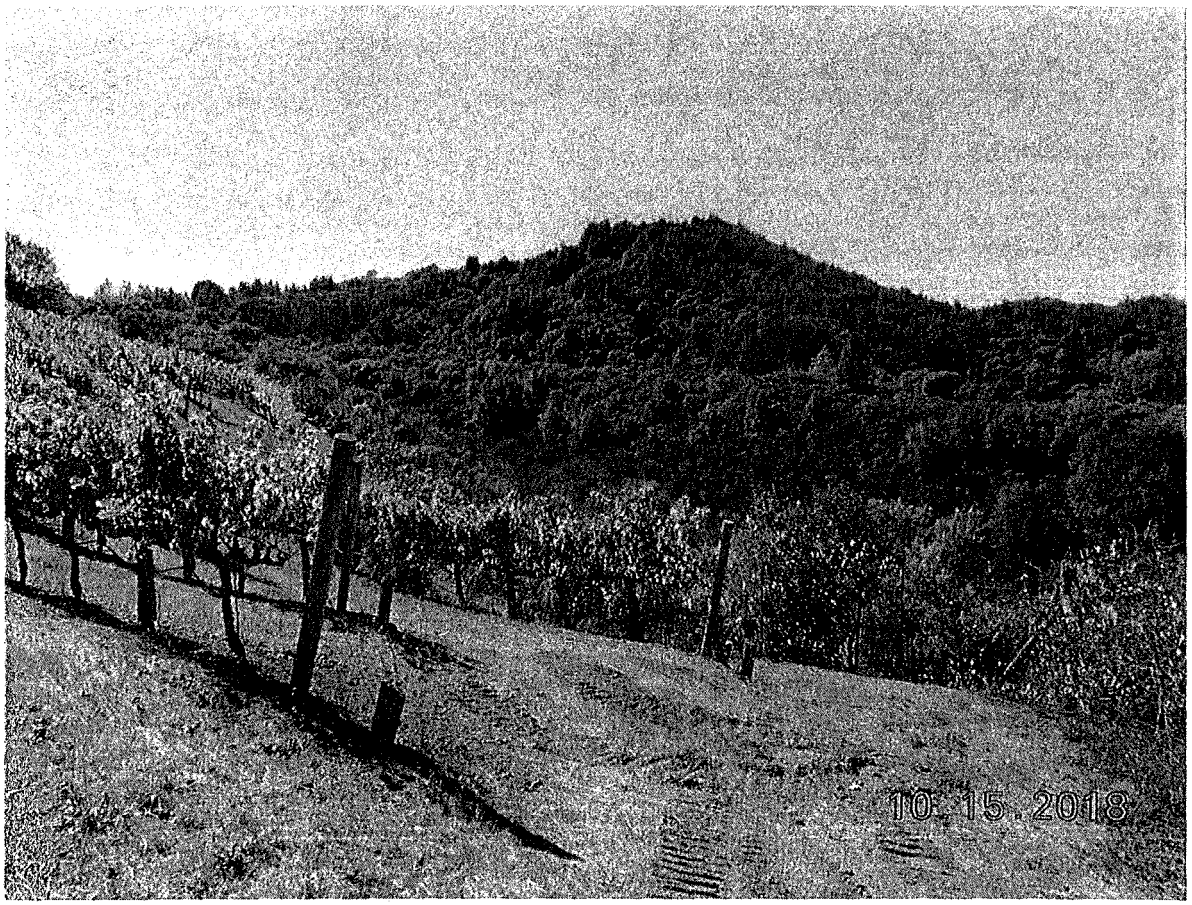
Open Space and Wildlife Habitat Assessment

Collier Falls Vineyard, LLC
9931 West Dry Creek Road, Healdsburg
APN 139-120-004



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October 2018

ATTACHMENT C

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EXECUTIVE SUMMARY

This study was conducted at the request of Collier Falls Vineyard, LLC. The project proposes placement of the property into a Hybrid Williamson Act Contract (Agriculture + Open Space Wildlife Habitat). The property extends upslope on the west side of West Dry Creek Road above Dry Creek Valley. The 98-acre parcel supports four vineyard blocks that total 22-acres with agricultural infrastructure and a residence. The vineyard blocks have perimeter deer fencing. Approximately 65% of the property is proposed for open-space wildlife habitat with connectivity to US Government held lands associated with Lake Sonoma.

The purpose of the study and report is to provide background information essential for inclusion of the property within a Hybrid Williamson Act Contract. This report provides an evaluation of the open space qualities, habitat, wildlife resource value and botanical resources as well as recommendations for management practices that will enhance and maintain the land as open space and habitat for native flora and fauna.

Our fieldwork was conducted on October 15, 2018. Our findings are based on analysis of pertinent literature, onsite study, habitat types present, and the relationship of the parcel to surrounding habitat and regional biological resources:

- The 63-acres that is proposed for Open Space Wildlife is undisturbed natural habitat. The majority of the area proposed for Open Space Wildlife Habitat has been undisturbed for decades;
- A portion of the proposed Open Space Wildlife area has access from vineyard roads but a significant portion on the west side does not have any direct access or trails;
- Only the vineyard blocks on the property are deer fenced leaving open space corridors (Plate V) through and around the agricultural elements;
- The parcel is within the watershed of Fall Creek, Dry Creek and the Russian River;
- The plant communities/associations or habitat types present on the proposed Open Space Wildlife Habitat area would be termed: Forest or Woodland Alliances, Riparian Woodland, and Shrubland/Chaparral Alliance (Chamise Chaparral).

Open Space Wildlife Habitat Qualities and Wildlife Resources:

- The primary consideration is that undeveloped natural habitat of the property is effectively linked to vast areas of the Coast Range Mountain habitat. The undeveloped open space access (lack of perimeter deer fencing) on the parcel effectively provides wildlife with unobstructed access through and across the property;

- The diversity of the vegetation on the property provides habitat that allows diverse animal foraging and cover;
- The proximity of the property to Lake Sonoma and its biological accessibility from the adjacent large undeveloped areas of the Coast Range Mountains offers high potential for support, migration and dispersal of local wildlife species;
- The habitat types and or different plant communities/alliances with their interfacing "edges" support a wide array of fungi, lichens, mosses, ferns, conifers and flowering plants, insects, amphibians reptiles, birds and mammals. Ecologically edges are prime area for wildlife foraging;
- The Forest or Woodland Alliances present on the proposed Open Space Wildlife Habitat provide foraging and nesting needs for local wildlife; and
- The Open Space Wildlife Habitat area shows a diversity of age class structure within the Forest or Woodland Alliances, Riparian zone and Shrubland/Chaparral Alliance.

Ecological Functions and Services:

- The proposed Open Space Wildlife Habitat is within the watershed of Fall Creek, Dry Creek and the Russian River. As a watershed it functions to: maintain surface water quality through filtration and decomposition of pollutants, recharge of groundwater resources, maintain water quality through silt retention and by filtering out sediment and nutrients from run-off, the prevention of flooding and minimization of channel erosion by slowing surface runoff;
- The habitat types and the absence of historic grazing offer a high quality environment for local wildlife and plant species; and
- The property provides a corridor link from the open space lands on the south and west to Lake Sonoma and Coast Range Mountains allowing genetic dispersal of wildlife as well as botanical gene flow.

California's biotic resources are being lost as our population continues to expand. The loss or conversion of open space and wildlife habitat has been occurring in the County and State at an accelerated rate. The proposed Open Space Wildlife Habitat area will preserve an area that is near the developed landscape of Dry Creek Valley and Lake Sonoma yet associated with vast open space elements of the Coast Range Mountains. The recognition as an Open Space Wildlife Habitat Area will allow significant value and service as a wildlife and botanical corridor connecting local biological resources as well as functioning as watershed and view shed. The property is a rich mosaic of habitat types including; Chaparral, Oak Woodland, Conifer Woodland, which have all been severely impacted and lost in the region. The connectivity of the site to adjacent open space offers the highest potential for the sustainable support of a rich diversity of wildlife.

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A. PROJECT DESCRIPTION

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A.1 Introduction

The property extends upslope on the west side of West Dry Creek Road above Dry Creek Valley. The 98-acre parcel supports four vineyard blocks that total 22-acres with agricultural infrastructure and residence. The vineyard blocks have perimeter deer fencing. Approximately 65% of the property is proposed for open-space wildlife habitat with connectivity to US Government held lands associated with Lake Sonoma. Plate I provides a Site and Location Map of the property. Plate III is an aerial photograph of the property showing vegetation types and vineyard locations. The land use in the local area consists of rural/residential housing and agricultural lands.

The Williamson Act or California Land Conservation Act of 1965 is a legislative act intended to preserve agriculture and agricultural lands (Government Code Section 51200-51207). The act also allows upon consultation, consideration of "Wildlife Habitat Area" as "areas of great importance for the protection or enhancement of the wildlife resources of the state" and also consideration of Open Space Use as "the use or maintenance of land in a manner that preserves its natural characteristics, beauty, or openness, to provide essential habitat for wildlife."

Our findings and conclusions are based on literature resources, field conditions, plant associates, habitat present, the association of the property with adjacent properties including the Lake Sonoma, the remoteness and inaccessibility of significant portions of property, the lack of perimeter vineyard deer fencing, and the familiarity with other properties in the area. Our 2018 fieldwork was an autumn analysis of the property, which is reflected in the species list attached. Seasonal studies will undoubtedly find numerous additional plant and animal species as residents on the property or transient in their appearance as they migrate through.

B. SURVEY METHODOLOGY

Our fieldwork and property survey is a reconnaissance level survey and was undertaken to provide sufficient information for determining the quality of wildlife habitat value on the property and the potential connectivity to local adjoining biological resources, which would provide justification for consideration of the property as a candidate for Williamson Act Open Space and Wildlife Habitat Area.

B.1 Field Survey Methodology

Fieldwork was conducted by driving access roads and walking the property with two personnel (Chris K. Kjeldsen and Daniel T. Kjeldsen). We reviewed the neighboring parcels from the edges of the property (private property was not entered) and aerial photographs. Field surveys were conducted on October 15, 2018.

Our fieldwork studied the property and surrounding habitat, noting habitat types or plant community/associations and searching for special-status organisms or the presence of suitable habitat, which would support special-status organisms animal or plant species that are listed by the State, Federal Government, or California Native Plant Society. Special-status species with potential for the area are recorded by the California Native Plant Society (CNPS), California Department of Fish and Wildlife (CDFW) Natural Diversity Data Base (CNDDB), and Federal Endangered and Threatened Species known for U.S.G.S. 7 1/2 Minute Quadrangle and the nine surrounding Quadrangles listed by the United States Fish and Wildlife Service (USFWS).

Plants were identified in the field or specimens were collected, when necessary, for laboratory examination with a binocular microscope. Voucher material for selected individuals is in the possession of the authors. All plants observed (living and or remains from last season's growth) were recorded in field notes. A complete record of all plant species observed and collected as voucher material is presented in Appendix A. Dr. Kjeldsen has a CDFW Collecting Permit.

Animals were identified in the field by their sight, sign, or call. Our field technique for surveying and identification of birds was facilitated with the aid of field binoculars. Our field survey was conducted in the afternoon when bird activity is at its lowest. Additional surveys would increase the amount of birds identified on the property.

Wildlife corridors were evaluated by searching for game trails on the ground and viewing aerial photos of the property. Game trails were present and randomly located across and through the property.

Photographs for this report were taken using a Nikon digital camera and printed on a HP Office Jet Pro printer to illustrate field conditions. Selected photographs are included in this report.

C. RESULTS / FINDINGS

Our results and findings are based on our site visit and background material available for the project.

C.1 Property Description / Biological Setting

Figures 1 to 7 below illustrate habitat found on the property and Plate III shows the wildlife corridors. The property is within the Geyserville USGS Quadrangle. The parcel extends upslope from Dry Creek Valley. The proposed Open Space Wildlife Habitat area drains by sheet flow into Fall Creek or unnamed tributaries of Dry Creek thence the Russian River.

The agricultural element of the property consists of four vineyard blocks with perimeter fencing and access roads. The residence is near the entrance off of West Dry Creek Road.

The proposed Open Space Wildlife Habitat area is located within the Outer Coast Range Mountains above Dry Creek Valley. The topography consists of sections of steep, rugged terrain with intervening ephemeral drainages supporting a mosaic of vegetation that is a function of aspect, moisture regime and edaphic conditions. The complexity of these conditions is such that microhabitats allow for plant alliances that overlap and integrated with one another.

Non-native plant species are present around the vineyard blocks and access roads. Pine tree plantings of non-local species for bank stabilization are present along the edge of some of the vineyard blocks. Non-native landscape species of trees and shrubs are present around the residence.

The Open Space Wildlife Habitat area is essentially free of non-native species due to the density of native plant cover.

Table I. Proposed Williamson Act Land Use Collier Falls Vineyard LLC.

Land Use	Acreage	See Plate V. Land Use Map
Vineyard	22-acres	Illustrated on Aerial Photograph and Land Conservation Map provided by Curtis & Associates
Proposed Open Space Wildlife Habitat	63.11-acres	Present on west side and between the Vineyard Blocks
Compatible Land Use	1.28-acres	Agricultural infrastructure and Residence
Undesignated	11.43 acres	Two sites. One along Fall Creek and the other between vineyard on the west side adjacent to the Open Space Wildlife Habitat area
Property Total Acreage	**97.82**	

C.2 Vegetation Habitat Types Present

It is generally convenient for descriptive needs, to refer to the vegetation associates on a property as a plant community. Plant communities are usually identified by the dominant vegetation form or dominant species present. There have been numerous community classification schemes proposed by different authors using different systems for classification of vegetation on a site with the assumption that there are discrete boundaries. There is also evidence that the vegetation on the site is part of a continuum without well-defined boundaries and that the vegetation associates integrate with one another over the landscape. Natural communities normally have the following attributes: 1) they are physically defined including a given structure and discernable edges or transitions to adjacent communities, 2) they reflect distinct environmental conditions with a composition of characteristic species and can be considered ecological units, 3) they cover a discrete area, and 5) they form units that are treated as habitats by animals and plants and are ecosystems.

Biotic Communities integrate the concept of assemblages of plants and animals in a discrete area of the landscape associated with particular soils climate and topographic conditions.
The plant communities/associations or habitat types present on the area proposed for open space are the following: Forest or Woodland Alliances and Shrubland/Chaparral Alliance.

Plate III maps the vegetation on the property as Doug-Fir, Mixed Oak Woodlands and Chaparral.

Each of these vegetation types is described below using the classification system A Manual of California Vegetation (Sawyer 2009). Figures 1-7 illustrate portions of the different vegetation types present as mapped in Plate III. The vegetation types Redwood Forest is included within the Doug-Fir mapping and the Madrone and Bay are within the Mixed Oak Woodlands and cannot be mapped separately as they occur randomly within the alliance. Riparian Woodlands also exist along the unnamed drainages on the property. The vegetation cover acreage of each of these alliances is summarized in the table below.

Table II. Approximate Acreage of Vegetation Coverage.

Vegetation Type	Acreage	See Plate IV. Vegetation Map
Forest Woodlands Doug- Fir Woodland	26-acres	Present on west side and within the Mixed Oak Woodlands on property. This includes Redwood Forest.
Forest Woodlands Mixed Oak Woodland	37-acres	Dominate Undeveloped Portions of the Parcel. Madrone and Bay present within this alliance as well as Douglas-fir. Seral stage.
Shrubland / Chaparral	11-acres	Fringing the Oak Woodland Alliance in areas with thin soil and steep slopes.
Existing Vineyards / Disturbed area	24-acres	Vineyards / Roads / Residence

FOREST OR WOODLAND ALLIANCES

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

Woodland/Forest. The woodland/forest vegetation dominates the property, the most prominent oak woodland/forest type consisting of Oak Woodlands (Sawyer, et al, 2009). This woodland is dominated by live and black oak, but several other species of oaks and other trees are present in varying densities. Understory vegetation is limited because of canopy closure and leaf litter. Scattered herbaceous vegetation typically includes native grasses such as California fescue (*Festuca californica*) and blue wildrye (*Elymus glaucus*). Native forbs (herbaceous flowering plants that are not graminoids) in the understory include milk maids (*Cardamine californica*), Indian warrior (*Pedicularis densiflor*a), and blue dicks (*Dichellostema capitata*). The property's woodland alliance appears to be of a relatively mature Oak age class.

Another term to describe the forest or woodlands on the parcel would be Cismontane Woodlands or Oak Woodlands. The composition varies throughout the landscape of the property depending on aspect, soils and historic use. Local Oak woodlands have undergone many changes due to human management and impacts. They were a valuable food source for Native Americans and were managed by the use of fire to increase acorn production and wildlife resources. They were considered to be "weeds" by ranchers raising cattle and by foresters looking for conifer production. The Oak Woodlands in the area were extensively cut for firewood and charcoal production for the early Californians in the absence of coal. Limited lumber and railroad tie production also impacted Oak Woodlands.

The Forest or Woodland Alliances on the property consist of:

1) *Pseudotsuga menziesii* Forest Alliance Douglas fir Forest;
2) *Sequoia sempervirens* Forest Alliance Redwood Forest
3) *Quercus* (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni*) Forest Alliance Mixed Oak Forest;
4) *Arbutus menziesii* Forest Alliance Madrone Forest; and
5) *Umbellularia californica* Forest Alliance California Bay Forest

Each of these alliances is described below as well as the membership rules as per Sawyer (2009).

Forest Alliance Douglas fir Forest; *Pseudotsuga menziesii* is dominant or co-dominant with hardwoods in the tree canopy with *Abies concolor, Acer macrophyllum, Alnus rhombifolia, Arbutus menziesii, Calocedrus decurrens, Chamaecyparis lawsoniana, Chrysolepis chrysophylla, Cornus nuttallii, Pinus contorta, P. lambertiana, P. jefferyi, Quercus agrifolia, Q. chrysolepis, Q. garryana, Q. kelloggii* and *Sequoia sempervirens*. Membership rules >50% relative cover in the tree canopy and reproducing successfully, though hardwoods may dominate or co-dominate in the subcanopy and regeneration layer. Trees >75 m.; canopy is intermittent to continuous, and it may be two tiered. Shrubs are infrequent or common. Herbaceous layer is sparse or abundant. North Coast interior stands are local and often associated with relic

populations of *Sequoia sempervirens. Pseudotsuga menziesii* Forest Alliance in some instances are a seral stage in Oak Woodlands and in the absence of fires will reach a climax stage eliminating associated oaks.

Wildlife: Douglas fir Woodlands are not as productive for wildlife as other woodlands but the presence of snags older woodlands are valuable for wildlife. The cones are an important food source for many species of birds and mammals. Douglas Fir trees are significant symbionts for mycorrhizal fungi with roots supporting as many as 300 different species of fungi. Numerous insects also feed on these trees and they are rich in lichens. The wildlife associated with Douglas Fir Woodlands includes the following: deer, squirrels, mountain lion, coyote, striped skunk, bobcat, fox and numerous rodents. Reptiles in this habitat include: western fence lizard, alligator lizard, king snake, common gopher snake, and western rattlesnake. Amphibians include: salamanders, frogs, newts, and toads. Many of California's birds are associated with this habitat.

Forest Alliance Redwood Forest; *Sequoia sempervirens* is dominant or co-dominant in the tree canopy with *Abies grandis, Acer macrophyllum, Alnus rubra, Arbutus menziesii, Chrysolepis chrysophylla, Notholithocarpus densiflorus* var. *densiflorus, Pseudotsuga menziesii, Tsuga heterophylla,* and *Umbellularia californica.* Trees <120m tall; canopy is intermittent or continuous it may be two tiered. Shrubs are infrequent or common. Herbaceous layer is absent or abundant. Membership rules *Sequoia sempervirens* > 50% relative cover in the tree canopy, or > 30% relative cover with other conifers such as *Pseudotsuga menziesii* or with a lower tier of hardwood trees such as *Notholithocarpus densiflorus* var. *densiflorus. Sequoia sempervirens* occurs in moist coastal areas with heavy summer fog.

Wildlife: Redwood Woodlands support much of the same wildlife as the Oak and Madrone woodlands. The primary role of redwood trees is the cover and structure that they provide for wildlife particularly birdlife. As a food source they are limited. Numerous insects use the branches bark and leaves as habitat. The wildlife associated with Redwood Woodlands includes the following: deer, squirrels, mountain lion, coyote, striped skunk, bobcat, fox and numerous rodents. Reptiles in this habitat include: western fence lizard, alligator lizard, king snake, common gopher snake, and western rattlesnake. Amphibians include: salamanders, frogs, newts, and toads. Many of California's birds are associated with this habitat.

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

Wildlife: Mixed Oak Woodlands are productive for wildlife and support a variety of shrub and herbaceous species. The understory associates vary with aspect, fire history and grazing pressure. The annual acorn crop provides an important food source for many species of birds and mammals particularly deer and the introduced wild turkey. Numerous insects feed on oaks. The wildlife associated with Oak Woodlands includes the following: deer, squirrels, mountain

lion, coyote, striped skunk, bobcat, fox and numerous rodents. Numerous fungi including many mycorrhizal fungi are associated with this species. Many mosses, liverworts and lichens are associated with these trees. Reptiles in this habitat include: western fence lizard, alligator lizard, king snake, common gopher snake, and western rattlesnake. Amphibians include: salamanders, frogs, newts, and toads. Many of California's birds are associated with this habitat.

Forest Alliance Madrone Forest; *Arbutus menziesii* is dominant or co-dominant tree in the canopy with *Acer macrophyllum, Notholithocarpus densiflorus, Pseudotsuga menziesii, Quercus agrifolia, Q. chrysolepis, Q. kelloggii, Q. wislizeni* and *Umbellularia californica*. Trees < 50m; canopy is continuous. The shrub layer is sparse to intermittent. Herbaceous layer is sparse. Membership rules *Arbutus menziesii* >50% relative cover in the tree canopy. *Arbutus menziesii* groves are considered, as part of the mixed evergreen forest and in most cases the species is common as a secondary species in many forest types. *Arbutus menziesii* is a fast growing evergreen hardwood, that can live for 500 years.

Wildlife: Madrone Woodlands are productive for wildlife. The annual berry provides an important food source for many species of birds and mammals. Numerous insects also feed on the leaves. The wildlife associated with Madrone Woodlands includes the following: deer, squirrels, mountain lion, coyote, striped skunk, bobcat, fox and numerous rodents. Reptiles in this habitat include: western fence lizard, alligator lizard, king snake, common gopher snake, and western rattlesnake. Amphibians include: salamanders, frogs, newts, and toads. Many of California's birds are associated with this habitat.

Forest Alliance California Bay Forest; *Umbellularia californica* is dominant or co-dominant in the tree or tall shrub canopy (membership rules >30% relative cover of *Umbellularia californica* in the tree canopy, conifers < 30% relative cover in the tree canopy). *Umbellularia californica* alliance consists of trees that are > 25 m and the canopy is intermittent to continuous. The shrub layer is open to intermittent and the herbaceous layer is sparse to abundant. *Umbellularia californica* forms an association termed *Umbellularia californica-Quercus agrifolia / Toxicodendron diversilobum.*

SHRUBLAND / CHAPARRAL ALLIANCE

Chaparral Alliance is a structurally homogeneous brush land type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary considerably with age since last burn, precipitation regime aspect, and soil type. At maturity, the structure is typically is a dense, nearly impenetrable thicket with greater than 80 percent absolute shrub cover. Canopy height ranges from 1 to 4 m, occasionally to 6 m. Considerable leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Due to the dense nature of the shrublands on the site, the understory is limited or lacking.

Shrublands (chaparral) on the property cover areas of shallow soils with southern exposure. The dominant plant species that define the chaparral habitat sub-type will be dependent on the soil substrate. The principal shrub constituents of Chaparral/Scrub are; chemise (*Adenostoma fasciculatum),* manzanita *(Arctostaphylos* ssp.), sticky monkey flower *(Mimulus aurantiacus*) ceanothus *(Ceanothus* ssp.), scrub oak *(Quercus berberidifolia),* poison oak (*Toxicodendron*

diversilobum), California broom or coyote brush (*Baccharis pilularis),* chaparral pea (*Pickeringia montana)*, California coffee berry (*Frangula californica* ssp. *californica),* toyon (*Heteromeles arbutifolia)* and pitcher sage *(Lepchinia calycina).*

This vegetation type has been divided by numerous authors into Mixed Chaparral/Scrub,, and Chamise Chaparral. Chaparral plants are usually found in areas with Mediterranean climate that have shallow-rocky, low-nutrient soils, steep slopes, and a high degree of solar exposure. Chaparral communities are usually found on south facing slopes or areas where water is not retained in the soil profile. This combination of physical factors results in xeric plants growing under stressed edaphic conditions. Chaparral is a vegetation type that is restricted to dry, exposed slopes and is typical for the ridges and slopes of the interior Coast Range Mountains of the County. Chaparral vegetation consists mainly of shrubs that are woody and with leaves adapted to xeric conditions (Holland and Kiel, 1986) that are typically small-waxy leaves. Periodic fires are characteristic of this community. Chaparral plant communities are adapted to fire, with cycles as frequent as 10 to 40 years between fires. In fact, most species require fire for seed germination and stump sprouting. Chaparral as a seral stage is threatened by the absence of a normal fire regime.

Shrubland Alliance Chamise Chaparral; *Adenostoma fasiculatum* is dominant in the shrub canopy with *Arctostaphylos glandulosa, A. manzanita, Ceanothus* ssp., *Diplacus aurantiacus, Eriodictyon californicum, Eriogonum fasiculatum, Heteromeles arbutifolia, Quercus berberidifolia, Q. wislizeni,* and *Toxicodendron diversilobum.* Emergent trees may be present at low cover. Shrubs < 4 m; canopy is intermittent to continuous. Herbaceous layer is sparse to intermittent. Membership Rules *Adenostoma fasciculatum* >50% relative cover in the shrub canopy: codominance of *A. fasiculatum* with the following species *Arctostaphylos glandulosa* and *Ceanothus cuneatus*. This alliance occurs across cismontane California in a variety of topographic settings. *Adenostoma fasciculatum* is a long-lived, shade intolerant shrub that grows to 3.5 m. Stands over 60 years old produce little new growth as dead stem biomass accumulates.

Wildlife diversity in chaparral is generally quite low. Animals that utilize this habitat include a variety of birds, reptiles, rodents and mammals. Habitat value is increased with factors such as: seed production, variety of nesting habitat. Native Americans recognized the value of this habitat was increased by setting periodic fires, which induced stump sprouting and young vegetation growth that favored browsing by large mammals.

Riparian Zone Woodland (Within Mixed Oak and Doug-Fir Woodlands) is found along Fall Creek and the unnamed tributary of Dry Creek on the property. Riparian vegetation is associated with streams and is a function or result of soils, location and hydrology. Riparian vegetation is primarily a result of the availability of water for growth and local herbivory. The width of riparian vegetation varies. Riparian vegetation is characterized by tree layer, shrub/vine layer and groundcover. The scale and scope of this habitat is limited in the county depending on location and there are great differences associated with location, soils, biotic factors and rain shadow. The riparian tree cover is characterized by the presence of broadleaved, deciduous trees such as *Salix, Alnus, Quercus* and *Umbellularia,* which are found along the banks and floodplains of waterways. Common shrubs include *Toxicodendron diversilobum, Baccharis pilularis, Rubus armeniacus* and *Vitis californica.* The understory consists of torrent sedge,

mule fat, and California polypody. Sawyer (2009) does not recognize Riparian Woodland as a separate Alliance but includes it as a component of woodland alliances. Sonoma County (Ordinance No. 60898) defines Riparian Vegetation: "Plant communities contiguous to and affected by surface and subsurface hydrologic features of water bodies (rivers, streams, lakes, or wetlands) that have one or both of the following characteristics: 1) distinctly different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian vegetation is usually transitional between wetland and upland. " This is recognized as a Biotic Habitat Zone (BH) as part of the general plan. These provisions are intended to protect and enhance riparian corridors and functions along designated streams, balancing the need for agricultural production, urban development, timber and mining operations, and other land uses with the preservation of riparian vegetation, protection of water resources, floodplain management, wildlife habitat and movement, stream shade, fisheries, water quality, channel stability, groundwater recharge, opportunities for recreation, education and aesthetic appreciation and other riparian functions and values.

Wildlife: The riparian woodland vegetation cover provides habitat as well as food resources for local wildlife. The shade and water that is available in these areas make them popular with wildlife. Common wildlife associated with this habitat include amphibians such as the Pacific tree frog; birds such as downy woodpecker, yellow warbler, and yellow-breasted chat. The mammals are those of the oak woodlands and grasslands. As a habitat type it also functions as a corridor for access to the various communities along its route and upslope. The quality of riparian habitat is enhanced where there are multilayered tree structures and complex vegetation layering.

Significance and Function: Riparian Zones Woodlands are significant biologically for the diversity that they provide, the influence on the hydrologic cycle and aquatic ecosystems, for environmental stability derived, and their role as biofilters and soil conservation. Riparian Vegetation is by all standards considered sensitive. Riparian Vegetation functions to control water temperature, regulate nutrient supply (biofilters), bank stabilization, rate of runoff, wildlife habitat (shelter and food), release of allochthonous material, release of woody debris which functions as habitat and slow nutrient release, and protection for aquatic organisms. Riparian vegetation is also a moderator of water temperature has a cascade effect in that it relates to oxygen availability. The beneficial uses of areas in and along streams, included: provides food, water, breeding, egg deposition and nesting areas for fish, amphibians, reptiles, birds, insects, and mammals; providing protective cover, shade and woody debris to stream channels as habitat for coho salmon, steelhead, freshwater shrimp, and other protected and common aquatic-dependent species; providing movement opportunities, protective cover, and breeding, roosting, and resting habitat for terrestrial wildlife, filtering sediment and pollutants in runoff into streams; providing erosion protection for stream banks; and groundwater recharge.

The flora and fauna observed during our study are presented in Appendix A.

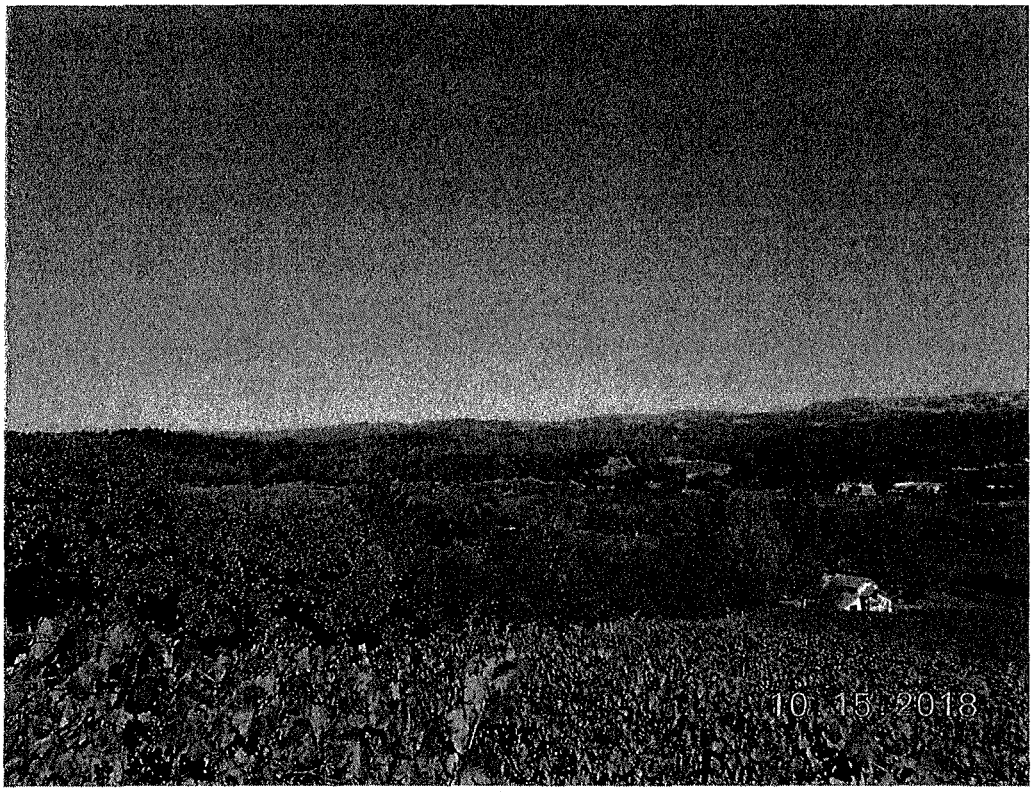


Figure 1. View to the north on the property. Vineyards and Mixed Oak Woodlands.

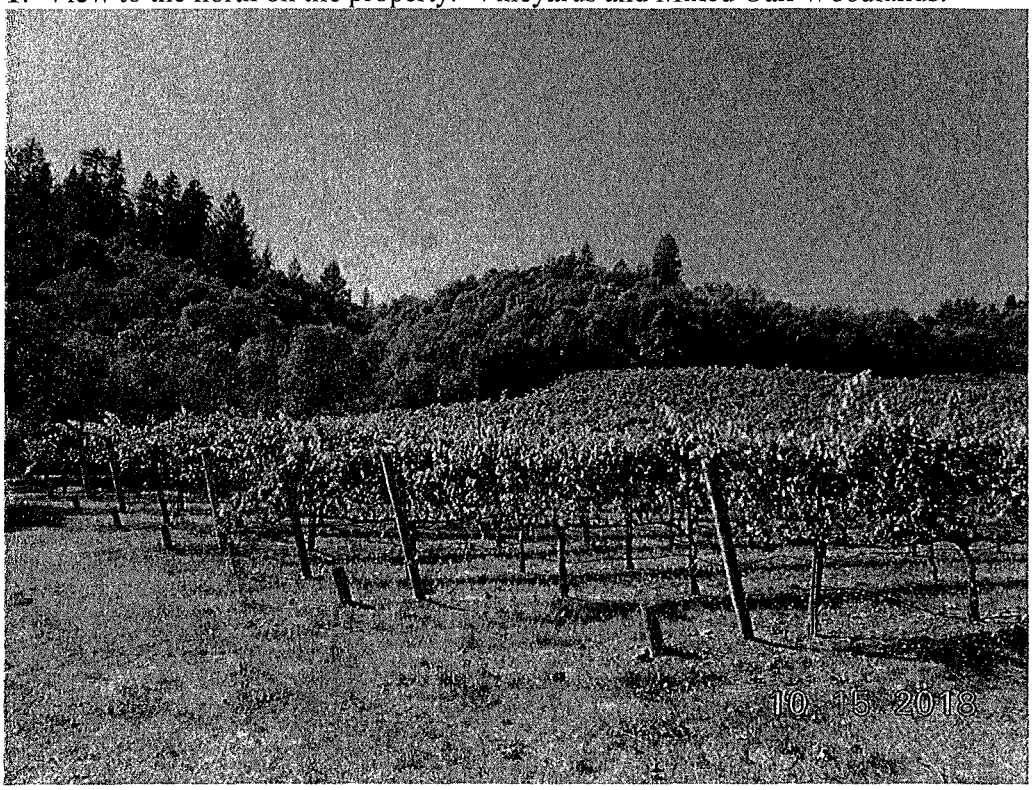


Figure 2. View of Mixed Oak Woodlands and Doug-fir Woodlands on the property.

Figure 3. View to the west of Doug-fir Woodlands.

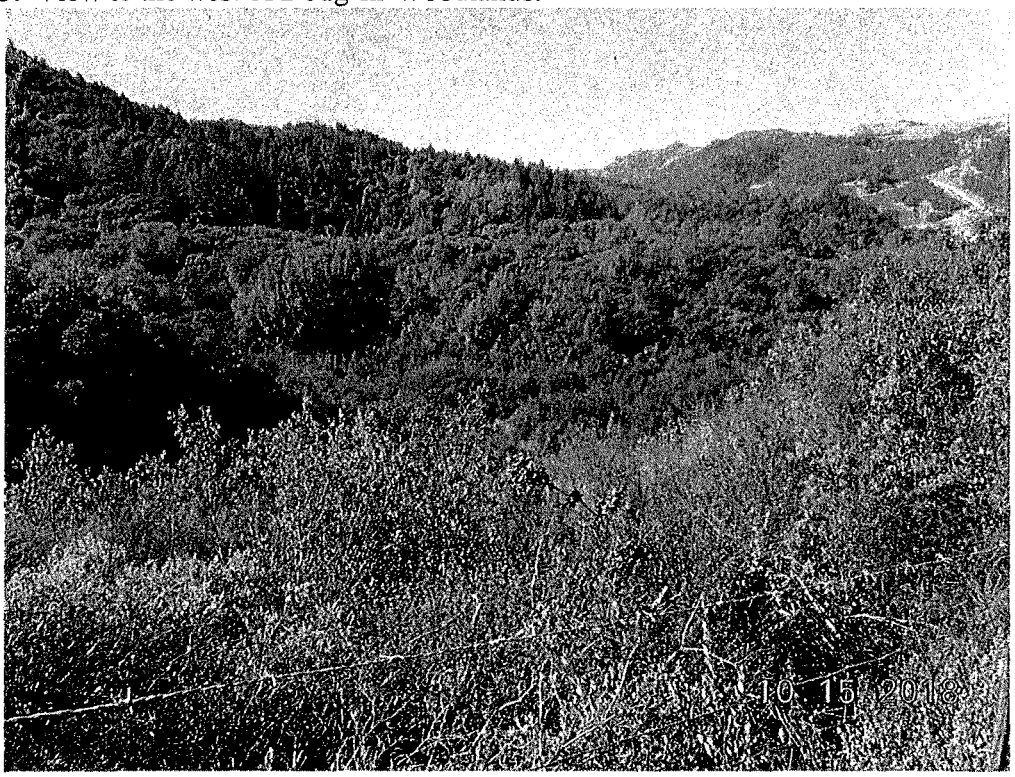


Figure 4. View of Chaparral and Doug-Fir Woodlands on the property.

Figure 5. View of understory within Doug-Fir Woodland.

Figure 6. Drainage within Chaparral Alliance on the property.

Figure 7. Chaparral Alliance on the property.

C.3 Special-Status Species

We did not find any special-status species of plants or animals on the property during our fieldwork. The CDFW CNDDB does not show any records of special-status species for the property or immediately adjoining the property.

ANIMALS

Plate II illustrates special-status animal species recorded in the CDFW CNDDB known to be present near the property. The following special-status animals in the list below are known to be near the property or associated with the habitat on the property:

Foothill Yellow-legged Frog
Coho Salmon-Central California Coast ESU
Red Bellied Newt
Western Pond Turtle

PLANTS

Plate II illustrates special-status plant species recorded in the CDFW CNDDB known to be near the property. The following special-status plants in the list below are known to be near the property or associated with the habitat on the property:

Rincon Ridge Ceanothus
Rincon Ridge Manzanita
Thin-lobed Horkelia

The following summarizes our findings related to special-status species:

- No special-status animal species were observed, seasonal studies may reveal additional species;
- There are no records of special-status animal species in the Department of Fish and Wildlife Natural Diversity database for the property;
- No special-status plant species were observed on or associated with the property, a full spring floristic survey could reveal special-status plant species; and
- There are no records of special-status plant species in the Department of Fish and Wildlife Natural Diversity Data Base for the property.

C.4 Open Space Qualities and Wildlife Resources

The primary open space considerations include the location of the property, the unfenced perimeter, diversity of vegetation types, watershed, view shed and the position between the upland biological resources of the Coast Range Mountains and the adjacent Lake Sonoma.

The Woodland Alliances present contain essential resources of native wildlife as well as significant visual benefit to the public from West Dry Creek Road and Stewarts Point Skaggs Springs Road.

The relative remoteness of the proposed Open Space Wildlife Habitat Area and its biological accessibility from the adjacent parcel and connectivity to the lands of Lake Sonoma offers high potential for support, migration and dispersal of local wildlife species. The remoteness from human activities is critical for species that require large territories such as mountain lion and bear.

The habitat types and or plant communities with their interfacing "edges" around the proposed "Wildlife Habitat Area" support a wide array of fungi, lichens, mosses, liverworts, ferns, conifers and flowering plants and wildlife.

The Open Space Wildlife Habitat area is in a natural undisturbed area without substantial populations on non-native plant species. Wild pigs, although non-native, are present and their rooting opens up small areas of "intermediate disturbance."

C.5 Corridor Connectivity

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

The proposed Open Space Wildlife Habitat area is positioned such that (as shown on Plate IV) the site will allow access or passage of wildlife through the property. This positioning allows connectivity from parcels south of the property to the extensive open space lands of Lake Sonoma. The drainages that traverse the property also function as corridors. This connectivity is essential for genetic exchange ant the maintenance of viable plant and wildlife populations.

The Oak Woodlands provide foraging and nesting needs of local wildlife. The recognition and preservation of the non-farmed areas of the parcel as Open Space Wildlife Habitat Areas will offer replacement generations for the mature trees on the property. Native bunch grasses are surviving on the property in significant populations. This is an important feature because of the losses of native grasslands throughout California. The association of Open Space "Wildlife Habitat Area" with agriculture offers a sustainable balance for preserving natural diversity for future generations.

C.6 Riparian

The Riparian Vegetation along Fall Creek and drainages on the property is by all standards considered sensitive. Riparian Vegetation functions to control water temperature regulate nutrient supply (biofilters), bank stabilization, rate of runoff, wildlife habitat (shelter and food), release of allochthonous material, release of woody debris which functions as habitat and slow nutrient release, and protection for aquatic organisms. Riparian vegetation is also a moderator of water temperature has a cascade effect in that it relates to oxygen availability. The proximity of the proposed Open Space "Wildlife Habitat Area" to this resource further justifies the biotic value of the proposal for local wildlife.

C.7 Recommended Land Use Restrictions and Allowable Uses

As part of the qualification procedures for the Williamson Act, the following recommendations of prohibited uses will insure the continuance of habitat functions and value of the Open Space Wildlife Habitat area:

- No grading or disturbance of ground including the development of roads;
- No agricultural development;
- No deer fencing;
- No domestic agricultural grazing within Open Space Area;
- No removal of any vegetation except as specifically described in the Permitted Uses section;
- No vehicular use except as may be necessary to carry out a use specified in the Permitted Uses section.

It is anticipated that there will be no change in land use of the area designated as Open Space Wildlife Habitat area. The Williamson Act Site Plan insures that any change in use will require either modification of Williamson Contract or cancellation of the Contract.

The following allowable management measures recommended for the Open Space Wildlife Habitat Area:

- Removal of invasive plants:
- Removal of man-made material debris or garbage in a manner not disruptive or injurious to the plants:
- Any access trail building shall only be done by hand:
- Removal of non-status vegetation by hand operated equipment when required by a fire - protection agency and when intended to prevent the build up of fire related fuel type vegetation or dead wood; and
- Emergency equipment access by agency personnel.

These standards and uses are critical in assuring that the Open Space Wildlife Habitat area retains its value over time so the tax relief provides a long-term public benefit.

D. DISCUSSION AND CONCLUSIONS

California's biotic resources are being lost as our population continues to expand. The loss or conversion of open space and wildlife habitat has been occurring in the County and State at an accelerated rate. The proposed Open Space Wildlife Habitat area will preserve an area that is near the developed landscape of Dry Creek Valley and Lake Sonoma yet associated with vast open space elements of the Coast Range Mountains. The recognition as an Open Space Wildlife Habitat Area will allow significant value and service as a wildlife and botanical corridor connecting local biological resources as well as functioning as watershed and view shed. The property is a rich mosaic of habitat types including; Conifer Woodland, Oak Woodland, and Chaparral which have all been impacted and lost in the region. The connectivity of the site to adjacent open space offers the highest potential for the sustainable support of a rich diversity of wildlife.

Our fieldwork found:

- Approximately 65% of the property is open-space undisturbed natural habitat;

- The parcel perimeters are unfenced. Only the vineyard blocks are deer fenced leaving open space corridors through and around the agricultural elements, allowing movement through and within the property

- The parcel contains significant wildlife habitat (forage and cover);

- The parcel is within the watershed of the Russian River and provides connectivity from upland Coast Range Mountain habitat and its wildlife and vegetation resources to the aquatic resources of the Lake Sonoma;

- The plant communities/associations or habitat types present on the undeveloped land of the parcel would be termed: Forest or Woodland Alliances, Shrubland/Chaparral Alliance (Chamise Chaparral) and Riparian Zone Woodland.

Ecological Functions:

- The proposed Open Space / Wildlife Habitat Area (Corridors) are within the watershed of Dry Creek and the Russian River. As a watershed it functions to: maintain surface water quality through filtration and decomposition of pollutants, recharge of groundwater resources, maintain water quality through silt retention and by filtering out sediment and nutrients from run-off, the prevention of flooding and minimization of channel erosion by slowing surface runoff.

- The diversity of habitat types on the parcels and extensive edge effects offers a high quality environment for the support of and survival of local wildlife and plant species.

- The connectivity of the property to adjoining habitat provides access for biological resources allowing genetic dispersal of wildlife as well as botanical gene flow.

Ecosystem Services of Proposed Open Space Wildlife Habitat Area:

In summary the potential "Ecosystem Services" of the proposed Open Space Wildlife Habitat Area include:

- Corridor for biological access to diverse essential ecosystem resources allowing seasonal movement and gene flow;
- Breeding and foraging habitat for local and migratory wildlife and avifauna;
- Preservation of diverse plant alliances and natural biota;
- Preservation of biological diversity;
- Protection of and preservation of portions of the watershed;
- Carbon sequestration;
- Improve air quality;
- Natural areas for nutrient recycling (decomposition) by bacteria and fungi that will support terrestrial and aquatic resources on site and off site;
- Soil development and retention;
- Ground water recharge of aquifers; and
- Retention of viewshed.

Establishing a Williamson Act Contract on this property offers a high level of sustainable support of regional biotic resources. The acceptance will preserve essential wildlife habitat and corridor access that will sustainably support local and regional botanical and wildlife resources.

E. LITERATURE CITED / REFERENCES

E.1 Literature Cited / References

Arora, David, 1986. Mushrooms Demystified. Ten Speed Press.

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

Baldwin, B.G., D.H. Goldman, D.J.Keil, R.Patterson, T.J.Rosati, and D.H.Wilkens, editors, 2012. The Jepson Manual Vascular Plants of California. U.C. Berkley Press

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

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

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

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

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

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

California Department of Fish and Wildlife Natural Diversity Data Base Rare Find 2018.

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

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

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

Ingles, Lloyd C., 1985. Mammals of the Pacific States. Stanford Press.

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

Peterson, Roger T. 1961, 1990. A Field Guide to Western Birds. Houghton Mifflin Co., Boston, MA.

Peters, Hans and Pam Peters, 2005. Raptors of California Natural History Guides. University of California Press, Berkeley and Los Angles.

Sawyer, J. O., T. Keeler-Wolf and Julie M. Evans 2009. A Manual of California Vegetation Second Edition. California Native Plant Society, Sacramento, California.

Schoenherr, Allan A. 1992. A Natural History of California. California Natural History Guides: 56. University of California Press, Berkeley.

Stebbins, Robert C., 1966. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin.

Stewart, John D and John O. Sawyer, 2001 Trees and Shrubs of California. University of California Press.

Wilson, Barbara L., et al., 2008. Field Guide to the Sedges of the Pacific Northwest. Oregon State University Press, Corvallis Oregon.

E.2 Qualifications of Field Investigators

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

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

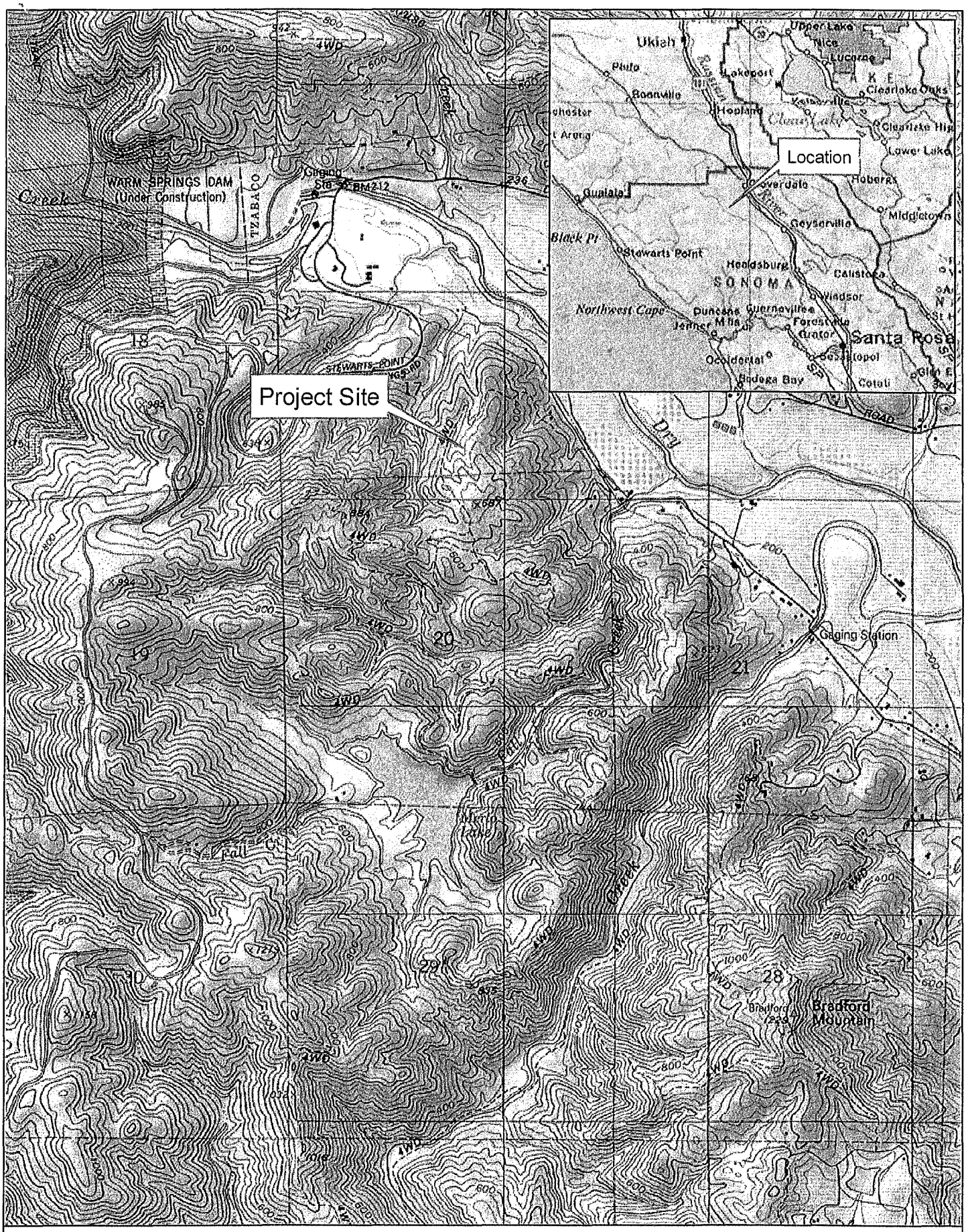


Plate I. Location and Site Map (USGS Geyserville Quadrangle)

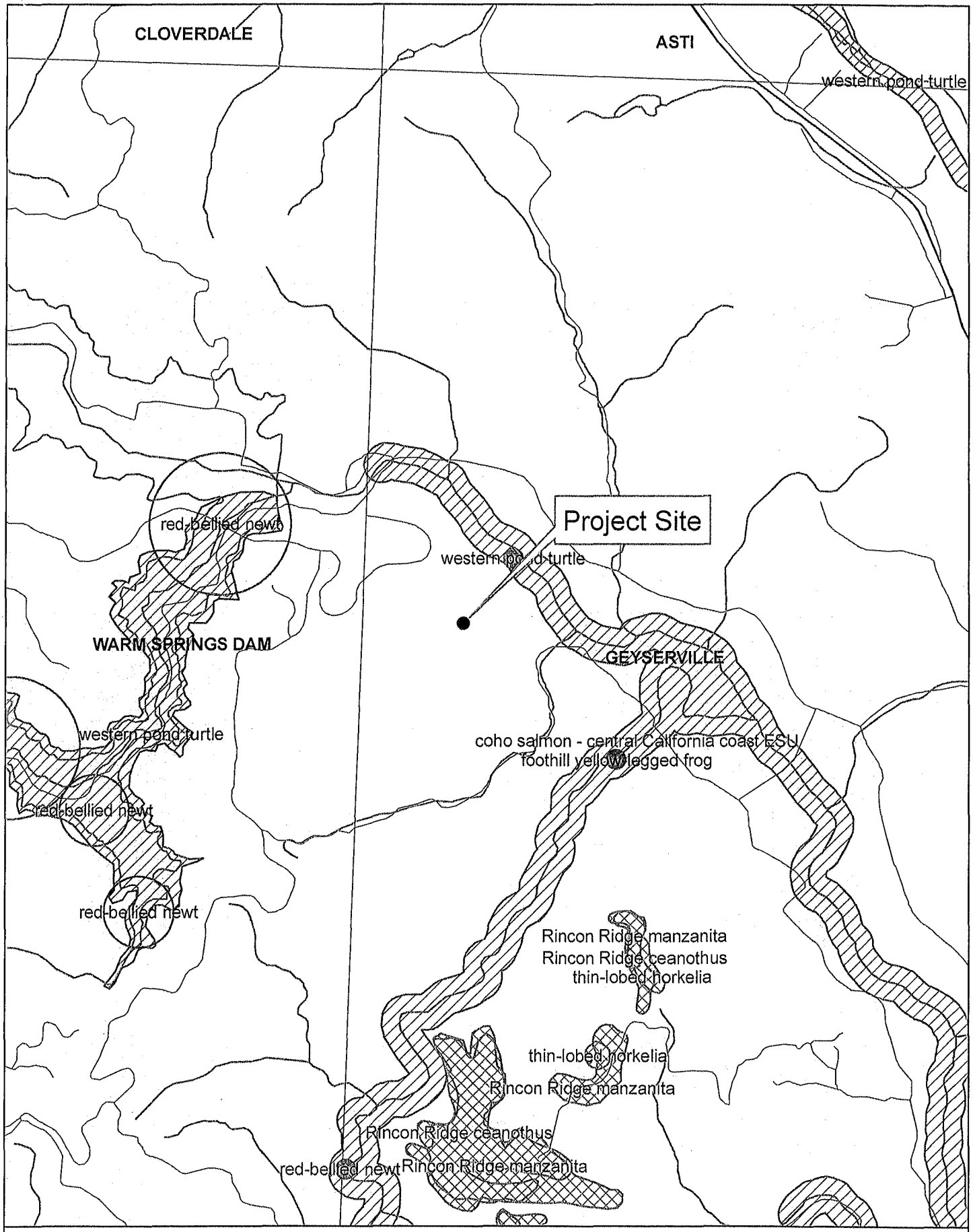


Plate II. CDFW CNDDB Rare Find Data (Data Date October 2018)

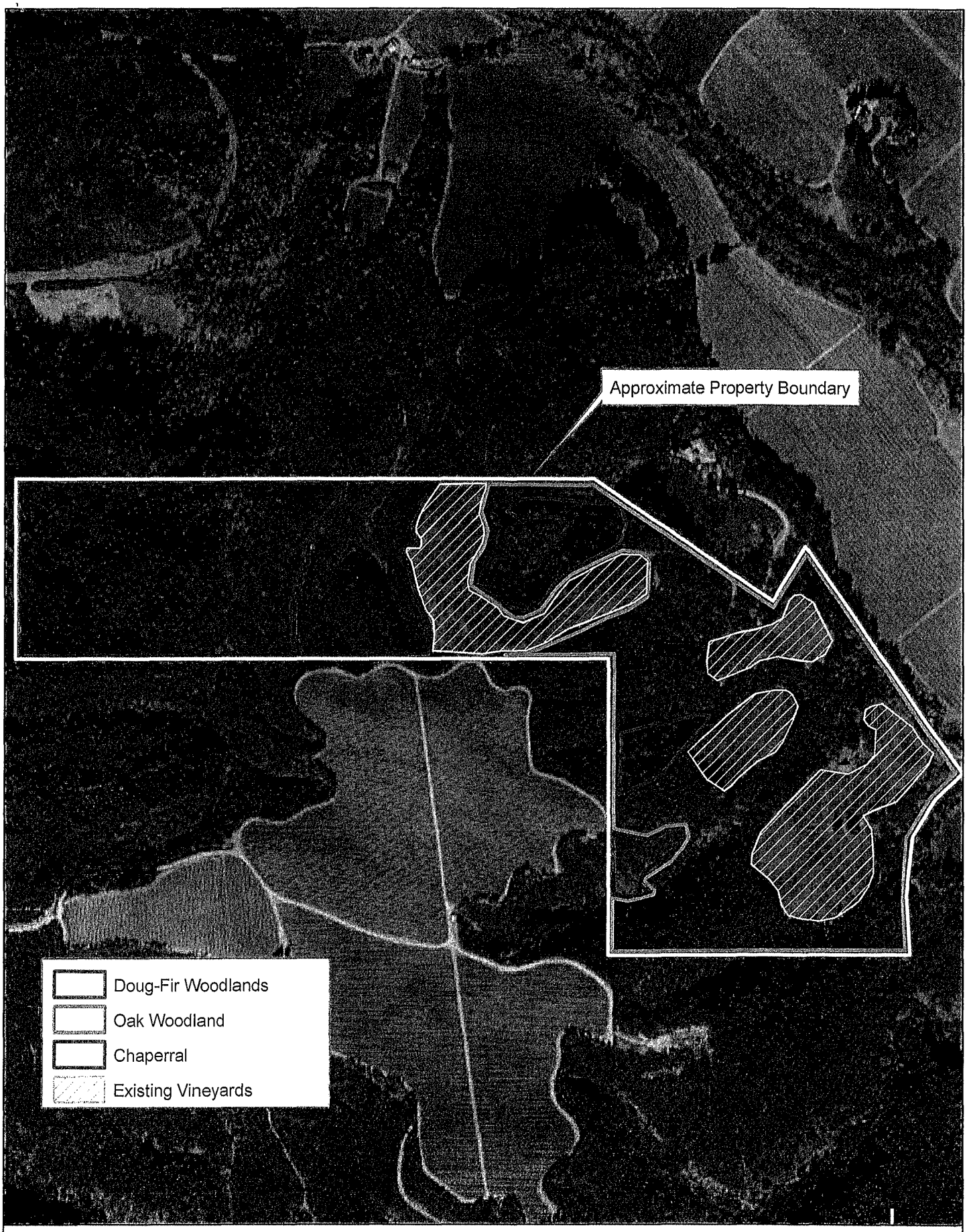


Plate III. Aerial Photo / Vegetation Map

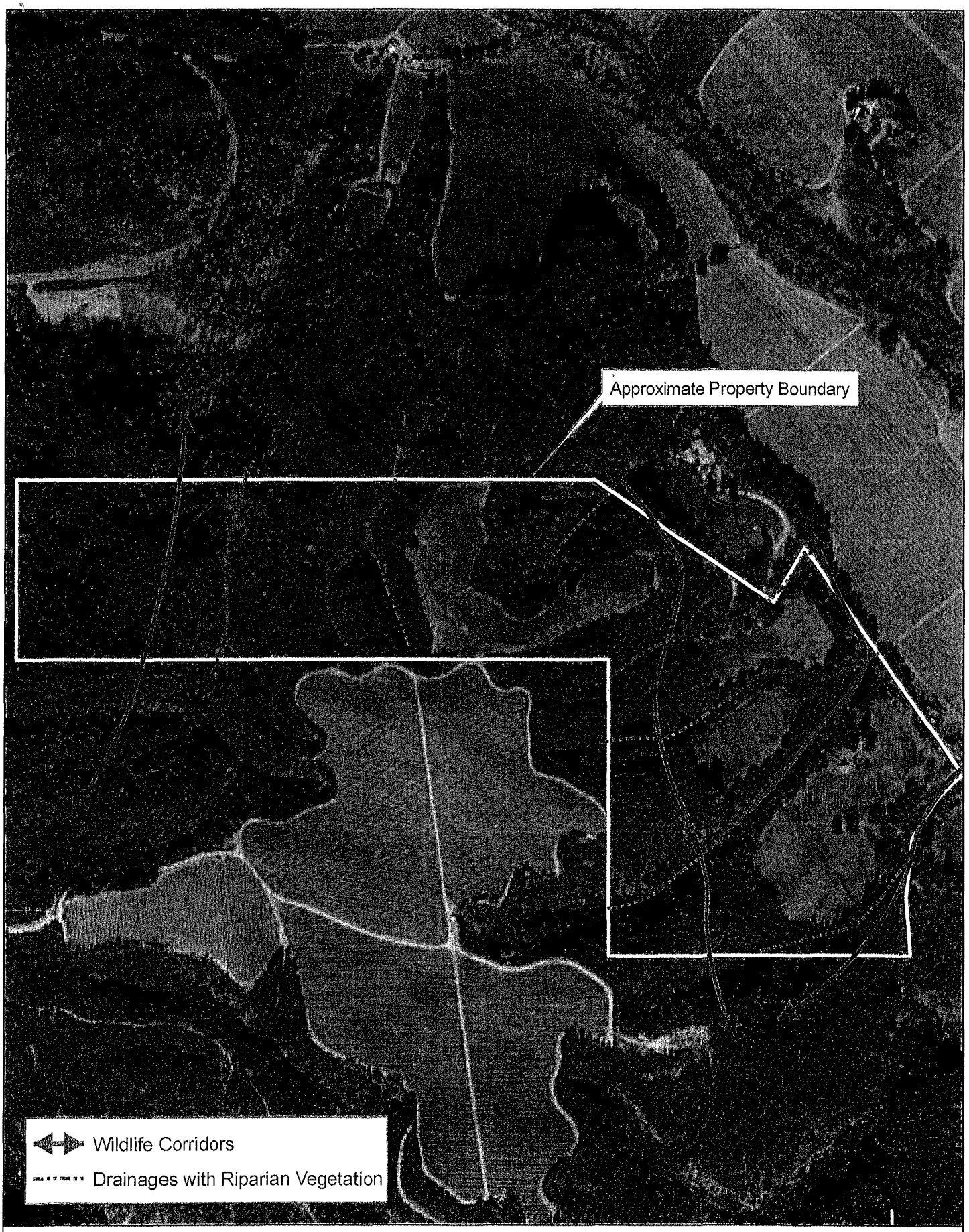
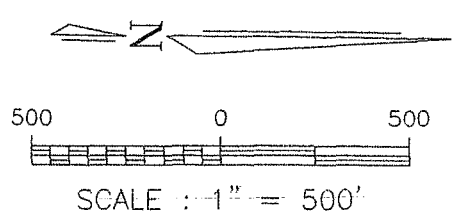


Plate IV. Wildlife Resources Map



VINEYARDS	22 ACRES±
OPEN SPACE	63.11 ACRES ±
COMPATABLE USE	1.28 ACRE ±
UNDESIGNATED	11.43 ACRES±
TOTAL	97.82 ACRE ±

LEGEND

POTENTIAL PLANTING AREA IF ACCESSIBLE

STRUCTURES AS NOTED

DOUG-FIR WOODLANDS

OAK WOODLAND

CHAPERRAL

VINEYARD

LICENSED LAND SURVEYOR
BRIAN ALAN CURTIS
No. 8485
Exp. 12-31-18
STATE OF CALIFORNIA

Brian A Curtis 11/1/18

BRIAN ALAN CURTIS, P.L.S. 8485
EXP. 12/31/18

DATE: 09/27/2018
SCALE: 1"=500'
DRAWN: BC
JOB: 18-057

LAND CONSERVATION MAP
LANDS OF COLLIER FALLS VINEYARD LLC
9931 WEST DRY CREEK RD
APN: 139-120-004

CURTIS & ASSOCIATES
SURVEYING SERVICES
805 HEALDSBURG AVE. · HEALDSBURG, CALIF. 95448 · (707)433-4808

REVISIONS BY

SHEET 1 1

APPENDIX A.

Flora and Fauna Observed

Plants Observed on or in the immediate vicinity of the Property

The nomenclature for the list of plants found on the project study areas and the immediate vicinity follows: Brodo, Irwin M., Sylvia Duran Sharnoff and Stephen Sharnoff, 2001, for the lichens; Arora - 1985, for the fungi; S. Norris and Shevrock - 2004, for the mosses; and Baldwin, B.G., D.H. Goldman, D.J.Keil, R.Patterson, T.J.Rosati, and D.H.Wilkens, editors, 2012 - for the vascular plants. **Habitat Type** indicates the general associated occurrence of the taxon on the project site or in nature. **Abundance** refers to the relative number of individuals on the project site or in the region.

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

FUNGI		
Basidiomycota- Club Fungi		
TELIOMYCETES		
Endocronartium harkensii Western Pine Gall Rust	Parasite on Pines	Common
POLYPORACEAE		
Trametes versicolor (L.) Lloyd Turkey Tail (=*Coriolus versicolor, Polyporus versicolor*	Woodlands on Dead Hardwood	Common
FUNGI		
Ascomycota - Sac Fungi		
LEOTIOMYCETES		
Mycosphaerella arbutiocola Madrone Leaf Spot	On Madrone Leaves	Common
MOSSES		
BRACHYTHECIACEAE		
Homalothecium nuttallii (Wilson) Jaeger NCN	Logs, Tree Trunks, Rocks	Common
Scleropodium touretii (Brid.) L Koch. NCN	Woodlands	Common
CRYPHACEAE		
Dendroalsia abietina (Hook.) Brit. NCN	Woodlands	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

ORTHOTRICHACEAE		
Orthotrichum lyellii Hook & Tayl. NCN	Woodlands, Upper Canopy	Common
RHABDOWEISIACEAE		
@*Dicranowesia cirrata* Hedw. NCN	Woodlands, Chaparral on Soil	Occasional
LIVERWORTS: "COMPLEX THALLOID"		
TARGIONIACEAE		
Targionia hypophylla L. NCN	On Cut Banks	Common
LIVERWORTS: "LEAFY"		
FRULLANIACEAE		
@*Frullania bolanderi* Austin NCN	Woodlands on Bark	Common
LICHENS		
FOLIOSE		
@*Cetraria chlorophylla* (Willd.) Vain NCN	On Wood Conifer Forests	Occasional
Flavoparmelia caperata (L.) Hale Common Green Shield	On Oaks	Common
Flavopunctilia flaventor (Stirt.) Hale Speckled Green Shield	On Oaks, Occasional on Rocks	Common
@*Hypogymnia inactiva* (Krog) OhlssonOn NCN	Oaks	Common
Parmelia sulcata Taylor Hamered Shield Lichen	On Bark	Common
@*Parmotrema perlatum* (Osbeck) Hale & Ahti=*P. chinense* NCN	On Oaks	Common
Peltigera apthosa (L.) Willd . NCN	On Cut Banks Oak Woodland	Occasional
Physconia californica Essl. California Frost Lichen	On Oak Limbs	Common
Xanthoria polycarpa (Hoffm.) Rieber Pin-cushion Sunburst Lichen	On Oaks Young Twigs	Common
FRUTICOSE		
Cladonia chlorophaea (Flörke ex Sommerf.) Spreng. Mealy Powderhorn	On Soil	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

@*Cladonia fimbriata* (L.) Fr. Pixie Cups	On Soil	Occasional
Evernia prunastri (L.) Ach. NCN	On Oaks	Common
@*Ramalina farinacea* (L.) Ach. NCN	On Oaks	Common
Ramalina menziesii Taylor non Tuck. Lace Lichen, Old Man's Beard	On Oaks	Common
@*Usnea fragilescens* Hav. ex Lynge Inflated Beard Lichen	Conifers	Common
Usnea intermedia=U. arizonica NCN	On Oaks	Common
CRUSTOSE		
Pertusaria californica Dibben NCN	On Oaks	Common
Trapeliopsis granulosa NCN	On Soil	Occasional
VASCULAR PLANTS FERNS		
DENNSTAEDTIACEAE		
Pteridium aquilinum (L.) var. *pubescens* Underw. Bracken Fern	Grasslands or Woodlands	Common
DRYOPTERIDACEAE		
Dryotpteris expansa (C. Presl) Fraser-Jenk. Wood Fern	Shaded Creek Banks	Common
PTERIDACEAE		
Pentagramma triangularis (Kaulf.)G.Yatsk. subsp. *triangularis* Goldback Fern	Woodlands	Common
VASCULAR PLANTS DIVISION CONIFEROPHYTA--GYMNOSPERMS		
PINACEAE		
Pinus ponderosa Laws. Ponderosa Pine	Woodlands-Planted	Occasional
Pinus sabiniana Douglas Gray or Foothill Pine	Dry Ridges	Occasional
Pseudotsuga menziesii (Vassey) Mayr var. *menziesii* Douglas-fir	Woodlands	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

TAXODIACEAE		
Sequoia sempervirens (D.Don) Endl. Redwood	Coastal Forests	Common
VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS		
CLASS--DICOTYLEDONAE- TREES		
MAGNOLIIDS		
LAURACEAE		
Umbellularia californica (Hook.&Arn.) Nutt. California Laurel, Sweet Bay, Pepperwood, California Bay	Conifer&Oak Woodlands	Occasional
EUDICOTS		
ERICACEAE Heath Family		
Arbutus menziesii Pursh Madrone	Woodlands	Common
FAGACEAE Oak Family		
Quercus agrifolia Nee Live Oak	Woodlands	Common
Quercus agrifolia x Q kelloggii Hybrid Black Oak	Woodlands	Common
Quercus garryana Hook. Oregon Oak	Woodlands	Common
Quercus kelloggii Newb. Black Oak	Woodlands	Common
Quercus kelloggii Newb. Hybrid *Q. kelloggii x Q. agrifolia* Black Oak		Occasional
@*Quercus wislizenii* A.D.C. Interior Live Oak	Woodlands	Occasional
SAPINDACEAE Soapberry Family		
Aesculus californica (Spach) Nutt. California Buckeye	Woodlands, Riparian	Common
VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS		
CLASS--DICOTYLEDONAE-SHRUBS AND WOODY VINES		
EUDICOTS		
ANACARDIACEAE Sumac Family		
Toxicodendron diversilobum (Torry&Gray) E.Green Poison Oak	Woodlands	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

ASTERACEAE (Compositae) Sunflower Family		
Baccharis pilularis deCandolle Coyote Brush	Woodlands, Grasslands	Common
CACTACEAE Cactus Family		
**Opuntia ficus-indica* (L.) Miller Mission Prickly-Pear, Indian-Fig Burbank's Spineless Prickly Pear	Escape	Common
CAPRIFOLIACEAE Honeysuckle Family		
Symphoricarpos albus (L.) SF Blake *var. laevigatus* Snowberry	Riparian, Shrub/Scrub Woodlands	Common
Symphoricarpos mollis Nuttall Creeping Snowberry, Trip Vine	Woodlands	Common
ERICACEAE Heath Family		
Arctostaphylos manzanita Parry ssp. *manzanita* Common Manzanita	Woodlands	Common
FABACEAE (Leguminosae) Legume Family		
Pickeringia montana Nutt. Chaparral Pea	Chaparral	Common
FAGACEAE Oak Family		
Quercus berberidifolia Liebm. California Scrub Oak	Chaparral	Common
GARRAYACEAE Silk Tassel Family		
Garrya fremontii Torry Fremont's Silk Tassel	Chaparral	Occasional
HYDRANGEACEAE Hydrangea Family		
Whipplea modesta Torrey Whipplea, Yerba de Selva	Woodlands	Common
LAMIACEAE Mint Family		
Lepechinia calycina (Benth.) Munz Pitcher Sage	Chaparrral	Occasional
Monardella viridis Benth. subsp. *viridis* Green Monardella	Chaparral	Occasional
PHRYMACEAE Lopseed Family		
Mimulus aurantiacus Curtis Bush Monkey Flower	Woodlands	Occasional
RHAMNACEAE Buckthorn Family		
Ceanothus cuneatus Nutt.var. *cuneatus* Buckbrush	Chaparral	Common
Ceanothus foliosus Parry var. *foliosus* Wavyleaf Ceanothus	Chaparral	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

Ceanothus intergerrimus Hook.& Arn. var. *integerrimus* Chaparral Deer Brush		Common
Frangula californica (Eschsch.) A.Gray ssp. *californica* Shrub/Scrub California Coffee Berry (=*Rhamnus californica)*		Common
ROSACEAE Rose Family		
Adenostoma fasciculatum Hooker&Arn. Chamise	Shrub/Scrub	Common
Heteromeles arbutifolia (Lind.) M. Rome. Christmas Berry, Toyon	Shrub/Scrub	Common
Rosa gymnocarpa Nuttall. Wood Rose	Woodlands	Occasional
VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS		
CLASS--DICOTYLEDONAE-HERBS		
EUDICOTS		
APIACEAE (Umbelliferae) Carrot Family		
**Dacus carota*L. Wild Carrot, Queen Anne's Lace	Ruderal	Common
**Foeniculum vulgare* Mill. Fennel	Ruderal	Common
Sanicula crassicaulis DC. Pacific Sanicle	Woodlands	Common
**Torilis nodosa* (L.) Gaertn. NCN	Ruderal, Chaparral, Woodlands	Occasional
ASTERACEAE (Compositae) Sunflower Family		
Arnica discoidea Benth. Rayless Arnica	Chaparral, Foothill Woodland	Occasional
@*Baccharis salicifolia* (Ruiz&Pav.)Pers subsp. *salicifolia* Riparian Occasional Mule Fat		
**Carduus pycnocephalus* L.subsp.*pycnocephalus* Woodlands Italian Thistle		Common
**Hypochaeris glabra* L. Cat's Ear	Ruderal	Common
**Lactuca serriola* L. Prickly Lettuce	Ruderal	Occasional
Pseudognaphalium californicum (DC.)Anderb. Dry Open Woodlands Cudweed (=*Gnaphalium californicum)*		Occasional
Wyethia angustifolia (DC.) Nutt. Narrow Leafed Mules Ears	Chaparral	Occasional

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

BRASSICACEAE Mustard Family		
*_Sisymbrium officinalis_ L. Hedge Mustard	Ruderal	Common
EUPHORBIACEAE Spurge Family		
Croton setigerus Hook. Turkey Mullein, Dove Weed (=_Eremocarpus setigerus_)	Ruderal	Common
FABACEAE (Leguminosae) Legume Family		
Lathyrus vestitus Nutt. var. _vestitus_ Hillside Pea	Woodlands	Occasional
ONAGRACEAE Evening-primrose Family		
Epilobium ciliatum Raf. Subsp. _ciliatum_ Northern Willow Herb	Ruderal	Common
*_Plantago lanceolata_ L. English Plantain	Ruderal	Common
POLYGONACEAE Buckwheat Family		
*_Rumex acetosella_ L. Sheep Sorrel	Ruderal	Common
RUBIACEAE Madder Family		
Galium californicum Hook.&Arn. subsp. _californicum_ California Bedstraw, Cleavers	Woodlands	Occasional

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

POACEAE Grass Family		
*_Aira caryophyllea_ L. Silver European Hairgrass	Ruderal	Common
*_Avena barbata_ Link. Slender Wild Oat	Ruderal	Common
*_Briza maxima_ L. Large Quaking Grass, Rattlesnake Grass	Ruderal	Common
*_Bromus diandrus_ Roth Ripgut Grass	Ruderal	Common
*_Bromus hordeaceus_ L. Soft Chess, Blando Brome (_B.mollis_)	Ruderal	Common
*_Cynosurus echinatus_ L. Hedgehog, Dogtail	Ruderal	Common
Elymus glaucus Buckley ssp. _glaucus_ Blue Wildrye	Woodlands	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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

Festuca microstachys Nutt. NCN (=*Vulpia microstachys)*	Ruderal	Common
**Festuca myuros* L. Rattail Fescue,Zorro Annual Fescue (=*Vulpia myuros)*	Ruderal	Common
Festuca occidentalis Hook. Western Fescue	Open Forests, Woodlands	Occasional

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

AGAVACEAE Centuray Plant Family

Chlorogalum pomeridianum (DC.) Kunth var. *pomeridianum* Soap Plant	Woodlands	Common

Fauna Species Observed in the Vicinity of the Project Site

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

AMPHIBIA AND REPTILIA ORDER Common Name	Genus	Observed
SQUAMATA		
Northwestern Alligator Lizard	*Gerrhonotus coeruleus* ssp. *principis*	
Western Fence Lizard	*Sceloporus occidentalis*	X

AVES ORDER Common Name	Genus	Observed
AVES		
California Quail	*Callipepla californica*	X
California Thrasher	*Toxostoma redivivum*	X
California/Brown Towhee	*Pipilo fuscus*	X
Hutton's Vireo	*Vireo huttoni*	X
Osprey	*Pandion haliaetu*	Reported
Spotted Towhee	*Pipilo erythrophthalmus*	X
Scrub Jay	*Aphelocoma coerulescens*	X

MAMMALS ORDER Common Name	Genus	Observed
ARTIODACTYLA		
Feral Pig/Wild Boar	*Sus scrofa*	Reported
CARNIVORA		
Coyote	*Canis latrans*	Scat
Mountain Lion	*Felis concolor*	Reported
Raccoon	*Procyon lotor*	Scat
CERVIDAE		
Black-tailed Deer	*Odocoileus hemionus*	Sight
MARSUPIALIA		
Virginia Opossom	*Didelphis virginiana*	Scat
RODENTIA		
Pocket Gopher	*Thomomys bottae*	Sight