BIOLOGICAL ASSESSMENT

Lot Line Adjustment
APN 025-100-007 (PTN)
3225 Bloomfield Road
Sonoma County

Prepared
By
Kjeldsen Biological Consulting

For

Jackson Family Wines

July 2017

BIOLOGICAL ASSESSMENT
Lot Line Adjustment
APN 025-100-007 (PTN)
3225 Bloomfield Road
Sonoma County

PROJECT NAME: Lot Line Adjustment
APN 025-100-007 (PTN)
3225 Bloomfield Road
Sonoma County

COUNTY FILE # **LLA17-0015**

APPLICANT: Jackson Family Investments III, LLC.

Deborah M. Hunt
Jackson Family Wines
425 Aviation Blvd.
Santa Rosa, CA 95403

PROJECT EINGENEER: Ray Carlson and Associates
411 Russell Avenue
Santa Rosa, CA 95403

REPORT PREPARED BY: Kjeldsen Biological Consulting
923 St. Helena Ave.
Santa Rosa, CA 95404
(707) 544-3091
Fax (707) 575-8030
kjeldsen@sonic.net

PERIOD OF SURVEY: May and July 2017

BIOLOGICAL ASSESSMENT
Lot Line Adjustment
APN 025-100-007 (PTN)
3225 Bloomfield Road
Sonoma County

TABLE OF CONTENTS

EXECUTIVE SUMMARY

A. PROJECT DESCRIPTION……...…….....1
- A.1 Introduction
- A.2 Purpose

B. SURVEY METHODOLOGY……..…….…….....2
- B.1 Project Scoping
- B.2 Field Survey Methodology

C. RESULTS / FINDINGS……..……...…….…….6
- C.1 Biological Setting
- C.2 Habitat Types Present
- C.3 Special-Status Species(s)
- C.4 Discussion of Sensitive Habitat Types

D. POTENTIAL BIOLOGICAL IMPACTS…….....…….22
- D.1 Analysis of Potential Impacts to Special-status Species
- D.2 Analysis of Potential Impacts on Sensitive Habitat
- D.3 Potential Off-site Impacts of the Project
- D.4 Potential Cumulative Impacts
- D.5 State and Federal Permit

E. RECOMMENDATIONS TO AVOID IMPACTS……..…...26
- E.1 Recommendations

F. CONCULSIONS……...27

G. LITERATURE CITED / REFERENCES……..……..……28
F.1 Literature and References
F.2 Names and Qualifications of Field Investigators

PHOTOGRAPHS **Figures 1 to 6**

PLATES
Plate I Site Map / Location
Plate II Fish and Wildlife CNDDB Rare Find 3 Map
Plate III Aerial Photo / Site Map

APPENDIX A. **Flora and Fauna Observed**

APPENDIX B. **CNPS Special Status-species Listed for the Project Quadrangle and Surrounding Quadrangles**

U.S. Fish and Wildlife Service Listed Species for the Quadrangle

California Department of Fish and Wildlife Rare Find 5 Species list for the Quadrangle and Surrounding Quadrangles for Habitat found on the project site

BIOLOGICAL ASSESSMENT
Lot Line Adjustment
APN 025-100-007 (PTN)
3225 Bloomfield Road
Sonoma County

EXECUTIVE SUMMARY

This study was conducted at the request of Jackson Family Investment's III, LLC. as background material for Sonoma County Permit and Resource Management Department. The project proposes a lot split to add approximately 19+/- acres from LLA Parcel 1 to LLA Parcel 2. Parcel 1, 159.00-acre+/- will be reconfigured to LLA 1 140.32 +/- acres, and LLA Parcel 2, a 331.00 +/- acre parcel will be reconfigured to LLA 2 349.86+/- acre parcel.

The property has access from Bloomfield Road. The project site is located within the Two Rock Quadrangle south of the city of Sebastopol. The parcel contains vineyards and associated infrastructure, an unnamed tributary of Blucher Creek, grasslands and oak woodlands.

The purpose of the study and this report is to provide an assessment of biological resources that may be impacted by the proposed lot split and the designated building envelopes including septic and leach field sites. Specifically this report evaluates the project for potential impacts on protected plants, wetlands, marshes and or animal species.

Our survey did not cover the developed portions of the property. The findings presented below are the results of fieldwork conducted on May 1 and July 17, 2017 by Kjeldsen Biological Consulting:

- It is unlikely that the proposed lot split would impact any of the special-status plants known for the Quadrangle or the region based on the habitat present and historic use of the project sites;
- American Badger burrows are present on the property. No other special-status animals were observed or would likely be impacted by the proposed lot split;
- The property is not located within the designated area of the U.S.F.W.S. Programmatic Biological Opinion (PBO) for the U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California, and is not located within the designated Potential Range of the Sonoma County California Tiger Salamander (July 21, 2005);
- The habitat or plant associations on the proposed building site Lot 1 consists of Oak woodlands. Access to building envelope will be along existing vineyard avenues;
- The habitat or plant associations on the proposed building site Lot 2 consists of Grassland Semi-natural Herbaceous Stands with Herbaceous Layer. Lot 2 proposed building envelope will be accessed by an existing gravel road. Lot 2 currently contains a house and associated agricultural buildings;

- An unnamed tributary of Blucher Creek with a riparian corridor bisects the property. Development on the property has established standard setbacks along this resource;
- The project as proposed will not impact any Sensitive Natural Communities regulated by the California Department of Fish and Wildlife or US Fish and Wildlife, seasonal wetlands or vernal pools. No riparian vegetation will be removed by the proposed project;
- The proposed lot split will not substantially interfere with native wildlife species, wildlife corridors, or native wildlife nursery sites; and
- There is no reason to expect any "take" or impacts to special-status species as a result of the proposed project following recommendations within this report.

Assessment of Impacts

The primary biological concern is the avoidance and of potential to impact to the American Badger (Taxidea taxus) a Species of Special Concern. Burrows were observed adjacent to (Lot 1, and Lot 2) proposed building envelope.

Eucalyptus trees adjacent to building envelope Lot 2 have the potential for nesting raptors.

The unnamed tributary of Blucher Creek with its riparian corridor is a local and regional resource that has been provided with setbacks and must be avoided with any future development on the property.

Recommendations

No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist will conduct a survey to determine if active American badger den sites are present at the site.

a. If it is determined that dens are inactive then no further action is necessary.

b. If it is determined that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3 to 5-day period. After the qualified CDFW biologist determines that badger have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.

All project construction activities must be limited to the project footprint. Any access road improvements or widening must be done using Best Management Practices (BMPs). BMPs including silt and erosion control measures must be implemented during construction to protect off-site movement of sediment and dust during and post construction. Any work within the bed and or bank or potential impact to riparian habitat, emergent wetland, or other sensitive natural communities, will require consultation with the California Department of Fish and Wildlife (CDFW)

Eucalyptus trees adjacent to building envelopes Lot 2 have the potential for nesting raptors. Typical nesting season for raptors is (March 1 through July 31). Surveys should be conducted by a qualified

biologist. Any development of the site between the dates of March 1 through July 31 will require a pre-construction raptor survey. Surveys for nesting birds should be conducted within 14 days prior any ground breaking on the project sites. A qualified wildlife biologist should conduct pre-construction surveys of all potential nesting habitat for birds within 500 feet of earthmoving activities. If active bird nests are found during preconstruction surveys, a 500-foot no-disturbance buffer will be created around active raptor nests during the breeding season or until it is determined that all young have fledged.

BIOLOGICAL ASSESSMENT
Lot Line Adjustment
APN 025-100-007 (PTN)
3225 Bloomfield Road

A PROJECT DESCRIPTION

A.1 Introduction

This study was conducted at the request of Jackson Family Investment's III, LLC. as background material for Sonoma County Permit and Resource Management Department. The project proposes a lot split to add approximately 19+/- acres from LLA Parcel 1 to LLA Parcel 2. Parcel 1, a 159.00-acre+/- will be reconfigured to LLA 1, a 140.32 +/- acres. Parcel 2, a 331.00 +/- acre. Parcel will be reconfigured to LLA 2, a 349.86+/- acre parcel.

The property has access from Bloomfield Road. The project site is located within the Two Rock Quadrangle south of the city of Sebastopol. The property contains vineyards and associated infrastructure, a residence, an unnamed tributary of Blucher Creek, grasslands, and oak woodlands.

Our fieldwork focused on the proposed project building envelopes and their surrounding habitat and access routes. Plate I provides a Site and Location Map of the project and Plate III is a site plan and aerial photograph of the property.

A.2 Purpose

The purpose of this report is to identify biological resources that may be affected by the proposed project as listed below:

- To determine the presence of potential habitat for special-status species which would be impacted by the proposed project, including habitat types which may have the potential for supporting special-status species (target species that are known for the region, habitat, the Quadrangle and surrounding Quadrangles);
- To identify if the project will have a substantial adverse effect on Sensitive Habitats or Communities regulated by the California Department of Fish and Wildlife;
- To identify and assess potential impacts to Federal or State protected wetlands as defined by Section 404 of the Clean Water Act; and
- To determine if the project will substantially interfere with native wildlife species, wildlife corridors, and or native wildlife nursery sites;
- Identify any State or Federal biological permits required by the proposed project; and
- Recommend measures to reduce biological impacts to a less than significant level pursuant to the California Environmental Quality Act (CEQA).

B SURVEY METHODOLOGY

Our biological review of the proposed project considered available background material and on-site reconnaissance. Our survey focused on the proposed building envelopes and access routes. Our survey did not cover the entire property.

Fieldwork was conducted on May 1 and July 17, 2017. Our fieldwork was conducted by walking the site perimeter and recording with photographs and field notes the site and surrounding area.

B.1 Project Scoping

The scoping for the project considered location and type of habitat and or vegetation types present on the project sites 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 Wildlife California Natural Diversity Data Base (CDFW CNDDB Rare Find-5), Biogeographic Information and Observation System Online mapping tool, the California Native Plant Society (CNPS) Electronic Inventory of Rare or Endangered Plants and U.S Fish and Wildlife species list for the Quadrangle. "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.

We also considered species that are known for the nine surrounding Quadrangles which would potentially be present based on habitat on the property (Appendix C). The special-status species listed in Appendix C with habitat requirements that are present on the project sites or immediate vicinity are considered and included in our findings and comments below. Those species with specific habitat conditions not present within the project footprint such as vernal pools or hot springs are not discussed.

Google historic aerial photographs were also reviewed to provide a context for biological analysis of the project site.

B.2 Field Survey Methodology

Fieldwork was conducted by walking the project footprint including the existing access road with two personnel (Chris K. Kjeldsen, and Daniel T. Kjeldsen). Our fieldwork analyzed the project sites and surrounding habitat for special-status organisms or the presence of suitable habitat, which would support special-status organisms.

Plants

Field surveys were conducted recording identifying all species on the project sites and in the near proximity. 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.

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. All plants observed (living and or remains from last season's growth) were recorded in field notes and presented in Appendix A.

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

Wildlife was 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-species. 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. All animal life observed during our fieldwork 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 project sites (500 ft +) with binoculars searching for nest or bird activity. Our search was conducted from the project sites and by walking under existing trees looking for droppings or nest scatter from nests that may be present that were not observable by binoculars.

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

Sensitive Communities

DFW 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 which meets one of the following criteria: (1) habitats containing or supporting "rare and endangered" species as defined by the State Fish and Wildlife 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.

Jurisdictional Wetlands

The term "Wetland" is defined as those areas, which are 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. Wetlands generally include swamps, marshes, bogs, and similar areas (Part 230-Section 404 (b) (1), section 230.3 Federal Register, Vol. 45, No. 249). Wetlands also include less conspicuous types such as vernal pools and other seasonal wetlands. Wetlands have the following general diagnostic environmental characteristics:

(1) Vegetation. The prevalent vegetation consists of macrophytes which are typically adapted to areas having hydrologic and soil conditions described above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively complete, reproduce, and/or persist in anaerobic soil conditions.

(2) Hydric Soil. A hydric soil is a soil which is saturated, flooded, or with standing water for long enough during the growing season to develop anaerobic conditions which favor the growth and regeneration of hydrophytic vegetation. Hydric soils may be classified into two broad categories: Organic and Mineral. Organic soils (Histosols) develop under conditions of nearly continuous saturation and/or inundation. All organic soils are hydric soils except Folists, which are freely drained soils occurring on dry sloped where excess litter accumulates over bedrock. Organic hydric soils are commonly known as peat and mucks. All other hydric soils are mineral soils. Mineral soils have a wide range of textures. Mineral hydric soils are those periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment. They are usually gray and/or mottled immediately below the surface horizon, or they have thick, dark-colored surface layers overlying gray or mottled subsurface horizons.

(3) Hydrology. The term "Wetland hydrology" encompasses all hydrologic characteristics of areas which are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions respectively. Such characteristics are usually present in areas, which are inundated or have soils that are saturated to the surface for sufficient duration to develop hydric soils, and support vegetation typically adapted for life in periodically anaerobic soil conditions. Hydrology is often the least exact of the parameters and indicators of wetland hydrology are sometimes difficult to find in the field. However, it is essential to establish that a wetland area is periodically inundated or has saturated soils during to growing season.

Seasonal Wetlands In many regions especially in western states, depression areas occur which have wetland indicators of all three parameters during the wetter portion of the growing season, but normally lack wetland indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophyte and facultative wetland plant species normally are dominant

during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. These areas may be inundated during the wetter portion of the growing season, realizing that wetland hydrology indicators may be totally lacking during the drier portion of the growing season. It is important to establish that an area truly is a water body. Water in a depression normally must be sufficiently persistent to exhibit an ordinary high water mark of the presence of wetland characteristics before it can be considered as a water body potentially subject to Clean Water Act jurisdiction. The determination that an area exhibits wetland characteristics for a sufficient portion of the growing season to qualify as a wetland under the Clean Water Act must be made on a case-by-case basis. Such determinations should consider the respective length of time that the area exhibits upland and wetland characteristics, and the manor in which the area fits into the overall ecological system as a wetland.

Tributaries to Waters of the US

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

Waters of the U.S.

The term "Waters of the U. S." refers to all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; all interstate waters, including interstate wetlands; all other waters such as interstate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use degradation or destruction of which could affect interstate or foreign commerce including any such waters [among which include], all impediments of waters otherwise defined as waters of the United States under this definition.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These water bodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the ACOE under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a ACOE permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination.

C RESULTS / FINDINGS

Our results and findings are based on our fieldwork, literature search, and the background material available for the project. The habitat or plant associations on the proposed building site Lot 1 consist of Oak woodlands. The alternative building site is greater than 200-feet from an unnamed drainage. Access to building envelopes will be along existing vineyard avenues. The habitat or plant associations on the proposed building site Lot 2 consists of Grassland Semi-natural Herbaceous Stands with Herbaceous Layer. Lot 2 proposed building envelope will be accessed by an existing gravel road. Lot 2 currently contains a house and associated agricultural buildings.

C.1 Biological Setting

The property is a large parcel with several different habitat types located above the Santa Rosa Plain within the North Coast Range Mountains, a geographic subdivision of the larger California Floristic Province. The property and surrounding region is strongly influenced by storms and fog from 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 photographs (Figures 1 to 6) below illustrate the study sites.

Figure 1. View of proposed building envelope LLA 1, within Oak woodlands.

Figure 2. View of the proposed LLA 1. western site with oak woodlands.

Figure 3. View of existing crossing and access to the proposed LLA 1.

Figure 4. View of proposed building envelope LLA 2 illustrating Semi-natural Grasslands.

Figure 5. View of existing road and crossing to the proposed building envelope of LLA 2.

Figure 6. View of existing house on the property.

C.2 Habitat Types Present

The vegetation of California has been considered to be a mosaic, with major changes present from one area to another, often with distinct 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. Biologists use habitat types or biotic communities for the plant and animals that are associated with a particular vegetation type in a region. Typically plant communities 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 or associations 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.

The vegetation associations or alliances on the property consist of vineyards, grasslands, woodlands, wetland, and riparian corridor of the unnamed tributary of Blucher Creek. The California Native Plant Society Inventory of Rare and Endangered Plants classifies the vegetation on the site as Cismontane Woodland and Valley and Foothill Grassland.

The criteria for classifying the vegetation on the site as per Sawyer et al, 2009, A Manual of California Vegetation, Second Edition as Forest or Woodland Alliance and Semi-natural grassland with Herbaceous Layer. The wildlife and plants observed during our fieldwork are presented in Appendix A and the vegetation types are described below.

Forest or Woodland Alliances

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, grazing, substrate base, aspect and rainfall are variables that control the degree of understory shrubs, herbs and tree recruitment.

The woodland/forest on the property is dominated by live oaks. Understory vegetation is limited because of grazing, shade and leaf litter. For a complete list of species observed in this plant habitat see Appendix A.

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.

Local Oak Woodlands have undergone many changes due to human management and impacts. They were a valuable food source for Native Americans and were managed by the use of fire to increase acorn production and wildlife resources. They were considered to be "weeds" by ranchers raising cattle and by foresters looking for conifer production. The Oak Woodlands in the area were extensively cut for firewood and charcoal production for the early Californians in the absence of coal. Limited lumber and railroad tie production also impacted Oak Woodlands.

Grassland Semi-Natural Herbaceous Stands with Herbaceous Layer

Semi-Natural Herbaceous Grasslands are a result of decades of grazing 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. 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. This includes what can be termed weeds, aliens, exotics or invasive plants in agricultural and nonagricultural settings. These grasslands are often referred to as Annual Grassland (California Annual Grassland). The Semi-natural Herbaceous Stands present within the proposed project are described below.

***Centaurea (solstitialis, melitensis*)**
Semi-Natural Herbaceous Stands Yellow Star-thistle Fields; *Centaurea solstitialis is dominant or co-dominant with other non-natives in the herbaceous layer.* Emergent shrub and tree layers may occur at low cover. Herbs < 2 M tall, canopy is intermittent to continuous (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. It is an annual that uses deep soil moisture reserves earlier in the growing season than do natives; as a result the natives experience drought conditions.

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-domiant 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 *Achnatherum 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.*

***Festuca perenne = Lolium perenne* Semi-Natural Herbaceous Stands Perennial Rye Grass Field**
Festuca perenne is dominant or co-dominant with other non-natives in the herbaceous layer with *Agrostis stolonifera, Alopecurus aequalis, Ascliepias fascicularis, Abena fatua, Brassica nigra, Bromus didandrus, B. hordeaceus, Centaurium muhlenbergii, Cirsium vulgare, Crypthantha flaccida, Euphorbia spthulata, Festuca arundinacea, Holcus lanatus, Hordeum brachyantherum, Hordeum marinum, Lentodon taraxacoides, Leymus triticoides, Lotus corniculatus, Microseris douglasii, Stipa pulchra, Phalaris aquatica, Plantago erecta, Poa pratensis, Rorippa nasturtium-aquaticum, Rumex*

crispus and *Trifolium ssp.* Emergent Trees and shrubs may be present at low cover. Herbs < 1 m tall; canopy is intermittent to continuous. (Membership Rules *Festuca perenne* > 50% relative cover, native plants< 15% relative cover). *Festuca 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. Stands are found on lowlands with periodic flooding and uplands including serpentine substrates.

Annual Grassland (California Annual Grassland Alliance)
This habitat is composed of many introduced non-native species with relict native annual species within the stands. The common taxa include non-native: wild oat (*Avena* ssp.), ripgut brome (*Bromus didandrus*), soft chess (*Bromus hordordaceus)*, wild barley (*Hordium murinum*), Mediterranean barley (*Hordium murinum* ssp. *gusoneanum*), rattlesnake grass (*Briza maxima*), little quaking grass (*Briza minor*), dogtail grass (*Cynosurus echinatus*), cultivated timothy (*Phleum pretense*), annual hairgrass (*Deschampsia danthoioides*), hood canarygrsss (*Phalaris paradoxa*), fescue (*Festuca arundinacea*), Medusa ahead-grass (*Taenianherium caput-medusae*) rattail fescue (*Vulpia myuros*). Often this alliance is invaded by star thistle (*Centaurea solstitialis*). Common forbs include filaree (*Erodium cicutarium*), smooth cat's ear (*Hypocheris glabra*), rough cat's ear (*Hypocheris radicata*), bur clover (*Medicago polymorpha*), California poppy (*Eschoscholzia californica*), clover (*Trifolium* ssp.), vetch (*Viccia* ssp.) and plantain (*Plantago lanceolata*). For a complete list of species observed in this plant habitat see Appendix A.

Indicators of native grassland are purple needle grass (*Nassella pulchra*), bluegrass (*Poa secunda*), wildrye (*Leymus triticoides*), and blue wild rye (*Elymus glauca*) and creeping wild rye (*Leymus triticoides*). High densities/abundance/cover of any of these indicate significant persistent native grassland. The grasslands of the site do not meet the criteria for native Grassland.

Experts conclude that native grasslands in California are among the most endangered ecosystem in the United States. Due to historical land use, naturalized non-native species of grasses and herbs and introduced disease. It is estimated that less than 1% of our state's original grasslands remain.

The species observed on or near the project site are included as an attachment (See Appendix B for species observed).

Habitats around the site

Ruderal habitat
Ruderal habitat (*Lolium perenne* Semi-Natural Herbaceous Stands Perennial Rye Grass Field) supports a flora that is a result of historic use or agriculture, which has allowed the introduction and establishment of non-native plants. These areas support a typical grass and herbaceous flora that is a result of decades of disturbance, tilling and weed abatement. The ruderal habitat or plant community on the site does not provide significant habitat for wildlife, but small mammals and songbirds utilize this habitat. The ruderal habitat of the site consists of naturalized exotic species that have been introduced and selected for over time and a few residual native species (Appendix A).

Riparian Vegetation (Riparian Corridors) or Riparian Zone
Riparian vegetation is associated with streams and is a function or result of soils, location and hydrology. Riparian vegetation is primarily a result of the availability of water for growth and local

herbivory. The width of riparian vegetation varies. The extant riparian zone along Washoe Creek is relatively narrow as a result of agricultural practices and steep incised banks resulting from cattle grazing. Riparian vegetation is characterized by tree layer, shrub vine layer and groundcover. The scale and scope of this habitat is limited in the county depending on location and there are great differences associated with location, soils, biotic factors and rain shadow. In the area the riparian tree cover is characterized by the presence of broadleaved, deciduous trees such as *Salix, Alnus, Quercus* and *Populus*, which are found along the banks and floodplains of waterways. Common shrubs include *Toxicodendron diversilobum*, *Baccharis pilularis*, *Rubus armeniacus* and *Vitis californica.* The understory consists of torrent sedge, mule fat, ninebark, spicebush, California polypody and dogwood. Sawyer (2009) does not recognize Riparian Woodland as a separate Alliance but includes it as a component of woodland alliances. Sonoma County (Ordinance No. 60898) defines Riparian Vegetation: Plant communities contiguous to and affected by surface and subsurface hydrologic features of water bodies (rivers, streams, lakes, or wetlands) that have one or both of the following characteristics: 1) distinctly different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian vegetation is usually transitional between wetland and upland.

C.3 Special-Status Species

The flora and fauna observed during our study are presented in Appendix A. The DFG CNDDB does not show any records of special-status species of plants or animals for the project study site. The Quadrangle is designated as a Sensitive Occurrence for the for the Pitkin Marsh Lilly.

Plants

Table I. Analysis of potential "target" special-status plant species. The taxa included in the table are selected based on CDFW, CNDDB, and U.S. Fish & Wildlife target plant species. (see Plate II)

Scientific Name Common Name	**Species Habitat Association or Plant Community**	**Habitat present**	**Bloom Time**	**Obs. on or Near Site**	**Justification for Concluding Absence on Project Site**
Allium peninsulare var. *franciscanum* Franciscan Onion	Cismontane Woodland, Valley and Foothill Grassland/Clay often Serpentinite	Yes	May-June	No	Historic agricultural use. Absence of requisite edaphic conditions.
Alopercus aequalis var. *sonomensis* Sonoma Alopercus	Marshes and Swamps	No	May-July	No	Absence of requisite mesic habitat or substrate on project site.
Amorpha californica var. *napensis* Napa False Indigo	Cismontane Woodland	Yes	April-July	No	Lack of suitable aspect and vegetation associates.

Scientific Name Common Name	**Species Habitat Association or Plant Community**	**Habitat present**	**Bloom Time**	**Obs. on or Near Site**	**Justification for Concluding Absence on Project Site**
Amsinkia lunularis Bent-flowered Fiddleneck	Cismontane Woodland, Valley and Foothill Grassland, 3 to 500 M	Yes	March-June	No	Potential for project site. No indications for presence during our fieldwork. Historic agricultural use precludes presence,
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.
Astragalus claranus Clara Hunt's Milk-vetch	Chaparral, Cismontane Woodland, Valley and Foothill Grassland	No	March-May	No	Absence of requisite micro-habitat and vegetation associates.
Balsamorhiza macrolepis var. *macrolepis* Big-scale Balsamroot	Chaparral, Cismontane Woodland, Valley and Foothill Grassland	Yes	March-June	No	Historic use of site precludes presence.
Blennosperma bakeri Sonoma Sunshine	Valley and Foothill Grassland, Vernal Pools	No	March-May	No	Absence of requisite mesic habitat.
Brodiaea leptandra (= B. californica var. *leptandra)* Narrow-anthered California Brodiaea	Open Cismontane Woodland, Mixed-evergreen Forest or Chaparral Gravely Soil	No	May-June	No	Absence of typical vegetation associates and soils.
California macrophylla Round-leaved Filaree	Open sites, Grassland, Scrub	Yes	Mar.-July	No	Historic agricultural use of site.
Caryx comosa Bristly Sedge	Coastal Prairie, Lake Margins	No	May-Sep.	No	Lack of mesic habitat.
Ceanothus confusus Rincon Ridge Ceanothus	Closed Cone Conifer Forests, Chaparral	No	Feb.-April	No	Absence of typical habitat and vegetation associates.
Ceanothus divergens Calistoga Ceanothus	Chaparral, Serpentinite or Volcanic-Rocky.	No	May-Sep.	No	Absence of typical habitat and vegetation associates.
Ceanothus gloriosus var. *porrectus* Mount Vison Ceanothus	Coastal Bluffs, Scrub, Closed Cone Pine Forests.	No	March -May	No	Lack of typical habitat.

Scientific Name Common Name	Species Habitat Association or Plant Community	Habitat present	Bloom Time	Obs. on or Near Site	Justification for Concluding Absence on Project Site
Ceanothus purpureus Holly-leaved Ceanothus	Chaparral	No	Feb. April	No	Absence of typical habitat and vegetation associates.
Centromadia parryi ssp. *parryi* Pappose Tarplant	Grassland salt or alkaline Marshes	No	March-June	No	Requisite mesic conditions absent.
Chorizanthe valida, Sonoma Spineflower	Coastal Prairie (sandy)	No	June-August	No	Absence of requisite substrate on project site precludes presence.
Clarkia imbricata Vine Hill Clarkia	Chaparral, Valley and Foothill Grassland	Yes	June-Aug.	No	Absence of requisite habitat and vegetation associates on the site or in the immediate vicinity. Historic agricultural use
Delphinium bakeri Baker's Larkspur	Coastal Shrub, Low Brush	No	May-June	No	Absence of typical habitat and vegetation associates.
Dirca occidentalis Western Leatherwood	Broadleaved upland forest, Closed-cone Coniferous forest, chaparral/mesic	No	Jan.-April	No	Absence of typical habitat.
Downingia pusilla Dwarf Downingia	Wetlands	Yes	March May	No	Requisite aquatic habitat absent on the site or in the immediate vicinity.
Eriogonum luteolum var. caninum Tiburon Buckwheat	Valley and Foothill Grassland, Serpentinite	No	June-Sept.	No	Absence of requisite edaphic habitat on the site or in the immediate vicinity precludes presence.
Fritillaria liliacea Fragrant Fritillary	Open Grasslands	Yes	Feb.-April	No	Historic use of site precludes presence.
Gilia capitata ssp. tomentosa Wooly-headed Gilia	Coastal Strand, Dunes	No	May-July	No	Absence of requisite habitat.
Hemizonia congesta ssp. *congesta* Congested Headed Tarplant	Coastal Grassland	No	April Oct.	No	Absence of requisite habitat.

Scientific Name Common Name	Species Habitat Association or Plant Community	Habitat present	Bloom Time	Obs. on or Near Site	Justification for Concluding Absence on Project Site
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.
Lasthenia burkei Burke's Goldfields	Vernal Pools	No	April –June	No	Requisite aquatic habitat absent on the site or in the immediate vicinity.
Lasthenia californica ssp. *bakeri* Baker's Goldfields	Open Grasslands Closed-cone Coniferous Forest openings	No	April-Oct.	No	Requisite habitat and vegetation associates absent.
Lasthenia conjugens Contra Costa Goldfields	Wet Meadows, Vernal Pools	No	May-June		Lack of suitable mesic habitat.
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.
Leptosiphon jepsonii Jepson's Leptosiphon	Chaparral, Cismontane Woodland, Valley and Foothill Grassland.	Yes	April-May	No	Historic agricultural use Requisite habitat absent on the site or in the immediate vicinity.
Lessingia arachnoidea Crystal Springs Lessingia	Cismontane Woodland, Serpentinite open sunshine	No	July – Oct.	No	Requisite habitat absent on the site.
Lilium pardalinum ssp. *pitkinense* Pitken Marsh Lily	Marshes and Swamps, Valley Oak Scrub	No	May-Aug.	No	Absence of requisite mesic habitat.
Limnanthes vinculans Sebastopol Meadowfoam	Meadows and Seeps, Valley and Foothill Grassland, Vernal Pools.	No	April-May	No	Requisite mesic habitat absent on the site or in the immediate vicinity.
Microseris paludosa Marsh Microseris	Closed Cone Conifer Forests, Cismontane Woodland, Valley and Foothill Grassland	No	April-June	No	Absence of typical habitat and vegetation associates.

Scientific Name Common Name	Species Habitat Association or Plant Community	Habitat present	Bloom Time	Obs. on or Near Site	Justification for Concluding Absence on Project Site
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.
Plagiobothrys mollis var. vestitus Petaluma Popcorn-flower	Valley Grassland, Coastal Salt Marsh, wetland-riparian	No	June-July	No	Lack of habitat required for presence.
Potentilla uliginosai Cunningham Marsh Cinquefoil	Marshes and Swamps Low nutrient wetlands (Fresh Water)	No	May-Aug.	No	Presumed extinct for the County.
Stebbinsoseris decipens Santa Cruz Microseris	Open Sandy, Shaly or Serpentine Sites. Coastal	No	April-May	No	Lack of Habitat
Thamnolia vermicularis Whiteworm Lichen	Coastal Bluff Scrub	No	NA	No	Lack of habitat.
Rhynchospora californica California Beaked-rush	Bogs and Fens, Lower Montane Coniferous Forest	No	May-July	No	Absence of requisite mesic edaphic habitat on the site.
Triphysaria floribunda San Francisco Owl's Clover	Coastal Prairie, Coastal Scrub /serpentinite	No	April-June	No	Absence of typical habitat and vegetation associates.
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.
Trifolium hydrophilum Saline Clover	Marshes and Swamps Grassland	No	April-June	No	Historic agricultural use Absence of mesic habitat required for presence.
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.

Based on habitat types present and associated vegetation with the proposed project we conclude that it is unlikely that any of the species shown in the table above, or known for the region, would occur

on the site given the soil types, history of disturbance, lack of proper hydrology/topography, lack of any records, plant associates present, canopy closure, and our field studies.

Animals

Plate II illustrates the records of special-status animal species, which are present within a five-mile radius of the study site. Table II below provides information and findings relating to the special-status animals within the vicinity of the project site. The Quadrangle is designated as a Sensitive Occurrence for the for the California Red-legged frog (CRLF).

Table I. Analysis of potential "target" special-status plant species. The taxa included in the table are selected based on CDFW, CNDDB, and U.S. Fish & Wildlife target plant species. (see Plate II)

Scientific Name Common Name	**Habitat**	**Potential for Project Site**	**Obs. on or Near Project Site**	**Justification for Negative Findings**
Agelaius tricolor Tricolored Blackbird	Tule Marshes	No	No	Lack of habitat.
Ambystoma californiense California Tiger Salamander	Ephemeral breeding pools with upland oak woodlands for estivation	No	No	Not within current range.
Andrena blennospermatis Blennosperma Vernal Pool Andrenid Bee	Vernal pools with Blennosperma	No	No	Lack of requisite habitat and associated plants.
Antrozous pallidus Pallid Bat	Roosts in Buildings and Overhangs. Trees min 24"DBH with basal hollow of 2 sq ft.	May fly over	No	Lack of habitat.
Athene cunicularia Burrowing Owl	Low lying grasslands.	Yes	No	Not known to breed in the area.
Buteo swainsoni Swainson's Hawk	Open areas with riparian influence	Yes	No	Lack of nesting habitat.
Callophrys mossii bayensis San Bruno Elfin Butterfly	Host plant stonecrop (*Sedum spathulifolium*).	Yes	No	Lack of host plant.
Coccyzus americanus occidentalis Western Yellow-billed Cuckoo	Riparian Forest and Woodlands along Permanent Streams	No	No	Requisite habitat is not associated with Project. Presumed extinct in the area.

Scientific Name Common Name	Habitat	Potential for Project Site	Obs. on or Near Project Site	Justification for Negative Findings
Corynorhinus townsendii Townsend's Big-eared Bat	Caves, also in Buildings. Trees min 24"DBH with basal hollow of 2 sq ft.	May fly over	No	Tree on the project site do not have structure to provide potential roosting habitat.
Elanus leucurus White-tailed Kite	Nests in tall trees near water	Yes	No	Requisite habitat absent.
Emys marmorata Western Pond Turtle	Slow moving water or ponds	Yes	No	Project sites do not contain habitat to support species. Potential on property.
Falco peregrinus anatum American Peregrine Falcon	Nests on cliffs	No	No	May fly over. Lack of habitat for nesting and feeding.
Rana boylii Foothill Yellow-legged Frog	Streams with pools	No	No	Lack of habitat precludes presence.
Rana draytonii California Red-legged Frog	Creeks, Rivers, Permanent flowing water.	Yes	No	Lack of habitat associated with building envelopes.
Strix occidentalis caurina Northern Spotted Owl	Old growth, Forested deep canyons	No	No	Requisite habitat absent. Not associated with project.
Syncaris pacifica California Freshwater Shrimp	Creeks and Estuaries below 300 ft.	No	No	Requisite habitat required for presence lacking.
Taxidea taxus American Badger	Hillsides with suitable food sources	Yes	No	Observed Dens associated with LLA 1 and 2.
Taricha rivularis Red-bellied Newt	Aquatic	No	No	Lack of habitat.
Vespericola marinensis Marin Hesperian	Salt Marsh	No	No	Lack of suitable habitat.
Zapus trinotatus orarius Point Reyes Jumping Mouse	Coastal Humid Zone	No	No	Lack of habitat.

The proposed project will not have a substantial impact to special-status animal species. There is no reason to expect any "take" or impacts to special-status animal species by the proposed project provided recommendations in this report are followed.

C.4 Discussion of Sensitive Habitat Types

The sensitive habitat types listed by the DFG CNDDB for the quadrangles and surrounding quadrangles are the following; Valley Needlegrass Grassland, Coastal and Valley Freshwater Marsh, Northern Hardpan Vernal Pool, and Northern Vernal Pool. These habitat types are not present on or adjacent to the project site.

Native grasses on the project site do not meet the definition of Native Grass Grassland and would not be considered a species with limited distribution or a sensitive natural plant communitis for the following reasons: Lack of typical native grassland species and diversity. The grasses present are within an understory and not associated with historic grasslands.

Jurisdictional Wetlands or Waters of the U.S.

• **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 and RWQCB. There are no seasonal wetlands associated with the proposed building envelopes and soil percolation areas.

• **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. The project is not associated with any vernal pools. There are no vernal pools associated with the proposed project.

• **"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, DFW, and RWQCB permits.

Drainages on the property would be considered "Waters of the State". Any impacts to the drainages on the property will require agency permits.

Sensitive Communities

• **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 and has a cascade effect in that it relates to oxygen availability. The project will not impact any riparian vegetation.

• **Migratory 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 were no identifiable wildlife corridors associated with the proposed project sites.

• **Nesting or Breeding Habitat, or Unique Plant Distributions or Populations-** We found no indications of nesting raptors on the project sites or in the near vicinity of the project sites. We did not observe any nests, whitewash, nest droppings, or perching associated with the project sites.

Very few burrows were observed, but small mammals and songbirds likely utilize habitats on the project site for foraging and cover. American Badger burrows were observed adjacent to the proposed building envelope of LLA 1 LLA 2. We did not find any rookeries or significant nesting sites for wildlife associated with the proposed project. The site has potential for raptor nesting. There are no unique plant distributions associated with the project or the project sites.

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA also prohibits disturbance or harassment of nesting migratory birds at any time during their breeding season. Raptors were observed in the area and have to potential to nest within the eucalyptus trees adjacent to LLA 2. No raptor nests, or whitewash from nests were observed on the project sites.

D POTENTIAL BIOLOGICAL IMPACTS

The project's effect to 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 habitat, wetlands, riparian habitat);
- 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; or
- Interference with migratory routes or habitat connectivity.

D.1 Analysis of Potential Impacts to Special-status Species

The habitat impacted by the proposed project is such that there is little reason to expect impacts to special-status plant species.

Numerous special-status species are shown in Plate II. It is noted that the records are associated with chaparral or wetlands. The proposed project will not have a substantial impact to special-status plant species, either directly or through habitat modifications based on the lack of habitat required for their presence and the historical use of the project site. There is no reason to expect any "take" or impacts to special-status plant species by the proposed project.

Pitkin Marsh Lily (*Lilium pardalinum* ssp. *pitkinense)* It is included in the CNPS Inventory of Rare and Endangered Plants on list 1B.1 (rare, threatened, or endangered in CA and elsewhere), and is listed by the State of California as Endangered and by the Federal Government as 'Endangered. This plant is associated with marshes and swamps (it is extremely limited in nature) Occurs in mesic sandy, Cismontane woodland, meadows and seeps, marshes and swamps (freshwater). Although this species is known to occur within close proximity on the DFW CNDDB map, habitat associated on the project site and initial vineyard development would eliminate the potential for this species to occur on the project site. This species was not observed and would not be present on the proposed building envelopes sites.

California Red-legged Frog *(Rana draytonii)* is listed as threatened by USFWS. The seasonal drainage and reservoirs surrounding the project contains potential habitat for this species. The California Red-legged Frog (CRLF) inhabits permanent or nearly permanent water sources (quiet streams, marshes, and reservoirs). They are highly aquatic and prefer shorelines with extensive vegetation.

The CRLF is recorded to be within 1.14-miles from the project site. The project is subject to the "take prohibitions" for CRLF under the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). If frogs were present it is likely they would stay with in the vegetated areas adjacent to seasonal wetlands and would unlikely use upland habitat on the project site.

California Red-legged Frog (CRLF) is a federally threatened species. USFWS can assume presence of CRLF at a site based on suitable habitats and proximity of a site from known CRLF breeding sites and require mitigation for loss of upland habitat. For CRLF suitable habitat, USFWS requires a 3:1 mitigation ratio for permanent losses of upland and stream habitat and a 1:1 mitigation ratio for temporary losses of upland and stream habitat. Temporary impacts are impacts to habitats that can be restored to pre-project or better condition within 12-18 months. Other mitigation options could be to purchase land and set aside as CRLF mitigation, or provide adequate funds to an environmental group, such as the California Wildlife Foundation, who are performing stream restoration in the area. The details of these options would need to be identified and approved by the USFWS.

The closest known occurrence for the CRLF is 1.14-miles from the project site. The project is subject to the "take prohibitions" for CRLF under the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). CRLF absence cannot be assumed without conducting protocol level surveys. If frogs were present it is likely they would stay with in the vegetated areas adjacent to seasonal drainages and would unlikely use upland habitat on the project site. The potential for occurrence on the project site is Low.

Western Pond Turtle ***(Emys marmorata)*** The western pond turtle is found throughout California and is listed by the State as a Species of Concern. It does not have Federal status. 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 100 meters away from aquatic habitat. Although habitat exists within the reservoirs on the property, the project sites does not contain habitat which would support this species.

Americian Badger (*Taxidea taxus*) Badgers are included on the Department of Fish and Wildlife's list of Mammalian Species of Special Concern, since it appears that there has been a substantial reduction in range and abundance in several areas where it was formerly common (Williams 1986). Badger mates between July and August and female gives birth in March. A badger may change dens every day, except when it has young. Badgers maintain several burrows throughout their home range. They use these burrows or dens for sleeping, raising young and storing food. American badgers move between their different homes, sometimes picking a different burrow on different days. Active burrows were observed on the property.

The habitat impacted by the proposed project is such that there is little reason to expect impacts to special-status species on-site or off-site. On-site and off-site impacts will be less than significant if standard erosion control measures, recommendations in this report, and construction best management practices are implemented.

Habitat impacted by the proposed project is such that it will not substantially reduce or restrict the range of listed animals.

The Endangered Species Act of 1973 (ESA), 15 United States Code (U.S.C.) Section 1531 et seq., provides for the protection and conservation of various species of fish, wildlife, and plants that have been federally listed as threatened or endangered. Section 9 of the ESA prohibits the "take" of any

fish or wildlife species that is listed as endangered under the ESA unless such take is otherwise specifically authorized pursuant to either Section 7 or Section 10(a)(l)(B) of the Act. Pursuant to the implementing regulations of the ESA, the take of fish or wildlife species listed as threatened is also prohibited unless otherwise authorized by the FWS.

California Endangered Species Act Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the Fish and Game Code, a permit from CDFW is required for projects that could result in the take of a species state listed as threatened or endangered. 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.

D.2 Analysis of Potential Impacts on Sensitive Habitat

The primary concern is the avoidance and protection of seasonal drainages or "Waters of the State" on the property. Construction equipment has the potential to impact these areas during construction. Any alteration or filling will require CDFW permits, ACOE permits, and Regional Water Quality Control Board Certification.

There are no identifiable wildlife corridors associated with the project sites. The project will not significantly alter movement of wildlife through the property. The project will incrementally reduce a small amount of oak woodland and grassland habitat. The proposed project will not result in significant changes in avifauna and or rodent utilization in the area.

Portions of the property will continue to function as wildlife habitat, watershed, and open space. The proposed project will not lead to significant impacts to habitat fragmentation in the region, significant species exclusion, or significant change in species composition in the region.

D.3 Potential Off-site Impacts

A potential impact is the movement of dust and noise during road improvements and site construction. Construction and Erosion Control BMP's during construction of the site will prevent any significant off-site impacts. Any off-site impacts will be less than significant provided best management and erosion control practices are followed.

D.4 Potential Cumulative Impacts

Cumulative biological effects are the result of incremental losses of biological resources within a region. Removal of vegetation can reduce the abundance and diversity of species in an area. Vineyards provide limited foraging, cover, and breeding habitat for native wildlife species. Vineyards can be used by wildlife but the diversity is low within vineyards and foraging may be difficult.

Significant cumulative effects may be expected where there is a substantial reduction in required habitat for local or regional species or the project will result in substantial interference with the

movement and or reproduction of resident or migratory species. Factors that were considered in the evaluation of cumulative biological impacts include:

1. Any known rare, threatened, or endangered species or sensitive species that may be directly or indirectly affected by project activities or on the habitat of the species.
2. Any significant, known wildlife or fisheries resource concerns within the immediate project area and the biological assessment area (e.g. loss of structural elements, and significant natural areas).
3. Adequacy of standard setbacks for protection of aquatic and near-water habitat conditions.

On a local or regional scale it is anticipated that any cumulative effects will be negligible or un-quantifiable. The project footprint will not significantly contribute to habitat loss or habitat fragmentation. There is no reason to expect any species exclusion, isolation or extinction. There are no potential significant impacts to migratory corridors or wildlife nursery sites associated with the proposed project.

D.5 State and Federal Permit

Drainages on the property are considered "Waters of the U.S". California Department of Fish and Wildlife, U.S. Army Corps of Engineers, and Regional Water Resources Control Board must be consulted prior to any potential impact to the bed and or bank of these drainages.

E RECOMMENDATIONS TO AVOID IMPACTS

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.

E.1 Recommendations

All project construction activities must be limited to the project footprint. Any access road improvements or widening must be done using Best Management Practices (BMPs). BMPs including silt and erosion control measures must be implemented during construction to protect off-site movement of sediment and dust during and post construction. All Sonoma County setbacks must be followed in the development of the septic systems on the project sites.

No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist must conduct a survey to determine if active American badger den sites are present at the site.

a. If it is determined that dens are absent or inactive then no further action is necessary.

b. If it is determined that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3 to 5-day period. After the qualified CDFW biologist determines that badger have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.

Any work within the bed and or bank or potential impact to riparian habitat, emergent wetland, or other sensitive natural communities, will require consultation with the California Department of Fish and Wildlife (CDFW)

Eucalyptus trees adjacent to building envelopes LLA 2 have the potential for nesting raptors. Surveys for nesting birds should be conducted within 14 days prior any ground breaking on the project sites. Typical nesting season for raptors is (March 1 through July 31). Any development of the site between the dates of March 1 through July 31 will require a pre-construction raptor survey. Surveys should be conducted by a qualified biologist. A qualified wildlife biologist should conduct pre-construction surveys of all potential nesting habitat for birds within 500 feet of earthmoving activities. If active bird nests are found during preconstruction surveys, a 500-foot no-disturbance buffer will be created around active raptor nests during the breeding season or until it is determined that all young have fledged.

F. SUMMARY

This study is provided as background information necessary for evaluating potential impacts of the project on local biological resources.

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

We find that the project as proposed will not have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

We find that the project as proposed will not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. No wetlands or vernal pools are associated with the proposed project.

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.

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 measures are incorporated, will not result in any significant adverse biological impacts.

G LITERATURE CITED / REFERENCES

G.1 Literature Cited / References

Arora, David, l986. Mushrooms Demystified. Ten Speed Press.

Bailey, L. H., 1951. Manual of Cultivated Plants. The MacMillan Company NY.

Barbe, G. D. 1991. Noxious Weeds of California. Department of Food and Agriculture, Sacramento, CA.

Barbour, M.G. and J. Major. 1977. Terrestrial Vegetation of California. John Wiley and Sons, New York.

Best, Catherine, et al. 1996. A Flora of Sonoma County, California Native Plant Society.

Behler, John L. National Audubon Society Fields Guide to North American Reptiles & Amphibians. May, 1996 Chanticleer Press, Inc., New York.

Brodo, Irwin M., Sylvia Duran Sharnoff and Stephen Sharnoff, 2001. Lichens of North America. Yale University Press. 795 pp.

California Department of Fish and Game California Natural Resource Agency Protocol for Surveying and Evaluating impacts to Special Status Native Plant Populations and Natural Communities November 24, 2009.

California Department of Fish and Game, Natural Diversity Database. Special Vascular Plants Bryophytes, and Lichens List. Biannual Publication.

California Department of Fish and Game Natural Diversity Data Base Rare Find 5.

California Native Plant Society. 2001. Inventory of Rare and Endangered Plants of California. Special Publication No 1, Sixth Edition.

California Native Plant Society Electronic Inventory of Rare and Endangered Vascular Plants of California, Online.

California Native Plant Society, Botanical Survey Guidelines (Revised June 2, 2001).

Grinell, Joseph, Joseph Dixon, and Jean M. Linsdale. 1937. Fur-bearing Mammals of California, University of California Press, two Volumes.

Hickman, James C. ed. 1993. The Jepson Manual Higher Plants of California. U. C. Berkeley Press.

Hitchcock, A. S. 1950 Manual of the Grasses of the United States. U. S. Government Printing Office, Washington D. C.

Holland, Robert. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA.

Holland, U. L. and D. J. Keil. 1995. California Vegetation. Kendall/Hunt Publ. Co. Dubuque Iowa.

Howell, John Thomas et al. 2007. Marin Flora An Illustrated Manual of the Flowering Plants, Ferns and Conifers of Marin County, California California Academy of Sciences and California Native Plant Society, California Academy of Sciences.

Ingles, Lloyd C., l985. Mammals of the Pacific States. Stanford Press.

Jameson, E. W. and H. J. Peeters, 2004. Mammals of California. Revised Edition. U.C. Press.

Mason, Herbert L. 1957. A Flora of the Marshes of California.

Matthews, Mary Ann, 1997. An Illustrated Field Key to the Flowering Plants of Monterey County. California Native Plant Society.

Naiman R J, Decamps H, Pollock M. 1993. The role of riparian corridors in maintaining regional biodiversity. Ecological Application 3: 209-212. Naiman, Robert J. et al, 2005. Riparian: Ecology, Conservation, and Management of Streamside Communities. Elisvier.

Norris, Daniel H. and James R. Shevock, 2004. Contributions Toward a Bryoflora of California: I. A specimen-Based Catalogue of Mosses. Madrono Volume 51, Number 1, pp: 1 to 131.
Norris, Daniel H. and James R. Shevock, 2004. Contributions Toward a Bryoflora of California: II. A Key to the Mosses. Madrono Volume 51, Number 2, pp: 1 to 133.
Peterson, Roger T. 1961, 1990. A Field Guide to Western Birds. Houghton Mifflin Co., Boston, MA.
Reed, Porter B. Jr. 1988. National List of Plant Species That Occur in Wetlands: l988 California (Region 0) National Wetlands Inventory U. S. Fish and Wildlife Service.
Sawyer, J. O., T. Keeler-Wolf and Julie M. Evans 2009. A Manual of California Vegetation Second Edition, California Native Plant Society, Sacramento, California.
Schoenherr, Allan A. 1992. A Natural History of California. California Natural History Guides: 56. University of California Press, Berkeley.
Schofield, W. B. 1969. Some Common Mosses of British Columbia. British Columbia Provincial Museum, Victoria, Canada.
Schofield, W. B. 2002. Field Guide to Liverwort Genera of Pacific North America. Univeristy of Washington Press.
Stebbins, Robert C., 1966. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin.
Stewart, John D and John O. Sawyer, 2001 Trees and Shrubs of California. University of California Press.
Warner, Richard E. and Kathleen M. Hendrix. 1984. California Riparian Systems Ecology, Conservation, and Productive Management. University of California Press.
Wilson, Barbara L., et al., 2008. Field Guide to the Sedges of the Pacific Northwest. Oregon State University Press, Corvallis Oregon.

F.2 Names and Qualifications of Field Investigators.

Chris K. Kjeldsen, Ph.D., Botany, Oregon State University, Corvallis, Oregon. He has over thirty-five 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 SB 34 Mitigation projects, COE 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 1601-1603 permitting, and consulting on various projects. A full resume is available upon request. 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 l994 to l996 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, COE 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.

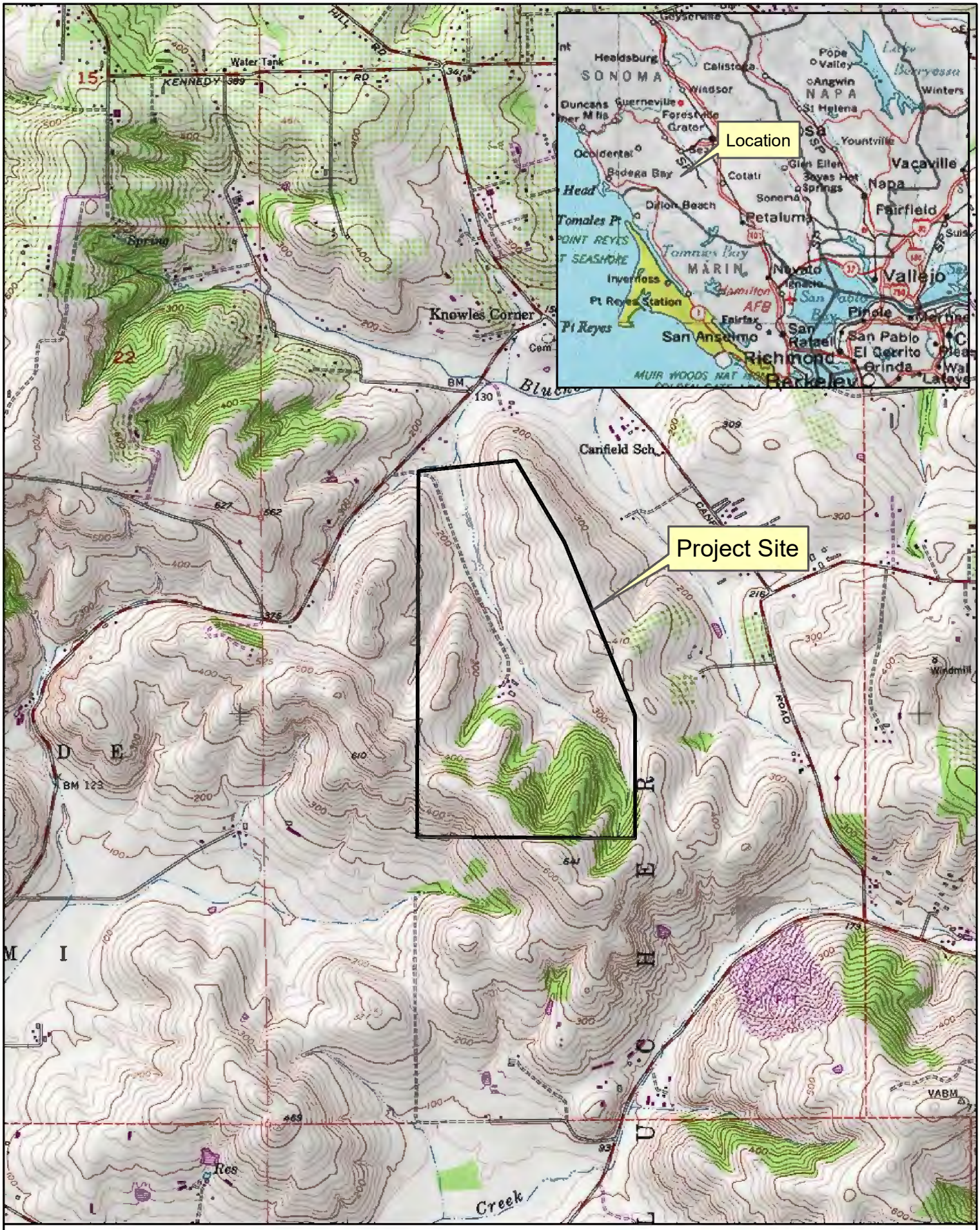

Plate I. Location and Site Map (Two Rock USGS Quadrangle)

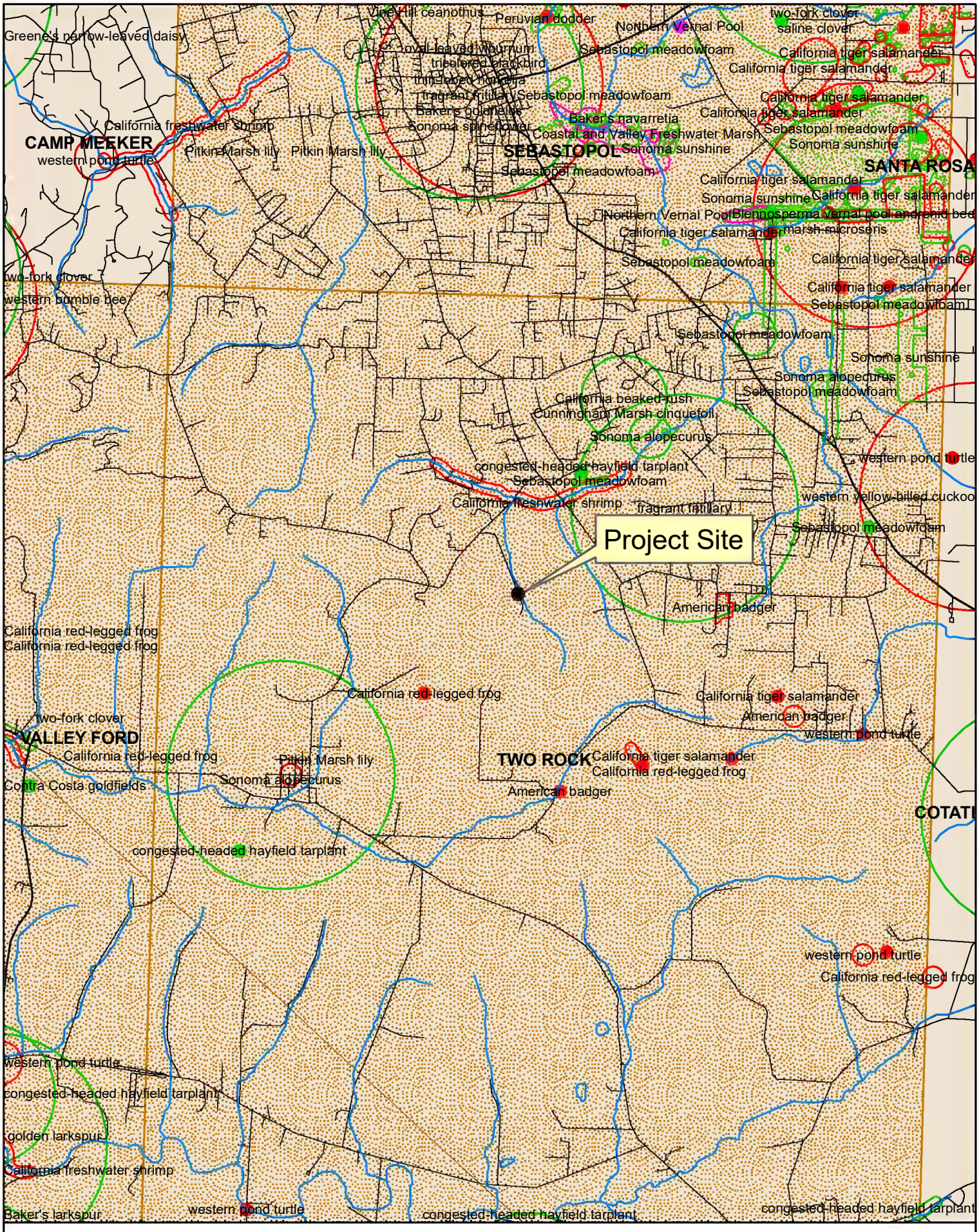

Plate II. CDFW CNDDB Rare Find Data

(Data Date July 2017)

0 0.5 1 2 Miles

Plate II. Aerial Photo / Survey Area

APPENDIX A
FLORA AND FAUNA

Plant Species Observed on or in the Vicinity of the Project

The nomenclature for the list of plants found on the project study areas and the immediate vicinity follows: Baldwin, Goldman, Keil, Patterson, Rosati, and Wilkens, editors, 2012 - for the vascular plants.

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

MOSSES		
MINACEAE		
@*Funaria hygrometrica* Hedw. NCN	Ruderal, On Bare Soil	Common
Homalothecium nuttallii (Wilson) Jaeger NCN	Epiphytic on Trees	Common
Orthotrichum lyellii Hook & Tayl. NCN	Woodlands, Upper Canopy	Common
LICHENS		
FOLIOSE		
Flavoparmelia caperata (L.) Hale Common Green Shield	On Oaks	Common
Flavopunctilia flaventor (Stirt.) Hale Speckled Green Shield	On Oaks, Occasional on Rocks	Common
@*Parmelina coleae* (Willd.) Hale NCN	On Oaks	Common
Parmotrema perlatum (Osbeck) Hale & Ahti=*P. chinense* NCN	On Oaks	Common
Xanthoria polycarpa (Hoffm.) Rieber Pin-cushion Sunburst Lichen	On Oaks Young Twigs	Common
FRUTICOSE		
Evernia prunastri (L.) Ach. NCN	On Oaks	Common
Ramalina farinacea (L.) Ach. NCN	On Oaks	Common
Usnea intermedia=U. arizonica NCN	On Oaks	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

VASCULAR PLANTS FERNS

DENNSTAEDTIACEAE

Pteridium aquilinum (L.) var. *pubescens* Underw. Bracken Fern	Grasslands or Woodlands	Common

EQUISETACEAE

Equisetum arvense L. Common Horsetail	Riparian	Occasional

VASCULAR PLANTS DIVISION CONIFEROPHYTA--GYMNOSPERMS

CUPRESSACEAE

*Calocedrus decurrens (*Torrey) Florin Incense-cedar	Domestic Introduction	Occasional

TAXODIACEAE

Sequoia sempervirens (D.Don) Endl. Redwood	Coastal Forests	Common

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

EUDICOTS

FAGACEAE Oak Family

Quercus agrifolia Nee Live Oak	Woodlands	Common
Quercus garryana Hook. Oregon Oak	Woodlands	Common
Quercus kelloggii Newb. Black Oak	Woodlands	Common
Quercus kelloggii Newb. Hybrid *Q. kelloggii x Q.agrifolia* Black Oak*)*		Occasional

MYRTACEAE Myrtle family

**Eucalyptus globulus* Labill Blue Gum	Ruderal Escape	Occasional
**Eucalyptus siderozylon* Wooll Red Iron Bark	Ruderal Escape	Occasional

ROSACEAE Rose Family

**Prunus domestica* L. Prune	Escape, Ruderal	Occasional
**Prunus cerasifera* Ehrh. Cherry Plum	Escape, Ruderal	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

Salix laevigata Bebb. Red Willow	Riparian	Common
SAPINDACEAE Soapberry Family		
Acer palmatum Thunb. Japanese Maple	Domestic Introduction	Occasional

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
ARALIACEAE Ginsing Family		
**Hedra helix* L. English Ivy	Ruderal	Occasional
ASTERACEAE (Compositae) Sunflower Family		
Baccharis pilularis deCandolle Coyote Brush	Woodlands, Grasslands	Common
BETULACEAE Birch Family		
Corylus cornuta Marshall var. *californica* Hazelnut	Riparian, Woodlands	Occasional
CAPRIFOLIACEAE Honeysuckle Family		
Linocera involucrata (Rich.) Spreng Var. *ledbouriiI* Twinberry	Coastal Moist Areas	Common
CELASTRACEAE		
Euonymus japonicus L var. *albo-marginatus* Euonymus	Horticultural	Common
CUCURBITACEAE Gourd Family		
Marah fabacea (Naudin) Greene California Man-root	Dunes, Stream Sides	Common
FABACEAE (Leguminosae) Legume Family		
**Genista monspessulana* (L.) Johnson Broom, French Broom	Woodlands	Common
OLEACEAE Olive Family		
**Ligustrum* ssp. Privet	Domestic Escape	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

ROSACEAE Rose Family		
**Cotoneaster frigidus* Lindl . Tree Cotoneaster	Ruderal	Common
**Cotoneaster lacteus* W.W.Sm. Cotoneaster	Ruderal	Common
**Cotoneaster pannosus* Franchet. Cotoneaster	Ruderal	Common
Rosa californica Cham.& Schlidl. Rose	Grasslands, Edge of Woodlands	Common
**Rubus armeniacus* Focke Himalayan Blackberry	Ruderal	Common
Rubus leucodermis Torr.&A. Gray Western Raspberry	Woodlands	Common
Rubus ursinus Chamis.&Schltdl. California Blackberry	Woodlands	Occasional

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

EUDICOTS

APIACEAE (Umbelliferae) Carrot Family		
**Conicum maculatum* L. Poison Hemlock	Riparian	Common
**Dacus carota* L. Wild Carrot, Queen Anne's Lace	Ruderal Grasslands	Common
**Foeniculum vulgare* Mill. Fennel	Ruderal	Common
ASTERACEAE (Compositae) Sunflower Family		
Achillea millefolium L. Yarrow	Ruderal	Common
Agoseris heterophylla (Nutt.) Green Annual Agoseris	Ruderal	Occasional
**Anthemis cotula* L. Mayweed, Stinkweed, Dog-fennel	Ruderal	Common
**Carduus pycnocephalus* L.subsp.*pycnocephalus* Italian Thistle	Woodlands	Common
Circium occidentale (Nutt.) Jeps. var. *occidentale* Cobwebby Thistle	Grasslands, Oak Woodland	Common
**Circium vulgare* (Savi) Ten. Bull Thistle	Grasslands, Ruderal	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

**Hypochaeris glabra* L. Cat's Ear	Ruderal	Common
**Lactuca serriola* L. Prickly Lettuce	Ruderal	Occasional
**Senecio jacobaea* L. Tansy Ragwort	Ruderal	Common
**Senecio vulgaris* L. NCN	Ruderal	Occasional
**Silybum marianum* (L.) Gaertn. Milk Thistle	Ruderal	Common
**Sonchus asper* (L.) Hill var. *asper* Prickly Sow Thistle	Ruderal	Common
**Sonchus oleraceus* L. Common Sow Thistle	Ruderal	Common
**Taraxacum officinale* F.H.Wigg Dandelion	Ruderal	Common
Wyethia angustifolia (DC.) Nutt. Narrow Leafed Mules Ears	Grasslands	Occasional
BORAGINACEAE Borage or Waterleaf Family		
Phacelia ciliata Benth. NCN	Grasslands	Occasional
BRASSICACEAE Mustard Family		
**Barbarea orthocarpusa* Ledeb. Winter Cress, Rocket	Damp Meadows,Streambanks, Woodlands	Common
**Brassica rapa* L. Field Mustard	Grasslands, Ruderal	Common
**Capsella bursa-pastoris* L. Shepherd's Purse	Ruderal	Common
**Raphanus sativus* L. Wild Radish	Ruderal	Common
CARYOPHYLLACEAE Pink Family		
**Cerastium fontanum* Baumg. subsp.*vulgare* Mouse-ear-chickweed	Ruderal	Common
FABACEAE (Leguminosae) Legume Family		
Acmispon brachycarpus (Benth.) Sokoloff NCN (=*Lotus humistratus)*	Grasslands, Ruderal	Common
Acmispon micranthus (Torr.&A. Gray) Small Flowered Lotus (= *Lotus micranthus)*	Grasslands, Ruderal	Common
**Lathyrus latifolius* L. Perennial Sweet Pea	Ruderal	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

**Lathyrus sphaericus* Retz. Grass Pea	Ruderal	Occasional
**Lotus corniculatus* L. Bird's-foot Trefoil	Grasslands, Ruderal	Common
Lupinus nanus Benth. Sky Lupine	Grasslands	Common
**Medicago polymorpha* L. Bur Clover	Ruderal, Grasslands	Common
**Trifolium hirtum* All. Rose Clover	Ruderal	Common
**Vicia sativa* L. subsp. *nigra* Narrow Leaved-vetch	Grasslands, Ruderal	Common
**Vicia villosa* Roth. subsp. *varia* Hairy Vetch, Winter Vetch, Lana Vetch	Ruderal	Common
GERANIACEAE Geranium Family		
**Erodium botrys* (Cav.) Bertol. Broadleaf Filaree, Long-beaked Filaree	Grasslands	Common
**Geranium dissectum* L. Common Geranium	Grasslands	Common
**Geranium molle* L. Dove's Foot Geranium	Grasslands	Common
LAMIACEAE (Labiatae) Mint Family		
**Marrubium vulgare* L. Horehound	Ruderal	Occasional
**Melissa officinalis* L. Lemon Balm	Open Woods, Ruderal	Occasional
**Mentha pulegium* L. Pennyroyal	Ruderal	Occasional
Stachys ajugoides Benth. Hedge-nettle	Moist Open Places	Occasional
LINACEAE Flax Family		
Linum usitatissimum L. Common Flax	Grasslands	Common
MALVACEAE Mallow Family		
**Malva parviflora* L. Cheeseweed, Mallow	Ruderal	Common
MONTIACEAE Miner's lettuce Family		
Claytonia perfoliata Willd. ssp. *perfoliata* Miner's Lettuce	Woodlands, Riparian	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

ONAGRACEAE Evening-primrose Family		
Taraxia ovata (Torr.& A. Grau) Small Sun Cup (=*Camissonia, Oenothera)*	Grasslands	Common
OROBANCHACEAE Broomrape Family		
**Bellardia trixago* (L.) All. Medeterranean Lindseed	Grasslands	Common
@*Castilleja exserta* (Heller) Chuang&Heckard subsp. *exserta* Purple Owl's Clover	Grasslands	Common
PAPAVERACEAE Poppy Family		
Eschscholzia californica Cahm. California Poppy	Grasslands	Common
PLANTAGINACEAE Plantain Family		
**Kickxia spuria* (L.) Dumort. Fluellin	Ruderal	Occasional
**Plantago lanceolata* L. English Plantain	Ruderal	Common
POLYGONACEAE Buckwheat Family		
**Rumex acetosella* L. Sheep Sorrel	Ruderal	Common
**Rumex crispus* L. Curly Dock	Ruderal	Common
PRIMULACEAE Primrose Family		
**Anagallis arvensis*L. Scarlet Pimpernel	Ruderal	Common
RUBIACEAE Madder Family		
Galium aparine L. Goose Grass	Woodlands, Riparian, Ruderal	Common

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

POACEAE Grass Family		
**Aira caryophyllea* L. Silver European Hairgrass	Grassland	Common
**Avena barbata* Link. Slender Wild Oat	Grasslands	Common
**Avena sativa* L. Cultivated Oat	Grasslands, Ruderal	Common
**Briza maxima* L. Large Quaking Grass, Rattlesnake Grass	Grasslands, Ruderal	Common

MAJOR PLANT GROUP
Family

Genus Common Name	Habitat Type	Abundance

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

**Briza minor* L. Small Quaking Grass	Grasslands, Ruderal	Common
**Bromus diandrus* Roth Ripgut Grass	Ruderal, Grasslands	Common
**Bromus hordeaceus* L. Soft Chess, Blando Brome (*B.mollis*)	Grasslands	Common
**Cortaderia selloana* (Schulth.&Schulth) Asch&Graebn Pampas Grass	Ruderal	Occasional
**Cynosurus echinatus* L. Hedgehog, Dogtail	Ruderal	Common
**Dactylis glomerata* L. Orchard Grass	Grasslands	Occasional
Elymus triticoides Buckley Beardless Ryegrass (=*Leymus triticoides)*	Grasslands, Moist	Occasional
**Festuca bromoides* L. Six-weeks Fescue *(=Vulpia bromoides)*	Ruderal, Moist Flats become Dry	Common
Festuca microstachys Nutt. NCN (=*Vulpia microstachys)*	Grasslands, Ruderal	Common
**Festuca myuros* L. Rattail Fescue,Zorro Annual Fescue (=*Vulpia myuros)*	Grasslands	Common
**Festuca perennis* (L.) Columubus & Sm. Perennial Rye Grass (=*Lolium multiflorum, L. perenne)*	Grasslands	Common
**Festuca pratensis* Huds. Meadow Fescue	Ruderal, Grasslands	Common
**Hordeum murinum* Huds. subsp. *leporinum* Farmers Foxtail	Grasslands	Common
**Phalaris aquatica* L. Harding Grass	Grasslands	Common
**Poa annua* L. Annual Bluegrass	Grasslands	Common
Stipa pulchra Hitchc. Purple Needle Grass (=*Nassella pulchra)*	Oak Woodland, Grasslands, Chaparral	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--MONOCOTYLEDONAE-SEDGES AND RUSHES

CYPERACEAE Sedge Family

Caryx densa (Bailey) Bailey Dense Sedge	Wet Meadows, Open Slopes Stream Banks	Occasional
Caryx subfusa Boott Rusty or Pale Broomsedge	Open Areas Moist, Grasslands	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

Caryx tumulicola Mack. Foothill Sedge	Grassy Slopes, Woodlands	Common
Caryx unilateralis Mack. One-sided Sedge	Grassy Slopes, Woodlands	Occasional
JUNCACEAE Juncus Family		
Juncus bufonius L.var. *bufonius* Toad Rush	Ruderal Moist Areas, Grasslands	Common
Juncus effusus L. *pacificus* Rush	Seeps, Shorelines,Marshes	Common
Juncus xiphioides Mey Flat Leafed Rush	Grasslands, Seeps	Common

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		
Iris douglasiana Herb. Iris	Open Grassland, Meadows	Common
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-l985, for the reptiles and amphibians; Udvardy and Farrand–1998, for the birds; and Jameson and Peeters -l988 for the mammals.

AVES		
ORDER		
Common Name	**Genus**	**Observed**
AVES		
Common Crow	*Corvus brachyrhynchos*	X
Mourning Dove	*Zenaida macroura*	X
Red-winged Blackbird	*Agelaius phoeniceus*	X
Red-shouldered Hawk	*Buteo lineatus*	X
Turkey Vulture	*Cathartes aura*	X
Wild Turkey	*Meleagris gallopavo*	X

MAMMALS		
ORDER		
Common Name	**Genus**	**Observed**
CARNIVORA		
Badger	*Taxidea taxus*	Workings
CERVIDAE		
Black-tailed Deer	*Odocoileus hemionus*	Sight
LAGOMORPHA		
Black-tailed Jackrabbit	*Lepus californicus*	Scat
RODENTIA		
Pocket Gopher	*Thomomys bottae*	Sight

APPENDIX B.

CNPS Special Status-species Listed for the Project Quadrangle and Surrounding Quadrangles

U.S. Fish and Wildlife Service Listed Species for the Quadrangle

California Department of Fish and Wildlife Rare Find 5 Species list for the Quadrangle and Surrounding Quadrangles for Habitat found on the project site

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

40 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812248, 3812247, 3812246, 3812238, 3812237, 3812236, 3812228, 3812227 and 3812226; Community = Valley and foothill grassland

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	1B.2	S1	G5T1
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S2S3	G2G3
Astragalus claranus	Clara Hunt's milk-vetch	Fabaceae	annual herb	Mar-May	1B.1	S1	G1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Blennosperma bakeri	Sonoma sunshine	Asteraceae	annual herb	Mar-May	1B.1	S1	G1
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	May-Jul	1B.2	S3?	G3?
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	Mar-May	1B.2	S3?	G3?
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	4.2	S4	G4
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	4.2	S4	G4T5
Ceanothus gloriosus var. porrectus	Mt. Vision ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-May	1B.3	S2	G4T2
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Clarkia imbricata	Vine Hill clarkia	Onagraceae	annual herb	Jun-Aug	1B.1	S1	G1
Delphinium bakeri	Baker's larkspur	Ranunculaceae	perennial herb	Mar-May	1B.1	S1	G1
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	1B.2	S2	G5T2

Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
Gilia capitata ssp. tomentosa	woolly-headed gilia	Polemoniaceae	annual herb	May-Jul	1B.1	S1	G5T1
Grindelia hirsutula var. maritima	San Francisco gumplant	Asteraceae	perennial herb	Jun-Sep	3.2	S1	G5T1Q
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	1B.2	S1S2	G5T1T2
Horkelia tenuiloba	thin-lobed horkelia	Rosaceae	perennial herb	May-Jul (Aug)	1B.2	S2	G2
Hosackia gracilis	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	4.2	S3	G4
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	4.2	S3	G3
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	Apr-Aug	4.2	S3	G3
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	Mar-May	1B.2	S3	G3
Lessingia arachnoidea	Crystal Springs lessingia	Asteraceae	annual herb	Jul-Oct	1B.2	S2	G2
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	3	S3?	G3?
Limnanthes vinculans	Sebastopol meadowfoam	Limnanthaceae	annual herb	Apr-May	1B.1	S1	G1
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun (Jul)	1B.2	S2	G2
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	Apiaceae	perennial herb	Jun-Oct	4.2	S4	G5T4
Plagiobothrys mollis var. vestitus	Petaluma popcornflower	Boraginaceae	perennial herb	Jun-Jul	1A	SX	G4?TX
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Stebbinsoseris decipiens	Santa Cruz microseris	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Thamnolia vermicularis	whiteworm lichen	Icmadophilaceae	fruticose lichen (terricolous)		2B.1	S1	G3G5
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Triphysaria floribunda	San Francisco owl's-clover	Orobanchaceae	annual herb	Apr-Jun	1B.2	S2?	G2?

Suggested Citation

California Native Plant Society, Rare Plant Program. 2017. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 14 July 2017].

Search the Inventory
Simple Search
Advanced Search
Glossary

Information
About the Inventory
About the Rare Plant Program
CNPS Home Page
About CNPS
Join CNPS

Contributors
The Calflora Database
The California Lichen Society

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Camp Meeker (3812248) OR Sebastopol (3812247) OR Santa Rosa (3812246) OR Valley Ford (3812238) OR Two Rock (3812237) OR Cotati (3812236) OR Tomales (3812228) OR Point Reyes NE (3812227) OR Petaluma (3812226))
AND Habitat IS (Riparian woodland OR Valley & foothill grassland OR Wetland)

CNDDB Element Query Results

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Habitats
Agelaius tricolor	tricolored blackbird	None	Candidate Endangered	G2G3	S1S2	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Allium peninsulare var. franciscanum	Franciscan onion	None	None	G5T1	S1	Cismontane woodland, Ultramafic, Valley & foothill grassland
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Endangered	None	G5T1	S1	Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
Ambystoma californiense	California tiger salamander	Threatened	Threatened	G2G3	S2S3	Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland
Amsinckia lunaris	bent-flowered fiddleneck	None	None	G2G3	S2S3	Cismontane woodland, Coastal bluff scrub, Valley & foothill grassland
Antrozous pallidus	pallid bat	None	None	G5	S3	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Ardea alba	great egret	None	None	G5	S4	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland

Ardea herodias	great blue heron	None	None	G5	S4	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Astragalus claranus	Clara Hunt's milk-vetch	Endangered	Threatened	G1	S1	Chaparral, Cismontane woodland, Valley & foothill grassland
Astragalus tener var. tener	alkali milk-vetch	None	None	G2T2	S2	Alkali playa, Valley & foothill grassland, Vernal pool, Wetland
Athene cunicularia	burrowing owl	None	None	G4	S3	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
Balsamorhiza macrolepis	big-scale balsamroot	None	None	G2	S2	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Blennosperma bakeri	Sonoma sunshine	Endangered	Endangered	G1	S1	Valley & foothill grassland, Vernal pool, Wetland
Brodiaea leptandra	narrow-anthered brodiaea	None	None	G3?	S3?	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley & foothill grassland
Buteo swainsoni	Swainson's hawk	None	Threatened	G5	S3	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
Calamagrostis crassiglumis	Thurber's reed grass	None	None	G3Q	S2	Coastal scrub, Freshwater marsh, Marsh & swamp, Wetland
California macrophylla	round-leaved filaree	None	None	G3?	S3?	Cismontane woodland, Valley & foothill grassland
Callophrys mossii bayensis	San Bruno elfin butterfly	Endangered	None	G4T1	S1	Valley & foothill grassland
Campanula californica	swamp harebell	None	None	G3	S3	Bog & fen, Closed-cone coniferous forest, Coastal prairie, Marsh & swamp, Meadow & seep, North coast

						coniferous forest, Wetland
Carex comosa	bristly sedge	None	None	G5	S2	Coastal prairie, Freshwater marsh, Marsh & swamp, Valley & foothill grassland, Wetland
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	None	None	G4T2	S2	Marsh & swamp, Salt marsh, Wetland
Castilleja leschkeana	Point Reyes paintbrush	None	None	GHQ	SH	Marsh & swamp, Wetland
Castilleja uliginosa	Pitkin Marsh paintbrush	None	Endangered	GXQ	SX	Freshwater marsh, Marsh & swamp, Wetland
Ceanothus gloriosus var. porrectus	Mt. Vision ceanothus	None	None	G4T2	S2	Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley & foothill grassland
Centromadia parryi ssp. parryi	pappose tarplant	None	None	G3T2	S2	Chaparral, Coastal prairie, Marsh & swamp, Meadow & seep, Valley & foothill grassland
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	None	None	G4?T2	S2	Marsh & swamp, Salt marsh, Wetland
Cicuta maculata var. bolanderi	Bolander's water-hemlock	None	None	G5T4	S2	Marsh & swamp, Salt marsh, Wetland
Clarkia imbricata	Vine Hill clarkia	Endangered	Endangered	G1	S1	Chaparral, Valley & foothill grassland
Coastal Brackish Marsh	Coastal Brackish Marsh	None	None	G2	S2.1	Marsh & swamp, Wetland
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	G3	S2.1	Marsh & swamp, Wetland
Corynorhinus townsendii	Townsend's big-eared bat	None	None	G3G4	S2	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian

						woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	None	None	G5T4T5	SH	Marsh & swamp, Wetland
Delphinium bakeri	Baker's larkspur	Endangered	Endangered	G1	S1	Broadleaved upland forest, Coastal scrub, Valley & foothill grassland
Dirca occidentalis	western leatherwood	None	None	G2	S2	Broadleaved upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North coast coniferous forest, Riparian forest, Riparian woodland
Downingia pusilla	dwarf downingia	None	None	GU	S2	Valley & foothill grassland, Vernal pool, Wetland
Elanus leucurus	white-tailed kite	None	None	G5	S3S4	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
Emys marmorata	western pond turtle	None	None	G3G4	S3	Aquatic, Artificial flowing waters standing waters, Wetland
Eriogonum luteolum var. caninum	Tiburon buckwheat	None	None	G5T2	S2	Chaparral, Cismontane woodland, Coastal prairie, Ultramafic, Valley & foothill grassland
Fritillaria liliacea	fragrant fritillary	None	None	G2	S2	Cismontane woodland, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland
Gilia capitata ssp. tomentosa	woolly-headed gilia	None	None	G5T1	S1	Coastal bluff scrub, Ultramafic, Valley & foothill grassland
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	G5T1T2	S1S2	Valley & foothill grassland

Horkelia tenuiloba	thin-lobed horkelia	None	None	G2	S2	Broadleaved upland forest, Chaparral, Valley & foothill grassland
Lasiurus blossevillii	western red bat	None	None	G5	S3	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland
Lasthenia burkei	Burke's goldfields	Endangered	Endangered	G1	S1	Meadow & seep, Vernal pool, Wetland
Lasthenia conjugens	Contra Costa goldfields	Endangered	None	G1	S1	Alkali playa, Cismontane woodland, Valley & foothill grassland, Vernal pool, Wetland
Laterallus jamaicensis coturniculus	California black rail	None	Threatened	G3G4T1	S1	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Layia septentrionalis	Colusa layia	None	None	G2	S2	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Legenere limosa	legenere	None	None	G2	S2	Vernal pool, Wetland
Lessingia arachnoidea	Crystal Springs lessingia	None	None	G2	S2	Cismontane woodland, Coastal scrub, Ultramafic, Valley & foothill grassland
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	Endangered	Endangered	G5T1	S1	Cismontane woodland, Freshwater marsh, Marsh & swamp, Meadow & seep, Wetland
Limnanthes vinculans	Sebastopol meadowfoam	Endangered	Endangered	G1	S1	Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Microseris paludosa	marsh microseris	None	None	G2	S2	Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley & foothill grassland
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	G4T2	S2	Cismontane woodland, Lower montane coniferous forest, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland

Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None	G3	S3.2	Marsh & swamp, Wetland
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	None	None	G3	S3.1	Vernal pool, Wetland
Northern Vernal Pool	Northern Vernal Pool	None	None	G2	S2.1	Vernal pool, Wetland
Plagiobothrys mollis var. vestitus	Petaluma popcornflower	None	None	G4?TX	SX	Marsh & swamp, Salt marsh, Valley & foothill grassland, Wetland
Pleuropogon hooverianus	North Coast semaphore grass	None	Threatened	G2	S2	Broadleaved upland forest, Meadow & seep, North coast coniferous forest, Wetland
Polygonum marinense	Marin knotweed	None	None	G2Q	S2	Brackish marsh, Marsh & swamp, Salt marsh, Wetland
Potentilla uliginosa	Cunningham Marsh cinquefoil	None	None	GH	SH	Marsh & swamp, Wetland
Rallus obsoletus obsoletus	California Ridgway's rail	Endangered	Endangered	G5T1	S1	Brackish marsh, Marsh & swamp, Salt marsh, Wetland
Rana boylii	foothill yellow-legged frog	None	Candidate Threatened	G3	S3	Aquatic, Chaparral, Cismontane woodland, flowing waters
Rana draytonii	California red-legged frog	Threatened	None	G2G3	S2S3	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, standing waters, Wetland
Rhynchospora alba	white beaked-rush	None	None	G5	S2	Bog & fen, Marsh & swamp, Meadow & seep, Wetland
Rhynchospora californica	California beaked-rush	None	None	G1	S1	Freshwater marsh, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Wetland
Rhynchospora capitellata	brownish beaked-rush	None	None	G5	S1	Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Upper montane

						coniferous forest, Wetland
Rhynchospora globularis	round-headed beaked-rush	None	None	G4	S1	Freshwater marsh, Marsh & swamp, Wetland
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	None	None	G5T2	S2	Freshwater marsh, Marsh & swamp, Wetland
Stebbinsoseris decipiens	Santa Cruz microseris	None	None	G2	S2	Broadleaved upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland
Taricha rivularis	red-bellied newt	None	None	G4	S2	Broadleaved upland forest, North coast coniferous forest, Redwood, Riparian forest, Riparian woodland
Taxidea taxus	American badger	None	None	G5	S3	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, , Valley & foothill grassland
Thamnolia vermicularis	whiteworm lichen	None	None	G3G5	S1	Chaparral, Valley & foothill grassland
Trifolium amoenum	two-fork clover	Endangered	None	G1	S1	Coastal bluff scrub, Ultramafic, Valley & foothill grassland
Trifolium hydrophilum	saline clover	None	None	G2	S2	Marsh & swamp, Valley & foothill grassland, Vernal pool, Wetland
Triphysaria floribunda	San Francisco owl's-clover	None	None	G2?	S2?	Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland
Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None	G3	S3.1	Valley & foothill grassland

Vespericola marinensis	Marin hesperian	None	None	G2	S2	Chaparral, Meadow & seep, North coast coniferous forest, Riparian woodland
Zapus trinotatus orarius	Point Reyes jumping mouse	None	None	G5T1T3Q	S1S3	Coastal scrub, Marsh & swamp, Meadow & seep, Valley & foothill grassland

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Sonoma County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Marbled Murrelet Brachyramphus marmoratus There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl Strix occidentalis caurina There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo Coccyzus americanus There is a **proposed** critical habitat for this species. Your location is outside the proposed critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle Chelonia mydas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2076	Endangered

Fishes

NAME	STATUS
Steelhead Oncorhynchus (=Salmo) mykiss There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/1007	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly Callophrys mossii bayensis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3394	Endangered

Crustaceans

NAME	STATUS
California Freshwater Shrimp Syncaris pacifica No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7903	Endangered

Flowering Plants

NAME	STATUS
Burke's Goldfields Lasthenia burkei No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4338	Endangered
Pitkin Marsh Lily Lilium pardalinum ssp. pitkinense No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/570	Endangered
Sebastopol Meadowfoam Limnanthes vinculans No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/404	Endangered
Showy Indian Clover Trifolium amoenum No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6459	Endangered
Sonoma Alopecurus Alopecurus aequalis var. sonomensis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/557	Endangered
Sonoma Sunshine Blennosperma bakeri No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1260	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The migratory birds species listed below are species of particular conservation concern (e.g. Birds of Conservation Concern) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the AKN Histogram Tools and Other Bird Data Resources. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
Allen's Hummingbird *Selasphorus sasin* https://ecos.fws.gov/ecp/species/9637	Breeding
Bald Eagle *Haliaeetus leucocephalus* https://ecos.fws.gov/ecp/species/1626	Year-round
Bell's Sparrow *Amphispiza belli* https://ecos.fws.gov/ecp/species/9303	Year-round
Black Oystercatcher *Haematopus bachmani* https://ecos.fws.gov/ecp/species/9591	Year-round
Black Rail *Laterallus jamaicensis* https://ecos.fws.gov/ecp/species/7717	Breeding
Burrowing Owl *Athene cunicularia* https://ecos.fws.gov/ecp/species/9737	Year-round
Fox Sparrow *Passerella iliaca*	Wintering
Lesser Yellowlegs *Tringa flavipes* https://ecos.fws.gov/ecp/species/9679	Wintering
Lewis's Woodpecker *Melanerpes lewis* https://ecos.fws.gov/ecp/species/9408	Wintering
Long-billed Curlew *Numenius americanus* https://ecos.fws.gov/ecp/species/5511	Wintering
Mountain Plover *Charadrius montanus* https://ecos.fws.gov/ecp/species/3638	Wintering
Nuttall's Woodpecker *Picoides nuttallii* https://ecos.fws.gov/ecp/species/9410	Year-round

Oak Titmouse Baeolophus inornatus https://ecos.fws.gov/ecp/species/9656	Year-round
Olive-sided Flycatcher Contopus cooperi https://ecos.fws.gov/ecp/species/3914	Breeding
Peregrine Falcon Falco peregrinus https://ecos.fws.gov/ecp/species/8831	Year-round
Rufous Hummingbird selasphorus rufus https://ecos.fws.gov/ecp/species/8002	Breeding
Rufous-crowned Sparrow Aimophila ruficeps https://ecos.fws.gov/ecp/species/9718	Year-round
Short-billed Dowitcher Limnodromus griseus https://ecos.fws.gov/ecp/species/9480	Wintering
Short-eared Owl Asio flammeus https://ecos.fws.gov/ecp/species/9295	Wintering
Tricolored Blackbird Agelaius tricolor https://ecos.fws.gov/ecp/species/3910	Year-round
Western Grebe aechmophorus occidentalis https://ecos.fws.gov/ecp/species/6743	Wintering
Whimbrel Numenius phaeopus https://ecos.fws.gov/ecp/species/9483	Wintering
Yellow Warbler dendroica petechia ssp. brewsteri https://ecos.fws.gov/ecp/species/3230	Breeding

What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?

Landbirds:

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

Atlantic Seabirds:

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAANCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the Northeast Ocean Data Portal. The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAANCCOS models: the models were developed as part of the NOAANCCOS project: Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf. The models resulting from this project are being used in a number of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such product is the Northeast Ocean Data Portal, which can be used to explore details about the relative occurrence and abundance of bird species in a particular area off the Atlantic Coast.

All migratory bird range maps within IPaC are continuously being updated as new and better information becomes available.

Can I get additional information about the levels of occurrence in my project area of specific birds or groups of birds listed in IPaC?

Landbirds:

The Avian Knowledge Network (AKN) provides a tool currently called the "Histogram Tool", which draws from the data within the AKN (latest,survey, point count, citizen science datasets) to create a view of relative abundance of species within a particular location over the course of the year. The results of the tool depict the frequency of detection of a species in survey events, averaged between multiple datasets within AKN in a particular week of the year. You may access the histogram tools through the Migratory Bird Programs AKN Histogram Tools webpage.

The tool is currently available for 4 regions (California, Northeast U.S., Southeast U.S. and Midwest), which encompasses the following 32 states: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North, Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

In the near future, there are plans to expand this tool nationwide within the AKN, and allow the graphs produced to appear with the list of trust resources generated by IPaC, providing you with an additional level of detail about the level of occurrence of the species of particular concern potentially occurring in your project area throughout the course of the year.

Atlantic Seabirds:

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAANCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Facilities

Wildlife refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location overlaps the following wetlands:

FRESHWATER POND

- PUBHh
- PUBFh

A full description for each wetland code can be found at the National Wetlands Inventory website: https://ecos.fws.gov/ipac/wetlands/decoder

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or

tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.