Biological Resource Survey

CAIRDEAN VINEYARDS
APN 022 070 028
3125 St. Helena Hwy
Napa County, CA

Prepared
For
Edwin and Stacia Williams

By
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923 St. Helena Ave.
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March 29, 2012

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PROJECT NAME:

Cairdean Vineyards
3125 St. Helena Hwy
Edwin and Stacia Williams
Use Permit for Winery, Wine Caves and Vineyard

CIVIL ENGENEER:

Riechers Spence Associates
Consulting Civil Engineers
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PROJECT COORDINATOR

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PERIOD OF STUDY:

Spring – Summer 2011

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Executive Summary

This study was conducted at the request of Jeffery Redding, AICP, and the property owner. 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 study site is in Napa County, north of the city of St Helena with access from State Highway 29 (St. Helena Highway). The study site is within the Calistoga USGS Quadrangle at the edge of the St Helena USGS Quadrangle. The surrounding land use consists of vineyards, a business complex and oak and conifer woodlands. The property is an irregularly shaped parcel with elevations that range from 300 to 700-ft on east facing slopes. The parcel at present consists of a single family residence, landscape plantings, fallow agricultural grasslands, agricultural barn, ranch fencing, access road to the west edge of the parcel, reservoir and oak and conifer woodlands with a small area of chaparral.

The project proposes the development along the highway frontage of a 50 +/- acre parcel. The development will include a 50,000 gallon winery within the existing agricultural residential complex, 13,000 square foot of wine caves (cave spoils to be hauled off site), and planting a 1+/- acre vineyard. The winery and associated infrastructure will be within a 19,700 square foot cut and cover area that will require the removal of three residential/agricultural structures. Recycled winery process water will be applied to a portion of blue oak woodland. The remainder of the parcel outside of the project area will remain undisturbed.

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, Department of Fish and Game Guidelines, and the California Native Plant Society Guidelines. The findings presented are results of spring and summer 2011 fieldwork conducted by Kjeldsen Biological Consulting.

Findings:

- We found no evidence that would indicate that the proposed project would impact any of the special-status species known for the region. No special-status species known for the Quadrangle, surrounding Quadrangles or the region were identified on the project site nor did the project sites contain vegetation associates, habitat or edaphic conditions which would support special-status species. Onsite field surveys by Kjeldsen Biological

Consulting and the site history reasonably preclude presence of any special-status species on the project site;

- Two special-status plants were found on non-project portions of the property Napa False Indigo (*Amorpha californica* Nuttall var. *napensis*) and California Narrow-anthered Brodiaea (*Brodiaea californica* var. *leptandra*). California Department of Fish and Game Natural Diversity Data Base Field Forms have been filed;

- The project footprint is primarily within a developed landscape. Specifically in the area of a single-family residence including landscape plantings which will be removed and fallow agricultural grasslands (herbaceous semi-natural grassland) with agricultural infrastructure which will be removed. A portion of the woodland forest alliance is within the footprint of the winery and the supporting infrastructure;

- There are no sensitive plant communities, habitat or sensitive biotic communities listed by DFG or Napa County on the project site or adjacent areas;

- Significant biological resources on the property have been avoided by the proposed project specifically the Forest Woodland Alliance, Chaparral Shrub Alliance, and Seasonal Drainages;

- A portion of the reclaimed process wastewater will be applied in a designated area (1-acre) of Blue Oak Woodland (*Quercus douglasii).* Our analysis of the rates and timing of application indicates that there will be no significant negative impacts to the Oak Woodland;

- No significant cumulative impacts to wildlife populations are expected by the proposed project. The loss of habitat on the project site is less than significant; and

- There are no potential significant impacts to migratory corridors or wildlife nursery sites associated with the proposed project. The potential biological impacts of the project include the incremental loss of natural habitat. The impact to local wildlife will be undetectable on a regional scale. Portions of the property will be retained in a natural state and continue to function as open-space, wildlife habitat and watershed.

It is concluded that further seasonal biological studies are unwarranted.

The flora and fauna observed on the study site and property included as an appendix.

Mitigation Considerations

The construction phase of the project will require best management practices to prevent impacts of dust and erosion from the project. The erosion control plan will mitigate for and prevent any silt, and or sediment movement offsite.

Native Oak trees within close proximity of project activities shall have construction fencing installed around the drip line to protect their roots. Soil compaction or cutting of roots has the potential for damaging the continued existence of the tree.

The project should comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland communities. If replacement plantings are necessary it is recommended that young trees from acorns collected on site be established on site for the next generation of oaks.

For ground disturbing activities occurring during the breeding season (March 1 through July 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.

A preconstruction bat survey must be conducted for construction and or demolition activities occurring during the special–status bat breeding season (March 1 through August 31), by a qualified wildlife biologist of all potential bat-roosting habitat. Removal of structures and any Mature Oaks or snags on the project should be removed after August 31 and before October 15 or after February 28, and before April 15 of any year to prevent any impacts to roosting bat if present.

BIOLOGICAL RESOURCE SURVEY

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A PROJECT DESCRIPTION

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The study site is in Napa County, north of the city of St Helena with access from State Highway 29 (St. Helena Highway). The study site is within the Calistoga USGS Quadrangle at the edge of the St. Helena USGS Quadrangle. The surrounding land use consists of vineyards, a business complex and oak and conifer woodlands. The property is an irregularly shaped parcel with elevations that range from 300 to 700-ft on east facing slopes. The parcel at present consists of a single family residence, landscape plantings, fallow agricultural grasslands, agricultural barn, ranch fencing, access road to the west edge of the parcel, reservoir and oak and conifer woodlands with a small area of chaparral. Plate III provides an aerial photograph of the property.

The project proposes the development along the highway frontage of a 50 + - acre parcel. The development will include a 50,000 gallon per year winery (19,770 s.f. cut and cover), 13,000 s.f. of wine caves (cave spoils to be hauled off site), and planting a 1 +/- acre vineyard on slopes that are less than 5%. Three residential structures will be removed. The remainder of the parcel will remain undisturbed. Plate I provides a site and location map of the property. The attached Utility Plan illustrates the project (1/10/2012).

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 wildlife movement corridors within and across the property,
- Determine if there is a need for additional protocol-level wildlife surveys,
- Assess the impacts of the proposed project on any on-site or off-site biological resources,
- Identify any State or Federal permits required by the proposed project, and
- Recommend mitigation measures to reduce biological impacts to a less than significant level pursuant to the California Environmental Quality Act (CEQA).

A.2 Definitions

Definitions used in this report are attached in Appendix B.

B SURVEY METHODOLOGY

The purpose of the spring floristic survey is to provide a faunal and floristic study of the project site with emphasis on any special-status animals, plants, unique plant populations and or critical habitat associated with the proposed project. The project scoping determined the extent of our surveys which ranged from March to July.

B.1 Project Scoping

The scoping for the project considered seasonal fieldwork, location and type of habitat and or 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.

Tables III and VI 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. Our fieldwork included a floristic study and focused on locating target organisms or suitable habitat for target organisms or indications that such habitat exists on the site.

Plants Field surveys were conducted recording 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 were identified in the field by their sight, sign, or call. 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 animal species. 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 (500 ft +) 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 is determined based

on the top of scour marks and high flow impacts on vegetation.

The area surveyed is shown on Plate IV.

Table I. Time and Date of Field Work for Spring and Summer 2011

Date	Personnel	Person-hr.	Time	Conditions
March 17, 2011	Chris K. and Daniel T. Kjeldsen	5.0 person-hours	11:15 to 14:15	Clear, clear cool temperatures, windy.
April 13, 2011	Chris K. and Daniel T. Kjeldsen	3.0 person-hours	11:00 to 14:00	Overcast, no wind, with mild temperatures.
May 12, 2011	Chris K. and Daniel T. Kjeldsen	3.0 person-hours	12:00 to 13:30	Clear, windy with warm temperatures.
June 17, 2011	Chris K. and Daniel T. Kjeldsen	3.3 person-hours	13:20 to 15:00	Clear, no wind, with warm temperatures.
July 20, 2011	Chris K. and Daniel T. Kjeldsen	2.0 person-hours	15:00 to 16:00	Clear with light breezes and mild temperatures.

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 forty 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. A full resume is available upon request.

C BIOLOGICAL SETTING

The study site is located in Napa County on an east-facing ridge above State Highway 29. The property is at an elevation of ranging from 300 to 700 feet along the edge of the Napa Valley floor. The parcel drains by sheet flow into unnamed tributaries of the Napa River. The proposed vineyard block is on the east side of the parcel adjacent to State Highway 29. The proposed vineyard area presently consists of fallow grasslands, residence, agricultural barn, landscape plantings and residential infrastructure. The wine caves and winery are proposed at the base of the hillside adjacent to open fallow grasslands and upland conifer oak woodlands. The cave spoils are proposed to be hauled off site. A major portion of the property will be retained as conifer oak woodland open space, watershed, and wildlife habitat (See Plate I for Location and Site Map and Plate III for an aerial photograph of the property). Figures 1 to 5 illustrate the site conditions and the areas proposed for conversion to vineyard.

We note that there appears to have been considerable cobble stone rock quarrying in the area proposed for recycled process water irrigation. It is also noted that these areas support an even age class of Blue Oaks in this area of the property (Figures 4 and 5).

The property is located 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.

C.1 Site Description and Biological Resources Evaluation Area

The survey area is shown on (Plate IV). Our survey focused on the areas proposed for conversion to vineyard, winery, irrigation wastewater site, 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.

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 California Native Plant Society (CNPS) and Department of Fish and Game California Natural Diversity Data Base (CNDDB) as: Cismontane Woodland and Valley and Foothill Grassland.

In general terminology one would refer to the habitat on the property as Ruderal Grassland, Shrubland (Chaparral), Open Water of the Reservoir, Landscape Plantings and Cismontane Woodland. The dominant land cover types on the project site consist of landscape plantings, herbaceous grasslands and conifer oak woodland. In the sections below each of habitat types is described and further categorized with the new system of vegetation classification by Sawyer *et al* A Manual of California Vegetation Second Edition. Sawyer classifies the vegetation on the project sites as Grassland Semi-natural Stands with Herbaceous Layer and a Forest Woodland Alliance. This classification is the presently preferred system that over time will replace existing classification systems.

Annual Grassland Stands present within the proposed vineyard are described below. These are also present as an understory within the Blue Oak Forest or Woodland Alliance. The Vegetation mapping of the property and project sites uses Forest Alliance, Grassland Semi-Natural Stand or Shrubland Alliance since the individual stands within each Alliance intergraded (See Plate III).

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

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

Centaurea (solstitialis, melitensis) Semi-Natural Herbaceous Stands Yellow star-thistle fields; (Membership Rules *Centaurea solstitialis* >50% relative cover in the herbaceous layer). *Centaurea solstitialis*, yellow star thistle, has a Cal IPC rank of High and a CDFA rank of C. It is the most serious range weed in the western United States.

Cynosurus echinatus Semi-Natural Herbaceous Stands Annual Dogtail Grasslands; (Membership Rules *Cynosurus echinatus >50%* relative cover with other non-natives in the herbaceous layer. *Cynosurus* echinatus is dominant or co-dominant with other non-natives in the herbaceous layer. Emergent Trees and shrubs may be present. Herbs < 50cm; cover is intermittent to continuous. Native plants associated with *Cynosurus echinatus* stands include *Achaatherum lemmonii, Bromus carinatus, Danthonia californica, Elymus glaucus, Eschoscholzia californica, Hemizonia congesta, Lotus micranthus, Lupinus bicolor* and *Madia* ssp. Non-native plants include *Aira caryophyllea, Avena* ssp., *Bromus hordeaceus, Bromus tectorum Erodium* ssp., *Poa pratensis, Rumex acetosella, Taeniantherum caput-medusae,* and *Taraxacum officinale.*

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.

Phalaris aquatica Semi-Natural Herbaceous Stands Harding grass swards; (Membership Rules *Phalaris aquatica* > %50 relative cover in the herbaceous layer or *Phalaris aquatica* > 15% absolute cover and 75% relative cover when compared to native species in the herbaceous layer. *Phalaris* aquatica is dominant in the herbaceous layer. Scattered emergent shrubs such as *Baccharis pilularis* may be present. Herbs < 1.5 m: canopy is intermittent to continuous.

Shrubland Alliance

The Shrubland Alliance on the property is located at the far west edge on a ridge and is what one would call Chaparral. The vegetation map for the property shows only the Shrubland Alliance and it is noted that the two special-status species recorded for the parcel are within this Alliance.
The Shrubland Alliance according to the Sawyer Classification consists of the following;

Adenostoma fasiculatum Shrubland Alliance Chamise Chaparral; (Membership Rules *Adenostoma fasciculatum* >50% relative cover in the shrub canopy: codominance of *A. fasiculatum* with the following species *Arctostaphylos glandulosa* and *Ceanothus cuneatus*). This alliance occurs across cismontane California in a variety of topographic settings. Stands over 60 years old produce little new growth as dead stem biomass accumulates.

Baccharis pilularis Shrubland Alliance Coyote Brush Scrub; *Baccharis pilularis* is Dominant to co-dominant in the shrub canopy (membership rules *Baccharis pilularis* is >50% absolute cover in the shrub layer) (*Baccharis pilularis* is >15 % shrub cover over grassy understory. *Baccharis pilularis* is a shrub that grows to 3 m tall and the stands can be transitory to forest and woodland alliances or persistent for long periods of time. *Baccharis pilularis* seedlings invade grasslands where grazing pressure is decreased or absent.

Quercus berberidifolia *Adenostoma fasciculatum* Shrubland Alliance Scrub Oak –Chamise Chaparral; (membership rules both *Quercus berberidifolia* and *Adenostoma fasciculatum* have between 30% and *60%* relative cover in the shrub canopy).

Forest or Woodland Alliance

A Forest or Woodland Alliance dominates the majority of the parcel. The only area that is within the footprint of the project that will be impacted is the project is the *Quercus douglasii* Woodland Alliance (Blue Oak Woodland) and the edge of the *Pseudotsuga menziesii* Forest Alliance Douglas fir Forest where the cave portals are proposed. The majority of the Forest or Woodland Alliance will be retained as open space, wildlife habitat and watershed (See Tables II and V and Plate III).

Pseudotsuga menziesii Forest Alliance Douglas fir Forest; *Pseudotsuga menziesii* is dominant or co-dominant with hardwoods in the tree canopy (membership rules >50% relative cover in the tree canopy and reproducing successfully, though hardwoods may dominate or co-dominate in the subcanopy and regeneration layer). Trees > 75 m.; canopy is intermittent to continuous, and it may be two tiered. Shrubs are infrequent or common. Herbaceous layer is sparse or abundant.

Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni) Forest Alliance Mixed Oak Forest; *Quercus agrifolia, Q. douglasii, Q, garryana, Q. kelloggii, Q. lobata* and/or *Q. wislizeni* are co-dominant in the tree canopy with *Aesculus californica, Arbutus menziesii, Pins sabiniana, Pseudotsuga menziesii,* and *Umbellularia californica.* The canopy is intermittent to continuous. Shrubs are infrequent or common, herbaceous layer is sparse or abundant, may be grassy. This Alliance is found in valley and on gentle to stee3p slopes. The membership rules require three or more *Quercus* species present at >30% constancy and they are co-dominant in the tree canopy.

Quercus douglasii Woodland Alliance Blue Oak Woodland; *Quercus douglasii* is dominant or co-dominant tree in the canopy (Membership Rules *Quercus douglasii >50%* relative cover in the tree canopy; other hardwoods or conifers may be >30% relative cover in the tree canopy). *Quercus douglasii* is a deciduous, drought and flood tolerant tree that grows to 20 m in height. The canopy is intermittent to continuous or savanna-like. Shrub layer is sparse to intermittent. Herbaceous layer is sparse or grassy, and forbs are present seasonally.

Reservoir

The reservoir on the property is a small on-stream reservoir, which was built in the past to store water seasonally. The banks of the reservoir (approximate <0.25 Acres) are seep and do not contain any significant aquatic vegetation. The reservoir contains limited aquatic habitat.

Table II. Summary of Estimated Habitat Types. Alliance or Stands within the footprint of each element of the proposed project and an estimate of the acreage.

Project Element	Habitat Type	Acreage
Vineyard	**Grassland Semi-Natural Herbaceous Stands with Herbaceous Layer**	1.0+/- Acres
Winery and Infrastructure	**Grassland Semi-Natural Herbaceous Stands with Herbaceous Layer &**	3.0+/- Acres
	Forest Or Woodland Alliance	1.0+/- Acres
Wine Caves	**Forest Or Woodland Alliance**	1.0 +/- Acre
Recycled Process Water Irrigation Area	**Forest Or Woodland Alliance**	1.0- Acre
Parcel Remainder	**Shrubland Alliance (Chaparral)** **Forest Or Woodland Alliance**	Approximately 43.0-Acres

Figure 1. Proposed Winery Site.

Figure 2. View of existing structures to be removed.

Figure 3. Area proposed for vineyard with Grassland Semi Natural Herbaceous Stands with Herbaceous Layer.

Figure 4. Area proposed for process water irrigation. Blue Oak Woodland Alliance with understory of Annual Grassland Semi Natural Herbaceous Stands with Herbaceous Layer.

Figure 5. Blue Oak Woodland Alliance with understory of Annual Grassland Semi Natural Herbaceous Stands with Herbaceous Layer on property.

Figure 6. Napa false Indigo on non-project portions of the property (*Amorpha californica* Nuttall var. *napensis*).

Figure 7. Narrow-anthered California Brodiaea on non-project portions of the property *Brodiaea californica* var. *leptandra* (=*B. leptandra* (Green) Baker).

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 – Vineyard, Conifer Oak Woodland (Forest or Woodland Alliance);
- On the east side of the project – State Highway 29, Vineyards;
- On the south side of the project – Commercial, Oak Woodland (Woodland Alliance); and
- On the west side of the project - Conifer Oak Woodland (Forest or Woodland Alliance).

The dominant land cover types in the vicinity of the property consist of Conifer Oak Woodland (Forest or Woodland Alliance) north, south and west. Oak woodland is the dominant land cover type (33% of the land cover in the county) which includes several different oak species including blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia),* interior live oak (*Quercus wislizeni),* valley oak (*Quercus lobata)*, and black oak (*Quercus kelloggii)* and conifers Douglas fir (*Pseudotsuga menziesii*) with coast redwood in canyons (*Sequoia sempervirens*). The Napa Valley Floor on the east side of the property is predominantly agricultural lands (vineyards).

C.3 Napa County Defined Drainage

The property is on an east-facing hillside above the floor of the Napa Valley. Drainage is by sheet flow into seasonal unnamed tributaries of the Napa River, and thence San Pablo Bay.

Napa County Definition for a Defined Drainages 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 are drainages on the property that would be considered Napa County Defined Drainages, however there are no direct impacts to these drainages associated with the proposed winery site, wastewater irrigation area, or vineyard development area.

D RESULTS AND FINDINGS

The results and findings discussed below are based on our 2011 fieldwork and the background materials available for the project.

D.1 Special-Status Species

Special-status organisms are plants or animals that have been designated by Federal or State agencies as rare, endangered, or threatened. 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.

A map from the DFG CNDDB for the records of special-status species in the proximity of the project is shown on Plate II. These taxa as well as those listed in Appendix C Special-status Species known for the Quadrangle and Surrounding Quadrangles were considered and reviewed as part of our scoping for the project site and property. Reference sites were reviewed as part of our scoping for some of the "Target Species." We did not observe any of these species associated with the proposed project footprint.

As noted in Table III two special status plants were found on non-project portions of the property (Figures 6 and 7). These species are the Napa False Indigo (*Amorpha californica* var. *napensis)* and the Narrow-anthered California Brodiaea (*Brodiaea californica* var. *leptandra)*. Department of Fish and Game Natural Diversity Data Base Field Forms have been filled out and submitted. Copies of the DFG CNDDB Field Forms are attached as an Appendix.

Tables III and IV below provides a list of potential "target species" that are known to occur (DFG CNDDB- 5 mile search). The table includes an analysis / justification for concluding absence as supported by our fieldwork.

Table III. Analysis of "target" special-status plant species. 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	Yes	Present on non-project areas of the property. Requisite habitat, exposure and historic land use preclude presence on project site.
Arctostaphylos stanfordiana ssp. *decumbans* Rincon Manzanita	Chaparral, Lower Montane Coniferous Forest (openings), Rocky, often Serpentinite	No	Feb.-April	No	Absence of requisite habitat and vegetation associates on the site or in the immediate vicinity. Lack of finding during our fieldwork.
Astragalus claranus Clara Hunt's Milk-vetch	Chaparral, Cismontane Woodland, Valley and Foothill Grassland	No	March-May	No	Absence of requisite micro-habitat, vegetation associates and historic land use precludes presence. Lack of finding during our fieldwork
Brodiaea californica var. *leptandra* (=*B. leptandra*) Narrow-anthered California Brodiaea	Cismontane Woodland	No	May-June	Yes	Present on non-project portions of the property. Requisite habitat, exposure and historic land use preclude presence on project site
Ceanothus confusus Rincon Ridge Ceanothus	Closed Cone Conifer Forests, Chaparral	No	Feb.-April	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.
Ceanothus divergens Calistoga Ceanothus	Chaparral, Serpentinite or Volcanic-Rocky.	No	May-Sept.	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.

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
Ceanothus purpureus Holly-leaved Ceanothus	Chaparral	No	March-May	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.
Centromadia parryi ssp. *parryi* Pappose Tarplant	Grassland salt or alkaline Marshes	No	March-June	No	Requisite mesic conditions absent. Lack of finding during our fieldwork.
Downingia pusilla Dwarf Downingia	Wetlands	No	March May	No	Requisite aquatic habitat absent on the project sites. Lack of finding during our fieldwork.
Erigeron greenei Green's Narrow-leaved Daisy	Chaparral, (serpentinite)	No	May-Sep	No	Absence of edaphic conditions required for presence. Lack of finding during our fieldwork.
Eryngium constancei Loch Lomond button-celery	Vernal Pools	No	April-June	No	Absence of mesic conditions required for presence. Lack of finding during our fieldwork.
Hesperolinon bicarpellatum Two-carpellate Western Flax	Chaparral	No	May-July	No	Requisite edaphic habitat absent on the site or in the immediate vicinity precludes presence. Lack of finding during our fieldwork.
Layia septentrionalis Colusa Layia	Cismontane Woodland, Valley and Foothill Grassland, Serpentinite	No	April-May	No	Requisite edaphic habitat absent on the site or in the immediate vicinity. Lack of finding during our fieldwork.

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
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. Lack of finding during our fieldwork.
Lupinus sericatus Cobb Mountain Lupine	Broadleaved upland forest, chaparral, cismontane woodland	No	March-June	No	Absence of requisite vegetation associates as well as historical use of project site precludes presence. Lack of finding during our fieldwork.
Navarretia leucocephala ssp. *bakeri* Baker's Navarretia	Meadows and Seeps Cismontane Woodland, Valley and Foothill Grassland, Vernal Pools	No	May-July	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.
Penstemon newberryi var. *sonomensis* Sonoma Beardtongue	Cismontane Woodland	No	April-Aug.	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.
Poa napensis Napa Blue Grass	Meadows near Hot Springs	No	May-Aug.	No	Requisite mesic habitat absent on the site or in the immediate vicinity. Lack of finding during our fieldwork.
Sidalcea hickmanii ssp. *napensis* Napa Checkerbloom	Chaparral Serpentinite	No	May-June	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.
Trichostema ruygtii Napa Bluecurls, Vinegar Weed	Grassland	No	June-Aug.	No	Requisite habitat absent on the site. Lack of finding during our fieldwork.

Two special-status plants were found on the property (Napa False Indigo and California Narrow-anthered Brodiaea *aka* Narrow-flowered Brodiaea). California Department of Fish and Game Natural Diversity Data Base Field Forms are attached. These taxa are discussed below;

The **Narrow-anthered California Brodiaea** (*Brodiaea californica* var. *leptandra* = *B. leptandra* (Green) Baker) is present on a ridge at the west end of the parcel. A DFG CNDDB Field Data Form is attached. This species is known from sites south of the property. We found no evidence for the presence of this species within or near the project footprint. This taxon is not State or Federally listed. The plant is listed by the California Native Plant Society as 1B. It occurs from 110 to 915 meters in elevation in broadleaf upland forests, chaparral, cismontane woodland, lower montane coniferous forest and valley and foothill grassland in volcanic and serpentinite soils with a blooming period of May through July. It is present in Lake, Napa and Sonoma Counties. The project sites do not contains habitat for this species.

Napa False Indigo *(Amorpha californica* var. *napensis)* is present on a ridge at the west end of the parcel. A DFG CNDDB Field Data Form is attached. This species known from north of the property. This species is found in broad-leafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest. We found no evidence for the presence of this species within or near the footprint of the proposed project.

Table IV below provides a summary of our field results for "target" special-status animal species and justification for negative findings. The taxa included in the Table are selected based the California Department of Fish and Game Natural Diversity Data Base Five Mile search records for the area of the project (Plate II) and Appendix C. Species listed in Appendix C are known within the quadrangle and surrounding quadrangles.

Table IV. Analysis of target special-status animal species. 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**
Antrozous pallidus Pallid Bat	Roosts in Buildings and Overhangs, woodlands	Potential in buildings on property	No	No evidence for presence observed during our fieldwork.
Corynorhinus townsendii Townsend's Big-eared Bat	Caves, also in Buildings	Potential in buildings on property	No	No evidence for presence observed during our fieldwork.
Emys marmorata Western Pond Turtle	Slow moving water or ponds	Potential habitat in Reservoir.	No	Reservoir on property has potential. Species was not observed during our fieldwork.

Scientific Name Common Name	Habitat	Potential for Project Site	Obs. on or Near Project Site	Justification for Negative Findings
Myotis thysanodes Fringed Myotis	Montane Forests or Montane Meadows	No	No	Lack of habitat. No evidence for presence observed during our fieldwork.
Oncorhynchus mykiss irideus Steelhead-central California Coast	Aquatic	No	No	No aquatic habitat associated with the proposed project.
Progne subis Purple Martin	Cavity nesters. Like open areas near water.	No	No	Habitat associated with proposed project is unlikely to contain feeding or nesting potential.
Rana boylii Foothill Yellow-legged Frog	Streams with pools	NA	No	Lack of habitat precludes presence. Drainages on property do not contain aquatic habitat
Strix occidentalis caurina Northern Spotted Owl	Old growth, Forested deep canyons	No	No	Requisite habitat absent. Not associated with project.

In the sections below species with the potential to be impacted by the proposed project are discussed in more detail than in the table above.

***Antrozous pallidus* Pallid Bat** occupies a wide variety of habitats, such as grasslands, shrub lands, and forested areas of oak and pine, but prefer rocky outcrops with desert scrub. The pallid bat roosts in caves, mines, crevices, and occasionally in hollow trees or buildings. They forage over open country. The CNDDB, 2011 lists a sighting of the bat more than two miles east and north of the project.

Buildings on the project site proposed to be removed contain potential habitat for day roosts, night roosts, or hibernation roosts. Blue Oaks trees on the project site have low potential for day and night roosts. There are several large old snags associated with the project site which contain potential roosting habitat. No roosts or evidence of their presence was observed within project area during our field survey.

***Emys marmorata* (Western Pond Turtle)**. The pond turtle is found throughout California and is listed by the State as a Species of Concern. Suitable habitat consists of any permanent or nearly permanent body of water or slow moving stream with suitable refuge, basking sites and nesting sites. Refuge sites include partially submerged logs or rocks or mats of floating vegetation. Basking sites can be partially submerged rocks or logs, as well as shallow-sloping banks with little or no cover. Nesting occurs in sandy banks or in soils up to 300 feet away from aquatic habitat.

We did not observe this species in the reservoir during our surveys on the property. We reviewed the property during times when the Western Pond Turtle would be observed sunning if present. The reservoir banks area steep with no cover. Surrounding upland nesting habitat is dry and not ideal nesting pond turtles.

Strix occidentalis caurina **Northern Spotted Owl** requires mature forest patches with permanent water and suitable nesting trees and snags. Northern spotted owls use dense, old-growth forests, or mid- to late- seral stage forests, with a multi-layered canopy for breeding. Mixed conifer, redwood, and Douglas-fir habitats are required for nesting and roosting. The State of California Northern Spotted Owl Database was queried for the presence of recorded Northern Spotted Owls (NSO) activity within a 1.3 mile radius of the plan area.

There are two occurrences with in 1.3 miles of the project site. Habitat impacted by the proposed project does not contain suitable habitat for the Northern Spotted Owl.

Our fieldwork did not find any special-status animal species that are known for the Quadrangle surrounding Quadrangles or for the region that would be impacted by 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.

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 aeiral 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 grasslands within the footprint of the project do not consist of any of the sensitive grassland communities listed by the County Baseline Data Report of DFG.

Table V below summarizes the project elements and the acreage on the property as well as the percentage of each vegetation alliance that will be lost or removed by the project. The vegetation map also illustrates the location of the different alliance on the property.

Table V. Acreage of Plant Communities or Alliances Impacted by the Proposed Project. The table shows percentage of cover of each Alliance Impacted by the Proposed Project.

Plant Community or Vegetation Alliance	Estimated Acreage on Property	Estimated Acreage Impacted by Project	Estimated Percent Impacted by Project
Semi-natural Herbaceous Stand Grassland (Annual Ruderal Grassland)	5.0- Acres	4.0 - Acres	80%
Forest Or Woodland Alliance	37.7-Acres	3.2 - Acres	8%
Shrubland Alliance	6 -acres	0.0 - Acres	0%
Open Water (Reservoir)	0.5-acres	0.0 - Acres	0%
Disturbed or Developed Landscape	0.8	0.8 - Acres	100%
Total	Total 50-Acres	8.2- Acres	16%

Native Grassland - Indicators of native grassland which are present around the project site include blue wild rye (*Elymus glauca*). The densities/abundance/cover of this species is such that it does not indicate significant persistent native grassland. The project will not impact any significant populations of native grasslands.

The cave spoils are to be hauled off site, and the cave portals are at the edge of the Douglas fir Woodland (*Pseudotsuga menziesii* Forest Alliance).

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. There are no DFG Sensitive Communities or Napa County Sensitive Biotic Communities present on or near the project site.

D.3 Biological Resources

Distinct biological resources that are limited in nature include, wetlands, waters of the state, riparian corridors or riparian vegetation, tree and vegetation layers, vegetation diversity, drainages, creeks, springs or 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 historically developed landscape and the landscape above the area of the project shows evidence of succession as a result of stone quarry operations.

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 seasonally dry 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 potential seasonal wetlands associated with the project footprint.

"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" will require ACOE, DFG, and RWQCB permits. Drainages on the property are considered "Waters of the State." The drainages on the property adjacent to the proposed project components have been provided with buffers as per Napa County Regulations.

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 The native trees within the proposed vineyard block and Winery that will be removed are Valley Oaks (Quercus lobata), Douglas-fir (Pseudotsuga menziesii), Coastal Live Oak (Quercus agrifolia) and Madrone (Arbutus menziesii). The Coast Redwoods (Sequoia sempervirens), although a native tree, are part of the historic landscaping and plantings on the project site. The Table below summarizes the trees that will be removed for the proposed project as shown on the Utility Plan Plate VI prepared by Riechers and Spence Associates.

As shown in Figures 4 and 5 the blue oak woodlands are of a single age class in the area proposed for disposal and the reclaimed process water irrigation.

The reclaimed process wastewater will be applied on the vineyard and in a designated area of Blue Oak Woodland (*Quercus douglasii*). The processed wastewater plan his been designed by Ricehers Spence Associates Consulting Civil Engineers and we reviewed the water balance calculations for our biological analysis. There calculations for water application have been designed to accommodate the vegetation demand on the site.

The summer month site evaporation in peak summer months is 7.21". The water balance indicates that the peak application for the oak woodland is 0.72" per month. During periods of irrigation, applied recycled water will rapidly evaporate if it is not consumed by vegetation. Due to the low application rates and pretreatment of the winery process waste the nutrient composition and the organic matter (BOD) is well within the acceptable range for the plant community on site.

Perhaps the best assessment of the wastewater application on this site is the 30-year application of treated wastewater on a Blue Oak woodland at the Berryessa Highlands treatment plant. The spray irrigation program (Napa Berryessa Resort Improvement District NBRID) applies the treated water onto a Blue Oak woodland. We reviewed this site (3/28/12) and interviewed the previous owner of the property for any indications of change in the habitat and found that there were no recollected indications of change in habitat structure in the spray irrigation field over time. We observed that the area was a healthy productive oak woodland with no discernable difference between treated areas and untreated areas.

It is anticipative that there will be no significant changes in habitat structure or significant change in habitat in the spray irrigation field over time. Blue Oaks is the area should continue to grow and will not be negatively impacted by increase of water over natural weather patterns.

Table VI. Summary of trees to be removed by the proposed project.

PROJECT ELEMENT	TREE TYPE	NUMBER
Vineyard	Redwood-Planted Live Oak Valley Oak Unidentified Tree On Plot Plan (Includes Clusters of Old Privet	2 1 3 5 Total 11
Winery and Infrastructure	Redwood-Planted Madrone Live Oak Douglas Fir Unidentified Tree On Plot Plan Birch-Planted Walnut	1 4 1 1 4 3 1 Total 15
Reclaimed Process Water Irrigation Area	Blue Oak	No oaks to be removed. No anticipated impact.
Total Number of Native Trees To Be Removed	(Need Count for Spoils Area)	10 Native Trees

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.

There are no identifiable wildlife corridors through the property. Small game trails and deer trails were observed on the project site and property. No significant wildlife corridors will be impacted by the proposed project. The project will not impact any migratory fish on or off site provided standard erosion control measures are implemented.

D.4 Raptor Nests, Bird Rookeries, Bat Roosts, Wildlife Dens or Burrows

Raptors were observed in the area although no raptor nests were identified during our survey. 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, whitewash from nests on the project site were observed.

The site does not contain any natural roosting habitat for bat species (i.e. mines, caves, riparian woodlands). Mature oaks on the property, the house and barn have the potential to support bat roosts. No evidence of bat roosting was observed.

Very few burrows were observed, but small mammals and songbirds likely utilize habitats on the project site for foraging and cover. Pack rat dens were present in the woodlands of the non-project portions of the property. No significant wildlife dens or burrows were observed.

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

Two special-status species were found on the west side of the property. They are not associated with the proposed project. No other unique or unusual populations of plants or animals were present on the property or the project site.

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.

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 major portion of the property is on a steep slope and is outside of the footprint of the proposed project. This portion of the property will continue to function as open space, wildlife habitat and watershed. The adjoining properties as shown in the aerial photograph Plate III allow for connectivity to adjoining woodlands. 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 cumulative biological effects will result from the proposed project.

D.9 State and Federal Permit

No biological state or federal permits are required for the project as proposed. Any impacts to the bed and or bank of any drainages on the property will require permit authorization from DFG, ACOE and the SWRCB.

E. POTENTIAL IMPACTS AND MITIGATION

E.1 Significance

The significance of potential impacts is a function of the scope and scale of the proposed project within the existing Federal, State and Local regulations and management practices. The determination of significance of impacts to biological resources consists of an understanding of the project as proposed and an evaluation of the context in which the impact may occur. The extent and degree of any impact on-site or off–site must be evaluated consistent with known or expected site conditions. Therefore, the significance of potential impacts is assessed relevant to a site-specific scale and the larger regional context.

The project's effect on onsite or regional biological resources is considered to be significant if the project results in:

- Alteration of unique characteristics of the area, such as sensitive plant communities and habitats (i.e. serpentine habitats, wetlands, riparian habitats);
- Adverse impacts to special-status plant and animal species;
- Adverse impacts to important or vulnerable resources as determined by scientific opinion or resource agency concerns (i.e. sensitive biotic communities, special status habitats; e.g. wetlands);
- Loss of critical breeding, feeding or roosting habitat; and
- Interference with migratory routes or habitat connectivity.

E.2 Potential Impacts and Recommended Mitigation

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

1. Special-Status Species

No special status species were observed within the project site during our spring to summer 2011 floristic surveys.

Two special-status plant species were found on the west edge of the property (Napa False Indigo *Amorpha californica* Nuttall var. *napensis* and California Narrow-anthered Brodiaea *Brodiaea californica* var. *leptandra* [= *B. leptandra* (Green) Baker]). The location of these plants was mapped and GPS coordinates determined. They are not near the project footprint and there is no reason to expect any impacts as a result of the proposed project (California Department of Fish and Game Natural Diversity Data Base Field Forms are attached in the Appendix).

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. The project has been designed to avoid all known special-status species on the property, there for no mitigation is required.

The reservoir on the property has low potential for Northwestern Pond Turtles. No turtles were observed during our survey of the property. There is the potential for turtles to move into the reservoir from surrounding properties.

Mitigation 1.1. Removal of the reservoir is not part of this project. If the reservoir is proposed for removal in the future a qualified wildlife biologist shall conduct preconstruction surveys for Northwestern Pond Turtle (NPT) to ensure that no turtles have moved into the area. Surveys must be conducted no more that two weeks prior to dam removal. Construction should take place when the reservoir is dry.

The property contains potential bat roosting within mature trees proposed for removal and the buildings scheduled for demolition. Bats could be impacted during tree removal and building demolition.

Mitigation 1.2. A preconstruction bat survey must be conducted for the demolition of buildings on the property if occurring during the special–status bat breeding season (March 1 through August 31), by a qualified wildlife biologist of all potential bat-roosting habitat. If roost are present and determined to support special-status bats a mitigation plan prepared by a qualified bat biologist shall be submitted to the county and approved before any disturbance of special-status bats or maternity roost occur. Mature Oaks and snags on the project should be removed after August 31 and before October 15 or after February 28, and before April 15 of any year to prevent any impacts to roosting bat if present.

Direct or indirect impacts to drainages has the potential to result in a significant negative impacts to special-status species known or expected to occur downstream in the Napa River and its riparian woodland habitat.

Mitigation 1.3. Ensure that 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.

Any future development must address impacts to populations of Napa False Indigo and California Narrow-anthered Brodiaea.

Mitigation 1.4. Prior to any future development on the property a qualified biologist shall place flagging around the Napa False Indigo and California Narrow-anthered Brodiaea populations. A "no disturbance" buffer should be established around the population. Flagged areas should be avoided during any new construction.

2. Sensitive Biotic Communities

No sensitive biotic communities or communities of limited distribution as per Napa County were identified on the property. No mitigation is necessary by the proposed project.

3. Biological Resources

Site development has the potential to impact biological resources without appropriate avoidance and protection measures. Biological resources present include "Tributaries to Waters of the U.S", and Removal of Tree Habitat.

Seasonal Wetlands No wetlands or vernal pools are present on the proposed project site. No mitigation is necessary by the proposed project.

Tributaries to Waters of the U. S. The project has been designed to avoid impacts to drainages on the property. Construction within the channel or sediment entering into the drainage channels has the potential to negatively impact downstream waters.

Mitigation 3.1 Drainages on the project site have been provided with setbacks as per Napa County requirements. Any impact to the bed or bank of un-named drainage or discharge of storm water into "Waters of the State" will require agencies consultation and permits form the Army Corps of Engineers (ACOE), Department of Fish and Game (DFG), and Regional Water Quality Control Boards (RWQCB).

Riparian Habitat Drainages on the property contain limited riparian vegetation. The proposed project will not impact any riparian vegetation and there for no mitigation is required.

Native Grassland The project will not impact any significant populations of native grasslands. Native grasses are present as understory for the Forest Woodland Alliance but they do not constitute "Native Grassland." The open grassland on the property that is within the footprint of the project is a semi-natural herbaceous grassland that is a result of decades of agricultural and or landscaping management. No mitigation is necessary by the proposed project.

Tree Removal The proposed project has the potential to result in direct impacts to native oaks by direct removal and injury during construction of project.

Mitigation 3.2 The project must comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland communities.

Mitigation 3.3 Provide tree protection fencing along the outside edge of the tree canopy adjacent to construction activities to ensure they are not disturbed or impacted during construction activities. Avoid soil disturbance within the canopy of avoided trees during construction activities.

Mitigation 3.4 Incorporate native trees and shrub plantings into the landscape plan on the winery site to increase the habitat value for wildlife and to mitigate for habitat lost.

4. Wildlife Habitat and Wildlife Corridors

There are no identifiable wildlife corridors through the property. The project will reduce a small amount of wildlife habitat on the property. Significant areas of 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. Habitat on the property will continue to function and provide habitat for wildlife in the area.

Mitigation 4.1 Provided standard erosion control measures are implemented the project will not impact any migratory fish on or off site.

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

The proposed project will not have any significant potential impacts to Rookeries Wildlife Dens or Burrows. Woodlands surrounding the proposed project have potential nesting habitat and will be retained in their present state. Trees to be removed have potential habitat for raptors nests.

Mitigation 5.1. For ground disturbing activities occurring during the breeding season (March 1 through July 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.

Mitigation 5.2. A preconstruction bat survey must be conducted for the demolition of buildings on the property if occurring during the special–status bat breeding season (March 1 through August 31).

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

No unique species that are endemic, rare or atypical for the area are associated with the proposed project site. No mitigation is necessary by the proposed project.

7 Habitat Fragmentation

The proposed change in land use will result in less than significant changes in avifauna and wildlife utilization of the property. The change in land use will incrementally contribute to habitat fragmentation. It is noted that portions of the property not impacted by the project will be retained as wildlife habitat, watershed and open space. No mitigation required.

8 Cumulative Biological Effects

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.

Mitigation 8.1. All project construction activities must be limited to the project footprint. Best Management Practices including silt and erosion control measures must be implemented to protect off-site movement of sediment and dust during and post construction. Best Management Practices must be implemented throughout the construction period such as retaining ground cover litter, monitoring for invasive species, providing mulch for bare ground and standard erosion and dust control.

F. SUMMARY

This study is provided as background information necessary for the assessment on the proposed project on local Biological Resources.

We find that the proposed 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 or U.S. Fish and Wildlife Service.

Onsite field surveys by Kjeldsen Biological Consulting and the site history reasonably preclude presence of any special-status species on the project site. The project footprint is primarily within a developed landscape. The two special status plant species (Napa False Indigo *Amorpha californica* Nuttall var. *napensis* and California Narrow-anthered Brodiaea *Brodiaea californica* var. *leptandra)* have been avoided by the proposed project.

We find that the proposed project will not have a 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.

We find that the proposed 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.

In order for the proposed project to not conflict with any local policies or ordinances protecting biological resources, the project must comply with the Oak Woodlands Preservation Act and provide setback form all drainages on the property as per Napa County requirements.

The proposed project will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.

We conclude that the proposed project if recommended mitigation measures are incorporated will not result in any potentially significant adverse biological impacts to the environment.

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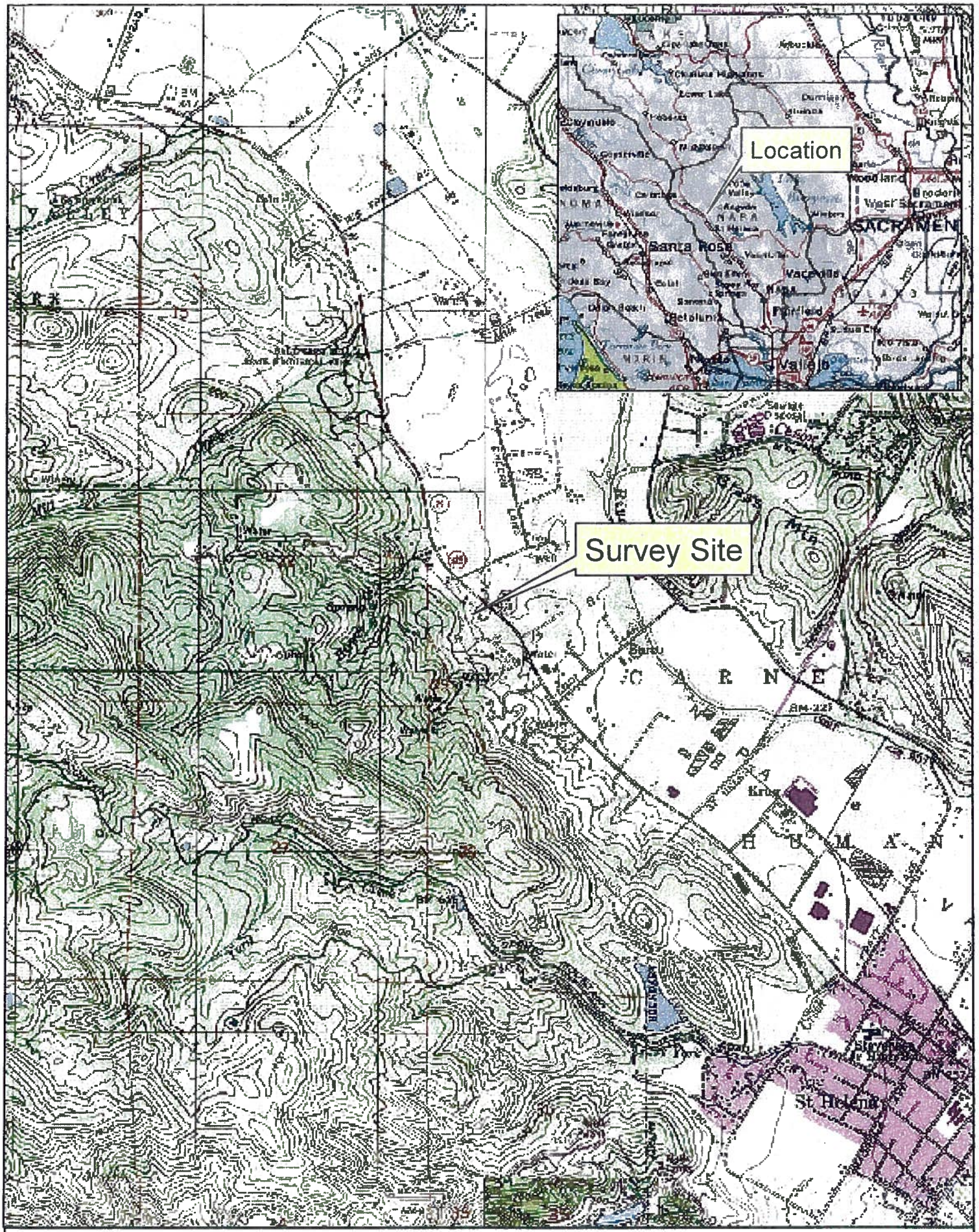
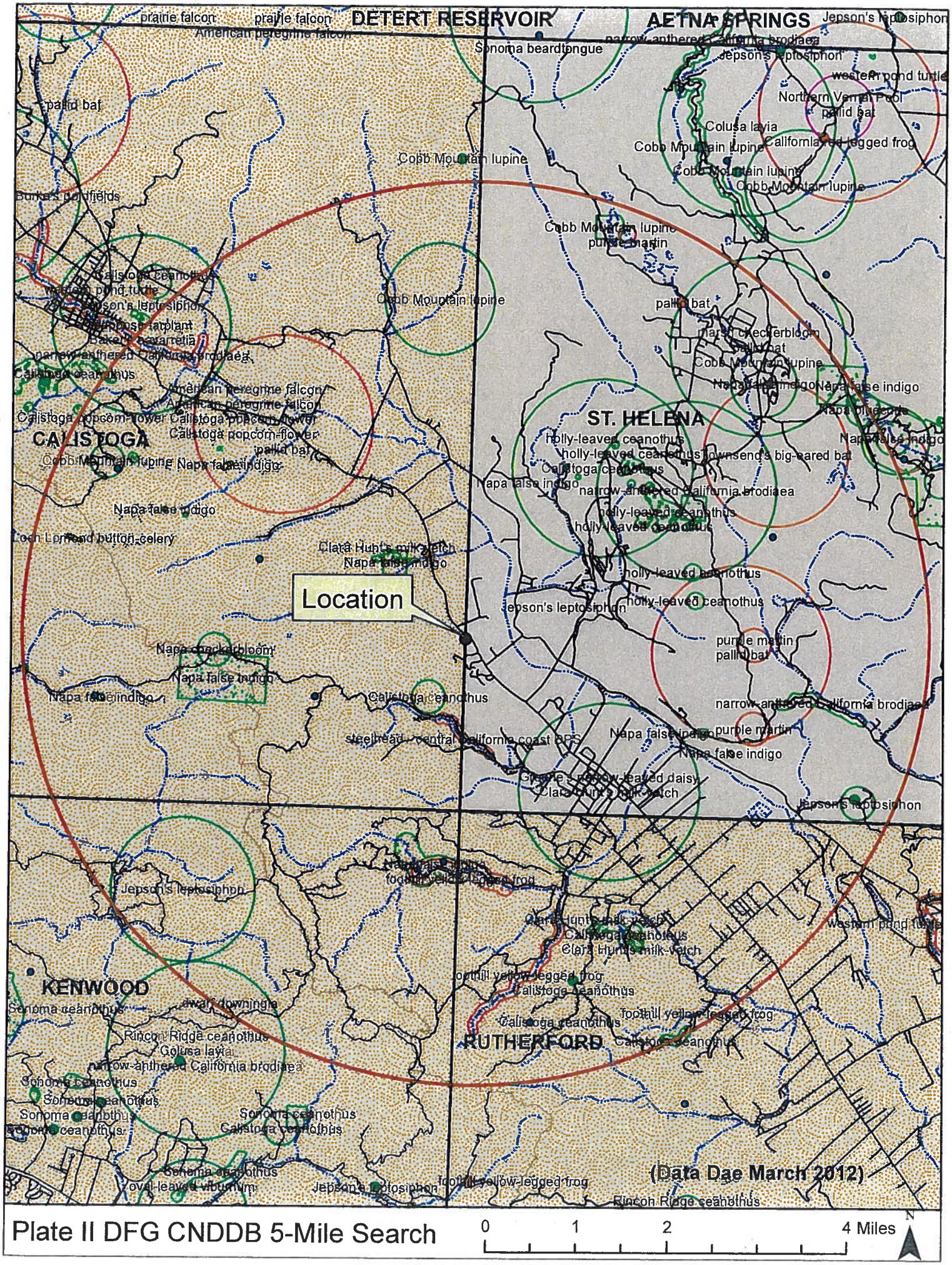


Plate I. Site / Location Map (Calistoga Quadrangle)


DETERT RESERVOIR
AETNA SPRINGS
ST. HELENA
CALISTOGA
KENWOOD
RUTHERFORD
Location
prairie falcon
prairie falcon
American peregrine falcon
Sonoma beardtongue
Jepson's leptosiphon
narrow-anthered California brodiaea
Jepson's leptosiphon
western pond turtle
Northern Vernal Pool
pallid bat
Colusa layia
Cobb Mountain lupine
California red-legged frog
Cobb Mountain lupine
Cobb Mountain lupine
Cobb Mountain lupine
Cobb Mountain lupine
purple martin
Cobb Mountain lupine
pallid bat
Bunker's bordfields
Calistoga ceanothus
western pond turtle
Jepson's leptosiphon
Napa bluecurls
Baker's navarretia
narrow-anthered California brodiaea
Calistoga ceanothus
American peregrine falcon
American peregrine falcon
Calistoga popcorn-flower
Calistoga popcorn-flower
Calistoga popcorn-flower
pallid bat
Cobb Mountain lupine
Napa false indigo
Napa false indigo
Napa false indigo
Napa false indigo
Napa bluecurls
Napa false indigo
holly-leaved ceanothus
holly-leaved ceanothus
Townsend's big-eared bat
Calistoga ceanothus
Napa false indigo
narrow-anthered California brodiaea
holly-leaved ceanothus
holly-leaved ceanothus
Napa false indigo
Loch Lomond button-celery
Clara Hunt's milk-vetch
Napa false indigo
holly-leaved ceanothus
holly-leaved ceanothus
Jepson's leptosiphon
purple martin
pallid bat
Napa bluecurls
Napa false indigo
Napa false indigo
Calistoga ceanothus
narrow-anthered California brodiaea
steelhead - central California coast DPS
Napa false indigo
purple martin
Napa false indigo
Greene's narrow-leaved daisy
Clara Hunt's milk-vetch
Jepson's leptosiphon
Napa false indigo
foothill yellow-legged frog
Jepson's leptosiphon
Clara Hunt's milk-vetch
Calistoga ceanothus
Clara Hunt's milk-vetch
western pond turtle
foothill yellow-legged frog
Calistoga ceanothus
Sonoma ceanothus
Awl's downingia
foothill yellow-legged frog
Calistoga ceanothus
Rincon Ridge ceanothus
Calistoga ceanothus
Golusa layia
narrow-anthered California brodiaea
Sonoma ceanothus
Sonoma ceanothus
Sonoma ceanothus
Sonoma ceanothus
Sonoma ceanothus
Calistoga ceanothus
Sonoma ceanothus
oval-leaved viburnum
Jepson's leptosiphon
foothill yellow-legged frog
Rincon Ridge ceanothus
(Data Dae March 2012)
Plate II DFG CNDDB 5-Mile Search
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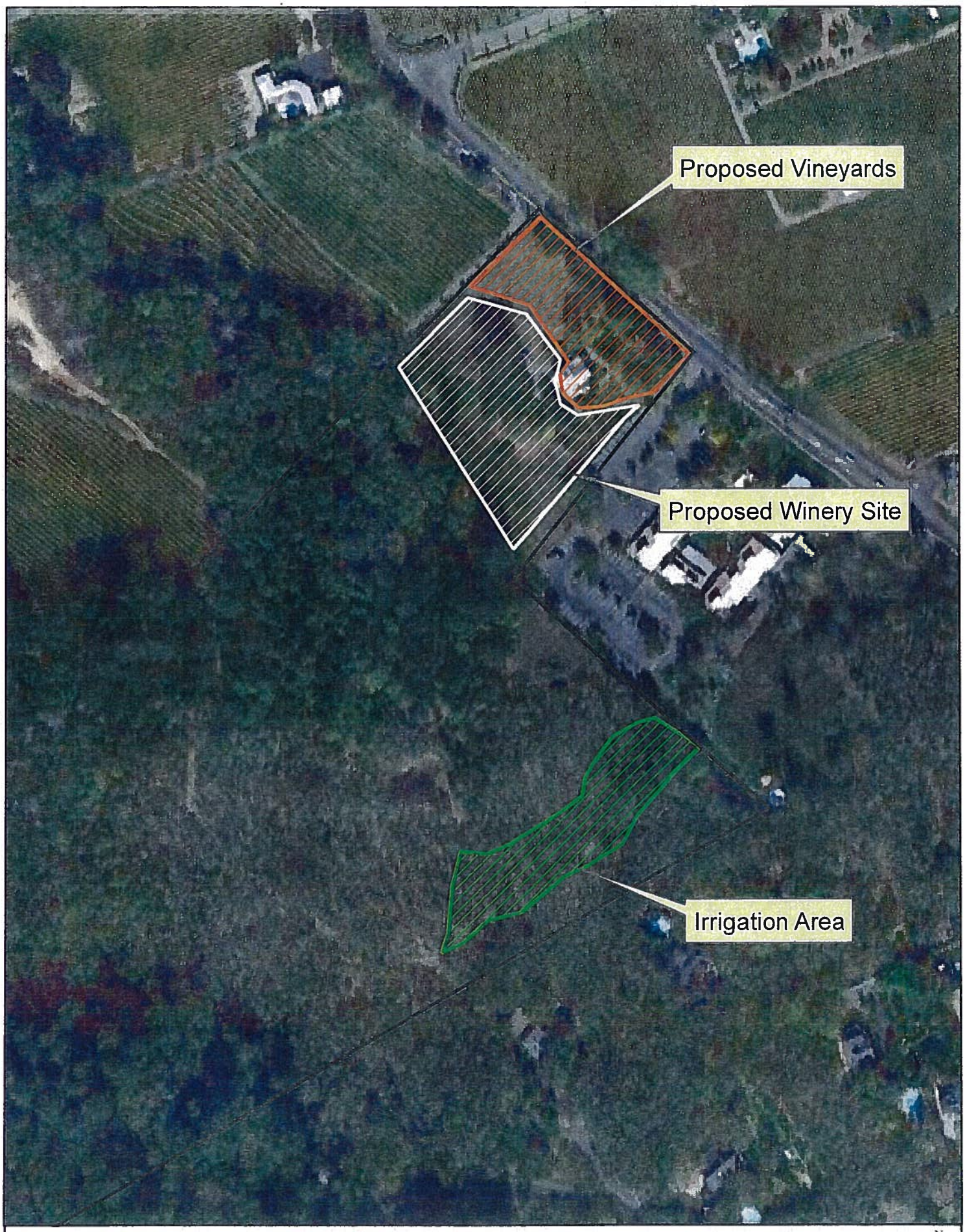

Plate III. Aerial Photo / Project Location Map

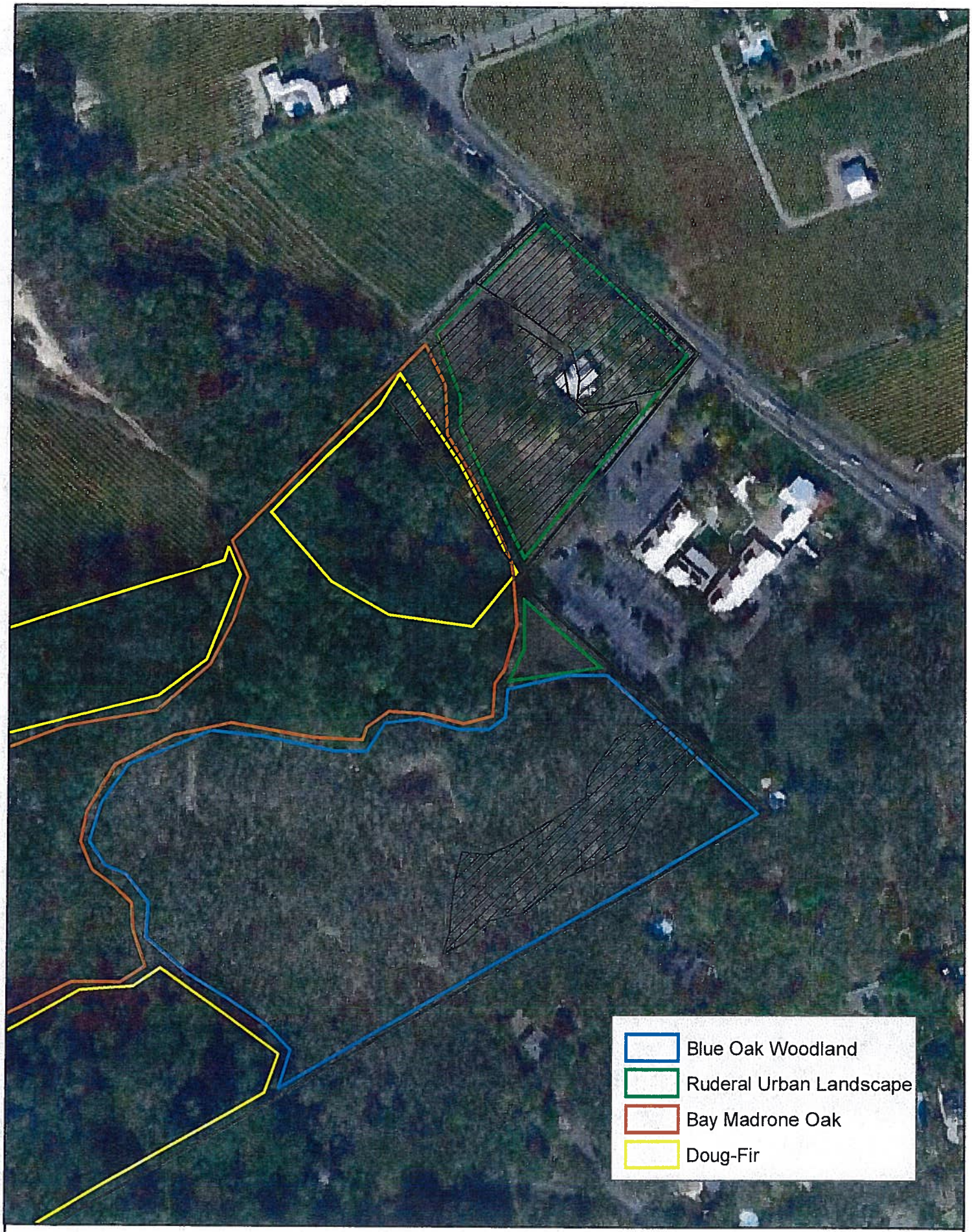

Plate IV. Vegetation Map

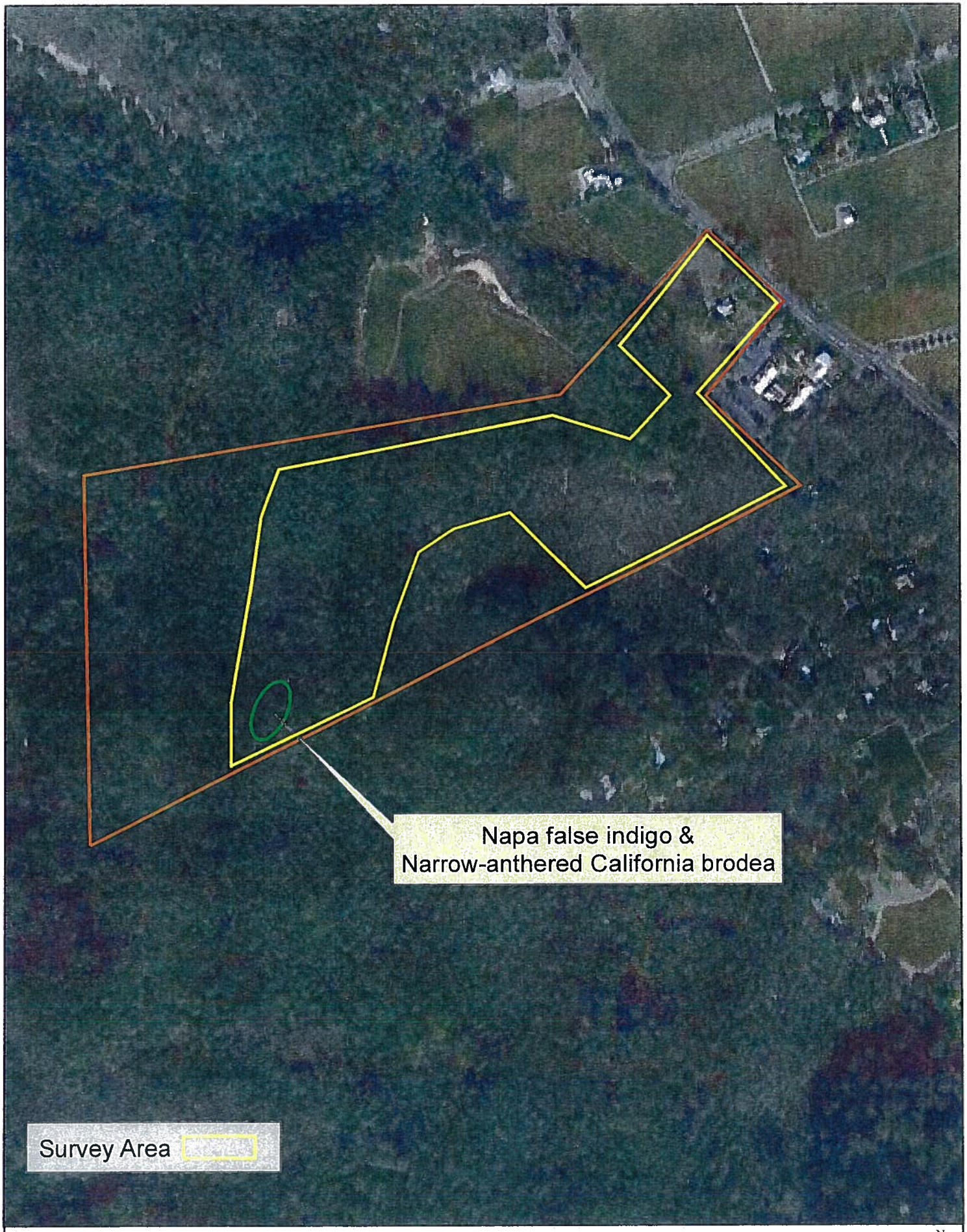

Plate V. Location of Special Status Species