

Habitat Assessment

Babu Vineyard

**3600 White Sulphur Springs Road
Saint Helena, CA 94574
(APN 027-010-033)**

May 2017

Prepared for

Matt O'Connor, PhD, Certified Engineering Geologist
Principal Hydrologist/Geomorphologist
O'Connor Environmental, Inc.
707- 431-2810

Prepared by

Wildlife Research Associates
1119 Burbank Avenue
Santa Rosa, CA 95407
707-544-6273

And

Jane Valerius Environmental Consulting
2893A Scotts Right of Way
Sebastopol, CA 95472
707-824-1463

**Habitat Assessment
Babu Vineyard**

**3600 White Sulphur Springs Road
Saint Helena, Napa County**

TABLE OF CONTENTS

SUMMARY	iv
INTRODUCTION.....	1
Site Location and Condition.....	1
METHODS	1
EXISTING CONDITIONS	2
Waters of the U.S. and State.....	2
Vegetation Communities	3
Wildlife Habitats	4
Movement Corridors	6
SPECIAL-STATUS BIOLOGICAL RESOURCES.....	7
Special-status Vegetation Communities.....	7
Special-status Plant Species	7
Special-status Animal Species.....	8
IMPACTS AND MITIGATION MEASURES	11
Waters of the U.S and State:	11
Special-Status Plants	11
Tree Removal	12
Birds	13
Bats.....	14
REFERENCES.....	16

LIST OF FIGURES

FIGURE	TITLE	PAGE
1	Regional Project Vicinity	17
2	Area A oak woodland.....	18
3	Area A canopy cover in oak woodland	18
4	Area A chaparral with manzanita.....	19
5	Area A chaparral area.....	19
6	Area B Douglas fir with bay trees.....	20
7	Area B Douglas fir with opening	20
8	Douglas fir canopy cover in Area B.....	21
9	Douglas fir showing basal widths in Area B.....	21

**Habitat Assessment
Babu Vineyard
3600 White Sulphur Springs Road
Saint Helena, Napa County**

TABLE OF CONTENTS (Cont'd)

LIST OF TABLES

FIGURE	TITLE	PAGE
1	Block A – Tree Species and Composition Percentage	3
2	Block B – Tree Species and Composition Percentage	4
3	Relationship between Vegetation Types and the California Wildlife Habitat Relationship Types.....	4

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Federal, State and Local Plans, Policies, Regulations and Ordinances	22
B	Potentially Occurring Special-Status Plant Species in the Study Area	26
C	Potentially Occurring Special-Status Animal Species in the Study Area	33
D	Plant Species Observed at the Babu Vineyard Project Site	38
E	Animal Species Observed at the Babu Vineyard Project Site	39

SUMMARY

The Babu Vineyard proposed project, located at 3600 White Sulphur Springs Road, in the hills west of the City of Saint Helena, is comprised of two blocks of vineyards to be located in the central portion of the Babu 67.80-acre parcel; Block A, the western-most block, is approximately 1.4 acres, and Block B, the eastern block, is 0.6 acres. Additional area of south of Block B was evaluated, however, this area was removed from the proposed vineyard owing to required set-back from the County-definition stream south of Block B. Existing roadways will service these two proposed vineyard areas.

This Habitat Assessment presents the findings of our review of scientific literature and reports detailing previous studies conducted in the area, the Biological Resources section of the Napa County Baseline Data Report (Napa County 2005) for county specific information, as well as the U.S. Fish and Wildlife Service Information on Planning and Conservation and the California Department of Fish and Wildlife's Natural Diversity Data Base for reported occurrences of special-status vegetation communities, plants and animals.

As part of this Habitat Assessment, we conducted a site visit of all habitats on the site to evaluate the potential for occurrence of 63 special-status plant species, and 40 special-status wildlife species. All vegetation was assessed for potentially suitable bird and bat habitat.

Four vegetation community types occur on the property: *Quercus agrifolia* Woodland Alliance or coast live oak woodland; mixed chaparral; *Pseudotsuga menziesii* Forest Alliance or Douglas fir forest; and a small area of willow riparian associated with a road culvert on Block A. Native vegetation types have been classified corresponding to The Manual of California Vegetation Second Edition (Sawyer, et al. 2009). Oak woodlands in general and the Douglas fir forest are listed in the Baseline Data Report (BDR) as a sensitive biotic communities.

No special-status animals were observed during the survey; however, the survey was an assessment only and not a focused survey.

Based on the literature review, seasonal periods of bird nesting and bat maternity roosting activity and limitations of the surveys conducted for this assessment, the following are action items to be addressed prior to ground breaking:

- If any wetlands, creeks or streams are impacted the applicant must obtain permits from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB) and the California Department of Fish & Wildlife for impacts to waters of the U.S. and state.
- A spring season of plant surveys should be conducted in April and May.
- To prevent take of Northern Spotted owl and other raptors and passerines, we recommend removal of trees after the nesting season, which occurs after August 15 and before March 1.

INTRODUCTION

O'Connor Environmental, Inc. contracted with Wildlife Research Associates and Jane Valerius Environmental Consulting to conduct a Habitat Assessment of the 1.93-acre area proposed for conversion to vineyard planting on the 67.8-acre Babu property. The 3600 White Sulphur Springs Road property (APN: 027-010-033) is located west of the City of Saint Helena at the northern end of White Sulphur Springs Road, in the northwestern portion of Napa County, California. This habitat assessment was conducted to determine the potential for special-status vegetation communities, plant and animal species to occur within the proposed project and to identify the limitations to potential development of the project, such as: a) impacts to waters of the U.S., and, b) habitat removal.

This Habitat Assessment is part of the preliminary analysis of both the existing environment and potential impacts from the proposed project as required under the California Environmental Quality Act (CEQA) for new projects. Federal and state agencies that have purview over biological resources include the following:

- U.S. Army Corps of Engineers (USACE),
- U.S. Fish and Wildlife Service (USFWS),
- National Marine Fisheries Service (NMFS),
- California Regional Water Quality Control Board (RWQCB),
- California Department of Fish and Wildlife (CDFW), and
- Napa County.

The USACE regulates the discharge of dredged or fill material into waters of the United States. Waters of the U.S. are defined as waters that are hydrologically connected to waters with interstate or foreign commerce, and includes tributaries to any of these waters, and wetlands, which are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support vegetation typically adapted to life in saturated soil conditions. The USFWS has regulatory authority over federally listed plant and animal species. The NMFS, a division of the National Oceanic and Atmospheric Administration (NOAA), has regulatory authority over essential fish habitat, which is habitat necessary to maintain sustainable fisheries in the United States. The California RWQCB protects all waters with special responsibility for wetlands, riparian areas, and headwaters. The CDFW has regulatory authority over state listed plants and animals as well as streams and lakes within the State.

Site Location and Description

The proposed Babu vineyard is situated on the west side of Napa Valley, west of the Napa River and HWY 128/29, south of Bothe-Napa Valley State Park and north of San Pablo Bay in the rural area of Napa County, California (Figure 1). Surrounding land uses consist of mainly forested open space lands, ranches and vineyards. A 20-acre conservation easement runs along the east and south side of the Babu parcel.

Proposed Project

Within the overall 67.80-acre Babu parcel, the proposed project is to convert about 2 acres of mostly forested lands into vineyards. Two blocks of vineyards are proposed; Block A, the westernmost and is approximately 1.4 acres, and Block B, is the easternmost, and is approximately 0.6 acres. Existing roadways will service these two proposed vineyard areas. Approximately 150 trees will be removed for the proposed Block A; fewer than 150 trees will be removed for proposed Block B. If additional trees outside the proposed planting area are removed due to shade considerations, a separate biological analysis will be conducted.

METHODS

Information on special-status plant species was compiled through a review of the literature and database search. Database searches for known occurrences of special-status species focused on the Rutherford, St. Helena, Calistoga, and Kenwood U.S. Geologic Service 7.5-minute topographic quadrangles, which provided a five mile radius around the proposed project area. The following sources were reviewed to

determine which special-status plant and wildlife species have been documented in the vicinity of the project site:

- U.S. Fish and Wildlife Service (USFWS) quadrangle species lists (USFWS 2016)
- USFWS list of special-status animals for Sonoma County (USFWS 2016)
- California Natural Diversity Database records (CNDDB) (CDFW 2016)
- California Department of Fish and Wildlife's (CDFW) Special Animals List (CDFW 2016),
- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2016)
- California Native Plant Society (CNPS) Electronic Inventory records (CNPS 2016)
- California Department of Fish and Game (CDFG) publication "California's Wildlife, Volumes I-III" (Zeiner, et al., 1990)
- Napa County Baseline Data Report (BDR) (Napa County 2005)

Botanical nomenclature used in this report conforms to Baldwin, et al. (2012) for plants and to Sawyer et al. (2009) for vegetation communities. Nomenclature for special-status animal species conforms to CDFW (2016).

Site Survey: Trish Tatarian, Wildlife Research Associates, and Jane Valerius Environmental Consulting conducted a site visit on June 16, 2016. The entire area was walked and plant species identifiable at the time of the survey were recorded.

The project area was evaluated for suitable bird nesting habitat using 8 x 42 roof-prism binoculars, noting presence of old bird nests. The reconnaissance-level site visit was intended only as an evaluation of on-site and adjacent habitat types; no special-status animal species surveys were conducted as part of this effort due to a lack of project detail and the changes in nesting trees from season to season. All species observed during the site visit were recorded and are presented in Appendix D and Appendix E.

EXISTING CONDITIONS

The project area is located within the San Francisco Bay/Delta Bioregion (Welsh 1994). This bioregion is located within central California and encompasses the San Francisco Bay and the Sacramento Delta, extending from the Pacific Ocean to the eastern portion of the tule marsh zone, which is defined by Highway 99 (Welsh 1994). Habitats within this bioregion include both mesic (moist) habitats, such as freshwater marsh, and xeric (dry) habitats, such as chaparral, and are typical of a Mediterranean type climate. Average rainfall in the area is 34.9 inches (NCRCD 2004).

Located at the northern end of Napa Valley, the project area is located in Section 3 in the northeastern portion of the Kenwood 7.5-minute topographic quadrangle, within Township 7N and Range 6W. Topographically, Block A is situated in a roughly east-facing slope, at an elevation between 760 and 850 feet. Block B is situated on a northeast-facing slope, at an elevation between 690 and 660 feet. Both sites are located more than 500 feet from Sulphur Creek.

Waters of the U.S. and State

An ephemeral creek drainage is located north of Block A, outside of the vineyard block and it is presumed that a minimum of a 25-foot setback, as required by Napa County, will be maintained between the creek and any vineyard planting. Also in Block A, in the northwestern corner, a small willow riparian wetland has developed at the downstream end of a culvert between the existing vineyard and the proposed vineyard. An ephemeral or intermittent tributary to Sulphur Creek occurs on the south side of Block B. This, too, will have the appropriate setbacks. No creeks or wetlands areas were observed within the proposed Block B planting area. Sulphur Creek lies northeast of the two vineyard blocks. The potential for Biotic Communities of Limited Distribution, including riverine, lacustrine and tidal mudflats or wet meadow grasses NFD super alliance, as described in the BDR (Jones and Stokes 2005), were evaluated and none occur on the site.

Vegetation Communities

Four vegetation communities occur within the project study area: *Coast live oak* woodland alliance, Mixed chaparral, willow riparian and non-native grassland as *Avena (barbata, fatua)* semi-natural herbaceous stands or *Pseudotsuga menziesii* Forest Alliance or Douglas fir Forest (Sawyer et. al 2009). Oak woodlands in general and the California bay-madrone-live oak super alliance specifically are identified in the Napa County BDR as sensitive biotic communities. The potential for Biotic Communities of Limited Distribution, including native grassland communities, tanbark oak alliance, Brewer willow alliance, Ponderosa pine alliance, as described in the BDR (Jones and Stokes 2005), were evaluated and none occur on the site.

Block A

Quercus agrifolia Woodland Alliance or Coast Live Oak Woodland: The coast live oak woodland type is dominated by coast live oak but includes a variety of native trees including California bay laurel (*Umbellularia californica*), Douglas fir (*Pseudotsuga menziesii*), black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*) and madrone (*Arbutus menziesii*). Understory shrubs include poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), hazelnut (*Corylus cornuta*) and coyote brush (*Baccharis pilularis*). Understory herbs include a variety of native grasses and forbs including blue wildrye (*Elymus glaucus*), California brome (*Bromus carinatus*), California fescue (*Festuca californica*), honeysuckle (*Lonicera hispidula*), soaproot (*Chlorogalum pomeridianum*), hedge nettle (*Stachys ajugoides*), California pipevine (*Aristolochia californica*), and sweet cicely (*Osmorhiza chilensis*). Non-native and weedy species observed include hare barley (*Hordeum murinum* ssp. *leporium*), dogtail grass (*Cynosurus echinatus*), false brome (*Brachypodium distachyon*), ryegrass (*Festuca perennis*), vetch (*Vicia* sp.), French broom (*Genista monspessulana*), yellow star thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), and salsify (*Tragopogon porrifolius*).

Table 1 presents the tree inventory for Block A. A total of 149 trees are proposed for removal for this block.

Table 1: Block A - Tree Species and Composition Percentage

Species	Diameter at Breast Height (dbh)				Percent
	4" - 10"	11" - 20"	21" - 30"	31" +	
Black Oak	12	45	9		44%
White Oak		3			2%
Douglas Fir	9	1	1		7%
Madrone	9	18	3		20%
Live Oak	9	19	5		22%
Pepperwood	5	1			4%
Maple					0%
	44	87	18	0	100%

Mixed Chaparral: A small area of mixed chaparral occurs within Block A. This vegetation type is dominated by shrubby species including sticky monkeyflower (*Mimulus aurantiacus*), coyote brush, common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), toyon, poison oak, and scrub oak (*Quercus berberidifolia*). This type has an understory of native and non-native grasses and forbs similar to that for the coast live oak woodland type.

Willow Riparian: A small area of willows (*Salix lasiolepis*) along with some wetland vegetation has developed at the downstream end of a culvert between Block A and the existing vineyard. This does not appear to have been a previously existing drainage but one that has developed from the runoff direct by the culvert placement.

Block B

Pseudotsuga menziesii Forest Alliance or Douglas fir Forest: This vegetation type dominated by Douglas fir and includes coast live oak, black oak, madrone, big-leaf maple (*Acer macrophyllum*) and California bay. Understory shrubs include scrub oak, poison oak, and toyon. A number of ferns were also noted in this area including goldback fern (*Pentagramma triangularis*), maidenhair fern (*Adiantum jordanii*), and wood fern (*Dryopteris arguta*). California fescue and narrow-flowered brome were common understory grass species in this area. Native forbs included Douglas iris (*Iris douglasiana*), yerba Buena (*Clinopodium douglasii*), sanicle (*Sanicula crassicaulis*), and starry false lily of the valley (*Maianthemum stellatum*).

Table 2 presents the tree inventory for Block B. A total of 151 trees originally proposed for removal for this block has been reduced owing to the required stream set-back.

Table 2: Block B - Tree Species and Composition Percentage

Species	Diameter at Breast Height (dbh)				Percent
	4" - 10"	11" - 20"	21" - 30"	31" +	
Black Oak	3	3	1		5%
White Oak					0%
Douglas Fir	14	11	8	5	25%
Madrone	10	30	1		27%
Live Oak	18	30	1		32%
Pepperwood	14	1	0		10%
Maple	1				1%
	60	75	11	5	100%

Wildlife Habitats

The value of a site to wildlife is influenced by a combination of the physical and biological features of the immediate environment. Species diversity is a function of diversity of abiotic and biotic conditions and is greatly affected by human use of the land. The wildlife habitat quality of an area, therefore, is ultimately determined by the type, size, and diversity of vegetation communities present and their degree of disturbance. Wildlife habitats are typically distinguished by vegetation type, with varying combinations of plant species providing different resources for use by wildlife. The following is a discussion of the wildlife species supported by the on-site habitats, as described by *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). The California Wildlife Habitat Relationship (CWHR) habitat classification scheme was developed by the CDFW to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. To show the relationship between the CWHR and the MCOSED Vegetation Mapping Units, please refer to Table 3.

Table 3: Relationship between Vegetation Types and the California Wildlife Habitat Relationship Types

Block	Vegetation Types	California Wildlife Habitat Relationship Types
A	Coast Live oak Woodland	Coastal Oak Woodland
A	Mixed Chaparral	Mixed chaparral
A	Willow Riparian	Riparian
B	Douglas Fir Forest	Douglas Fir

Coastal Oak Woodland: This wildlife habitat type encompasses the coast live oak and black oak woodland. This habitat type contains food for species such as chestnut-backed chickadee (*Poecile rufescens*), Stellar's jay (*Cyanocitta stelleri*), white-breasted nuthatch (*Sitta carolinensis*) and warbling vireo (*Vireo gilvus*). These species are bark gleaners, eating insects that are in the bark of trees, as well as catching insects in flight. The spotted towhee (*Pipilo maculatus*) and brown towhee (*Pipilo fuscus*) glean insects from the foliage on the ground, such as under leaf litter and plants. Anna's hummingbirds (*Calypte anna*) use vines growing around trees for nectar and for insects that are attracted to the nectar. Other species, such as the great horned owl (*Bubo virginianus*) and Cooper's hawk (*Accipiter cooperii*), use the tall trees as roosting and foraging sights during the day. The western gray squirrel (*Sciurus griseus*) and gray fox (*Urocyon cinereoargenteus*) both feed on truffles, mushrooms, fruits, and nuts within the forest. Several of the trees were of a diameter large enough to support roosting bats species, such as long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*) and pallid bat (*Antrozous pallidus*), a California Species of Special Concern (SSC).

Mixed Chaparral: Chaparral habitat, often interspersed with other habitats, provides foraging and nesting habitat for species that are attracted to edges of communities. These edge community species include California quail, California thrasher (*Toxostoma redivivum*), mourning dove (*Zenaidura macroura*), and spotted towhee (*Pipilo crissalis*), that forage among the leaf litter for invertebrates. Avian species that use the canopy of the chaparral for catching insects include blue-gray gnatcatcher (*Poliophtila caerulea*), and wren (*Chamaea fasciata*). Besides insects, flowers of the manzanita and ceonothus attract nectar drinkers such as Anna's hummingbird (*Calypte anna*). If nesting cliffs are nearby prairie falcons (*Falco mexicanus*) will use chaparral for foraging grounds, as well as sharp-shinned hawks, if water is nearby. Mammals use this habitat for protection and foraging grounds, feeding off new shoots of plants. Black-tailed deer (*Odocoileus hemionus*) often feed in chaparral but this habitat supports a lower density than in oak savannah. Other species include brush rabbits (*Sylvilagus audubonii*), gophers, and deer mice (*Peromyscus maniculatus*). Small mammals attract predators such as long-tailed weasel (*Mustela frenata*), gray fox, and bobcat (*Felis rufous*).

Riparian: Riparian areas provide nesting habitat and insect diversity attractive to a variety of migratory birds. Diverse foraging substrates, such as foliage, bark and ground substrates, increase feeding availability. Birds that forage for insects in the leaves of plants include Bewick's wren (*Thryomanes bewickii*), northern oriole (*Icterus galbula*), orange-crowned Warbler (*Oreothlypis celata*), bushtit (*Psaltiriparus minimus*), and black-headed grosbeak (*Pheucticus melanocephalus*). Bark-insect foraging species, such as Bewick's wren (*Thryomanes bewickii*), downy woodpecker (*Picoides pubescens*), Nuttall's woodpecker (*Picoides nuttallii*), plain titmouse (*Parus inornatus*) and white-breasted nuthatch (*Sitta carolinensis*) forage for insects in the bark. There are a few species that are adapted to foraging for insects in flight, such as black phoebe (*Sayornis nigricans*), western wood pewee (*Contopus sordidulus*) and tree swallows (*Tachycineta bicolor*).

Douglas Fir Forest. There are various guilds of avian insect eaters, such as northern flicker (*Colaptes auratus*), that glean insects from the bark, and others, such as Hutton's vireo (*Vireo huttoni*) and ruby crowned kinglet (*Regulus calendula*), which feed on insects while hovering. Woodpeckers (*Picoides* sp. and *Melanerpes* sp.) are some of the few birds that excavate into the bark to obtain insects. Steller's jay (*Cyanocitta stelleri*) and Bewick's wren (*Thryomanes bewickii*) may glean insects on the ground in this habitat. Northern spotted owl (*Strix occidentalis*) and Cooper's hawk (*Accipiter cooperi*) are often associated with this habitat.

Individual Trees: Several coast live oak trees occur on the site, particularly along the drainage area in Block A. Individual trees are foraging and nesting habitat for passerines, and roosting habitat for bats. Smaller passerines, such as black-capped chickadee (*Poecile atricapillus*), bushtit (*Psaltiriparus minimus*), plain titmouse (*Baeolophus inornatus*) and acorn woodpecker (*Melanerpes formicivorus*) may nest and forage in the larger trees, feeding on insects on the bark. Birds nest in trees, building either stick nests in the canopy, or creating cavities in which to nest.

Bats that use trees fall into three categories: 1) solitary, obligate tree-roosting bats that roost in the foliage or bark such as Western red-bat (*Lasiurus blossevillei*), a California Species of Special Concern (SSC), or hoary bat (*Lasiurus cinereus*); 2) colonial tree-roosting bats that form groups of varying size in tree cavities or beneath exfoliating bark, such as silver-haired bats (*Lasionycteris noctivagans*), and 3) more versatile bat species that will use a wide variety of roosts from buildings to bridges to trees, such as various *Myotis* species, pallid bat (*Antrozous pallidus*), another SSC species, and others. No cavities were observed in any of the coast live oak trees and no sloughing bark was observed. The large black oak in Block A may support foliage roosting habitat for bats.

Movement Corridors

Wildlife movement includes migration (i.e., usually one way per season), inter-population movement (i.e., long-term genetic flow) and small travel pathways (i.e., daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement among populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations comprising a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors and movement corridors. Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Potentially low frequency genetic flow may lead to complete isolation, and if pressures are strong, potential extinction (McCullough 1996; Whittaker 1998).

The project location is considered to be within the southern portion of the North Coast Ecoregion of the California Essential Habitat Connectivity Project (Spencer, *et al.* 2010). No Natural Landscape Blocks (i.e., large, relatively natural habitat blocks that support native biodiversity), or Essential Connectivity Areas (i.e., areas essential for ecological connectivity between Natural Landscape Blocks) are identified in this portion of Napa County (Spencer, *et al.* 2010). Sulphur Creek is not identified as a Riparian Connection for Napa County that provides both terrestrial and aquatic connectivity (Spencer, *et al.* 2010), although, locally, it does provide a connection. The Babu Vineyard project site is not hydrologically connected to Sulphur Creek that provides habitat for foothill yellow-legged frog and steelhead.

The site is located in the Western Mountain Evaluation Area of the BDR (Jones and Stokes 2005). In Napa County, several general conclusions regarding wildlife movement corridors can be drawn based on inferences from regional analyses of wildlife movement and land cover, such as there are three distinct habitat groupings (grassland-riparian, oak woodland-riparian and coniferous forest-riparian) important to wildlife movement in Napa County, and large patches of intact habitat currently exist in the eastern and northwestern portion of the County (Jones and Stokes 2005).

Wildlife connectivity of this site to other open lands in the area occurs throughout the parcel. The vineyards on other private parcels and their associated wildlife fence is tall with cattle guards and the larger wildlife (i.e., black-tailed deer (*Odocoileus hemionus*)) must travel around the plantings. Small animals (i.e., western gray squirrels (*Sciurus griseus*)) are not impeded by the fencing. Medium-sized animals (i.e., raccoon and skunk) likely also go around the small acreage of fenced off area. The small acreage of fencing that will be associated with Block A and Block B will not impede any wildlife movement corridor.

SPECIAL-STATUS BIOLOGICAL RESOURCES

Certain vegetation communities, and plant and animal species are designated as having special-status based on their overall rarity, endangerment, restricted distribution, and/or unique habitat requirements. In general, special-status is a combination of these factors that leads to the designation of a species as sensitive. The Federal Endangered Species Act (FESA) outlines the procedures whereby species are listed as endangered or threatened and established a program for the conservation of such species and the habitats in which they occur. The California Endangered Species Act (CESA) amends the California Fish and Wildlife Code to protect species deemed to be locally endangered and essentially expands the number of species protected under the FESA.

Special-status Vegetation Communities

Sensitive natural communities are those that are considered rare in the region, may support special-status plant or wildlife species, or may receive regulatory protection (i.e., through Section 404 of the Clean Water Act [CWA] and/or Sections 1600 et seq. of the California Fish and Wildlife Code). Please refer to Appendix A for detailed descriptions of waters and wetlands. In addition, sensitive natural communities include plant communities that have been identified as having highest inventory priority in the California Natural Diversity Database (CNDDB). The second edition of *A Manual of California Vegetation* (Sawyer, et al. 2009) also provides the rarity ranking status of these communities. No special-status vegetation communities occur on site and none occur in the project area.

The Napa County General Plan Open Space and Conservation Element addresses impacts to oak woodland. The policies in the document direct the County to retain existing oaks to the extent feasible as part of residential, commercial, industrial and agricultural land division approvals. The Oak Woodland Conservation Program in the Napa County Open Space and Conservation Element requires hardwood cutting to maintain adequate stands of oaks for wildlife, slope stabilization, soil protection, and acorn production. This program requires that natural groups of oaks be retained and replanting is required.

Special-status Plant Species

Special-status plant species are those species that are legally protected under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA) as listed or proposed for listing as threatened or endangered, as well as species that are considered rare by the scientific community. For example, the California Native Plant Society (CNPS) has identified some species as List 1 or 2 species and may be considered rare or endangered pursuant to Section 15380(b) of the State CEQA Guidelines. The CDFW has compiled a list of "Special Plants" (CDFW 2016), which include California Special Concern species. These designations are given to those plant species whose vegetation communities are seriously threatened. Although these species may be abundant elsewhere they are considered to be at some risk of extinction in California. Although Special Concern species are afforded no official legal status under FESA or CESA, they may receive special consideration during the planning stages of certain development projects and adverse impacts may be deemed significant under the California Environmental Quality Act (CEQA).

A total of 63 special-status plant species have been reported occurring on the four topographic quadrangles (CNDDB 2016). Please refer to Appendix B for a list of these species and their potential for occurrence. Many species were considered to have no potential to occur either because these species are restricted to areas with serpentinite, rhyolitic, sandy or clay soils and these substrates are lacking within the study area, or the species occurs in habitats not present within the study area such as montane coniferous forest, broad-leaved upland forest, cismontane woodland, riparian scrub, riparian woodland, closed-cone coniferous forest, North Coast coniferous forest, bogs and fens, marshes and swamps, coastal bluff scrub, coastal prairie, and coastal scrub. Three special-status plants have a low potential to occur on site, based on the presence of chaparral and oak woodland habitat. These are narrow anthered brodiaea (*Brodiaea leptandra*), nodding harmonia (*Harmonia nutans*) and Jepson's leptosiphon (*Leptosiphon jepsonii*). These and other species would only be identifiable in the earlier spring.

Special-status Animal Species

Special-status animal species include those listed by the USFWS (2016) and the CDFW (2016). The USFWS officially lists species as either Threatened or Endangered, and as candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act (*e.g.*, bald eagle, golden eagle), the Migratory Bird Treaty Act (MBTA), and the Birds of Conservation Concern. State protection for wildlife occurs under CEQA Section 15380(d). In addition, many other species are considered by the CDFW to be species of special concern; these are listed in Shuford and Gardali (2008), Williams (1986), and Jennings and Hayes (1994). Although such species are afforded no official legal status, they may receive special consideration during the planning and CEQA review stages of certain development projects. The CDFW further classifies some species under the following categories: "fully protected", "protected fur-bearer", "protected amphibian", and "protected reptile". The designation "protected" indicates that a species may not be taken or possessed except under special permit from the CDFW; "fully protected" indicates that a species can be taken for scientific purposes by permit only.

Of the 18 special-status animal species identified as potentially occurring in the vicinity of the project area, including a 3-mile radius (CNDDDB 2016), several additional species were evaluated for their potential to occur within the study area, based on: 1) review of the IPaC, 2) the "Special Animals" list (CDFW 2016) that includes those wildlife species whose breeding populations are in serious decline, and 3) the habitat present on site. See Appendix C for a list of the 40 species evaluated.

Several of these species are prominent in today's regulatory environment and are discussed below. This document does not address impacts to species that may occur in the region but for which no habitat occurs on site.

California red-legged frog (*Rana draytonii*)(CRF)

Status: federally listed by as Threatened with associated Critical Habitat and is classified by the CDFW as a State Special Concern species.

General Ecology and Distribution: Breeding habitat for this frog is primarily in ponds, but they will also breed in slow moving streams, or deep pools in intermittent streams. Inhabited ponds are typically permanent and contain emergent and shoreline vegetation. Sufficient pond depth and shoreline cover are both critical, because they provide means of escape from predators for the frogs (Stebbins 1985, CDFW 1988, Tatarian 2008). Additionally, emergent vegetation is necessary for the deposition of eggs. The breeding period begins during heavy rains, from early to late winter, usually November through early May. The larvae mature in 11 to 20 weeks.

Non-breeding CRF have been found in both aquatic and upland habitats. The majority of individuals prefer dense, shrubby or emergent vegetation, closely associated with deep (>0.7 meters) still, or slow moving water. However, some individuals use habitats that are removed from aquatic habitats, seeking cover in ground squirrel burrows, under boulders and logs and in non-native grasslands (Tatarian 2008). Upland refugia habitat includes areas up to 90 meters from a stream corridor and includes natural features, such as boulders, rocks, trees, shrubs, and logs. Incised stream channels with portions narrower than 18 inches and depths greater than 18 inches may also provide habitat. In general, densely vegetated terrestrial areas within the riparian corridor provide important sheltering habitat during the winter flooding of the streams (Tatarian 2008).

Occurrence in the project area: The closest reported sighting of CRF is approximately 4,980 feet southwest of Block A, at the headwaters of the tributary to Sulphur Creek (Solvesky, pers. comm. 2012). No suitable breeding habitat for California red-legged frog occurs within the two project areas. However, dispersal habitat does occur within these two blocks. The project areas are located outside the Napa 1 Critical Habitat Unit located along HWY 128 and east of Hwy 121.

Northern Spotted Owl (*Strix occidentalis caurina*)

Status: federally Threatened species, and like other raptors and birds in general, is protected by the MBTA. State listed Threatened and also falls under California Code 3503.5, which prohibits the taking or destroying of nest or eggs of any bird or nest in the order of Falconiformes (falcons, kites, and hawks) and Strigiformes (owls).

Description: This species is medium sized, approximately 16.5-19 inches in height with a 40-50 inch wingspan, and lacks ear tufts, typically seen in great horned owls (*Bubo virginianus*). The head and upper parts are an overall brown with irregular white spots. The under parts are buff with brown and white ovals or barring. This species lacks the vertical chest and flank streaking of its close relative the Barred owl (*Strix varia*).

General Ecology and Distribution: This species is an uncommon permanent resident in heavily forested areas in the northwestern portion of California and in the Sierra Nevada, west of the Cascade Range. Typical habitats for this species include dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats. Summer roosts in California have been noted on northwest or northeast inclinations, on slopes over 35%, and in stands with tall (65 foot) conifer canopy (Laymon, et al. 1985). Prey species include flying squirrels, woodrats, mice and voles as well as small birds and bats. It is thought that the northern spotted owl relieves heat stress through bathing and therefore requires a permanent water source (Zeiner, et al. 1990). Spotted owls nest in platforms built by other animals, requiring a minimum area ranging from 81 to 121 hectares for a nest stand (Laymon, et al. 1985). An understory vegetation layer is important for young fledglings as they leave the nest before they can fly and perch on small trees and shrubs. The majority of foraging occurs within 3.2 km radius of the nest site.

Project Occurrence: No spotted owl site analysis was conducted as part of this habitat assessment. However, review of the CNDDB (2016) shows that spotted owls have been reported within 1,629 feet southeast of study area (NAP0006). The most recent survey was conducted in May 2013 and it was an active breeding site (Gilmore, pers. com.). Block B provides potentially suitable nesting habitat based on the diameter of Douglas firs in and around the planting area. The hill is on a north facing slope, and it is within the foraging area of the known breeding area. Please refer to the Impacts and Mitigation Measures for details on avoidance measures and mitigation for northern spotted owl.

Nesting Raptors: Like passerines, raptors (birds of prey), such as red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*), are protected under the Federal Migratory Bird Treaty Act and Fish and Wildlife Code 3503.5

General Ecology and Distribution: Raptors nest in a variety of substrates including, cavities, ledges and stick nests. For example, Cooper's hawks are small bird hunters, hunting on the edges of forests in broken forest and grassland habitats where passerines forage for seeds and insects. Nests occur in heavily forested areas near a water source. Research sites on nesting Cooper's hawks rarely show the nests more than a quarter of a mile away from water, whether it is a cattle tank, stream or seep (Snyder and Snyder 1975). Trees typically used by Cooper's hawks include coast live oaks, cottonwoods, and black oaks (Call 1978), as well as second growth conifer stands or deciduous riparian areas. In general, the breeding season for raptors occurs in late March through June, depending on the climate, with young fledging by early August.

Project Area Occurrence: No nesting bird surveys were conducted as part of this habitat assessment based on the length of time before breaking ground (i.e., approximately 2 years). An adult Cooper's hawk was observed giving territorial calls when surveying Block A. It is likely a nesting area for the adult. Please refer to the Impacts and Mitigation Measures for details on avoidance measures of these nesting bird species.

Roosting bats – including pallid bat, Townsend's big-eared bat, and western red bat (*Lasiurus blossevillei*)

Status: California Species of Special Concern (SSC), State proposed Threatened, as well as Fish and Wildlife Code Sections 86, 2000, 2014, 3007, Title 14, Sections 15380, 15382.

General Ecology and Distribution: Bats in this region of California are not active year-round. During the maternity season, non-volant young of colonial bats remain in the roost until late summer (end of August), after which they may disperse from the natal roost or remain into or throughout the winter. Obligate tree-roosting bat species, and to some extent, colonial bats, may switch tree roosts frequently, particularly after young are volant, but are sometimes faithful for longer periods (weeks). Colonial bats differ from solitary, obligate tree-roosting bats in that they form colonies, whereas solitary bats roost singly, except when females are raising pups – generally in foliage. A solitary bat species in this area is the western red bat, which roosts in trees with large leaf foliage.

During winter months, roosting bats typically enter torpor, rousing only occasionally to drink water or opportunistically feed on insects. The onset of torpor is dependent upon environmental conditions, primarily temperature and rainfall. To prevent direct mortality of either non-volant young or torpid bats during winter months, roosts must not be disturbed or destroyed until bats are seasonally active, and only after they have been provided a means of escape from the roost, either by humane bat eviction (e.g. from structures), or two-step removal (trees).

Project Area Occurrence: - No habitat assessment of the trees for roosting bats was conducted for this report. Please see the Impacts and Mitigation Measures for further discussion.

Recovery Units

The California red-legged frog has a recovery plan that spans most of Napa County and the proposed action area is located within the North Coast and North San Francisco Bay Recovery unit for this species (USFWS 2002).

A revised recovery plan for the northern spotted owl was created in 2011 (USFWS 2011). The action area is located within the California Coast physiographic province.

Critical Habitat

USFWS-designated Critical Habitat for California red-legged frog occurs in three discrete areas in Napa County (USFWS 2010), with all of them located along the eastern border of the County.

USFWS-designated Critical Habitat Unit 11, Inner California Coast Ranges, for northern spotted owl includes this portion Napa County (USFWS 2012). However, discrete units of critical habitat are located south of the action area.

IMPACTS AND MITIGATION MEASURES

This section summarizes the potential temporary biological impacts from construction activities within the study area. The analysis of these impacts is based on a single reconnaissance-level survey of the study area, a review of existing databases and literature, and personal professional experience with biological resources of the region.

CEQA Guidelines Sections 15206 and 15380 were used to determine impact significance. Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state.

A species may be treated as rare or endangered even if it has not been listed under CESA or FESA. Species are designated endangered when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, disease or other factors.

For the purposes of this report, three principal components in the evaluation were considered:

- Magnitude of the impact (e.g., substantial/not substantial)
- Uniqueness of the affected resource (rarity)
- Susceptibility of the affected resource to disturbance (sensitivity)

The evaluation of significance must consider the interrelationship of these three components. For example, a relatively small-magnitude impact (e.g., disturbing a nest) to a state or federally listed species would be considered significant because the species is at low population levels and is presumed to be susceptible to disturbance. Conversely, a common habitat such as non-native grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact (e.g., removal of extensive vegetation) would be required for it to be considered a significant impact.

Waters of the U.S and State

Impact: An ephemeral unnamed tributary creek is located north of Block A but this area will not be impacted and a 25-foot minimum setback will be maintained to protect the creek. A small area of willow riparian has developed at the downstream end of a culvert. This area should be avoided.

Mitigation: If avoidance of any wetlands or riparian areas is not feasible then permits must be obtained from the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB) for any impacts to these resources. A wetland mitigation plan must be prepared and comply with the USACE and RWQCB requirements for mitigation and monitoring.

Special-Status Plants

Impact: No special-status plants were observed during the June 16, 2016 survey; however, the survey is outside the flowering season for early flowering spring plants.

Mitigation: An April and May survey for special status plants is recommended to comply with the CDFW and CEQA requirements for plant surveys. There is a low potential for three special status plants to occur based on the presence of potential grassland habitat. These are narrow-anthered brodiaea, nodding harmonia and Jepson's leptosiphon. If any special status plants are found the following mitigation measures will be implemented:

Endangered, Threatened, or Rare Species and their Habitats: The project shall either avoid take or obtain formal incidental take coverage with the required compensatory measures where avoidance cannot be achieved for the affected categories: state and federally listed or proposed species, state candidates for listing, and CNPS ranked species.

Listed or CNPS ranked species: The project applicant shall avoid, minimize, and/or compensate (in that order of preference) for any CNPS special status plant species that are found on the project site.

If CNPS special plant species are found on the project site, then the project applicant shall prepare a mitigation plan that describes the avoidance or compensatory mitigation measures that would be implemented for these populations. As a performance standard, the plan shall provide for no net loss in the quantity or quality of plant populations. The mitigation plan shall include the mitigation measures, which are adopted from the CNPS Policy on *Mitigation Guidelines Regarding Impacts to Rare, Threatened and Endangered Plants* (CNPS 1998), described below, or equally effective alternative measures:

1. Mitigation for impacts to special status plants would include avoidance measures, when feasible, and compensatory mitigation when avoidance is not possible. Avoidance measures shall include buffer zones to avoid impacting listed plants; installing exclusion fencing around the existing plant populations prior to and during construction. Compensatory mitigation shall include replanting on site or propagation of plants at a nearby conservation site through seeding or translocation. Mitigation ratios shall be sufficient to achieve performance criteria of no net loss of plants. Post-project monitoring shall verify that avoidance and mitigation measures are successful.
2. If mitigation for impacts to special status plants occurs at a non-bank site, preference would be given to locating the mitigation site in an area as close to the project site as possible. If mitigation sites are not available in the vicinity of the project site, mitigation for listed plants may be accomplished at an appropriate site in Sonoma County that is suitable and supports the impacted plant population.
3. A long-term mitigation, monitoring, and management plan shall be developed for plant mitigation and submitted to CDFW for approval prior to initiation of construction activities. Mitigation sites shall be monitored for five years after installation. Depending on the actual case-by-case circumstances listed plants within the Project footprint may be salvaged and/or transplanted to a mitigation site approved by the CDFW. When feasible, seed from plants unavoidably impacted shall be collected and preserved for planting on an approved mitigation site.
4. Impacted plants shall be mitigated at the ratio of 2:1, or as required by resources agencies, for both individuals and area.

Tree Removal

Impact: Approximately 150 trees are proposed for removal within each of the two blocks (fewer in Block B owing to set-back from County-definition stream). If additional trees outside the proposed planting area are removed due to shade considerations, a separate biological analysis will be conducted. The Napa County General Plan Policy Con-24 addresses removal of oak woodlands. For development projects such as this one, the Policy requires preservation of existing woodlands or replacement at a 2:1 ratio in relation to the woodland removed by a project. In addition, the Napa County General Plan Open Space and Conservation Element directs the County to retain existing oaks to the extent feasible as part of residential, commercial, industrial and agricultural land division approvals. Projects should include management plans for fishery and wildlife including provisions to employ supplemental planting and maintenance of trees to provide adequate vegetation cover to keep watersheds in good condition and provide shelter and food for wildlife. The Oak Woodland Conservation Program in the Napa County Open Space and Conservation Element requires hardwood cutting to maintain adequate stands of oaks for wildlife, slope stabilization, soil protection, and acorn production. This program requires that natural groups of oaks be retained and replanting is required.

Mitigation Measure: A minimum of a 2:1 replacement to loss of oak woodland habitat is required under the Napa County General Plan. A tree removal permit must be obtained from the County prior to tree removal.

To mitigate for the loss of Douglas fir trees and oak woodland habitat, an additional 1.93 acre should be added to the existing 20-acre conservation easement.

Birds

Passerines and Raptors

Impact: Several passerine (perching birds) species may nest in the trees on the site. There is also a chance that raptors may nest on the site in the larger trees. Disturbance during the nesting season (February 15-August 15) may result in the potential nest abandonment and mortality of young, which is considered a “take” of an individual.

Mitigation Measure: The following mitigation measures should be followed in order to avoid or minimize impacts to passerines and raptors that may potentially nest in the trees:

- 1) Grading or removal of nesting trees should be conducted outside the nesting season, which occurs between approximately February 15 and August 15.
- 2) If grading between August 15 and February 15 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grasslands and adjacent trees shall be performed by a qualified biologist within 7 days of ground breaking. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent “take” of individual birds that could begin nesting after the survey.
- 3) If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest tree(s) until the young have fledged, as determined by a qualified biologist.
- 4) The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-300 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW.
- 5) To delineate the buffer zone around a nesting tree, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude.
- 6) After the fencing is in place there will be no restrictions on grading or construction activities outside the prescribed buffer zones.

Northern Spotted Owl

Impact: A total of 0.6 acres of Douglas fir forest (Block B) and 1.4 acres of coastal oak woodland (Block A) will be removed for the proposed planting blocks. Spotted owls have been reported within 1,630 feet southeast of study area (NAP0006), less than 0.5 miles. There is a moderate likelihood that owls are nesting in the vicinity of Block B and only foraging in Block A. Tree removal during the nesting season may result in take of individuals.

Mitigation Measure: To prevent take of individuals, there are two alternatives, presume presence or conduct surveys to verify absence.

Presume Presence

- tree removal must occur after September 1 and before March 1.

Conduct Surveys to Verify Absence

To determine occupancy of the two sites, spotted owl surveys are recommended prior to tree removal by following the prescribed protocol, as outlined in the *Northern Spotted Owl Survey Protocol* (USFWS 2012):

- Surveys must be conducted during the nesting season. The *general* survey period throughout the range of the northern spotted owl is specified as March 15 through August 31, with birds establishing territories as early as March 1 in the California Coast Range Province.

- Where reported spotted owl sites occur (e.g., NAP0006), surveys should be initiated at the activity center to determine occupancy. If the site is occupied, no further calling is required because it is assumed that owls are already occupying the area and are unlikely to nest within close proximity.
- If owls are in the area then measures to prevent disturbance to nesting pairs and their young from noise should be enacted, and include, but not be limited to, tree removal after September 1 and before March 1, which is outside the nesting season.
- If the reported activity center is *not* occupied, then three (3) surveys should be conducted within a 1.3 mile radius around the project areas, with the last being completed before June 30.
- To determine presence or absence, 2 years of surveys, with six (6) complete visits are required.
- If occupancy of trees by nesting owls occurs within the planting area, discussions with USFWS and CDFW will be required to address loss of habitat.

Impact: Based on the presence of a nesting pair of northern spotted owl within 1,630 feet both sites are likely used as foraging habitat.

Mitigation: To mitigate for the loss of Douglas fir trees and oak woodland habitat that provide foraging habitat for Northern spotted owl, an additional 1.93 acre should be added to the existing 20-acre conservation easement.

Bats

Impact: Removal of trees containing suitable bat roosting habitat comprised of cavities, crevices, and/or exfoliating bark, may cause direct mortality of roosting bats if removed during maternity season prior to self-sufficient volancy of pups, or in winter during torpor or hibernation. Removal of larger mature trees has the potential of causing direct mortality of solitary tree-roosting species such as western red bat or hoary bat.

Preventing Take of Tree-roosting Bats – General Discussion

As with those bats that roost in buildings, colonial bats that roost in trees are seasonally inactive (e.g. non-volant young during maternity season or torpid bats during winter months). Unlike with buildings however, bats cannot readily be humanely evicted from trees. This is because many trees have numerous cavities, crevices, or large areas of exfoliating bark that cannot be fitted with one-way exits, or cannot even be safely worked on due to poor condition or lack of accessibility. This is particularly true of snags due to their extremely poor condition, however snags provide some of the most preferred and substantial bat tree roost habitat.

Mitigation Measure: A separate bat habitat assessment of the trees to be removed is recommended. We recommend that the survey be conducted well in advance of removal (i.e., 6 months prior) to ensure the appropriate timing is followed to prevent take of individuals.

A two-step tree removal method, *conducted over two consecutive days*, is recommended and works by creating noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery) on Day 1. The noise and vibration disturbance, together with the visible alteration of the tree, is very effective in causing bats that emerge nightly to feed, to not return to the roost that night. The remainder of the tree is removed the following day - Day 2. During Day 1 non-habitat trees are also removed.

Two-step removal of bat habitat trees must only be conducted during seasonal periods of bat activity, which are in this region, between March 1 (or after evening temperatures rise above 45F and/or no more than 1/2" of rainfall within 24 hours occurs), and April 15, or between August 31 and October 15 (or before evening temperatures fall below 45F and/or more than 1/2" of rainfall within 24 hours occurs).

REFERENCES

- BAICICH, P. AND C. HARRISON. 1997. A GUIDE TO NESTS, EGGS AND NESTLINGS OF NORTH AMERICAN BIRDS. SECOND EDITION. NATURAL WORLD ACADEMIC PRESS. SAN DIEGO. 347 PP.
- BALDWIN, B. G. (CONVENING EDITOR); EDITORS, D. H. GOLDMAN, D.J. KEIL, R. PATTERSON, T.J. ROSATTI, D.H. WILKEN. 2012. THE JEPSON MANUAL: VASCULAR PLANTS OF CALIFORNIA. UNIVERSITY OF CALIFORNIA PRESS, BERKELEY AND LOS ANGELES, CA.
- CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW). 2016A. SPECIAL VASCULAR PLANTS, BRYOPHYTES, AND LICHENS LIST. NATURAL DIVERSITY DATA BASE, HABITAT CONSERVATION DIVISION. JUNE.
- CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW). 2016B. STATE AND FEDERALLY LISTED ENDANGERED, THREATENED, AND RARE PLANTS OF CALIFORNIA. NATURAL DIVERSITY DATA BASE, WILDLIFE AND HABITAT DATA ANALYSIS BRANCH. JUNE.
- CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW). 2016C. SPECIAL ANIMALS. NATURAL DIVERSITY DATA BASE, WILDLIFE AND HABITAT DATA ANALYSIS BRANCH. JUNE.
- CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW). 2016D. STATE AND FEDERALLY LISTED ENDANGERED AND THREATENED ANIMALS OF CALIFORNIA. NATURAL DIVERSITY DATA BASE, WILDLIFE AND HABITAT DATA ANALYSIS BRANCH. JUNE.
- CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG). 1988B. CALIFORNIA'S WILDLIFE - AMPHIBIANS AND REPTILE. VOLUME I. CALIFORNIA DEPARTMENT OF FISH AND GAME. EDITORS, ZEINER, D.C., W.F. LAUDENSLAYER, JR., AND K.E. MAYER.
- CALIFORNIA NATIVE PLANT SOCIETY (CNPS). 1998. MITIGATION GUIDELINES REGARDING IMPACTS TO RARE, THREATENED AND ENDANGERED PLANTS.
- CALIFORNIA NATURAL DIVERSITY DATA BASE (CNDDB). 2016. REPORTED OCCURRENCES FOR THE ST. HELENA, CALISTOGA, KENWOOD AND RUTHERFORD 7.5-MINUTE TOPOGRAPHIC QUADRANGLE. WILDLIFE CONSERVATION DIVISION. SACRAMENTO, CALIFORNIA. JULY.
- CALL, MAYO W. 1978. NEST SURVEYS. TECHNICAL NOTES-316. BUREAU OF LAND MANAGEMENT ENVIRONMENTAL LABORATORY. 1987. CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. WETLANDS RESEARCH PROGRAM TECHNICAL REPORT Y-87-1. U.S. ARMY CORPS OF ENGINEERS ENVIRONMENTAL LABORATORY, WATERWAYS EXPERIMENT STATION, VICKSBURG, MS.
- GRINNELL, J. AND A. MILLER. 1944. THE DISTRIBUTION OF THE BIRDS OF CALIFORNIA. ARTEMESIA PRESS, LEE VINING, CALIFORNIA.
- HICKMAN, J.C. 1993. THE JEPSON MANUAL: HIGHER PLANTS OF CALIFORNIA. UNIVERSITY OF CALIFORNIA PRESS, BERKELEY, CALIFORNIA. 1400 PP.
- LAYMON, S., H. SALAWASSER, & R. BARRETT. 1985. HABITAT SUITABILITY INDEX MODELS: SPOTTED OWL. USFWS BIO. REPORT 82 (10.113).
- MAYER, K.E. AND W. F. LAUDENSLAYER, JR. EDS. 1988. A GUIDE TO WILDLIFE HABITATS OF CALIFORNIA. CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION. SACRAMENTO. 166 PP.
- MCCULLOUGH, D. 1996. METAPOPULATIONS AND WILDLIFE CONSERVATION. ISLAND PRESS. 429PP.
- NAPA COUNTY RESOURCE CONSERVATION DISTRICT (NCRCD). 2004. SULPHUR CREEK WATERSHED MANAGEMENT PLAN. PREPARED FOR THE SULPHUR CREEK WATERSHED TASK FORCE. DECEMBER.
- NAPA COUNTY. 2005. NAPA COUNTY BASELINE DATA REPORT. AVAILABLE ONLINE AT: [HTTP://WWW.CO.NAPA.CA.US/GOV/DEPARTMENTS/29000/BDR/INDEX.HTML](http://www.co.napa.ca.us/gov/departments/29000/BDR/INDEX.HTML). NOVEMBER
- NAPA COUNTY. 2008. NAPA COUNTY GENERAL PLAN. JUNE 2, 2008. AVAILABLE ONLINE AT: [HTTP://WWW.CO.NAPA.CA.US/GOV/DEPARTMENTS/DEPTDOCS](http://www.co.napa.ca.us/gov/departments/DEPTDOCS)
- SAWYER, JOHN O., TODD KEELER-WOLF, JULIE M EVENS. 2009. A MANUAL OF CALIFORNIA VEGETATION. SECOND EDITION. CALIFORNIA NATIVE PLANT SOCIETY PRESS, SACRAMENTO, CA. 1300 PAGES.
- SHUFORD, W. D., AND GARDALI, T., EDITORS. 2008. CALIFORNIA BIRD SPECIES OF SPECIAL CONCERN: A RANKED ASSESSMENT OF SPECIES, SUBSPECIES, AND DISTINCT POPULATIONS OF BIRDS OF IMMEDIATE CONSERVATION CONCERN IN CALIFORNIA. STUDIES OF WESTERN BIRDS 1. WESTERN FIELD

ORNITHOLOGISTS, CAMARILLO, CALIFORNIA, AND CALIFORNIA DEPARTMENT OF FISH AND GAME, SACRAMENTO.

- SPENCER, W.D., P. BEIER, K. PENROD, K. WINTERS, C. PAULMAN, H. RUSTIGIAN-ROMSOS, J. STRITTHOLT, M. PARISI, AND A. PETTLER. 2010. CALIFORNIA ESSENTIAL HABITAT CONNECTIVITY PROJECT: A STRATEGY FOR CONSERVING A CONNECTED CALIFORNIA. PREPARED FOR CALIFORNIA DEPARTMENT OF TRANSPORTATION, CALIFORNIA DEPARTMENT OF FISH AND GAME, AND FEDERAL HIGHWAYS ADMINISTRATION.
- STEBBINS, R. C. 2003. A FIELD GUIDE TO WESTERN REPTILES AND AMPHIBIANS. HOUGHTON MIFFLIN COMPANY.
- TOBIN, D.P. 2001. INVENTORY OF RARE AND ENDANGERED VASCULAR PLANTS OF CALIFORNIA. CALIFORNIA NATIVE PLANT SOCIETY, SACRAMENTO, CALIFORNIA. SPECIAL PUBLICATION NO. 1, SIXTH ED. 384 PP.
- U. S. ARMY CORPS OF ENGINEERS. 2008. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: ARID WEST REGION. FINAL REPORT. DECEMBER. VICKSBURG, MS. U. S. ARMY ENGINEERS RESEARCH AND DEVELOPMENT CENTER.
- U.S. FISH AND WILDLIFE SERVICE (USFWS). 2016. INFORMATION FOR PLANNING AND CONSERVATION (IPAC). JUNE 30.
- U.S. FISH AND WILDLIFE SERVICE (USFWS). 2012. PROTOCOL FOR SURVEYING PROPOSED MANAGEMENT ACTIVITIES THAT MAY IMPACT NORTHERN SPOTTED OWLS. REVISED JANUARY 9. 42 PP.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2012. REVISED CRITICAL HABITAT FOR THE NORTHERN SPOTTED OWL. FEDERAL REGISTER VOL 77 (44): 14062 – 14165. MARCH 8.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2011. REVISED RECOVERY PLAN FOR THE NORTHERN SPOTTED OWL (*STRIX OCCIDENTALIS CAURINA*). U.S. FISH AND WILDLIFE SERVICE PORTLAND OREGON. XVI + 258 PP.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2010. ENDANGERED AND THREATENED WILDLIFE AND PLANTS; REVISED DESIGNATION OF CRITICAL HABITAT FOR THE CALIFORNIA RED- LEGGED FROG. FEDERAL REGISTER VOL. 75(51): 12816-12959.
- U.S. FISH AND WILDLIFE SERVICE (USFWS). 2002. RECOVERY PLAN FOR THE CALIFORNIA RED-LEGGED FROG (*RANA AURORA DRAYTONII*). U.S FISH AND WILDLIFE SERVICE, PORTLAND, OREGON. VIII+173 PP.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2008. BIRDS OF CONSERVATION CONCERN 2008. UNITED STATES DEPARTMENT OF INTERIOR, FISH AND WILDLIFE SERVICE, DIVISION OF MIGRATORY BIRD MANAGEMENT, ARLINGTON, VIRGINIA. 85 PP. [ONLINE VERSION AVAILABLE AT WWW.FWS.GOV.MIGRATORYBIRDS].
- WELSH, H. 1994. BIOREGIONS: AN ECOLOGICAL AND EVOLUTIONARY PERSPECTIVE AND A PROPOSAL FOR CALIFORNIA. CALIFORNIA FISH AND GAME (80) 3:97-124.
- WHITTAKER, R. 1998. ISLAND BIOGEOGRAPHY: ECOLOGY, EVOLUTION AND CONSERVATION. OXFORD UNIVERSITY PRESS. 285PP.
- WILLIAMS, D.F. 1986. MAMMALIAN SPECIES OF SPECIAL CONCERN IN CALIFORNIA. CALIFORNIA DEPARTMENT OF FISH AND GAME. WILDLIFE MANAGEMENT DIVISION ADMINISTRATIVE REPORT 86-1. 112 PP.
- ZEINER, D., W. LAUDENSLAYER, K. MAYER, AND M. WHITE. 1990. CALIFORNIA'S WILDLIFE. VOLUME III. MAMMALS. CALIFORNIA STATEWIDE WILDLIFE HABITAT RELATIONSHIPS SYSTEM. STATE OF CALIFORNIA, THE RESOURCES AGENCY, DEPT. OF FISH AND GAME, SACRAMENTO, CALIF.

PERSONAL COMMUNICATION

- GILMORE, S. 2016. WILDLIFE BIOLOGIST WITH CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE. CONVERSATION WITH TRISH TATARIAN OF WILDLIFE RESEARCH ASSOCIATES. JULY 13.

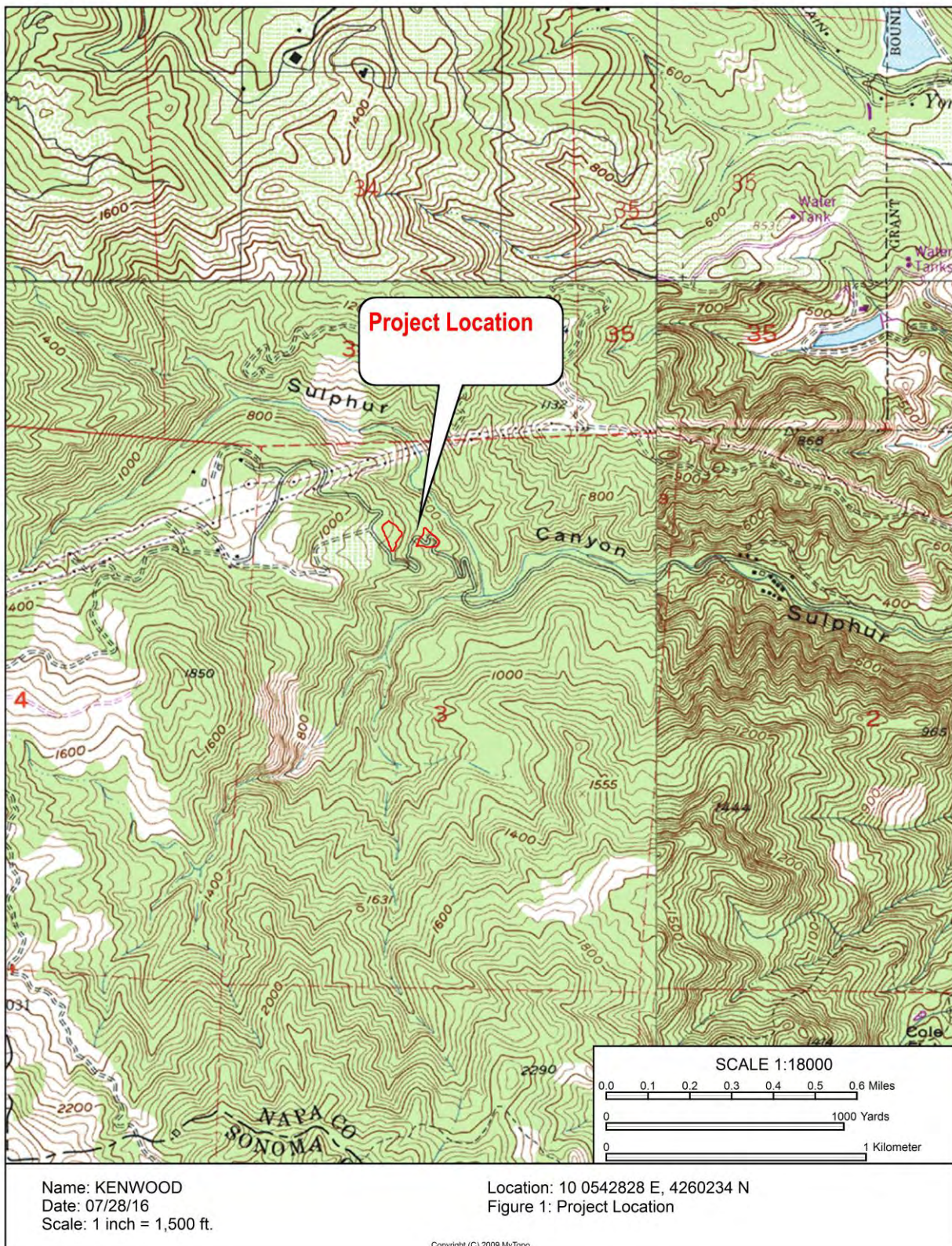


Figure 1: Project Location



Figure 2. Area A oak woodland.



Figure 3. Area A canopy cover in oak woodland.



Figure 4. Area A chaparral with manzanita.



Figure 5. Area A chaparral area.



Figure 6. Area B Douglas fir with bay trees.



Figure 7. Area B Douglas fir with opening.



Figure 8. Douglas fir canopy cover in Area B.



Figure 9. Douglas fir showing basal widths in Area B.

APPENDIX A: FEDERAL, STATE AND LOCAL PLANS, POLICIES, REGULATIONS AND ORDINANCES

Federal Endangered Species Act - U.S. Fish and Wildlife Service

Pursuant to ESA, the U.S. Fish and Wildlife Service (USFWS) has regulatory authority over federally listed species. Under ESA, a permit to “take” a listed species is required for any federal action that may harm an individual of that species. Take is defined under Section 9 of ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” Under federal regulation, take is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Section 7 of ESA requires all federal agencies to consult with USFWS to ensure that their actions are not likely to “jeopardize the continued existence” of any listed species or “result in the destruction or adverse modification” of designated critical habitat. No federal approvals or other actions are anticipated as being required to implement the project at this time. Therefore, consultation under Section 7 of ESA is not expected. However, if USACE determines that wetlands and/or other waters of the United States on the project site are subject to protection under Section 404 of the CWA, or any other federal action becomes necessary, consultation under Section 7 of ESA would be required.

For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain a permit for incidental take under Section 10(a) of ESA. Section 10(a) of ESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan (HCP) that includes components to minimize and mitigate impacts associated with the take. The permit is known as an incidental take permit. The project proponent must obtain a permit before conducting any otherwise-lawful activities that would result in the incidental take of a federally listed species.

Sections 404 and 401 of the Clean Water Act - U.S. Army Corps of Engineers

USACE regulates the discharge of dredged or fill material into waters of the United States under Section 404 of the CWA. Waters of the United States are defined as waters where use, degradation, or destruction could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are somehow connected to any of these waters or their tributaries. Wetlands are defined as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands falling under USACE jurisdiction must demonstrate the presence of three specific wetland parameters: hydric soils, hydrophytic vegetation, and sufficient wetland hydrology. Generally, wetlands include swamps, marshes, bogs, and similar areas. Lakes, rivers, and streams are defined as “other waters.” Jurisdictional limits of these features are typically noted by the ordinary high-water mark (OHWM). The OHWM is the line on the shore or bank that is established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in soils, lack of woody or terrestrial vegetation, the presence of litter or debris, or other characteristics of the surrounding areas.

Isolated ponds or seasonal depressions had been previously regulated as waters of the United States. However, in *Solid Waste Agency of Northwestern Cook County (SWANCC) v. United States Army Corps of Engineers et al.* (January 8, 2001), the U.S. Supreme Court ruled that certain “isolated” wetlands (e.g., nonnavigable, isolated, and intrastate) do not fall under the jurisdiction of the CWA and are no longer under USACE jurisdiction (although isolated wetlands are regulated by the State of California under the Porter-Cologne Water Quality Control Act—see discussion below). Some circuit courts (e.g., *U.S. v. Deaton*, 2003; *U.S. v. Rapanos*, 2003; *Northern California River Watch v. City of Healdsburg*, 2006), however, have ruled that the SWANCC opinion does not prevent CWA jurisdiction if a “significant nexus” such as a hydrologic connection exists, whether it be human-made (e.g., roadside ditch) or natural tributary to navigable waters, or direct seepage from the wetland to the navigable water, a surface or underground hydraulic connection, an ecological connection (e.g., the same bird, mammal, and fish populations are supported by both the wetland

and the navigable water), and changes to chemical concentrations in the navigable water due to water from the wetland.

Section 404 prohibits the discharge of dredged or fill material into waters of the United States (including wetlands) without a permit from USACE. With respect to the proposed project, the discharge of dredged or fill material includes the following activities:

- placement of fill that is necessary for the construction of any structure or infrastructure in a water of the United States;
- the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, or other material for its construction;
- site-development fills for recreational, industrial, commercial, residential, or other uses; and
- construction of causeways or road fills.

The regulations and policies of USACE, the U.S. Environmental Protection Agency (EPA), and USFWS mandate that the filling of wetlands be avoided unless it can be demonstrated that no practicable alternatives (to filling wetlands) exist. If the placement of fill into waters of the U.S., including wetlands, meets certain criteria the project be permitted under one of the Nation Wide Permits (NWP), which is an expedited permit process.

Section 401 of the CWA requires an applicant for any federal permit that may result in a discharge into waters of the United States to obtain a certification from the state that the discharge will comply with provisions of the CWA. The regional water quality control boards (RWQCBs) administer this program. Any condition of water quality certification would be incorporated into the USACE permit. The state has a policy of no net loss of wetlands and typically requires mitigation for impacts on wetlands before it will issue a water quality certification.

Waters of the State - California Regional Water Quality Control Board

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, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies 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 USACE 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 USACE 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.

If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to “Waters of the State,” the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat - California Department of Fish and Game

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFG under Sections 1600-1616 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water

conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFG.

Native Tree Protection and Preservation - Napa County

The Napa County General Plan Policy Con-24 addresses removal of oak woodlands. For development projects such as this one, the Policy requires preservation of existing woodlands or replacement at a 2:1 ratio in relation to the woodland removed by a project. In addition, the Napa County General Plan Open Space and Conservation Element directs the County to retain existing oaks to the extent feasible as part of residential, commercial, industrial and agricultural land division approvals. Projects should include management plans for fishery and wildlife including provisions to employ supplemental planting and maintenance of trees to provide adequate vegetation cover to keep watersheds in good condition and provide shelter and food for wildlife. The Oak Woodland Conservation Program in the Napa County Open Space and Conservation Element requires hardwood cutting to maintain adequate stands of oaks for wildlife, slope stabilization, soil protection, and acorn production. This program requires that natural groups of oaks be retained and replanting is required.

Appendix B: Potentially Occurring Special-Status Plant Species in the Study Area

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS Rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	-/-/1B	Cismontane woodland, valley and foothill grassland on clay, volcanic soils; often on serpentinite. Blooms May to June. Elevation 52-300m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	FE/-/1B	Freshwater marshes and swamps, riparian scrub. May-July. Elevation: 5-365m.	None. No habitat in study area.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	-/-/1B	Broadleafed upland forest (openings), chaparral, cismontane woodland. Blooms April-July. Elevation: 120-2000m.	None. Not observed during survey.
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon Ridge manzanita	-/-/1B	Chaparral on rhyolitic soils and cismontane woodland. Blooms February to April (sometimes May). Elevation: 75-370m.	None. No habitat in study area – no rhyolitic soils.
<i>Astragalus breweri</i> Brewer's milk-vetch	-/-/4	Meadows and seeps, valley and foothill grassland in open and often gravelly areas and often on serpentinite or volcanic soils. Blooms April-June. Elevation: 90-730m.	None. Typical habitat not present in study area.
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	FE/CT/1B	Openings in chaparral, cismontane woodland, valley and foothill grassland on serpentinite or volcanic, rocky or clay soils. Blooms March to May. Elevation: 75-275m.	None. Typical habitat not present in study area.
<i>Astragalus clevelandii</i> Cleveland's milk-vetch	-/-/4	Chaparral, cismontane woodland, riparian forest. Blooms June to September. Elevation: 200-1500m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Brodiaea leptandra</i> Narrow-anthered brodiaea	-/-/1B	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland on volcanic soils. Blooms May to July. Elevation: 110-915m.	Low. Potential habitat in study area. Not observed during survey. Survey timing may have been too late given the dryness of the season.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS Rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Calamagrostis ophitidis</i> Serpentine reed-grass	-/-/4	Chaparral (open, north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland on serpentinite and rocky soils. Blooms April to July. Elevation: 90-1065m.	None. Typical habitat not present in study area.
<i>Calandrinia breweri</i> Brewer's red maids	-/-/4	Chaparral and coastal scrub on sandy or loam soils and in disturbed sites and burns. Blooms March to June. Elevation: 10-1220m.	None. Typical habitat not present in study area.
<i>Calochortus uniflorus</i> Pink star tulip	-/-/4	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest. Blooms April to June. Elevation: 10-1070m.	None. No habitat in study area.
<i>Castilleja ambigua</i> var. <i>ambigua</i> Johnny-nip	-/-/4	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Blooms March to August. Elevation: 0-435m.	None. No habitat in study area.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	-/-/1B	Closed-cone coniferous forest, chaparral, cismontane woodland on volcanic or serpentinite. Blooms February to June. Elevation: 75-1065m.	None. No habitat in study area.
<i>Ceanothus divergens</i> Calistoga ceanothus	-/-/1B	Chaparral on serpentinite or volcanic, rocky soils. Blooms February to April. Elevation 170-950m.	None. No habitat in study area.
<i>Ceanothus gloriosus</i> ssp. <i>exaltatus</i> Glory brush	-/-/4	Coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub/sandy. Blooms March to May. Elevation: 5-520m.	None. No habitat in study area.
<i>Ceanothus purpureus</i> Holly-leaved ceanothus	-/-/1B	Chaparral, cismontane woodland on volcanic, rocky soils. Blooms February to June. Elevation: 120-640m.	None. No habitat in study area.
<i>Ceanothus sonomensis</i> Sonoma Ceanothus	-/-/1B	Chaparral on sandy, serpentinite or volcanic soils. Blooms February to April. Elevation: 215-800m.	None. No habitat in study area.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS Rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Centromadia parryi</i> ssp. <i>parryi</i> Pappose tarplant	-/-/1B	Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic)/often alkaline. Blooms May to November. Elevation 0-420m.	None. No habitat in study area.
<i>Clarkia breweri</i> Brewer's clarkia	-/-4	Chaparral, cismontane woodland, coastal scrub, often on serpentinite. Blooms April to June. Elevation: 215-1115m	None. Typical habitat not in study area. Not observed during June survey.
<i>Clarkia gracilis</i> ssp. <i>tracyi</i> Tracy's clarkia	-/-4	Chaparral, openings, usually on serpentinite. Blooms April to July. Elevation: 65-650m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Collomia diversifolia</i> Serpentine collomia	-/-4	Chaparral, cismontane woodland on serpentinite, rocky or gravelly soils. Blooms May to June. Elevation: 300-600m.	None. No serpentine habitat on site.
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i> Serpentine birds-beak	-/-4	Closed-cone coniferous forest, chaparral, cismontane woodland usually on serpentinite. Blooms July to August. Elevation: 475-915m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Delphinium uglinosum</i> Swamp larkspur	-/-4	Chaparral, valley and foothill grassland on serpentine seeps. Blooms May to June. Elevation: 340-610m.	None. No habitat on site.
<i>Downingia pusilla</i> Dwarf downingia	-/-/2B	Valley and foothill grassland (mesic), vernal pools. Blooms March to May. Elevation: 1-445m.	None. No habitat in study area.
<i>Erigeron bioletti</i> Streamside daisy	-/-/3	Broadleafed upland forest, cismontane woodland, North Coast coniferous forest on rocky and mesic sites. Blooms June-October. Elevation 30-1100	None. Not observed during June survey.
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	-/-/1B	Chaparral on serpentinite or volcanic soils. Blooms May to September. Elevation: 80-1005m.	None. No habitat in study area.
<i>Eryngium constancei</i> Loch Lomond button-celery	FE/CE/1B	Vernal pools. Blooms April-June. Elevation: 460-855m.	None. No habitat in study area.
<i>Fritillaria liliacea</i> Fragrant fritillary	-/-/1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland often on serpentinite. Blooms February to April. Elevation: 3-410m.	None. Typical habitat not present on site.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS Rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Harmonia nutans</i> Nodding harmonia	-/-/4	Chaparral, cismontane woodland on volcanic rocky or gravelly soils. Blooms March to May. Elevation: 75-975m.	Low. Potential chaparral and woodland habitat on site.
<i>Hesperolinon bicarpellatum</i> Two-carpellate western flax	-/-/1B	Chaparral on serpentinite. Blooms May to July. Elevation: 60-1005m.	None. No habitat in study area.
<i>Hesperolinon sharsmithiae</i> Sharsmith's western flax	-/-/1B	Chaparral on serpentinite. Blooms May to July. Elevation: 270-300m.	None. No habitat in study area.
<i>Iris longipetala</i> Coast iris	-/-/4	Coastal prairie, lower montane coniferous forest, meadows and seeps in mesic sites. Blooms March to May. Elevation 0 -600 m.	None. No habitat in study area.
<i>Lasthenia burkei</i> Burke's goldfields	FE/CE/1B	Meadows and seeps (mesic), vernal pools. Blooms April to June. Elevation: 15-600m.	None. No habitat in study area.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE/CE/1B	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools/ mesic. Blooms March-June. Elevation: 0-470m.	None. No habitat in study area.
<i>Layia septentrionalis</i> Colusa layia	-/-/1B	Chaparral, cismontane woodland, valley and foothill grassland on sandy or serpentinite soils. Blooms April to May. Elevation: 100-1095m.	None. No habitat in study area.
<i>Leptosiphon acicularis</i> Bristly leptosiphon	-/-/4	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Blooms April to July. Elevation: 55-1500m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	-/-/1B	Chaparral, cismontane woodland, usually volcanic. Blooms March to May. Elevation: 100-500m.	Low. Potential habitat in study area.
<i>Lessingia hololeuca</i> Woolly-headed lessingia	-/-/3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland/clay, serpentinite. Blooms June-October. Elevation: 15-305m.	None. No habitat in study area.
<i>Limnanthes vincularis</i> Sebastopol meadowfoam	FE/CE/1B	Vernally mesic meadows and seeps, valley and foothill grassland, vernal pools. Blooms April to May. Elevation: 15-305m.	None. No habitat in study area.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS Rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Lomatium repostum</i> Napa lomatium	-/-/4	Chaparral, cismontane woodland on serpentinite. Blooms March-June. Elevation: 90-830m.	None. No habitat in study area.
<i>Lupinus sericatus</i> Cobb Mtn Lupine	-/-/1B	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest. Blooms March-June. Elevation: 275-1525m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Microphus amphibolus</i> Mt. Diablo cottonweed	-/-/4	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland in rocky areas. Blooms March to May. Elevation: 45-825 m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Microseris paludosa</i> Marsh microseris	-/-/1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Blooms April-June (July). Elevation: 5-300m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Monardella viridis</i> Green monardella	-/-/4	Broadleafed upland forest, chaparral, cismontane woodland. June-September. Elevation: 100-1010m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Navarretia cotufolia</i> Cotula navarretia	-/-/4	Chaparral, cismontane woodland, valley and foothill grassland on adobe soils. Blooms May to June. Elevation: 4-1830m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Navarretia heterandra</i> Tehama navarretia	-/-/4	Mesic valley and foothill grassland, vernal pools. Blooms April to June. Elevation: 30-1010m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	-/-/1B	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/mesic. Blooms April to July. Elevation: 5-1740m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Navarretia leucocephala</i> ssp. <i>pliantha</i> Many flowered navarretia	FE/CE/1B	Volcanic ash flow vernal pools. Blooms May to June. Elevation: 30-950 m.	None. No habitat in study area.
<i>Penstemon newberryi</i> var. <i>sonomensis</i> Sonoma beardtongue	-/-/1B	Chaparral on rocky soils. Blooms April to August. Elevation: 700-1370m.	None. Typical habitat not in study area. Not observed during June survey.
<i>Plagibothrys strictus</i> Calistoga popcornflower	FE/CT/1B	Meadows and seeps, valley and foothill grassland, vernal pools/alkaline areas near thermal springs. Blooms March-June. Elevation 90-160m.	None. No habitat in study area.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS Rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Poa napensis</i> Napa blue grass	FE/CE/1B	Meadows and seeps, valley and foothill grassland/alkaline, near thermal springs. Blooms May-August. Elevation: 100-200m.	None. No habitat in study area.
<i>Puccinellia simplex</i> California alkali grass	-/-/1B	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools/alkaline, vernal mesic, sinks, flats and lake margins. Blooms March to May. Elevation 2-930m.	None. No habitat in study area.
<i>Ranunculus lobbii</i> Lobb's aquatic buttercup	-/-/4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools/mesic. Blooms February to May. Elevation: 15-470m.	None. No habitat in study area.
<i>Senecio clelandii</i> var. <i>clelandii</i> Cleveland's ragwort	-/-/4	Chaparral in serpentine seeps. Blooms June to July. Elevation: 365-900m.	None. No habitat in study area.
<i>Sidalcea hickmanii</i> ssp. <i>napensis</i> Napa checkerbloom	-/-/1B	Chaparral on rhyolitic soils. Blooms April-June. Elevation: 415-610m.	None. No habitat in study area.
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i> Marsh checkerbloom	-/-/1B	Meadows and seeps, riparian forest. Blooms June to August. Elevation: 1100-2300 m.	None. No habitat in study area.
<i>Sidalcea oregana</i> ssp. <i>valida</i> Kenwood Marsh checkerbloom	FE/CE/1B	Freshwater marshes and swamps. Blooms June to September. Elevation: 115-150m.	None. No habitat in study area.
<i>Streptanthus hesperidis</i> Green jewelflower	-/-/1B	Chaparral (openings), cismontane woodland on serpentinite, rocky soils. Blooms May to July. Elevation: 130-760m.	None. No habitat in study area.
<i>Toxicoscordion fontanum</i> Marsh zigadenus	-/-/4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seep, marshes and swamps in vernal mesic areas, often on serpentinite. Blooms April to July. Elevation: 15-1000m.	None. No habitat in study area.
<i>Trichostema ruygtii</i> Napa bluecurls	-/-/1B	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools. Blooms June to October. Elevation: 30-680m.	None. Typical habitat not in study area. Not observed during June survey.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS Rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Trifolium amoenum</i> Showy Rancheria clover	FE/-/1B	Coastal bluff scrub, valley and foothill grassland, sometimes on serpentinite. Blooms April to June. Elevation: 5-415m.	None. No habitat in study area.
<i>Trifolium hydrophilum</i> Saline clover	-/-/1B	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Blooms April to June. Elevation: 0-300m.	None. No habitat in study area.
<i>Viburnum ellipticum</i> Oval-leaved viburnum	-/-/2B	Chaparral, cismontane woodland, lower montane coniferous forest. Blooms May to June. Elevation: 215-1400m.	None. Typical habitat not in study area. Not observed during June survey..
Special-Status Vegetation Communities			
<i>Coastal and Valley Freshwater Marsh</i>			None
<i>Northern Vernal Pool</i>			None
<i>Valley Needlegrass Grassland</i>			None

NOTES:

U.S. FISH AND WILDLIFE SERVICE

FE = federally listed Endangered

FT = federally listed Threatened

CALIFORNIA DEPT. OF FISH AND WILDLIFE

CE = California listed Endangered

CR = California listed as Rare

CT = California listed as Threatened

CALIFORNIA NATIVE PLANT SOCIETY -

Rank 1B: Plants rare and endangered in California and elsewhere

Rank 2B: Plants rare and endangered in California but more common elsewhere

Rank 3: Plant about which more information is needed – a review list.

Rank 4: Plants of limited distribution- a watch list.

Appendix C: Potentially Occurring Special-Status Animal Species in the Project Area

Common Name <i>Scientific Name</i>	Status USFWS/ CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
Invertebrates			
Obscure bumblebee <i>Bombus caliginosus</i>	-/-	Food plants include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia. Occurs in Coastal areas from northern Washington to southern California.	None – no suitable habitat for pollinator plant.
Western bumblebee <i>Bombus occidentalis</i>	-/-	Generalist foragers. They do not depend on any one flower type but they favor Melilotus, Cirsium, Trifolium, Centaurea, Chrysothamnus, Eriogonum. Historically from the Pacific coast to the Colorado Rocky Mountains; severe population decline west of the Sierra-Cascade Crest.	None – no suitable habitat for pollinator plant.
Leech's skyline diving beetle <i>Hydroporus leechi</i>	-/-	Reported from Bennett Mt. Lake in Annadel State Park (CNDDDB 2016).	None -no suitable habitat present
California freshwater shrimp <i>Syncaris pacifica</i>	FE/SE	Endemic to Napa, Sonoma and Marin Counties. Occurs in low elevation and low gradient streams with moderate to heavy riparian cover.	None – no suitable habitat.
Fish			
Delta smelt <i>Hypomesus transpacificus</i>	FT/-	Sacramento-San Joaquin delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay. Seldom found at salinities > 10ppt. Most often at salinities <2ppt.	None -no suitable habitat present
steelhead - Central California Coast ESU <i>Onchorhynchus mykiss</i>	FT/SSC	Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	None -no suitable habitat present.
Amphibians			
California giant salamander <i>Dicamptodon ensatus</i>	-/-	Known from wet coastal forests near streams and seeps. Larvae found in cold, clear streams and adults knowns from wet forests under rocks and logs near streams and lakes.	None – no suitable habitat.
foothill yellow-legged frog <i>Rana boylei</i>	SC/ SSC	Inhabits permanent, flowing stream courses with a cobble substrate and a mixture of open canopy riparian vegetation.	None - no suitable habitat present
California red-legged frog <i>Rana draytonii</i>	FT/ SSC	Prefers semi-permanent and permanent stream pools, ponds and creeks with emergent and/or riparian vegetation. Occupies upland habitat especially during the wet winter months.	None – no suitable habitat.
Reptiles			
western pond turtle <i>Emys marmorata marmorata</i>	SC/ SSC	Prefers permanent, slow-moving creeks, streams, ponds, rivers, marshes and irrigation ditches with basking sites and a vegetated shoreline. Requires upland sites for egg-laying.	None – no suitable habitat.
Birds (All birds are protected under the MBTA)			

Common Name Scientific Name	Status USFWS/ CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
Cooper's hawk <i>Accipiter cooperi</i>	-/SSC, WL	Nests primarily in deciduous riparian forests. May also occupy dense canopied forests from gray pine-oak woodland to ponderosa pine. Forages in open woodlands.	High: Adult observed. Likely nesting site within 300 feet of Block A.
Sharp-shinned hawk <i>Accipiter striatus</i>	-/WL	Dense canopy pine or mixed conifer forest and riparian habitats. Water within one mile required.	High: Suitable nesting habitat present.
Western grebe <i>Aechmophorus occidentalis</i>	BCC	Breeds on large bodied freshwater lakes and marshes with emergent vegetation. Nest is built on floating plants or submerged snag, among emergent vegetation.	None – no suitable habitat.
Rufous-crowned sparrow <i>Aimophila ruficeps</i>	BCC	Nests constructed on the ground or in a small depression; occasionally near the base of a shrub up to about 1.5 feet off the ground. Often well concealed under grass, leaves, or rocks. Habitat occurs in dry, open hillsides covered with grasses, rocks, and scattered shrubs, including coastal sagebrush, open chaparral, scrub oaks, pinyon pine, and other woody plants.	None – no suitable habitat.
Bell's sparrow <i>Amphispiza belli</i>	BCC	Nests in dense stands of chamise and chaparral.	None – no suitable habitat.
Great blue heron <i>Ardea herodias</i>	MB/ SSC	Nests colonially in large trees near water	None – no suitable habitat.
Short-eared owl <i>Asio flammeus</i>	BCC/SSC	Nests in open areas in grasslands, marshes, or dunes on the ground sheltered by tall grasses, reeds or bushes.	None – no suitable habitat.
burrowing owl <i>Athene cunicularia hypugea</i>	BCC/ SSC	Nests in open, dry grasslands, deserts, prairies, farmland and scrublands with abundant active and abandoned mammal burrows. Prefers short grasses and moderate inclined hills.	None – no suitable habitat.
Oak titmouse <i>Baeolophus inornatus</i>	BCC/ -	Breeds in cavities in oak woodlands, gleaning insects from the bark. Occurs from southern Oregon to northern Mexico along the Central Valley and xeric coastal foothills.	High – observed.
Swainson's hawk <i>Buteo swainsoni</i>	BCC/ST	Nests in scattered trees in open areas, with nests usually high in the tree. Nests are reused annually and are made of sticks, with a diameter of 21-28 inches.	None – no suitable habitat.
olive-sided flycatcher <i>Contopus borealis</i>	BCC/ SSC	Nests in open conifer or mixed oak woodland. Nests on horizontal branches, among a cluster of twigs and needles.	High – suitable habitat present.
Black swift <i>Cypseloides niger</i>	BCC/SSC	Nests made of moss bound with mud or simply a cushion of grass or bare mud, are often built on small ledges with overhanging moss or grass near seashore and waterfalls.	None – no suitable habitat.

Common Name Scientific Name	Status USFWS/ CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
white-tailed kite <i>Elanus leucurus</i>	MB/CFP	Inhabits low rolling foothills and valley margins with scattered oaks and river bottom- lands or marshes adjacent to deciduous woodlands. Prefers open grasslands, meadows and marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Absent – would have been detected.
American peregrine falcon <i>Falco peregrinus anatum</i>	BCC/FP	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers or marshes. Forages on shorebirds and small passerines.	None – no suitable habitat.
bald eagle <i>Haliaeetus leucocephalus</i>	BCC/CE, CFP	Nests in tall snags near water and forages on fish. This species winters near large bodies of waters with fish.	None – no suitable habitat.
Least bittern <i>Ixobrychus exilis</i>	BCC/-	Nests in freshwater or brackish marshes with tall emergent vegetation. Creates nesting platform in dense stands of vegetation.	None – no suitable habitat.
Lewis's woodpecker <i>Melanerpes lewis</i>	BCC/SSC	Found in open forest and woodland, often logged or burned, including oak, coniferous forest, riparian woodland, orchards, less often pinyon-juniper. Closely associated with open ponderosa pine forest in western North America. Most commonly uses pre-made or natural cavities. Wintering areas must provide storage sites for grain or mast.	None – no suitable habitat.
long-billed curlew <i>Numenius americanus</i>	BCC/SSC	Nests at high elevations in grasslands adjacent to lakes or marshes. Winters along the coast on mudflats or in interior valleys in grasslands and agricultural fields.	None – no suitable habitat.
Osprey <i>Pandion haliaetus</i>	-/SSC	Nests in large trees within 15 miles of good fish-producing water body.	None – no suitable habitat.
Fox sparrow <i>Passerella iliaca</i>	BCC/-	Nests in forests and chaparral on the ground or in low crotches of bushes or trees.	None – no suitable habitat.
Nuttall's woodpecker <i>Picoides nuttallii</i>	BCC/-	Found primarily in oak woodlands and riparian woods. Cavity nester.	High – suitable habitat present.
Purple martin <i>Progne subis</i>	-/SSC	Nests colonially in snags, old woodpecker cavities, crevices in cliffs or buildings.	None – no suitable habitat.
northern spotted owl <i>Strix occidentalis caurina</i>	FT, BCC/CT	Dense coniferous and hardwood forest, shaded, steep sided canyons. Species reported within 1 mile of site (CNDDDB 2016).	High – suitable habitat present.
Lesser yellowlegs <i>Tringa flavipes</i>	BCC/-	Breeds in open boreal forest with shallow wetlands. Winters in wide variety of shallow fresh and saltwater habitats.	None – no suitable habitat.
Mammals			

Common Name Scientific Name	Status USFWS/ CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
pallid bat <i>Antrozous pallidus</i>	-/SSC	Day roosts in crevices and cavities in rock outcrops, mines, caves, buildings, bridges, as well as hollows and cavities in a wide variety of tree species. May roost alone, in small groups (2 to 20 bats), or in 100s in maternity roosts, with males and non-reproductive subadults in other, smaller roosts. Winter roosts are not well known, but are similar to roosts when active. High reliance on oak woodland habitat in many portions of its range in California.	Low – potentially suitable habitat present.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	-/SSC (PT)	Day roosts in cave analogs; mines, buildings, bridges, sometimes large tree hollows. Particularly sensitive to roost disturbance, this species has declined throughout its range in California. Switches roosts seasonally, sometimes within each season. Females form maternity colonies, males roost singly, and all disperse widely after maternity season. During winter, roosts in cold, but non-freezing roosts, which may include man-made structures.	Low – potentially suitable habitat present
Western red bat <i>Lasiurus blossevillii</i>	-/SSC	Roosts in foliage of large shrubs and trees in woodland borders, rivers, agricultural areas, and urban areas with mature trees. Typically found in large cottonwoods, sycamores, walnuts and willows associated with riparian habitats. Solitary when roosting, except when females are with young (from 2 to 5 are born).	Moderate – potentially suitable habitat present.
Hoary bat <i>Lasiurus cinereus</i>	-/-, WBWG:M	Roosts singly except when females are with young (from 2 to 4 are born) in dense foliage of medium to large coniferous and deciduous trees. Highly migratory, occurs from sea level to tree line in Sierra Nevada. Forages along stream and river corridors, open water bodies, meadows, and open forest above canopy.	High – potentially suitable habitat present
fringed myotis <i>Myotis thysanodes</i>	-/-, WBWG:H	Roosts colonially, up to 2,000 individuals. Females form maternity roosts, give birth to one young. Found from coast to ca. 1,800 m in Sierra Nevada, though most are known to the west of that range. Rare in all localities, data suggests serious population declines. Roosts in rock crevices, caves, mines, buildings and bridges, as well as tree hollows, particularly large conifer snags. Occurs in xeric woodland, hot desert-scrub, grassland, sage-grassland steppe, spruce-fir, mesic old growth forest, coniferous and deciduous/coniferous forests. Forages over secondary streams in fairly cluttered habitat, over meadows. May hibernate or use intermittent torpor.	High – potentially suitable habitat present

Common Name Scientific Name	Status USFWS/ CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
American badger <i>Taxidea taxus</i>	-/SSC	Inhabits open grasslands, savannas and mountain meadows near timberline. Requires abundant burrowing mammals, their principal food source, and loose, friable soils.	None – no suitable habitat.

U.S. FISH AND WILDLIFE SERVICE

FE = federally listed Endangered
 FT = federally listed Threatened
 FC = federal candidate for listing
 BCC = Birds of Conservation Concern
 MBTA = Migratory Bird Treaty Act.

CALIFORNIA DEPT. OF FISH AND WILDLIFE

CE = California listed Endangered
 CT = California listed as Threatened
 SSC = Species of Special Concern

**Appendix D: Plant species observed at the Babu Vineyard Project Site
June 16, 2016.**

Scientific Name	Common Name
<i>Acer negundo</i>	Big leaf maple
<i>Acmispon glaber</i> var. <i>glaber</i>	Deer weed
<i>Adenocaulon bicolor</i>	Trail plant
<i>Adiantum jordanii</i>	Maidenhair fern
<i>Agoseris grandiflora</i>	California dandelion
<i>Agoseris heterophylla</i>	Annual agoseris
<i>Arbutus menziesii</i>	Madrone
<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	Common manzanita
<i>Aristolochia californica</i>	California pipe vine
<i>Avena barbata</i>	Wild oats*
<i>Avena fatua</i>	Oats*
<i>Baccharis pilularis</i>	Coyote brush
<i>Brachypodium distachyon</i>	False brome*
<i>Brassica nigra</i>	Black mustard*
<i>Bromus carintus</i>	California brome
<i>Bromus catharticus</i> var. <i>elatus</i>	Chilean brome*
<i>Bromus diandrus</i>	Ripgut brome*
<i>Bromus hordaeceus</i>	Soft chess*
<i>Bromus laevipes</i>	Narrow flowered brome
<i>Calystegia occidentalis</i>	Bush morning glory
<i>Carduus pycnocephalus</i>	Italian thistle*
<i>Carex</i> sp.	Sedge
<i>Centaurea solstitialis</i>	Yellow star thistle*
<i>Chlorogalum pomeridianum</i>	Soaproot
<i>Clinopodium douglasii</i>	Yerba Buena
<i>Cordylanthus pilosus</i>	Hairy bird's-beak
<i>Corylus cornuta</i>	Hazelnut
<i>Cynosurus echinatus</i>	Dogtail grass*
<i>Cyperus eragrostis</i>	Tall flatsedge
<i>Dryopteris arguta</i>	California wood fern
<i>Elymus glaucus</i>	Blue wildrye
<i>Festuca californica</i>	California fescue
<i>Festuca perennis</i>	Ryegrass*
<i>Frangula californica</i>	California coffeeberry
<i>Galium aparine</i>	Bedstraw*
<i>Galium porrigens</i>	Climbing bedstraw
<i>Genista monspessulana</i>	French broom*
<i>Heteromeles arbutifolia</i>	Toyon
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare barley*
<i>Hypochaeris radicata</i>	Rough cat's-ear*
<i>Iris douglasiana</i>	Douglas iris
<i>Juncus patens</i>	Spreading rush
<i>Lactuca serriola</i>	Prickly lettuce*
<i>Lonicera hispidula</i>	Honeysuckle
<i>Maianthemum sellatum</i>	Starry false lily of the valley
<i>Mimulus aurantiacus</i>	Sticky monkeyflower
<i>Osmorhiza chilensis</i>	Sweet cicely
<i>Pentagramma triangularis</i>	Goldback fern
<i>Petrorhagia dubia</i>	Hairypink*
<i>Poa</i> sp.	Blue grass
<i>Polystichum californicum</i>	California sword fern
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed*

Scientific Name	Common Name
<i>Pseudotsuga menziesii</i>	Douglas fir
<i>Quercus agrifolia</i>	Coast live oak
<i>Quercus berberidifolia</i>	Scrub oak
<i>Quercus kelloggii</i>	Black oak
<i>Quercus wizlizeni</i>	Interior live oak
<i>Rubus armeniacus</i>	Himalayan blackberry*
<i>Salix lasiolepis</i>	Arroyo willow
<i>Sanicula crassicaulis</i>	Sanicle
<i>Sequoia sempervirens</i>	Coast redwood
<i>Sonchus oleraceus</i>	Common sow thistle*
<i>Stachys ajugoides</i>	Hedge nettle
<i>Tolpis barbata</i>	European milkwort*
<i>Torilis arvensis</i>	Field hedge parsley*
<i>Toxicodendron diversilobum</i>	Poison oak
<i>Tragopogon porrifolius</i>	Salsify*
<i>Trifolium hirtum</i>	Rose clover*
<i>Umbellularia californica</i>	California bay laurel
<i>Vicia sativa</i>	Spring vetch*
<i>Wyethia helenioides</i>	Gray mule ears

Species with an * are non-native species.

Appendix E: Wildlife Species Observed on June 16, 2016.

<i>Scientific Name</i>	<i>Common Name</i>
<i>Calypte anna</i>	Anna's hummingbird
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Poliophtila caerulea</i>	blue-gray gnatcatcher
<i>Cyanocitta stelleri</i>	Stellar's jay
<i>Aphelocoma californica</i>	Western scrub jay
<i>Corvus corax</i>	Common raven
<i>Poecile rufescens</i>	Chestnut-backed chickadee
<i>Psaltiriparus minimus</i>	bushtit
<i>Junco hyemalis</i>	Dark-eyed junco
<i>Pipilo crissalis</i>	California towhee
<i>Baeolophus inornatus</i>	Oak titmouse
<i>Catharus ustulatus</i>	Swainson's thrush
<i>Odocoileus hemionius californicus</i>	Black-tailed deer (sign)
<i>Procyon lotor</i>	Raccoon (sign)
<i>Pipilo maculatus</i>	Spotted towhee
<i>Accipiter cooperi</i>	Cooper's hawk
<i>Colaptes auratus</i>	Northern flicker
<i>Buteo lineatus</i>	Red-shouldered hawk
<i>Vireo huttoni</i>	Hutton's vireo

In order of observation.