BIOLOGICAL RESOURCES REPORT

3525 Sweetwater Springs Road
(APN 110-200-021)
Healdsburg, Sonoma County, CA

Prepared For:

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Project No. 1905

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PRMD Staff notes on Pages 21-25, wrong address

SOL ECOLOGY

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LIST OF ACRONYMS AND ABBREVIATIONS

CDFG/CDFW	California Department of Fish and Game/Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CWHR	California Wildlife Habitat Relationships
ESA	Federal Endangered Species Act
Inventory	CNPS Inventory of Rare and Endangered Plants
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

The purpose of this study is to provide a review of natural communities, sensitive habitats, and special-status species resources at 3525 Sweetwater Springs Road, Healdsburg, Sonoma County, California (Study Area) as required to convert the existing Agricultural Contract to an Open Space Contract under the Williamson Act (Project).

On February 6, 2019, Sol Ecology, Inc. performed a biological resources survey at 3525 Sweetwater Springs Road, near Healdsburg in Sonoma County, California (Study Area). The purpose of the assessment was to evaluate the site for sensitive habitats and the potential for rare, threatened, and/or endangered species on the property. This report describes the results of the site survey and assessment of the Study Area for the presence of sensitive biological resources protected by state, and federal laws and regulations. This assessment is based on information available at the time of the study and on-site conditions that were observed on the date of the site visit.

1.1 Study Area Setting

The Study Area is located in unincorporated Sonoma County, accessed via Sweetwater Springs Road and Westside Road, off of the 101 freeway. The approximately 138-acre Study Area (APN 110-200-021) is currently zoned as Resources and Rural Development, with Riparian Corridor Combining Zone present along Porter Creek. There is an asphalt driveway in the eastern portion of the Study Area, currently connecting Sweetwater Springs Road to the highest elevation point, located in the northern part of the Study Area. This is also designated as the building envelope. Sweetwater Springs Road cuts through the southwestern portion of the parcel and continues to run along the southern parcel boundary. The Study Area consists of hilly terrain, with elevation changes from approximately 230 feet to 830 feet above sea level.

Starting from the northwestern corner of the property, Porter Creek meanders down into the middle of the study area, traverses along the southern border, and connects with Press Creek. Press Creek runs along the eastern site boundary, flowing in a southerly direction. Both Porter and Press Creeks are perennial creeks that drain the adjacent hillsides. These two creeks have a Riparian Corridor Combining Zone land use designation in Sonoma County, which includes a 50-foot setback from top of bank. There are additional unnamed tributaries to Porter Creek on the property, as mapped in Figure 2 (Appendix A). The unnamed tributaries do not have setbacks mapped in the Riparian Corridor Combining Zone map produced by Sonoma County PRMD. The Study Area is part of the Dry Creek watershed in Sonoma County (Sonoma County 2008).

2.0 METHODS

On February 6, 2019, the Study Area was traversed on foot to determine the presence of (1) plant communities both sensitive and non-sensitive, (2) special status plant and wildlife species, and (3) presence of essential habitat elements for any special-status plant or wildlife species.

2.1 Literature Review

Prior to the site visit, the Soil Survey of Sonoma County, California [U.S. Department of Agriculture (USDA) Web Soil Survey], Google Earth aerial images, USGS topographic quadrangle maps, and the Sonoma County Resource Conservation District watershed map for Sonoma Creek watershed were examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Study Area. Vegetation communities were described according to *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation* (MCV), Online Edition (CNPS 2019a). The MCV was then reviewed to assess the potential for sensitive biological communities to occur in the Study Area. All alliances within the Study Area with a ranking of 1 through 3 were considered sensitive biological communities and mapped if present.

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur near the Study Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Guerneville 7.5-minute USGS quadrangle and the eight surrounding USGS quadrangles (9-quad search). The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the surrounding vicinity of the Study Area.

- California Natural Diversity Database (CNDDB) records (CDFW 2019)
- USFWS Information for Planning and Conservation Species Lists (USFWS 2019; Appendix B)
- CNPS Inventory records (CNPS 2019b)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication *California Bird Species of Special Concern* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003)

2.2 Field Survey

The Study Area was evaluated for the presence of sensitive biological communities, including riparian areas, sensitive plant communities recognized by CDFW, County-mapped riparian corridors, and habitat connectivity corridors. Sensitive communities were identified following A Manual of California Vegetation, Online Edition and includes California Wildlife Habitat Relationships (CWHR) habitat classifications, as well as potentially jurisdictional waters of the U.S. and/or State.

Sol Ecology biologists also performed reconnaissance-level surveys for special status species on and adjacent to the Study Area on February 6, 2019. The focus of the surveys was to identify whether suitable habitat elements for each of the special status species documented in the surrounding vicinity are present on the Study Area or not. Habitat elements examined for the potential presence of sensitive plant species included soil type, elevation, vegetation community, and dominant plant species. For wildlife species, habitat elements examined included the presence of dispersal habitat, foraging habitat, refugia or estivation habitat, and breeding (or nesting) habitat.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of Sol Ecology biologists with experience working with the species and habitats. If a special-status species was observed during the site visit, its presence is recorded and discussed. For some threatened and endangered species, a site survey at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies.

3.0 RESULTS

3.1 Existing Conditions and General Wildlife Use

Biological communities present in the Study Area were classified based on existing plant community descriptions described in the California Native Plant Society Online Manual of California Vegetation (CNPS 2019). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations. Photographs of the Study Area are provided in Appendix C.

Soils at the site are mapped as Boomer loam (0.3%), Hugo-Josephine complex (29.7%), Huse stony clay loam (4.0%), and Laughlin loam (65.9%). These soils are generally well drained to moderately well-drained and has high runoff. There are no hydric soils mapped within the Study Area. Of these soils, the Huse stony clay loam is derived from serpentine parent material. The Huse stony clay loam is located in the northwestern corner of the site, and in the southeastern corner of the site, next to Porter Creek.

Due to the variability in grade, slope aspect, soil type, and moisture on the Study Area, there is a mosaic of vegetation communities across the site. The Study Area is primarily composed of coniferous/broadleaved forest, chaparral, and grassland, with small patches of riparian forest along the two creeks. See below for a detailed description of the vegetation communities and alliances found within the Study Area, as mapped by the Sonoma County Vegetation Mapping & LiDAR Program (Sonoma Veg Project 2014). Please refer to Figure 2 (Appendix A).

<u>Broadleaved Upland Forest</u>
This community is dominated by broadleaved trees, 10-30 meters tall, and forms a closed canopy with relatively little understory. This includes the madrone forest (*Arbutus menziesii*) alliance [S3.2, G4], the California bay forest (*Umbellularia californica*) alliance [S3, G4], and the coast live oak (*Quercus agrifolia*) alliance [S4, G5].

<u>North Coast Coniferous Forest</u>
Moderately dense coniferous forest with trees over 60-80 meters tall, typically found in cooler, moist portions of the Study Area (north-facing slopes and next to creeks). This includes the coast redwood (*Sequoia sempervirens)* alliance [S3.2, G3] and the Douglas-fir (*Pseudotsuga menziesii*) alliance [S4, G5]. Understory under the coast redwoods typically include herbaceous plants like ferns and sorrel.

<u>Cismontane Woodland</u>
This includes the Oregon white oak woodland (*Quercus garryana*) alliance [S3, G4], typically found on drier, warmer slopes – in other words, the south-facing slopes within the Study Area.

Chaparral (Serpentine)

The relatively small patch of leather oak shrubland (*Quercus durata*) alliance [S4, G4] is only found in the northwest corner of the Study Area, corresponding with the location of a serpentine outcrop (mapped as Huse stony clay loam in the soils report). Serpentine soils often host a wide variety of rare plants not found in any other soil type. This community supports a large number of the special status plants listed in Section 3.3.

Valley and Foothill Grassland

Grasslands are found in the less steep, south-facing parts of the Study Area. The largest patch of grassland is found in the highest part of the Study Area, at the terminal end of the driveway. This is mapped as the California annual and perennial grassland macrogroup [no global or state ranking available]. Valley and foothill grassland habitat include areas in which native bunch grass species have been largely or entirely supplanted by introduced, annual Mediterranean grasses (Non-Native Grassland). Stands rich in natives, however, can usually found on unusual substrates, such as serpentinite or somewhat alkaline soils. (CDFW 2019) These non-native grasslands (Holland/CDFW 1986) are dominated by non-native annual grassland characterized by non-native (and invasive) annual grasses and native forbs and wildflowers; in this case, big quaking grass (*Briza maxima)*, English plantain (*Plantago laceolata)*, hedge nettle (*Stachy ajugoides*), Ithuriel's spear (*Triteleia laxa*), and hairy vetch (*Vicia villosa*). Common wildlife species in this habitat includes: Botta's pocket gopher (*Sceloporus occidentalis*), deer mouse ( ), western kingbird ( ), and western fence lizard (*Sceloporus occidentalis*).

3.2 Sensitive Vegetation Communities

Sensitive communities (based on vegetation alliances) are listed below and shown in Figure 2. These alliances may support other sensitive species such as special status plants and animals as described in Sections 3.3 and 3.4.

- madrone forest (*Arbutus menziesii*) alliance [S3.2, G4]
- California bay forest (*Umbellularia californica*) alliance [S3, G4]
- coast redwood forest (*Sequoia sempervirens*) alliance [S3.2, G3]
- Oregon white oak woodland (*Quercus garryana*) alliance [S3, G4]
- Riparian deciduous forest group is found adjacent to Porter Creek and Press Creek and is considered sensitive under California Fish and Game Code Section 1600.

3.2.1 Potential Jurisdictional Areas

Waters (including "Other Waters") of the U.S. and State

- Press Creek
- Porter Creek
- Unnamed tributaries to Press Creek, as mapped on Figure 2.

Riparian deciduous forest group

This habitat is present along portions of Porter Creek. Riparian forest is regulated under Section 1600-1616 of the California Fish and Game Code.

3.3 Special-Status Plants

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Ranks 3 and 4 are included for completeness.

Based upon a review of the resources and databases given in Section 2.1, 61 special-status plant species have been documented within a 9-quad search (Appendix B) and 22 within a five-mile radius of the Study Area (Appendix A, Figure 3); of these 24 plants have potential to occur in the Study Area (see Table 1).

Table 1. Special-Status Plants with Potential to Occur in the Study Area

Common Name	Scientific Name	Rarity Status*	Form	Habitat Type/Alliance	Elevation	Bloom Period
Napa false indigo	*Amorpha californica var. napensis*	1B.2	shrub	Broadleaved upland forest, Chaparral, Cismontane woodland	30-735 m	April - July
Baker's manzanita	*Arctostaphylos bakeri ssp. bakeri*	1B.1	shrub	Broadleaved upland forest, Chaparral, Ultramafic	75-245 m	February - April
Rincon Ridge manzanita	*Arctostaphylos stanfordiana ssp. decumbens*	1B.1	shrub	Chaparral, Cismontane woodland	90 -375 m	February - April
The Cedars fairy-lantern	*Calochortus raichei*	1B.2	herb	Chaparral, Closed-cone coniferous forest, Ultramafic	255-430m	May - August
coastal bluff morning-glory	*Calystegia purpurata ssp. saxicola*	1B.2	herb	Coastal bluff scrub, Coastal dunes, Coastal scrub, North coast coniferous forest	4-165m	May - September
Rincon Ridge ceanothus	*Ceanothus confusus*	1B.1	shrub	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Ultramafic	150-1280m	February - June
dwarf soaproot	*Chlorogalum pomeridianum var. minus*	1B.2	herb	Chaparral, Ultramafic	120-1220m	May - August
Pennell's bird's-beak	*Cordylanthus tenuis ssp. capillaris*	FE, 1B.2	herb	Chaparral, Closed-cone coniferous forest, Ultramafic	90-215m	June - September
serpentine cryptantha	*Cryptantha dissita*	1B.2	herb	Chaparral, Ultramafic	135-735m	April - June
Greene's narrow-leaved daisy	*Erigeron greenei*	1B.2	herb	Chaparral, Ultramafic	90-835m	May - September
serpentine daisy	*Erigeron serpentinus*	1B.3	herb	Chaparral, Ultramafic	120-400m	May - August
fragrant fritillary	*Fritillaria liliacea*	1B.2	herb	Cismontane woodland, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland	3-385m	February - April
Pacific gilia	*Gilia capitata ssp. pacifica*	1B.2	herb	Chaparral, Coastal bluff scrub, Coastal prairie, Valley & foothill grassland	5-1345m	April - August
congested-headed hayfield tarplant	*Hemizonia congesta ssp. congesta*	1B.2	herb	Valley & foothill grassland	5-520m	April - November

Common Name	Scientific Name	Rarity Status*	Form	Habitat Type/Alliance	Elevation	Bloom Period
small groundcone	*Kopsiopsis hookeri*	2B.3	herb	North coast coniferous forest	120-1435m	April - August
Jepson's leptosiphon	*Leptosiphon jepsonii*	1B.2	herb	Chaparral, Cismontane woodland, Ultramafic	55-855m	March - May
marsh microseris	*Microseris paludosa*	1B.2	herb	Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley & foothill grassland	3-610m	April - June
white-flowered rein orchid	*Piperia candida*	1B.2	herb	Broadleaved upland forest, Lower montane coniferous forest, North coast coniferous forest, Ultramafic	20-1615m	May - September
north coast semaphore grass	*Pleuropogon hooverianus*	ST, 1B.1	herb	Broadleaved upland forest, Meadow & seep, North coast coniferous forest, Wetland	45-1160m	April - June
purple-stemmed checkerbloom	*Sidalcea malviflora ssp. purpurea*	1B.2	herb	Broadleaved upland forest, Coastal prairie	15-85m	May - June
Hoffman's bristly jewelflower	*Streptanthus glandulosus ssp. hoffmanii*	1B.3	herb	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland	60-765m	March - July
two-fork clover	*Trifolium amoenum*	FE, 1B.1	herb	Coastal bluff scrub, Ultramafic, Valley & foothill grassland	5-310m	April - June
Santa Cruz clover	*Trifolium buckwestiorum*	1B.1	herb	Broadleaved upland forest, Cismontane woodland, Coastal prairie	30-805m	April - October
oval-leaved viburnum	*Viburnum ellipticum*	2B.3	shrub	Chaparral, Cismontane woodland, Lower montane coniferous forest	215-1400m	May - June

FE – Federal Endangered
ST – State Threatened
SE – State Endangered
Rank 1B.1– Seriously rare, threatened, or endangered in California and elsewhere
Rank 1B.2– Moderately rare, threatened, or endangered in California and elsewhere
Rank 1B.3 – Not very threatened in California
Rank 2B.2 – Moderately rare, threatened, or endangered in California, but more common elsewhere
Rank 4 – Watch List or Locally Rare

3.4 Special Status Wildlife

In addition to wildlife listed as federal or state endangered and/or threatened, federal and state candidate species, CDFW Species of Special Concern, CDFW California Fully Protected species, USFWS Birds of Conservation Concern, and CDFW Special-status Invertebrates are all considered special-status species. Although these species generally have no special legal status, they are given special consideration under CEQA. The federal Bald and Golden Eagle Protection Act also provides broad protections to both eagle species that are roughly analogous to those of listed species. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a "High Priority" or "Medium Priority" species for conservation by the WBWG are typically considered special-status and also considered under CEQA; bat roosts are protected under CDFW Fish and Game Code. In addition to regulations for special-status species, most native birds in the United States (including non-status species) are protected by the federal Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code (CFGC), i.e., sections 3503, 3503.5 and 3513. Under these laws, deliberately destroying active bird nests, eggs, and/or young is illegal.

A total of 20 special-status wildlife species have been documented within five miles of the Study Area (Appendix A, Figure 4). Based on the presence of biological communities described above and the documented occurrence records, the Study Area has the potential to support 18 of these special-status wildlife species, plus three not documented but within range of the Study Area. Species with potential to occur on the Study Area are listed in Table 2 below.

The remaining species found in the review of background literature were determined to be unlikely to occur due to absence of suitable habitat elements in and immediately adjacent to the Study Area. Habitat elements that were evaluated but found to be absent from the immediate area of the Study Area include the following:

- No suitable large bodies of water such as marshes, lakes, title flats (e.g. for great blue heron, Suisun song sparrow, longfin smelt, American peregrine falcon, or osprey);
- No suitable coastal habitat (e.g. for tufted puffin, Allen's hummingbird, Myrtle's silverspot butterfly, or marbled murrelet);
- No suitable coastal prairie habitat (e.g. obscure bumble bee);
- No suitable vernal pool habitat (e.g. for California linderiella);
- Outside of the species potential range or no documented occurrence records within five miles of the Study Area (e.g. rhinoceros auklet, San Clemente spotted towhee, California tiger salamander, Gualala roach, hardhead, Russian River tule perch, Giuliani's dubiraphian riffle beetle, or American peregrine falcon).

Table 2. Special Status Animals with Potential to Occur in the Study Area

Species	Status	Habitat	Location
Mammals			
Pallid bat *Antrozous pallidus*	SSC, WBWG High	Roost in crevices in rocky outcrops, cliffs, caves, mines, trees, and various human structures including bridges, bars, and buildings (occupied and unoccupied). Found in grasslands, woodlands, and forests most commonly in open edges along river channels.	May maternity roost in tree cavities or under exfoliating bark in broadleafed upland forest and cismontane woodland habitats. No winter hibernation habitat is present.
Townsend's big-eared bat *Corynorhinus townsendii*	SSC, WBWG High	Associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	May forage within the Study Area as suitable forest habitats are present. Suitable roost habitat is not present.
western red bat *Lasiurus blossevillii*	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. Appear to be strongly associated with riparian habitats. Roosts are usually in broad-leaved trees including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	May roost in tree cavities or under exfoliating bark in woodland and riparian habitats. May hibernate in leaf litter during the winter rather than migrate.
hoary bat *Lasiurus cinereus*	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water. Have been known to hibernate rather than migrate.	May roost in foliage of trees within the Study Area. No winter hibernation habitat is present.
North American porcupine *Erethizon dorsatum*	none	Prefers coniferous and mixed forests; also inhabits riparian zones, grasslands, shrublands, and deserts in some parts of the range. Winter den may be in a rock outcrop, live hollow tree, hollow log, or outbuilding. May shelter in dense conifers in winter.	May be present in the forested, woodland and riparian habitats.

American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	May be present on site or adjacent lands. No badger burrows were observed within the Study Area.
Birds			
northern spotted owl *Strix occidentalis caurina*	FT, SCT SSC	Year-round resident in dense, structurally complex forests, primarily those with old-growth conifers. It nests in cavities or on platforms in large trees, preferentially inhabiting old growth forests, though it can be found in mixed primary- and secondary-growth forests in the southern part of its range (southern Oregon and California). Preys on mammals.	May nest in old-growth forest habitats on the site; may forage in both woodland and forest.
white-tailed kite *Elanus leucurus*	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	May nest or forage on-site; preferred habitat is not present.
Nuttall's woodpecker *Picoides nuttallii*	BCC	Year-round resident in lowland woodlands throughout much of California west of the Sierra Nevada. Typical habitat is dominated by oaks; also occurs in riparian woodland. Nests in tree cavities.	May be present in woodland and riparian habitats.
oak titmouse *Baeolophus inornatus*	BCC	Occurs year-round in woodland and savannah habitats where oaks are present, as well as riparian areas. Nests in tree cavities.	May be present in woodland and riparian habitats.
Golden eagle *Aquila chrysaetos*	CFP, BCC	Rolling foothills, mountain areas, and deserts. Nests in cliff-walled canyons and large trees within otherwise open areas.	May nest in large trees located within Study Area; no nest structures found. May forage on-site.
Amphibians and Reptiles			
Pacific (western) pond turtle *Emys marmorata*	SSC	Aquatic turtle present in ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation and basking sites. Nests in uplands within 100 m.	May be present in Porter Creek, Press Creek and surrounding tributaries; may nest in surrounding uplands.

California giant salamander *Dicamptodon ensatus*	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	Known, documented occurrences within Porter Creek within project-site boundaries. May utilize Porter Creek, Press Creek and surrounding tributaries as breeding habitat, and surrounding forest and woodland habitats the rest of the year.
California red-legged frog *Rana draytonii*	FT, SSC, RP	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	May breed within Porter Creek, Press Creek and surrounding tributaries. May estivate and disperse in surrounding uplands.
foothill yellow-legged frog *Rana boylii*	ST	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	May breed within Porter Creek, Press Creek and surrounding tributaries. Known documented occurrences within Porter Creek.
red-bellied newt *Taricha rivularis*	SSC	Lives in terrestrial habitats in redwood forests along the coast and will migrate several hundred meters in a season to breed in fast-moving streams with rocky bottoms. After breeding, adults leave streams but usually remain in the same drainages.	May be present in Porter Creek and surrounding terrestrial habitats are suitable for this species.
Fishes			
Coho salmon - central CA coast ESU	FE, SE, NMFS	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters.	Coho introduced to Porter Creek in 2016 by CDFW. Status in Press Creek is unknown.

Oncorhynchus kisutch		Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	
steelhead - central CA coast DPS *Oncorhynchus mykiss irideus*	FT, NMFS	Occurs from the Russian River south to Soquel Creek and Pajaro River and in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean.	Documented in Porter Creek and Press Creek (in CDFW stream inventory reports); both creeks provide suitable spawning habitat, and steelhead may also utilize tributaries.
Navarro roach *Lavinia symmetricus navarroensis*	SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams.	May be present in Porter Creek as suitable habitat is present. Unidentified roach species identified in online stream inventory reports.
Invertebrates			
California freshwater shrimp *Syncaris pacifica*	FE, SE, SSI	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	May be present as Porter Creek, Press Creek and surrounding tributaries provide suitable habitat capable of supporting this species.
western bumble bee *Bombus occidentalis*	SSI	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2015). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	May be present in woodland and grassland habitats in the Study Area.

FE/SE – Federal/State Endangered
FT/ST – Federal/State Threatened
SCE/T – State Candidate Endangered/Threatened
SSC – Species of Special Concern
CFP – California Fully Protected
BCC – Bird of Conservation Concern
SSI – Special Status Invertebrate
WBWG – Western Bat Working Group Medium or High Priority Species

3.5 Wildlife Habitat Area

Wildlife Habitat Area is defined as a land or water area designated by the Board of Supervisors, after consulting with and considering the recommendation of the CDFW as an area of importance for the protection or enhancement of the wildlife resources of the state. Such area shall include any land area designated in the General Plan as a biotic habitat area or riparian corridor. Wildlife Habitat Areas in the Study Area are shown in Figure 5 and include Porter Creek and its associated riparian corridor. This area will be included in its entirety within the open space contract area.

4.0 CONCLUSION AND RECOMMENDATIONS

The Study Area encompasses five sensitive natural communities including madrone forest, California bay forest, coast redwood forest, Oregon white oak woodland, and riparian deciduous forest; and jurisdictional non-wetland waters including Press Creek and Porter Creek. The Study Area has the potential to support 24 special status plant species and 18 wildlife species. Converting the existing Agricultural Contract to an Open Space Contract under the Williamson Act will help preserve the natural and scenic resources which contribute to the general welfare and quality of life for the residents of Sonoma County and the maintenance of its tourism industry.

The ecosystem services the forests and creeks within the Study Area provide include cleansing air and water, renewing soil fertility, slowing sediment runoff, treating wastes, maintaining biological diversity, and providing aesthetic. These services contribute to clean air and maintenance of water quality for the public. Maintaining the existing natural communities within the Study Area supports a rich diversity of plants and wildlife and their habitat.

To consistently maintain the open space of the Study Area, Sol Ecology recommends incorporating best management practices (BMPSs) consistent with the policies for biotic resources outlined in the 2020 Sonoma County General Plan (Sonoma County 2020). Such BMPs may include the following:

- Monitoring the status of non-native, invasive plant species using an integrated weed management approach for the species.
- Development of a reseeding plan in the event of a catastrophic event such as fire.
- Road maintenance or upgrades.
- Debris removal and cleanup.
- Hazard tree removal.
- Water quality monitoring during construction and/or maintenance activities.
- Fencing and/or signage to prevent trespassing.

5.0 REFERENCES

Burridge, B. (ed.) 1995. Sonoma County Breeding Bird Atlas. Madrone Audubon Soc., Santa Rosa, CA.

California Department of Fish and Wildlife (CDFW). 2019. California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch, Sacramento, CA. Most recently accessed: February 2019.

CDFW. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. March 20, 2018.

California Invasive Plant Council (Cal-IPC). 2019. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: February 2019.

California Native Plant Society (CNPS). 2019a. A Manual of California Vegetation, Online Edition. Sacramento, California. Online at: http://vegetation.cnps.org/; most recently accessed: February 2019.

CNPS. 2019b. Inventory of Rare and Endangered Plants (online edition, v8-02). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: February 2019.

Jepson Flora Project (eds.). 2019. Jepson eFlora. Online at: http://ucjeps.berkeley.edu/UM.html; most recently accessed: February 2019.

Shuford, WD, and T Gardali (eds). 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 CDFG, Sacramento.

Sonoma County. 2020. General Plan: Open Space and Resource Conservation Element document. Online at: https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/General-Plan/Open-Space-and-Resource-Conservation/. Most recently accessed: January 2020.

Sonoma County. 2008. Sonoma County General Plan 2020. Permit and Resource Management Department.

Sonoma County Vegetation Mapping & LiDAR Program (Sonoma Veg Project). 2014. Vegetation, Habitat, and LiDAR Data for Sonoma County. Available at: http://sonomavegmap.org/data-downloads/. Most recently accessed: February 2019.

Stebbins, RC. 2003. A Field Guide to Western Reptiles and Amphibians, third edition. The Peterson Field Guide Series, Houghton Mifflin Company, NY.

Thomson, Robert C., Amber N. Wright, and H. Bradley Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. California Department of Fish and Wildlife University Press.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service. 2011. Web Soil Survey. Online at http://websoilsurvey.nrcs.usda.gov; most recently accessed: February 2019.

United States Fish and Wildlife Service (USFWS). 2019. Information for Conservation and Planning Database. Available online at: https://ecos.fws.gov/ipac/; most recently accessed: February 2019.

United States Geological Survey (USGS). 2019. North American Breeding Bird Atlas. Available online at: https://www.pwrc.usgs.gov/bba/; most recently accessed: February 2019.

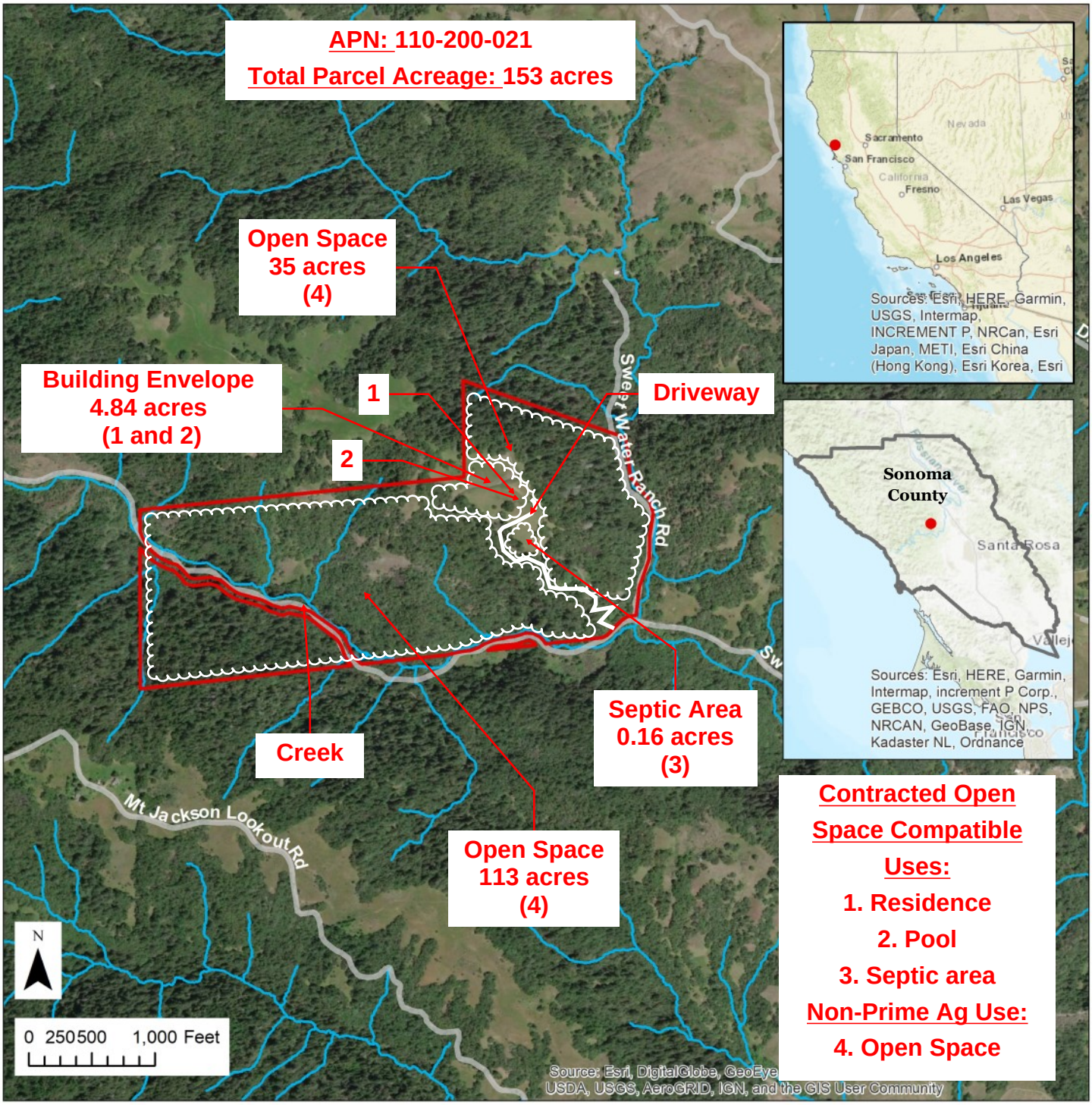
[WBWG] Western Bat Working Group. 2015. Species Accounts. Available online at: http://wbwg.org/western-bat-species/; most recently accessed: February 2019.

Zeiner, DC, WF Laudenslayer, Jr., KE Juneer, and M White. 1990. California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, CA.

APPENDIX A

PROJECT FIGURES: SITE LOCATION MAP, VEGEATION COMMUNITIES, AND CNDDB DATABASE RESULTS

Figure 1: Location of Project Area *(PRMD Staff edit) Site Address is 3525...*
~~3552~~ Sweetwater Springs Rd., Healdsburg, CA



Date: 2-5-2019
Data: Sol Ecology Inc., Sonoma Co., Sonoma Co. Vegetation Mapping & LIDAR Prog.

Base: ESRI
GIS: AJG

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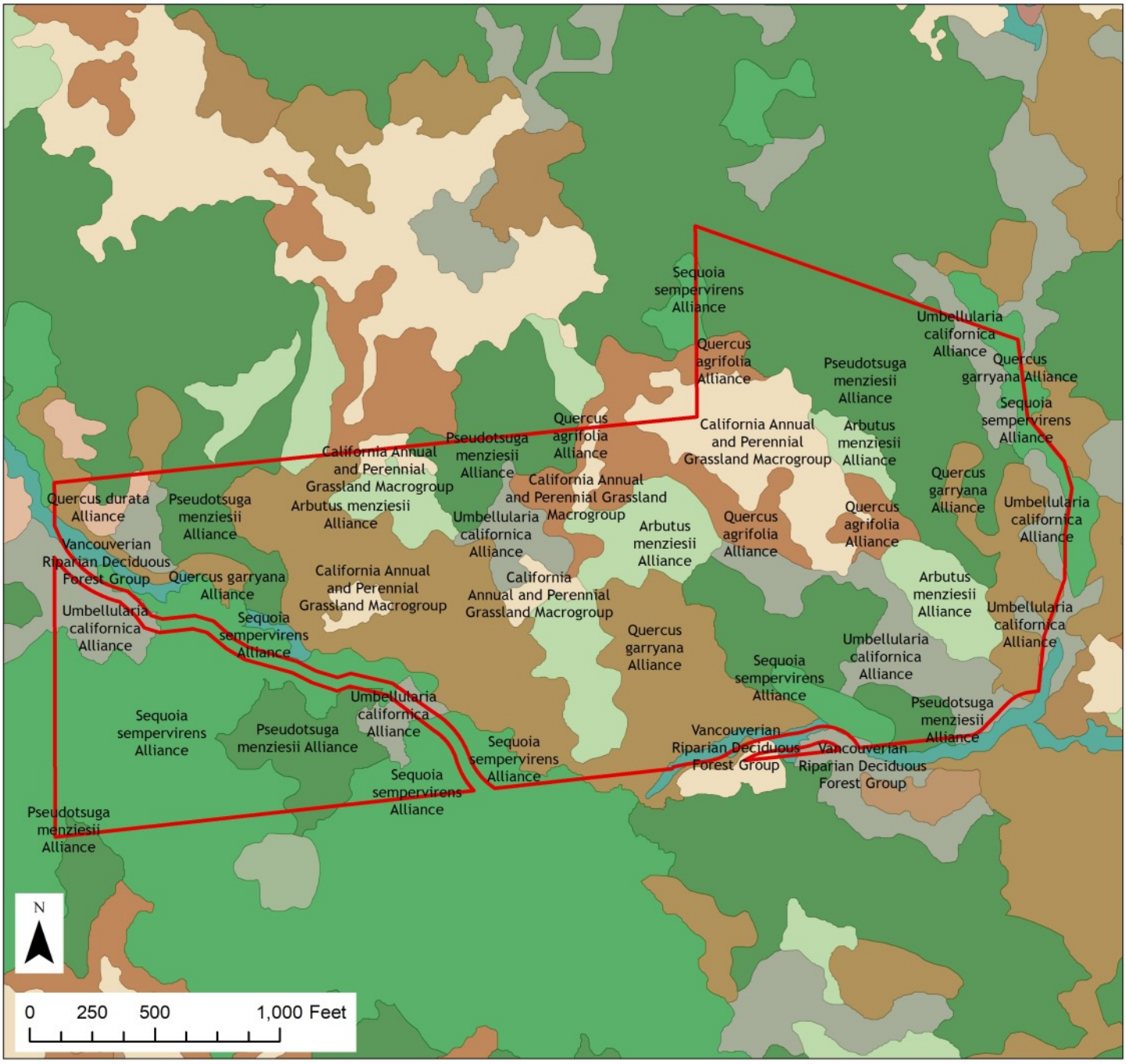
Figure 2: Vegetation Communities *(PRMD Staff edit) Site Address is 3525...*
~~3552~~ Sweetwater Springs Rd., Healdsburg, CA



Vegetation and Habitat Map Classes

Conifer
- Pseudotsuga menziesii Alliance
- Sequoia sempervirens Alliance

Hardwood
- Arbutus menziesii Alliance
- Notholithocarpus densiflorus Alliance
- Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizenii) Alliance
- Quercus agrifolia Alliance
- Quercus garryana Alliance
- Quercus lobata Alliance
- Umbellularia californica Alliance

Riparian Forest
- Vancouverian Riparian Deciduous Forest Group

Shrub
- Baccharis pilularis Alliance
- Quercus durata Alliance

Herbaceous
- California Annual and Perennial Grassland Macrogroup

Date: 2-5-2019
Data: Sol Ecology Inc., Sonoma Co., Sonoma Co. Vegetation Mapping & LIDAR Prog.

Base: ESRI
GIS: AJG

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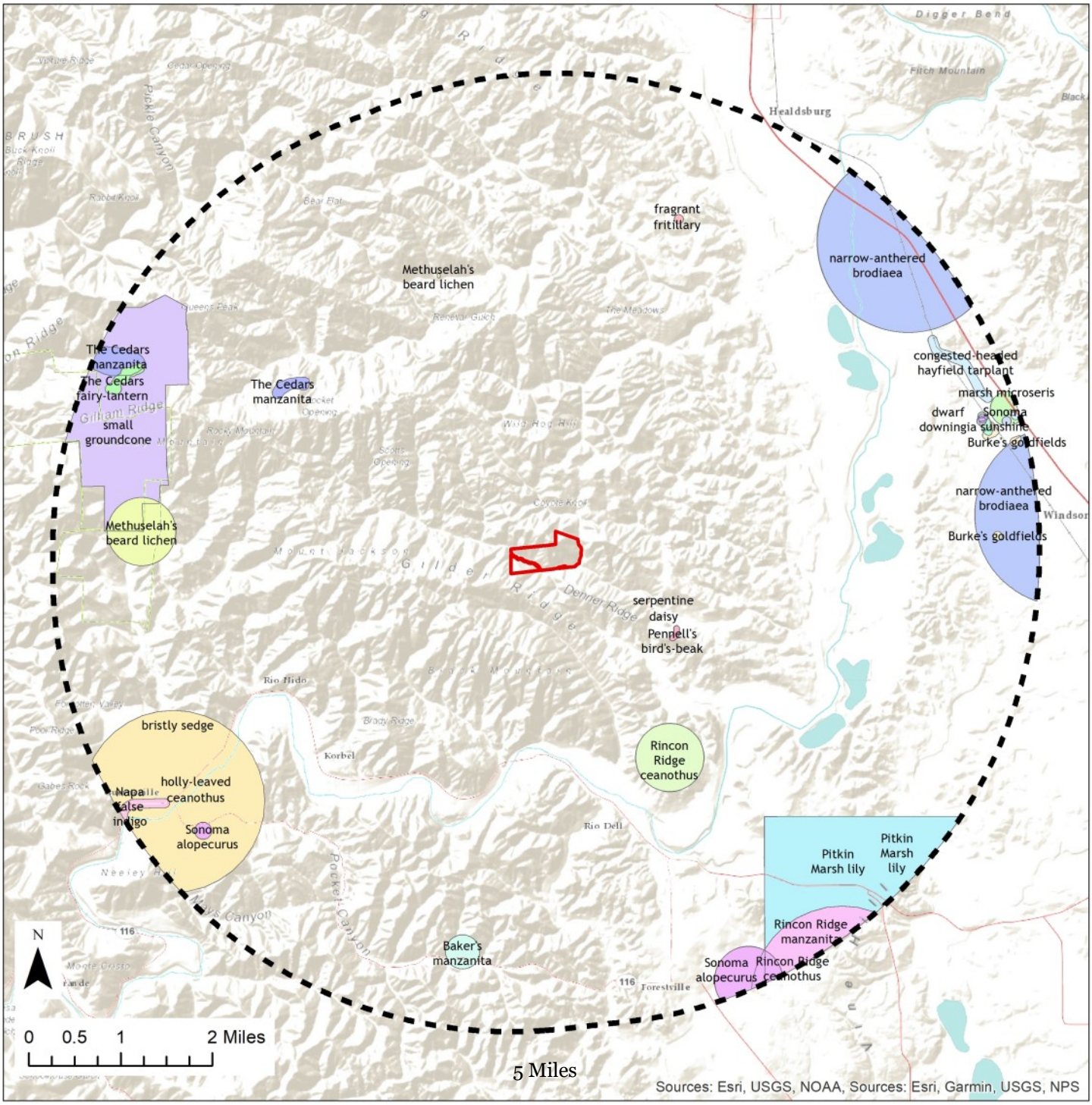
Figure 3: Special Status Plant Species within 5 Miles of the Project Site

~~3552~~ Sweetwater Springs Rd., Healdsburg, CA *(PRMD Staff edit) Site Address is 3525…*



Project Study Area
5-Mile buffer
Baker's manzanita (1)
Baker's navarretia (1)
Burke's goldfields (2)
Methuselah's beard lichen (2)
Napa false indigo (1)
Pennell's bird's-beak (1)
Pitkin Marsh lily (2)
Rincon Ridge ceanothus (2)
Rincon Ridge manzanita (1)
Sonoma alopecurus (2)
Sonoma sunshine (1)
The Cedars fairy-lantern (1)
The Cedars manzanita (2)
bristly sedge (1)
congested-headed hayfield tarplant (2)
dwarf downingia (1)
fragrant fritillary (1)
holly-leaved ceanothus (1)
marsh microseris (1)
narrow-anthered brodiaea (2)
serpentine daisy (1)
small groundcone (1)

Date: 2-5-2019
Data: Sol Ecology Inc., Sonoma Co., Sonoma Co. Vegetation Mapping & LIDAR Prog.

Base: ESRI
GIS: AJG

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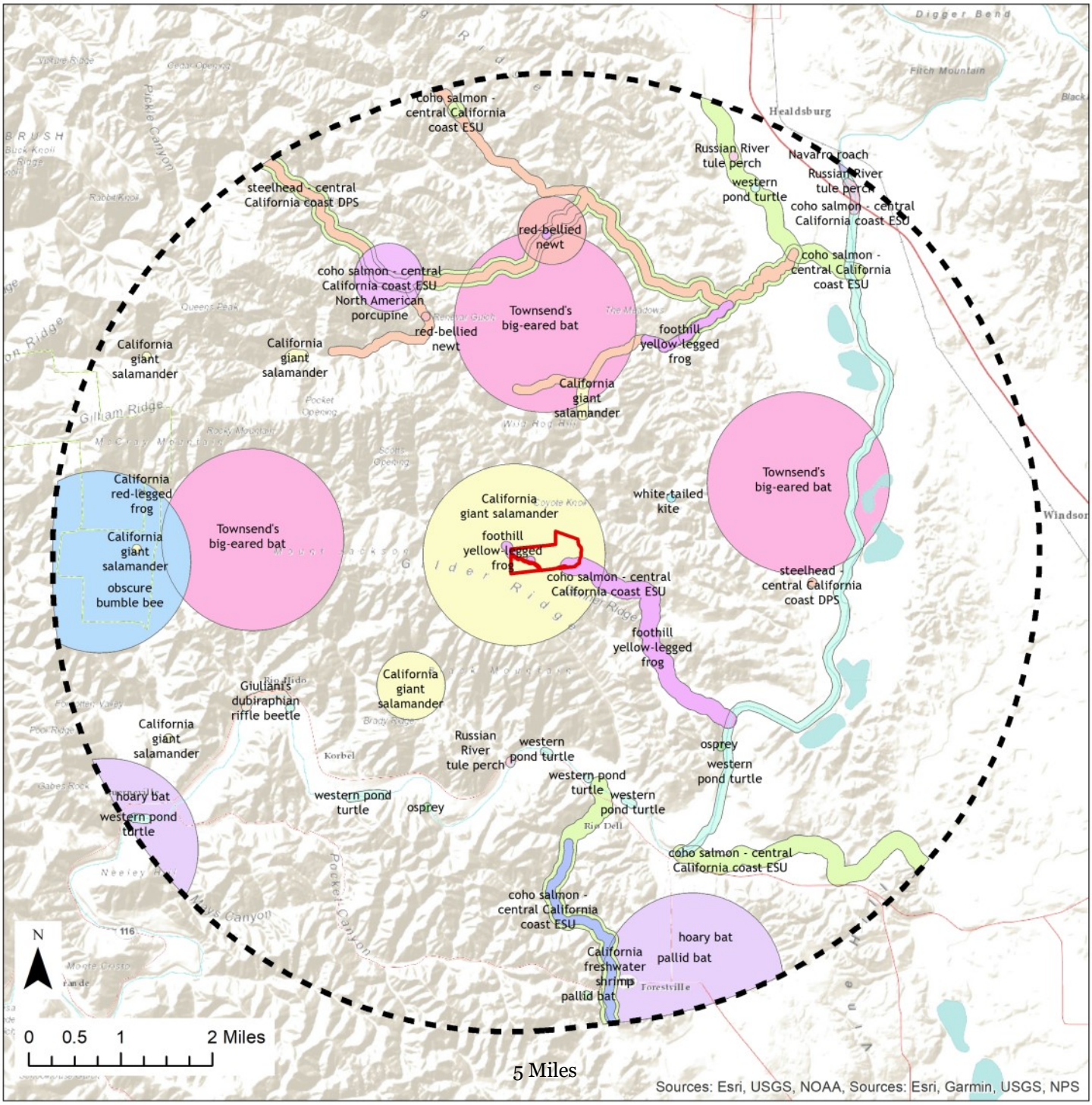
Figure 4: Special Status Animal Species within 5 Miles of the Project Site

~~3552~~ Sweetwater Springs Rd., Healdsburg, CA *(PRMD Staff edit) Site Address is 3525…*



Project Study Area
5-Mile buffer
California freshwater shrimp (1)
California giant salamander (7)
California red-legged frog (1)
Giuliani's dubiraphian riffle beetle (1)
Navarro roach (1)
North American porcupine (1)
Russian River tule perch (3)
Townsend's big-eared bat (3)
coho salmon - central California coast ESU (7)
foothill yellow-legged frog (4)
hoary bat (2)
obscure bumble bee (1)
osprey (2)
pallid bat (2)
red-bellied newt (2)
steelhead - central California coast DPS (2)
western pond turtle (8)
western red bat (1)
white-tailed kite (1)

Date: 2-5-2019
Data: Sol Ecology Inc., Sonoma Co., Sonoma Co. Vegetation Mapping & LIDAR Prog.

Base: ESRI
GIS: AJG

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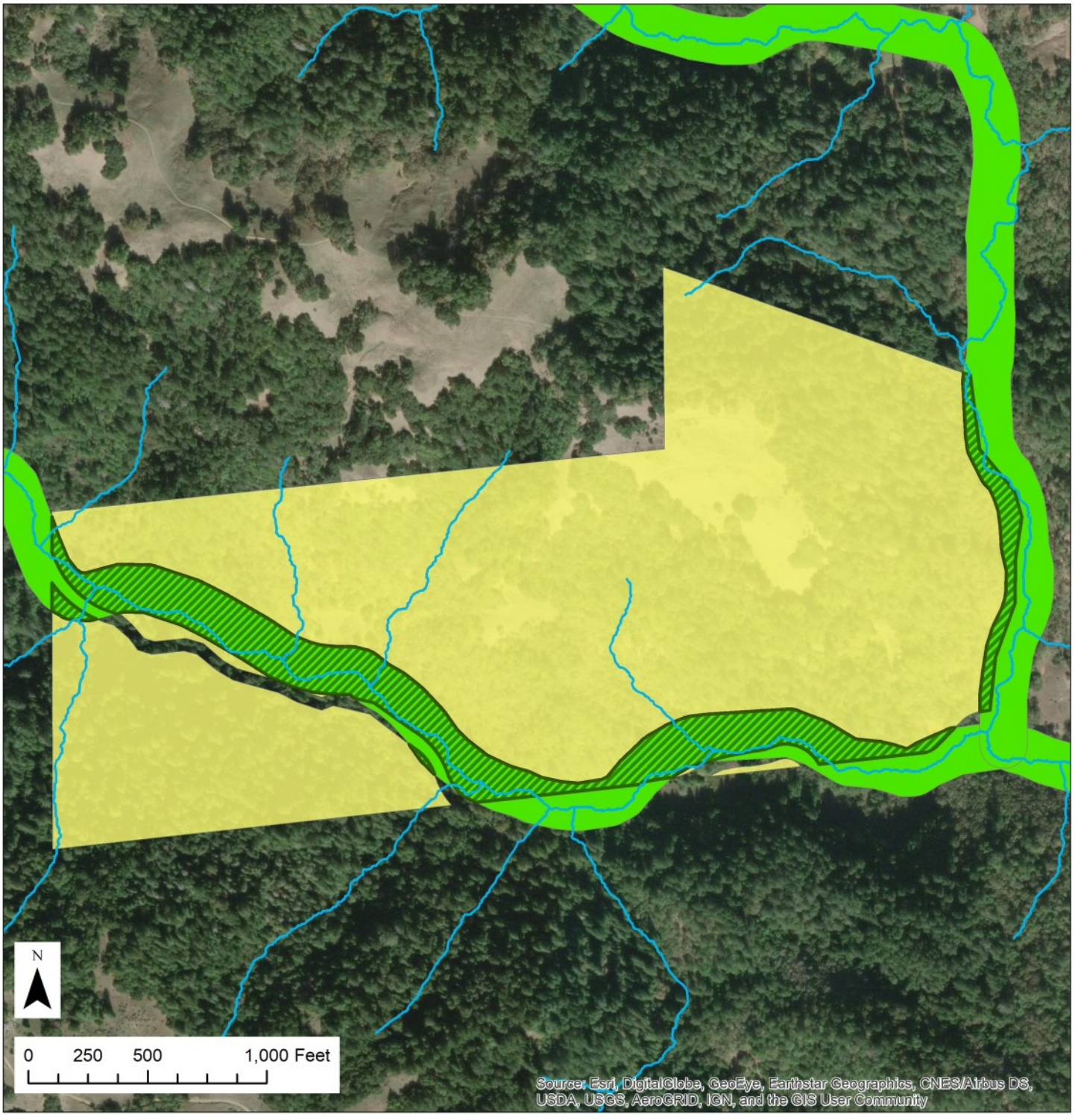
Figure 5: Wildlife Habitat Area *(PRMD Staff edit) Site Address is 3525...*
~~3552~~ Sweetwater Springs Rd., Healdsburg, CA



Date: 2-5-2019
Data: Sol Ecology Inc., Sonoma Co., Sonoma Co. Vegetation Mapping & LIDAR Prog.

Base: ESRI
GIS: AJG

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APPENDIX B

CNDDB RESULTS SUMMARY TABLE

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Warm Springs Dam (3812361) OR Geyserville (3812268) OR Jimtown (3812267) OR Cazadero (3812351) OR Guerneville (3812258) OR Healdsburg (3812257) OR Duncans Mills (3812341) OR Camp Meeker (3812248) OR Sebastopol (3812247))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Agelaius tricolor tricolored blackbird	G2G3 S1S2	None Candidate Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	106 106	952 S:1	0	0	0	0	0	1	1	0	1	0	0
Agrostis blasdalei Blasdale's bent grass	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	20 280	62 S:4	0	1	2	0	0	1	0	4	4	0	0
Alopecurus aequalis var. sonomensis Sonoma alopecurus	G5T1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	40 320	21 S:9	0	0	0	2	1	6	9	0	8	0	1
Ambystoma californiense California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	80 135	1185 S:28	5	13	5	1	0	4	2	26	28	0	0
Amorpha californica var. napensis Napa false indigo	G4T2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	100 1,800	76 S:9	1	1	1	0	0	6	4	5	9	0	0
Andrena blennospermatis Blennosperma vernal pool andrenid bee	G2 S2	None None		90 130	15 S:2	0	0	0	0	0	2	2	0	2	0	0
Antrozous pallidus pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	144 930	416 S:8	0	0	1	2	4	1	6	2	4	1	3
Arborimus pomo Sonoma tree vole	G3 S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	10 1,530	222 S:14	0	0	0	0	0	14	14	0	14	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Arctostaphylos bakeri ssp. bakeri Baker's manzanita	G2T1 S1	None Rare	Rare Plant Rank - 1B.1	250 800	3 S:3	0	2	0	0	0	1	2	1	3	0	0
Arctostaphylos bakeri ssp. sublaevis The Cedars manzanita	G2T2 S2	None Rare	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,000 1,200	4 S:4	3	1	0	0	0	0	3	1	4	0	0
Arctostaphylos densiflora Vine Hill manzanita	G1 S1	None Endangered	Rare Plant Rank - 1B.1	200 240	2 S:2	0	0	1	1	0	0	1	1	2	0	0
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	G3T1 S1	None None	Rare Plant Rank - 1B.1	500 1,220	12 S:5	0	1	0	0	0	4	4	1	5	0	0
Ardea herodias great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	120 870	155 S:2	1	0	0	0	0	1	1	1	2	0	0
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	104 187	1976 S:2	0	1	0	1	0	0	0	2	2	0	0
Blennosperma bakeri Sonoma sunshine	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	70 140	24 S:11	0	3	2	1	2	3	4	7	9	1	1
Bombus caliginosus obscure bumble bee	G4? S1S2	None None	IUCN_VU-Vulnerable	10 600	181 S:4	0	0	0	0	0	4	4	0	4	0	0
Bombus occidentalis western bumble bee	G2G3 S1	None None	USFS_S-Sensitive XERCES_IM-Imperiled	10 220	282 S:5	0	0	0	0	0	5	5	0	5	0	0
Brodiaea leptandra narrow-anthered brodiaea	G3? S3?	None None	Rare Plant Rank - 1B.2	100 530	39 S:3	0	0	0	0	0	3	3	0	3	0	0
Calamagrostis crassiglumis Thurber's reed grass	G3Q S2	None None	Rare Plant Rank - 2B.1	150 150	15 S:1	0	0	0	0	0	1	1	0	1	0	0
Calochortus raichei The Cedars fairy-lantern	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	850 1,400	9 S:9	2	2	0	0	0	5	6	3	9	0	0
Calystegia collina ssp. oxyphylla Mt. Saint Helena morning-glory	G4T3 S3	None None	Rare Plant Rank - 4.2	2,250 2,250	9 S:1	0	0	0	0	0	1	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	G4T2T3 S2S3	None None	Rare Plant Rank - 1B.2	40 200	42 S:4	0	1	1	0	0	2	1	3	4	0	0
Campanula californica swamp harebell	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	40 150	139 S:3	0	0	0	0	3	0	3	0	0	2	1
Carex comosa bristly sedge	G5 S2	None None	Rare Plant Rank - 2B.1	60 60	29 S:1	0	0	0	0	1	0	1	0	0	1	0
Castilleja uliginosa Pitkin Marsh paintbrush	GXQ SX	None Endangered	Rare Plant Rank - 1A	150 200	2 S:2	0	0	0	0	2	0	2	0	0	2	0
Ceanothus confusus Rincon Ridge ceanothus	G1 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	500 1,100	33 S:5	0	0	3	0	1	1	4	1	4	0	1
Ceanothus foliosus var. vineatus Vine Hill ceanothus	G3T1 S1	None None	Rare Plant Rank - 1B.1	150 250	6 S:4	0	0	1	0	0	3	2	2	4	0	0
Ceanothus purpureus holly-leaved ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2		43 S:2	0	0	0	0	0	2	2	0	2	0	0
Centromadia parryi ssp. parryi pappose tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	100 100	39 S:1	0	0	0	0	0	1	0	1	1	0	0
Cerorhinca monocerata rhinoceros auklet	G5 S3	None None	CDFW_WL-Watch List IUCN_LC-Least Concern		10 S:1	0	0	0	0	0	1	1	0	1	0	0
Chlorogalum pomeridianum var. minus dwarf soaproot	G5T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden USFS_S-Sensitive	625 800	31 S:2	0	0	0	0	0	2	1	1	2	0	0
Chorizanthe valida Sonoma spineflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	150 150	6 S:1	0	0	0	0	1	0	1	0	0	1	0
Clarkia imbricata Vine Hill clarkia	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	200 250	3 S:3	1	1	0	0	1	0	3	0	2	0	1
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	G3 S2.1	None None		15 65	60 S:3	0	0	0	0	0	3	3	0	3	0	0

Summary Table Report

California Department of Fish and Wildlife

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Coastal Brackish Marsh Coastal Brackish Marsh	G2 S2.1	None None		10 10	30 S:1	0	0	0	0	0	1	1	0	1	0	0
Coastal Terrace Prairie Coastal Terrace Prairie	G2 S2.1	None None		200 200	8 S:1	0	0	1	0	0	0	1	0	1	0	0
Cordylanthus tenuis ssp. capillaris Pennell's bird's-beak	G4G5T1 S1	Endangered Rare	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	300 700	4 S:4	0	3	0	0	0	1	1	3	4	0	0
Corynorhinus townsendii Townsend's big-eared bat	G3G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	140 983	628 S:3	0	0	0	0	0	3	3	0	3	0	0
Cryptantha dissita serpentine cryptantha	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,900 1,900	10 S:1	0	1	0	0	0	0	0	1	1	0	0
Cuscuta obtusiflora var. glandulosa Peruvian dodder	G5T4T5 SH	None None	Rare Plant Rank - 2B.2		6 S:1	0	0	0	0	0	1	1	0	1	0	0
Delphinium bakeri Baker's larkspur	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	670 670	6 S:1	0	0	0	0	1	0	1	0	0	0	1
Delphinium luteum golden larkspur	G1 S1	Endangered Rare	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden		11 S:1	0	0	0	0	0	1	1	0	1	0	0
Dicamptodon ensatus California giant salamander	G3 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	50 1,700	232 S:37	0	1	1	0	0	35	24	13	37	0	0
Downingia pusilla dwarf downingia	GU S2	None None	Rare Plant Rank - 2B.2	85 142	132 S:12	4	2	0	0	3	3	8	4	9	1	2
Dubiraphia giulianii Giuliani's dubiraphian riffle beetle	G1G3 S1S3	None None		50 50	1 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	300 400	178 S:2	0	1	0	0	0	1	2	0	2	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	20 2,000	1357 S:32	1	14	14	2	0	1	5	27	32	0	0
Erethizon dorsatum North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	178 378	508 S:3	0	0	0	0	0	3	0	3	3	0	0
Erigeron greenei Greene's narrow-leaved daisy	G3 S3	None None	Rare Plant Rank - 1B.2	300 300	20 S:3	0	0	0	0	0	3	3	0	3	0	0
Erigeron serpentinus serpentine daisy	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	400 1,300	6 S:3	1	0	1	0	0	1	2	1	3	0	0
Eriogonum cedrorum The Cedars buckwheat	G1 S1	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	1,400 1,800	3 S:2	0	0	0	0	0	2	1	1	2	0	0
Erysimum concinnum bluff wallflower	G3 S2	None None	Rare Plant Rank - 1B.2	20 20	30 S:1	0	0	0	0	0	1	0	1	1	0	0
Fissidens pauperculus minute pocket moss	G3? S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive		22 S:1	0	0	0	0	0	1	1	0	1	0	0
Fratercula cirrhata tufted puffin	G5 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern		17 S:1	0	0	0	0	0	1	1	0	1	0	0
Fritillaria liliacea fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	320 640	82 S:3	0	1	1	0	0	1	1	2	3	0	0
Gilia capitata ssp. chamissonis blue coast gilia	G5T2 S2	None None	Rare Plant Rank - 1B.1	80 80	37 S:1	0	0	0	0	0	1	1	0	1	0	0
Gilia capitata ssp. pacifica Pacific gilia	G5T3 S2	None None	Rare Plant Rank - 1B.2	978 978	73 S:1	1	0	0	0	0	0	0	1	1	0	0

Summary Table Report

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	G5T2 S2	None None	Rare Plant Rank - 1B.2	90 650	52 S:14	0	1	0	1	3	9	12	2	11	2	1
Hesperevax sparsiflora var. brevifolia short-leaved evax	G4T3 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	80 550	56 S:5	0	3	2	0	0	0	0	5	5	0	0
Horkelia tenuiloba thin-lobed horkelia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	200 1,060	27 S:7	2	0	1	0	0	4	6	1	7	0	0
Hysterocarpus traskii pomo Russian River tule perch	G5T4 S4	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern	30 200	4 S:4	0	0	2	0	0	2	3	1	4	0	0
Kopsiopsis hookeri small groundcone	G4? S1S2	None None	Rare Plant Rank - 2B.3		21 S:1	0	0	0	0	0	1	0	1	1	0	0
Lasiurus blossevillii western red bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	235 235	128 S:1	0	0	0	1	0	0	0	1	1	0	0
Lasiurus cinereus hoary bat	G5 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority		238 S:2	0	0	0	0	0	2	2	0	2	0	0
Lasthenia burkei Burke's goldfields	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	50 170	35 S:23	3	6	7	1	3	3	9	14	20	1	2
Lasthenia californica ssp. bakeri Baker's goldfields	G3T1 S1	None None	Rare Plant Rank - 1B.2	125 125	19 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia californica ssp. macrantha perennial goldfields	G3T2 S2	None None	Rare Plant Rank - 1B.2	50 50	59 S:2	0	0	0	0	0	2	2	0	2	0	0
Lavinia symmetricus navarroensis Navarro roach	G4T1T2 S2S3	None None	CDFW_SSC-Species of Special Concern	80 80	4 S:1	0	0	0	1	0	0	0	1	1	0	0
Lavinia symmetricus parvipinnis Gualala roach	G4T1T2 S2S3	None None	CDFW_SSC-Species of Special Concern	80 80	4 S:1	0	0	0	1	0	0	0	1	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Legenere limosa legenere	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	90 90	83 S:1	0	0	1	0	0	0	1	0	1	0	0
Leptosiphon jepsonii Jepson's leptosiphon	G3 S3	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	400 600	39 S:2	0	0	0	0	0	2	1	1	2	0	0
Lessingia arachnoidea Crystal Springs lessingia	G2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	300 640	11 S:3	0	2	1	0	0	0	2	1	3	0	0
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	150 200	4 S:2	0	1	0	0	0	1	2	0	2	0	0
Limnanthes vinculans Sebastopol meadowfoam	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	50 135	46 S:28	2	3	5	0	6	12	12	16	22	5	1
Linderiella occidentalis California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	100 135	437 S:4	0	1	0	0	0	3	4	0	4	0	0
Lupinus tidestromii Tidestrom's lupine	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1	15 15	21 S:1	0	1	0	0	0	0	0	1	1	0	0
Microseris paludosa marsh microseris	G2 S2	None None	Rare Plant Rank - 1B.2	80 100	38 S:2	0	0	0	0	0	2	2	0	2	0	0
Mylopharodon conocephalus hardhead	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	280 280	32 S:1	0	1	0	0	0	0	0	1	1	0	0
Navarretia leucocephala ssp. bakeri Baker's navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	50 135	58 S:12	0	0	0	0	5	7	12	0	7	2	3
Navarretia leucocephala ssp. plieantha many-flowered navarretia	G4T1 S1	Endangered Endangered	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	110 110	8 S:1	0	1	0	0	0	0	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	G3 S3.1	None None		60 135	126 S:6	4	0	1	0	1	0	6	0	5	1	0
Northern Vernal Pool Northern Vernal Pool	G2 S2.1	None None		73 80	20 S:2	0	1	0	0	0	1	2	0	2	0	0
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	G4 S2?	Endangered Endangered	AFS_EN-Endangered	0 445	23 S:13	0	1	1	0	0	11	1	12	13	0	0
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	26 380	44 S:4	0	3	1	0	0	0	0	4	4	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	70 647	500 S:5	2	1	0	0	0	2	3	2	5	0	0
Piperia candida white-flowered rein orchid	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		167 S:1	0	0	0	0	0	1	1	0	1	0	0
Pleuropogon hooverianus North Coast semaphore grass	G2 S2	None Threatened	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_BerrySB-Berry Seed Bank SB_RSABG-Rancho Santa Ana Botanic Garden	240 240	27 S:1	0	0	0	0	1	0	1	0	0	1	0
Rana boylii foothill yellow-legged frog	G3 S3	None Candidate Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	4 2,000	2359 S:55	5	14	6	0	1	29	10	45	54	1	0
Rana draytonii California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	20 670	1507 S:6	2	0	1	1	0	2	1	5	6	0	0
Rhynchospora alba white beaked-rush	G5 S2	None None	Rare Plant Rank - 2B.2	200 200	11 S:1	0	1	0	0	0	0	1	0	1	0	0
Rhynchospora californica California beaked-rush	G1 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	150 150	9 S:2	0	0	0	0	1	1	2	0	1	0	1
Rhynchospora capitellata brownish beaked-rush	G5 S1	None None	Rare Plant Rank - 2B.2	150 150	18 S:2	0	0	1	0	1	0	1	1	1	1	0

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Rhynchospora globularis round-headed beaked-rush	G4 S1	None None	Rare Plant Rank - 2B.1	150 150	2 S:2	0	0	0	0	1	1	2	0	1	1	0
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	200 200	298 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	G5T2 S2	None None	Rare Plant Rank - 1B.2	30 30	34 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom	G5T1 S1	None None	Rare Plant Rank - 1B.2	50 115	19 S:4	0	0	2	0	0	2	1	3	4	0	0
Speyeria zerene myrtleae Myrtle's silverspot butterfly	G5T1 S1	Endangered None	XERCES_CI-Critically Imperiled	10 12	17 S:2	0	0	0	0	0	2	2	0	2	0	0
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened	CDFW_SSC-Species of Special Concern	0 0	46 S:1	0	0	0	0	0	1	0	1	1	0	0
Streptanthus brachiatus ssp. hoffmanii Freed's jewelflower	G2T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,900 1,900	13 S:1	1	0	0	0	0	0	0	1	1	0	0
Streptanthus glandulosus ssp. hoffmanii Hoffman's bristly jewelflower	G4T2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	200 1,100	10 S:4	2	0	0	0	0	2	4	0	4	0	0
Streptanthus morrisonii ssp. hirtiflorus Dorr's Cabin jewelflower	G2T1 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	800 800	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Streptanthus morrisonii ssp. morrisonii Morrison's jewelflower	G2T1? S1?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	700 1,200	5 S:3	1	1	0	0	0	1	2	1	3	0	0
Syncaris pacifica California freshwater shrimp	G2 S2	Endangered Endangered	IUCN_EN-Endangered	80 162	20 S:4	0	3	0	0	0	1	1	3	4	0	0
Taricha rivularis red-bellied newt	G4 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	100 1,500	136 S:23	0	0	0	0	3	20	10	13	20	3	0
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	80 760	563 S:6	0	5	0	0	0	1	1	5	6	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Trifolium amoenum two-fork clover	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	200 1,020	26 S:4	0	1	0	0	0	3	4	0	4	0	0
Trifolium buckwestiorum Santa Cruz clover	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_USDA-US Dept of Agriculture	960 1,000	50 S:2	0	0	1	0	0	1	2	0	2	0	0
Trifolium hydrophilum saline clover	G2 S2	None None	Rare Plant Rank - 1B.2		49 S:2	0	0	0	0	1	1	2	0	1	0	1
Usnea longissima Methuselah's beard lichen	G4 S4	None None	Rare Plant Rank - 4.2 BLM_S-Sensitive	200 800	206 S:4	0	0	3	0	0	1	1	3	4	0	0
Viburnum ellipticum oval-leaved viburnum	G4G5 S3?	None None	Rare Plant Rank - 2B.3		38 S:1	0	0	0	0	0	1	1	0	1	0	0

APPENDIX C

SITE PHOTOGRAPHS

Broadleaved Upland Forest

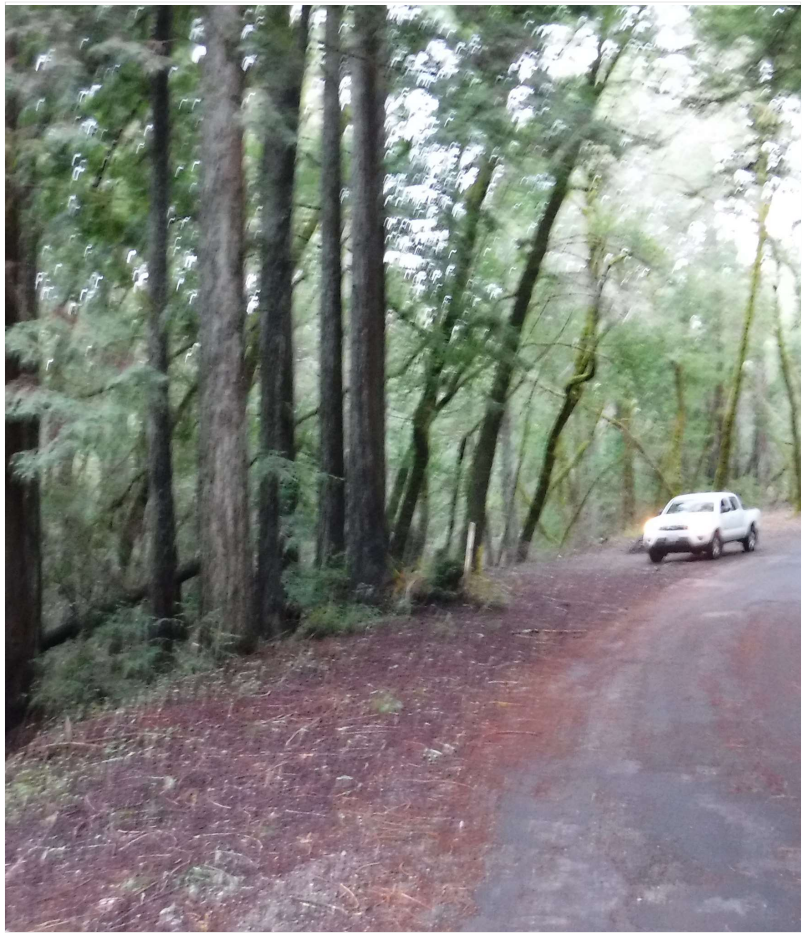
California bay *(Umbellularia californica)* forest alliance

Broadleaved Upland Forest

Coast live oak *(Quercus agrifolia)* alliance, with adjacent grassland habitat.

Porter Creek and Riparian Habitat

Located next to Porter Creek (headwaters).



North Coast Coniferous Forest

Coast redwood *(Sequoia sempervirens)* forest alliance adjacent to Sweetwater Springs Road

Suitable roost habitat for special status bats

Forest and woodland habitat provide roost habitat including cavities, exfoliating bark and foliage for bats.

Suitable forest habitat for special status raptors

Old-growth forest habitat provides nest habitat for birds including spotted owl and golden eagle.

APPENDIX D

QUALIFICATIONS OF THE BIOLOGIST(S)

Biological Assessment and Wildlife Surveys

Dana Riggs, Principal Biologist for Sol Ecology received her Bachelor of Science degree in Earth Systems, Science and Policy at California State University of Monterey Bay in 2001. Prior to founding Sol Ecology, she was a principal biologist and head of the Wildlife and Fisheries Department at WRA, a mid-size environmental consulting firm in San Rafael, California. She has 19 years of experience directing a broad range of resource studies from planning level to post-construction including: biological habitat assessments and mapping, special status species surveys, corridor studies, site restoration and monitoring, federal and state regulatory permitting, local permitting, mitigation and restoration planning for aquatic species, and NEPA and CEQA documentation for a variety of public and private sector clients. Dana has extensive experience working with species including California red-legged frog and California tiger salamander and has been approved by USFWS and CDFW to monitor for these species on projects throughout the state.

Biological Assessment and Botanical Surveys

Andrew Georgeades, Senior Ecologist for Sol Ecology received his Bachelor of Science degree in Natural Resource Management and Conservation at San Francisco State University in 2005. Prior to co-founding Sol Ecology, Andrew worked as a natural resources' specialist for the Golden Gate National Recreation Area where he was responsible for monitoring native and rare plant populations and planning and supervising revegetation projects within the park. Andrew also previously worked for the California Native Plant Society as a vegetation project lead on the "Manual of California Vegetation, 2nd Ed." Publication. As a lead, he performed plant surveys, identified vegetation habitat types, landforms, environmental conditions, and plant species following the project protocol. Andrew currently is responsible for overseeing all floristic and focused plant surveys at Sol Ecology and maintains a CDFW scientific collecting permit.