waters of the United States," including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these

waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

Army Corps of Engineers (ACOE) regulates and issues 404 permits for activities that involve the discharge of dredged or fill materials into waters of the United States. A Water Quality Certification 401 permit must also be obtain from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Board to the nine Regional Water Quality Control Boards (RWQCBs).

State Regulations

California Endangered Species Act Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the Fish and Game Code, a permit from Department of Fish and Game (DFG) is required for projects that could result in the take of a state listed threatened or endangered species. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the ESA does. As a result, the threshold for a take under CESA is higher than that under the ESA.

California Fish and Game Code Section 1600 – Lake and Streambed Alteration Permit. All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by DFG pursuant to Section 1600 of the California Fish and Game Code. Section 1600 states that it is unlawful for any person, government agency, state, local, or any public utility to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or deposit or dispose of waste, debris, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake without first notifying DFG of such activity.

Porter-Cologne Water Quality Control Act Under the Porter-Cologne Water Quality Control Act, "waters of the state" fall under the jurisdiction of the RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control non-point and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the Clean Water Act.

Napa County Ordinances, Conservation Regulations, and other Programs 1.1 Napa County Conservation Regulations (Chapter 18.108)

Napa County Code 18.108 includes conservation regulations such as requirements for standard erosion control measures, provisions for intermittent or perennial streams, and requirements for use of erosion hazard areas. This section of the code also defines streams and provides setbacks for grading and land clearing for agricultural development.

The general purpose of the Conservation Regulations is to ensure the continued long-term viability of county agricultural resources by protecting county lands from excessive soil loss (i.e., surface erosion, soil particle detachment and movement) which if unprotected could threaten local water quality and quantity and lead ultimately to loss of economic productivity (18.108.010) and possible decreased water quality in receiving waters.

Napa County Code

The following pertains to stream setbacks and tree and riparian vegetation protection provisions excerpted from Napa County Zoning Code, namely the Conservation Regulations, Chapter 18.108.

Section 18.108.100 – Erosion Hazard Areas; Vegetation Preservation and Management

Napa County Code 18.108.100 may require the following conditions when granting a discretionary permit for activities on slopes greater than 5 percent:

- Existing vegetation shall be preserved to the maximum extent feasible. Vegetation shall not be removed if necessary for erosion control or preservation of habitat for threatened or endangered species.

- An approved erosion control plan (ECPA) permit or grading permit is required for the grading associated with the removal of trees or tree stands measuring six inches in diameter (dbh) or larger. Replacement of removed protected trees located outside of the approved project boundary may be required. Trees to be avoided by project activities shall be protected through fencing or other methods during construction.

Section 18.108.025 – General Provisions, Intermittent/Perennial Streams

This section of the County code establishes stream setbacks for earthmoving activities and grading for all new developments, including agricultural and residential developments, and for replanting of existing vineyards when replanting occurs outside of the existing vineyard footprint and when the project would require a grading permit pursuant to the California Building Code. Under Section 18.108.030 a stream means any of the following:

- A watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey maps most recently published, or any replacement to that symbol.
- Any watercourse which has a well-defined channel with a depth greater than 4 feet and banks steeper than 3:1 (horizontal to vertical bank ratio) and contains hydrophilic (i.e. water adapted) vegetation, riparian vegetation or woody vegetation including tree species.
- Those watercourses listed in Resolution No. 94-16 and incorporated herein by reference.

Setbacks included in the Code range from 35 to 150 feet and are dependent on the slope of the terrain parallel to the top of bank of the stream, with wider setbacks required on steeper slopes. Where the outboard dripline of upper canopy vegetation is located outside the setback required by the slope steepness, the setback will extend to the outboard dripline. Re-vegetation of portions of the streamside setbacks may be required as a part of an erosion control plan.

Section 18.108.027 – Sensitive Domestic Water Supply Drainages

This section of the County code requires the maintenance/preservation of 60% tree canopy cover and 40% of shrubby and herbaceous cover present as of 1993 as part of land uses involving ground disturbance in sensitive domestic water supply drainages.

Ground-disturbing activities in the County's Domestic Water Supply Drainages are only allowed to take place during the dry season, between April 1 and September 1 of each year. Installation of winterization measures may take place during other times of the year, but must be in place by September 15 of any given year.

Napa County's Domestic Water Supply Drainages include the entire watershed areas associated with the following reservoirs:

> Kimball Reservoir Drainage, Rector Reservoir Drainage, Milliken Reservoir Drainage, Bell Canyon Reservoir Drainage, Lake Hennessey Drainage including Friesen Lakes, Lake Curry Drainage, and Lake Madigan Drainage

In these Sensitive Domestic Water Supply Drainages concentration of runoff will, wherever feasible, be avoided. Those drainage facilities and outfalls that unavoidably must be installed are required to be sized and designed to handle the runoff from a one-hundred-year storm event without failure or unintentional bypassing. If a project will increase delivery of sediment or other pollutants from a drainage into a public water supply (reservoir) by more than 1% on an individual project basis or by more than 10% on a cumulative basis, the project will not be approved until a public hearing on the matter has been held and a use permit has been issued. A geotechnical report specifying the depth and nature of the soils and bedrock present and the stability of the area potentially affected by the project or project runoff is required for any project located in a Sensitive Domestic Water Supply Drainage.

Section 18.108.070 – Erosion Hazard Areas–Use Requirements

This section of the code stipulates that uses permitted within erosion hazard areas, those portions of land having slopes over five percent (5%), must include temporary and/or permanent erosion control measures in conformance with the County's National Pollution Discharge Elimination System (NPDES) General Permit on file with the state (i.e., a suite of Best Management Practices to eliminate, control and or minimize sediment/soil particle detachment and transport). The section further requires erosion control plan approval for agricultural earthmoving activity on lands having slopes greater than 5%, and establishes grading deadlines (i.e., a winter shutdown period).

Additionally, this section, together with Chapter 18.108.100, limits the removal of vegetation in erosion hazard areas to only that necessary to accommodate the proposed project, sets conditions for the preservation and/or replacement of trees in excess of six inches in diameter, and requires projects to have no adverse affect on sensitive, rare, threatened of endangered plants or animal or their habitats as designated by state or federal agencies with jurisdiction, and mapped on the County's environmental sensitivity maps.

Section 18.108.075 – Requirements for Structural Erosion Control Measures

This section establishes erosion control requirements for structural developments (anything built or constructed on, above, or below the surface of the land), and requires the submission of Evidence of Erosion Control Measures, and the incorporation of such measures in all applicable building, grading, septic, or other required plans or plot plans submitted for County approval. This section of the County Code is carried out through the NPDES program administered through the Napa County Department of Public Works.

Section 18.108.135 – Oversight and Operation Requirements

Maintenance and monitoring is a requirement of any erosion control plan and is the ultimate responsibility of the property owner. Section 18.108.135 requires that maintenance and monitoring be implemented for any erosion control plan and includes the following components:

• Implementation of the ECP measures must be overseen by the preparer of the ECP.

• The property owner must provide weekly inspections of the control measures between October 1st and April 1st of each year, as well as during rainfall events, to assure the measures are installed properly and are effective in controlling offsite sediment transport, and to implement whatever actions are needed to keep them functioning properly.

• The property owner must implement a permanent, on-going self-monitoring program of the groundcover conditions and erosion control facility operations. The groundcover monitoring shall conform to the NRCS standards for determining rangeland conditions.

• The property owner must submit to the County an Annual Erosion Control Plan Operation Status Report that specifies the groundcover conditions and how the erosion control measures are operating. The report shall specify the proposed management and cultural measures to be used the following year to return or maintain the ground cover in optimal condition and any other remedial actions necessary to restore the disturbed areas in such a manner to minimize erosion and resultant sedimentation.

Specific actions are required under Napa County Code 18.108.135 in the event of existing or pending erosion control measure failures. These actions include:

• Issuance of notification to the County;
• Implementation of temporary measures to stabilize the situation;
• Modification of the temporary measures, if necessary, within 24-hours of receipt of County comment on the adequacy of temporary measures;
• Submit an engineered plan for measures needed to permanently correct the problem within 96 hours of the discovery;
• Submit a plan for clean-up of the damage done with and engineer's estimate of the cost of cleanup;
• Submit, if necessary, a modified plan and cost estimate for the problem within 48 hours

of receipt of County comments on the adequacy of the plan;
- Pay the County the cost of review within 48 hours of request;
- Post a security in the amount of 100 percent of the total cost to correct the problem and cleanup the damage;
- Insure the final correction and cleanup plans are implemented within 96 hours of its approval.

Finally, to assure the erosion control measures are adequately in place, the County may perform annual inspections of the project site, after the first major storm event of each winter and until the project has been completed and stable for three years. During these inspections, County staff may require that remedial actions be implemented where non-functioning or ineffective measures are identified. Additionally, once the project has been deemed complete, random site inspections by County staff may also occur with the same consequences.

APPENDIX C

California Native Plant Society Electronic Inventory
Special-status species for the Quadrangle and Surrounding Quadrangles

California Department of Fish and Game Rare Find Three
Special-status species for the Quadrangle and Surrounding Quadrangles

Sacramento Fish & Wildlife Office Federal Endangered And Threatened Species That Occur In Or May Be Affected By Projects In The U.S.G.S. 7 1/2 Minute Quadrangle

Inventory of Rare and Endangered Plants

v7-12aug 8-10-12

Status: search results - Wed, Sep. 5, 2012, 13:22 b

Your Quad Selection: Napa (500D) 3812233, Cuttings Wharf (483A) 3812223, Sears Point (483B) 3812224, Capell Valley (499B) 3812242, Mount George (499C) 3812232, Cordelia (482B) 3812222, Yountville (500A) 3812243, Rutherford (500B) 3812244, Sonoma (500C) 3812234

Hits 1 to 50 of 56

scientific	common	family	CNPS
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	List 1B.2
Amorpha californica var. napensis	Napa false indigo	Fabaceae	List 1B.2
Arctostaphylos bakeri ssp. bakeri	Baker's manzanita	Ericaceae	List 1B.1
Arctostaphylos canescens ssp. sonomensis	Sonoma canescent manzanita	Ericaceae	List 1B.2
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	Ericaceae	List 1B.1
Astragalus claranus	Clara Hunt's milk-vetch	Fabaceae	List 1B.1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	List 1B.2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	List 1B.2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	List 1B.2
Blennosperma bakeri	Sonoma sunshine	Asteraceae	List 1B.1
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	List 1B.2

Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	List 1B.2
Calycadenia micrantha	small-flowered calycadenia	Asteraceae	List 1B.2
Castilleja affinis ssp. neglecta	Tiburon paintbrush	Orobanchaceae	List 1B.2
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	List 1B.1
Ceanothus divergens	Calistoga ceanothus	Rhamnaceae	List 1B.2
Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	List 1B.2
Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	List 1B.2
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	List 1B.2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	List 1B.2
Chorizanthe valida	Sonoma spineflower	Polygonaceae	List 1B.1
Cryptantha dissita	serpentine cryptantha	Boraginaceae	List 1B.2
Downingia pusilla	dwarf downingia	Campanulaceae	List 2.2
Erigeron biolettii	streamside daisy	Asteraceae	List 3
Erigeron greenei	Greene's narrow-leaved daisy	Asteraceae	List 1B.2
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	List 1B.2
Gilia capitata ssp. tomentosa	woolly-headed gilia	Polemoniaceae	List 1B.1

Hemizonia congesta ssp. congesta	white seaside tarplant	Asteraceae	List 1B.2
Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	List 1B.2
Hesperolinon breweri	Brewer's western flax	Linaceae	List 1B.2
Hesperolinon serpentinum	Napa western flax	Linaceae	List 1B.1
Hesperolinon tehamense	Tehama County western flax	Linaceae	List 1B.3
Horkelia tenuiloba	thin-lobed horkelia	Rosaceae	List 1B.2
Juglans hindsii	Northern California black walnut	Juglandaceae	List 1B.1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	List 1B.1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	List 1B.2
Legenere limosa	legenere	Campanulaceae	List 1B.1
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	List 1B.2
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	List 3
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	List 1B.1
Limnanthes vinculans	Sebastopol meadowfoam	Limnanthaceae	List 1B.1
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	List 1B.2
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	List 3.2

Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Polemoniaceae	List 1B.1
Penstemon newberryi var. sonomensis	Sonoma beardtongue	Plantaginaceae	List 1B.3
Polygonum marinense	Marin knotweed	Polygonaceae	List 3.1
Rhynchospora californica	California beaked-rush	Cyperaceae	List 1B.1
Sidalcea hickmanii ssp. napensis	Napa checkerbloom	Malvaceae	List 1B.1
Sidalcea hickmanii ssp. viridis	Marin checkerbloom	Malvaceae	List 1B.3
Sidalcea keckii	Keck's checkerbloom	Malvaceae	List 1B.1
Streptanthus hesperidis	green jewel-flower	Brassicaceae	List 1B.2
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	List 1B.2
Trichostema ruygtii	Napa bluecurls	Lamiaceae	List 1B.2
Trifolium amoenum	two-fork clover	Fabaceae	List 1B.1
Trifolium hydrophilum	saline clover	Fabaceae	List 1B.2
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	List 2.3

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Napa Quadrangle and Surrounding Quadrangles

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	Adela oplerella Opler's longhorn moth	IILEE0G040			G2G3	S2S3	
2	Agelaius tricolor tricolored blackbird	ABPBXB0020			G2G3	S2	SC
3	Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1			G5T2	S2.2	1B.2
4	Amorpha californica var. napensis Napa false indigo	PDFAB08012			G4T2	S2.2	1B.2
5	Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030			G2	S2	
6	Antrozous pallidus pallid bat	AMACC10010			G5	S3	SC
7	Aquila chrysaetos golden eagle	ABNKC22010			G5	S3	
8	Arctostaphylos canescens ssp. sonomensis Sonoma canescent manzanita	PDERI04066			G3G4T2	S2.1	1B.2
9	Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4			G3T1	S1	1B.1
10	Ardea alba great egret	ABNGA04040			G5	S4	
11	Ardea herodias great blue heron	ABNGA04010			G5	S4	
12	Astragalus claranus Clara Hunt's milk-vetch	PDFAB0F240	Endangered	Threatened	G1	S1	1B.1
13	Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1			G2T2	S2	1B.2
14	Athene cunicularia burrowing owl	ABNSB10010			G4	S2	SC
15	Atriplex joaquinana San Joaquin spearscale	PDCHE041F3			G2	S2	1B.2
16	Balsamorhiza macrolepis big-scale balsamroot	PDAST11061			G2	S2	1B.2
17	Blennosperma bakeri Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
18	Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
19	Brodiaea leptandra narrow-anthered brodiaea	PMLIL0C022			G2G3	S2S3.2	1B.2
20	Buteo regalis ferruginous hawk	ABNKC19120			G4	S3S4	
21	Buteo swainsoni Swainson's hawk	ABNKC19070		Threatened	G5	S2	
22	Calasellus californicus An isopod	ICMAL34010			G2	S2	
23	Calycadenia micrantha small-flowered calycadenia	PDAST1P0C0			G2G3	S2S3.2	1B.2

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	Castilleja affinis ssp. neglecta Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1	S1	1B.2
25	Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220			G2	S2.2	1B.1
26	Ceanothus divergens Calistoga ceanothus	PDRHA04240			G2	S2.2	1B.2
27	Ceanothus purpureus holly-leaved ceanothus	PDRHA04160			G2	S2	1B.2
28	Ceanothus sonomensis Sonoma ceanothus	PDRHA04420			G2	S2.2	1B.2
29	Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2			G4T1	S1	1B.2
30	Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
31	Chloropyron molle ssp. molle soft bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
32	Circus cyaneus northern harrier	ABNKC11010			G5	S3	SC
33	Coastal Brackish Marsh	CTT52200CA			G2	S2.1	
34	Cryptantha dissita serpentine cryptantha	PDBOR0A0H2			G2	S2	1B.2
35	Cypseloides niger black swift	ABNUA01010			G4	S2	SC
36	Danaus plexippus monarch butterfly	IILEPP2010			G5	S3	
37	Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2	
38	Downingia pusilla dwarf downingia	PDCAM060C0			G2	S2	2.2
39	Elanus leucurus white-tailed kite	ABNKC06010			G5	S3	
40	Emys marmorata western pond turtle	ARAAD02030			G3G4	S3	SC
41	Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0			G2	S2	1B.2
42	Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A			G5T2	S2	SC
43	Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
44	Hemizonia congesta ssp. congesta white seaside tarplant	PDAST4R065			G5T2T3	S2S3	1B.2
45	Hesperolinon bicarpellatum two-carpellate western flax	PDLIN01020			G2	S2.2	1B.2
46	Hesperolinon breweri Brewer's western flax	PDLIN01030			G2	S2	1B.2
47	Hesperolinon tehamense Tehama County western flax	PDLIN010C0			G2	S2	1B.3

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
48	Horkelia tenuiloba thin-lobed horkelia	PDROS0W0E0			G2	S2.2	1B.2
49	Hydroprogne caspia Caspian tern	ABNNM08020			G5	S4	
50	Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
51	Isocoma arguta Carquinez goldenbush	PDAST57050			G1	S1	1B.1
52	Juglans hindsii Northern California black walnut	PDJUG02040			G1	S1.1	1B.1
53	Lasiurus blossevillii western red bat	AMACC05060			G5	S3?	SC
54	Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered		G1	S1	1B.1
55	Laterallus jamaicensis coturniculus California black rail	ABNME03041		Threatened	G4T1	S1	
56	Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2			G5T2	S2.2	1B.2
57	Legenere limosa legenere	PDCAM0C010			G2	S2.2	1B.1
58	Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140			G2	S2	1B.2
59	Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030		Rare	G2	S2	1B.1
60	Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
61	Lupinus sericatus Cobb Mountain lupine	PDFAB2B3J0			G2	S2.2	1B.2
62	Melospiza melodia maxillaris Suisun song sparrow	ABPBXA301K			G5T2	S2	SC
63	Melospiza melodia samuelis San Pablo song sparrow	ABPBXA301W			G5T2?	S2?	SC
64	Navarretia leucocephala ssp. pauciflora few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	G4T1	S1	1B.1
65	Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
66	Northern Vernal Pool	CTT44100CA			G2	S2.1	
67	Oncorhynchus mykiss irideus steelhead - central California coast DPS	AFCHA0209G	Threatened		G5T2Q	S2	
68	Penstemon newberryi var. sonomensis Sonoma beardtongue	PDSCR1L483			G4T1	S1.3	1B.3
69	Phalacrocorax auritus double-crested cormorant	ABNFD01020			G5	S3	
70	Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020			G2	S2	SC
71	Polygonum marinense Marin knotweed	PDPGN0L1C0			G1Q	S1.1	3.1

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
72	Rallus longirostris obsoletus California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	
73	Rana boylii foothill yellow-legged frog	AAABH01050			G3	S2S3	SC
74	Rana draytonii California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
75	Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
76	Rhynchospora californica California beaked-rush	PMCYP0N060			G1	S1.1	1B.1
77	Riparia riparia bank swallow	ABPAU08010		Threatened	G5	S2S3	
78	Serpentine Bunchgrass	CTT42130CA			G2	S2.2	
79	Sidalcea hickmanii ssp. napensis Napa checkerbloom	PDMAL110A6			G1	S1	1B.1
80	Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered		G1	S1	1B.1
81	Sorex ornatus sinuosus Suisun shrew	AMABA01103			G5T1	S1	SC
82	Speyeria zerene myrtleae Myrtle's silverspot	IILEPJ6089	Endangered		G5T1	S1	
83	Streptanthus hesperidis green jewel-flower	PDBRA2G510			G2	S2	1B.2
84	Symphyotrichum lentum Suisun Marsh aster	PDASTE8470			G2	S2	1B.2
85	Syncaris pacifica California freshwater shrimp	ICMAL27010	Endangered	Endangered	G1	S1	
86	Taxidea taxus American badger	AMAJF04010			G5	S4	SC
87	Trichostema ruygtii Napa bluecurls	PDLAM220H0			G2	S2	1B.2
88	Trifolium amoenum showy rancheria clover	PDFAB40040	Endangered		G1	S1	1B.1
89	Trifolium hydrophilum saline clover	PDFAB400R5			G2	S2	1B.2
90	Viburnum ellipticum oval-leaved viburnum	PDCPR07080			G5	S2.3	2.3

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
NAPA (500D)
U.S.G.S. 7 1/2 Minute Quad
Database last updated: September 18, 2011
Report Date: September 5, 2012
Listed Species

Invertebrates
Branchinecta conservatio-Conservancy fairy shrimp (E)
Syncaris pacifica-California freshwater shrimp (E)

Fish
Hypomesus transpacificus-delta smelt (T)
Oncorhynchus mykiss-Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)
Oncorhynchus tshawytscha-Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians
Rana draytonii-California red-legged frog (T)

Birds
Sternula antillarum (=Sterna, =albifrons) browni-California least tern (E)
Strix occidentalis caurina-northern spotted owl (T)

Mammals
Reithrodontomys raviventris-salt marsh harvest mouse (E)

Plants
Lasthenia conjugens-Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)
Trifolium amoenum-showy Indian clover (E)

Key:
(E) Endangered - Listed as being in danger of extinction.
(T) Threatened - Listed as likely to become endangered within the foreseeable future.
(P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
(C) Candidate - Candidate to become a proposed species.
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
(X) Critical Habitat designated for this species

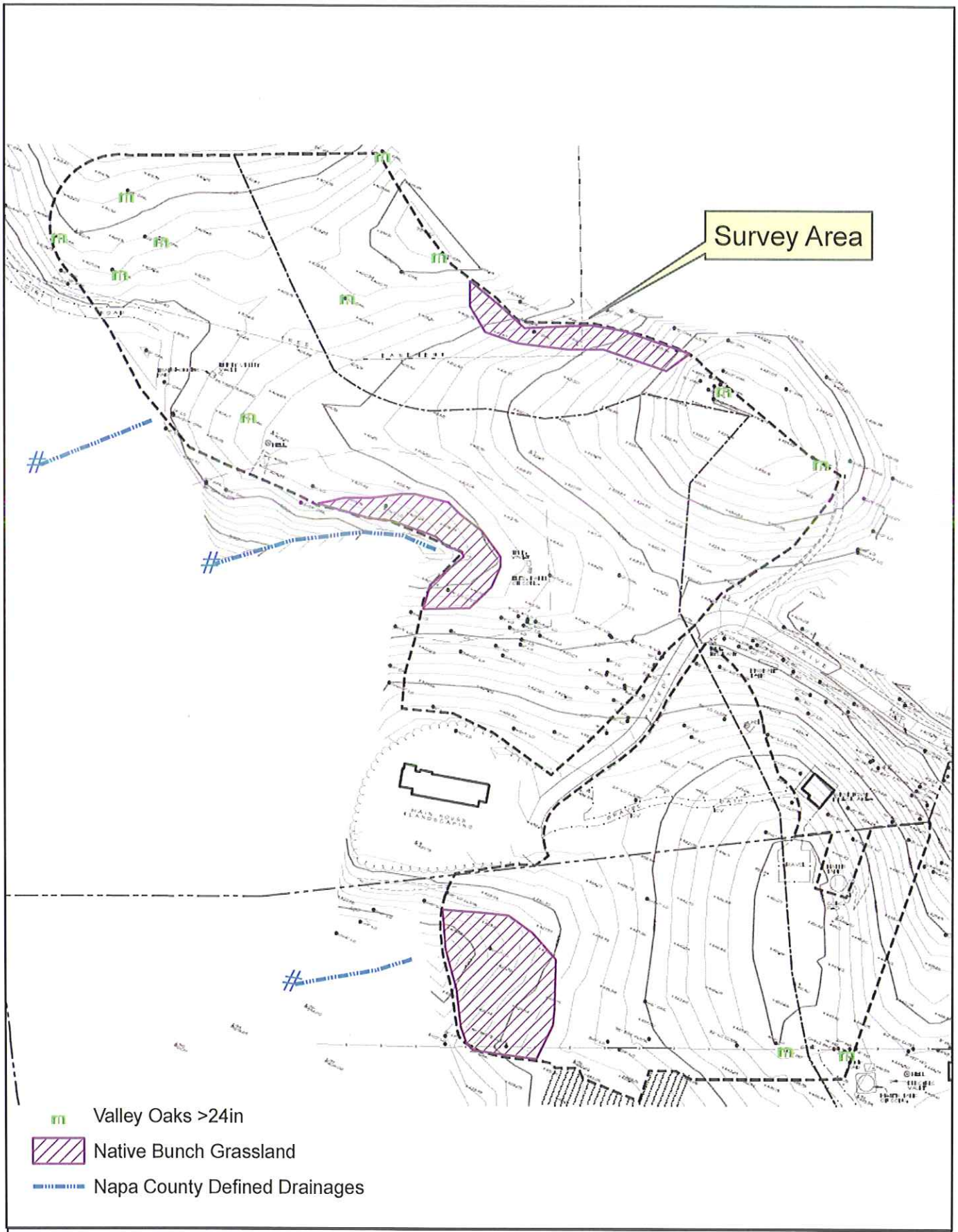


Plate IV. Biological Resources