



Biological Resources Assessment

Hess Veeder Hills

Napa County, California
August 2025



Prepared for:

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1.0 INTRODUCTION

This report presents the results of a Biological Resources Assessment (BRA) conducted for Hess Veeder Hills property (Study Area). The 518.5-acre Study Area is located generally west of Mount Veeder Road and north of Redwood Road in western Napa County, California. The Study Area is located in an unsectioned portion of the Napa Civil Land Grant, Township 6 North, Range 5 West (MDB&M) of the "Sonoma, California" 7.5-Minute Series USGS Topographic Quadrangle (USGS 2021) (**Figure 1**). This document has been completed to comply with Napa County's *Guidelines for Preparing Biological Resources Reconnaissance Surveys* (Napa County 2016).

1.1 Project Description

The Proposed Project is a tentative map, splitting the existing parcel into three parcels with potential residence locations identified. One of the residence locations is an existing house, and no improvements would be necessary to utilize that location. The other two residence locations would require some grading to construct. Impacts associated with construction of these two homesites are analyzed in this document. The tentative map, including the potential residence locations is included as **Attachment A**. The two residential impact areas are a cumulative total of 1.4 acres and are referred to throughout this document as the "Impact Area".

2.0 REGULATORY SETTING

This section describes federal, state and local laws and policies that are relevant to this assessment of biological resources.

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 protects species that are federally listed as endangered or threatened with extinction. FESA prohibits the unauthorized "take" of listed wildlife species. Take includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such activities. Harm includes significant modifications or degradations of habitats that may cause death or injury to protected species by impairing their behavioral patterns. Harassment includes disruption of normal behavior patterns that may result in injury to or mortality of protected species. Civil or criminal penalties can be levied against persons convicted of unauthorized "take." In addition, FESA prohibits malicious damage or destruction of listed plant species on federal lands or in association with federal actions, and the removal, cutting, digging up, damage, or destruction of listed plant species in violation of state law. FESA does not afford any protections to federally listed plant species that are not also included on a state endangered species list on private lands with no associated federal action.

2.1.2 Clean Water Act, Section 404

Section 404 of the Federal Clean Water Act requires that a Department of the Army permit be issued prior to the discharge of dredged or fill material into waters of the United States, including some wetlands. The U.S. Army Corps of Engineers (USACE) administers this program, with oversight from the U.S. Environmental Protection Agency. As of the date of this document, waters of the United States (waters of the U.S.) are defined as follows (40 CFR 120.2):

1. Waters which are:
 - i. Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 - ii. The territorial seas; or
 - iii. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the U.S. under this definition, other than impoundments of waters identified under item (5) below;
3. Tributaries of waters identified in items (1) or (2) above that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
 - i. Waters identified in item (1) of this section; or
 - ii. Relatively permanent, standing or continuously flowing bodies of water identified in items (2) or (3) above and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds not identified in paragraphs (1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in items (1) or (3) above.

Under the current definition of waters of the U.S., "adjacent" means *having a continuous surface connection*.

Waters subject to regulation under Section 404 are referred to as "jurisdictional waters".

2.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, any native migratory bird, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11.). Likewise, Section 3513 of the California Fish & Game Code prohibits the "take or possession" of any migratory non-game bird identified under the MBTA. Therefore, activities that may result in the injury or mortality of native migratory birds, including eggs and nestlings, would be prohibited under the MBTA.

2.1.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg,

unless allowed by permit [16 USC 668(a); 50 CFR 22]. The USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

2.2 State Regulations

2.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires evaluations of project effects on biological resources. Determining the significance of those effects is guided by Appendix G of the CEQA guidelines. These evaluations must consider direct effects on a biological resource within the project site itself, indirect effects on adjacent resources, and cumulative effects within a larger area or region. Effects can be locally important but not significant according to CEQA if they would not substantially affect the regional population of the biological resource. Significant adverse impacts on biological resources would include the following:

- Substantial adverse effects on any species identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) (these effects could be either direct or via habitat modification);
- Substantial adverse impacts to species designated by the California Department of Fish and Game (2009) as Species of Special Concern;
- Substantial adverse effects on riparian habitat or other sensitive habitat identified in local or regional plans, policies, or regulations or by CDFW and USFWS;
- Substantial adverse effects on federally protected wetlands defined under Section 404 of the Clean Water Act (these effects include direct removal, filling, or hydrologic interruption of marshes, vernal pools, coastal wetlands, or other wetland types);
- Substantial interference with movements of native resident or migratory fish or wildlife species population, or with use of native wildlife nursery sites;
- Conflicts with local policies or ordinances protecting biological resources (e.g., tree preservation policies); and
- Conflict with provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

2.2.2 State Endangered Species Act

With limited exceptions, the California Endangered Species Act (CESA) of 1984 protects state-designated endangered and threatened species in a way similar to FESA. For projects on private property (i.e., that for which a state agency is not a lead agency), CESA enables CDFW to authorize take of a listed species that is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code Section 2081).

2.2.3 California Fully Protected Species

The State of California first began to designate species as “fully protected” prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code, § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit.

2.2.4 California Species of Special Concern

The Species of Special Concern (SSC) are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the federal or California ESAs or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered or meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.

SSC are typically associated with habitats that are threatened. Project-related impacts to SSC, state-threatened or endangered species are considered “significant” under CEQA.

2.2.5 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

2.2.6 Clean Water Act, Section 401

Section 401 of the Clean Water Act requires any applicant for a 404 permit in support of activities that may result in any discharge into waters of the U.S. to obtain a water quality certification with the Regional Water Quality Control Board (RWQCB). This program is meant to protect these waters and wetlands by ensuring that waste discharged into them meets state water quality standards. Because the water quality certification program is triggered by the need for a Section 404 permit (and both programs are a part of the Clean Water Act), the definition of waters of the U.S. under Section 401 is the same as that used by the USACE under Section 404.

2.2.7 California Water Code, Porter-Cologne Act

Waters that are not considered waters of the U.S. may be considered waters of the State of California (waters of the State) under the Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne, from Division 7 of the California Water Code, requires any person discharging waste or proposing to discharge waste that could affect the quality of waters of the state to file a report of waste discharge (RWD) with the RWQCB. The RWQCB can waive the filing of a report, but once a report is filed, the RWQCB must either waive or adopt waste discharge requirements (WDRs). Waters of the State are defined as any surface water or groundwater, including saline waters, within the boundaries of the state of California.

2.2.8 California Fish and Game Code, Section 1600 – Streambed and Lake Alteration

The CDFW is responsible for conserving, protecting, and managing California’s fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code, Section 1602, requires notification to CDFW of any proposed activity that may substantially modify a river, stream, or lake. Notification is required by any person, business, state or local government agency, or public utility that proposes an activity that will:

- substantially divert or obstruct the natural flow of any river, stream or lake;
- substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

For the purposes of Section 1602, rivers, streams and lakes includes those that are dry for periods of time as well as those that flow year round. If notification is required and CDFW believes the proposed activity is likely to substantially adversely affect fish and wildlife resources, it will require that the parties enter into a Lake or Streambed Alteration Agreement (LSAA).

2.2.9 California Fish and Game Code, Section 3503.5 - Raptor Nests

Section 3503.5 of the Fish and Game Code makes it unlawful to take, possess, or destroy hawks or owls, unless permitted to do so, or to destroy the nest or eggs of any hawk or owl.

2.2.10 California Fish and Game Code, Section 3511, 4700, 5050, and 5515 – Fully Protected Species

California Fish and Game Code identifies “fully protected species” in sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). The state initially identified fully protected species in the 1960s to identify and provide additional protection to animals that were rare or faced possible extinction. Subsequent passage of the California Endangered Species Act has offered additional protection to some fully protected species.

Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research, relocation of the bird species for the protection of livestock, or if they are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (NCCP).

2.3 Local Regulations

2.3.1 Vegetation Retention Requirements and Vegetation Removal Mitigation

The Napa County Conservation Guidelines (Chapter 18.108.020 of the Napa County Code) state the following in regards to vegetation canopy cover, which is defined as “the biotic communities classified as oak woodland, riparian oak woodland, or coniferous forest”:

“In the AW zoning district, a minimum of seventy percent vegetation canopy cover as configured on the parcel existing on June 16, 2016 shall be maintained as part of any use involving earth-disturbing activity.”

“In the AW zoning district, the removal of any vegetation canopy cover shall be mitigated by permanent replacement or preservation of comparable vegetation canopy cover, on an acreage basis at a minimum 3:1 ratio...”

2.3.2 Napa County Stream and Wetland Setbacks

The Napa County Conservation Guidelines (Chapter 18.108.025 of the Napa County Code) have established the below setbacks for intermittent and perennial streams. In addition, the Guidelines mandate a 50-foot setback from delineated wetlands, and a 35-foot setback for ephemeral drainages. Within this setback, construction of structures and grading are prohibited unless an exemption is issued.

Slope (Percent)	Required Setback
< 1	35 feet
1—5	45 feet
5—15	55 feet
15—30	65 feet
30—40	85 feet
40—50	105 feet
50—60	125 feet
60—70	150 feet

2.3.3 Napa County Tree Protections in Erosion Hazard Areas

The Napa County Conservation Guidelines (Chapter 18.108 of the Napa County Code) states that within "erosion hazard areas" (areas with a slope greater than 5%),

"Existing trees six inches in diameter or larger, measured at diameter breast height, (DBH), or tree stands of trees six inches in diameter (DBH) or larger located on a site for which either an administrative or discretionary permit is required shall not be removed until the required permits have been approved by the decision-making body and tree removal has been specifically authorized.

Trees to be retained or designated for retention shall be protected through the use of barricades or other appropriate methods to be placed and maintained at their outboard drip line during the construction phase. Where appropriate, the director may require an applicant to install and maintain construction fencing around the trees to ensure their protection during earthmoving activities.

Wherever removal of vegetation is necessitated or authorized, the director or designee may require the planting of replacement vegetation of an equivalent kind, quality and quantity. All graded areas for nonagricultural activities shall be replanted with permanent vegetation. A revegetation plan shall be submitted for approval by the director or designee concurrently with the erosion control plan or as part of the NPDES program. All approved plant materials shall be installed prior to occupancy. Plant materials shall be drought-tolerant and compatible with the existing habitat area in which the project is located."

3.0 METHODOLOGY

3.1 Literature Review

A list of special-status species with potential to occur within the Study Area was developed by conducting a query of the following databases:

- California Natural Diversity Database (CNDDDB) (CNDDDB 2025) query of the "Sonoma, California" USGS topo quadrangle, and the eight surrounding quadrangles;
- USFWS Information for Planning and Conservation (IPaC) (USFWS 2025) query for the Study Area (**Attachment B**);
- California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (CNPS 2025a) query of the "Sonoma, California" USGS topo quadrangle, and the eight surrounding quadrangles (**Attachment C**); and
- Western Bat Working Group (WBWG) Priority Matrices (WBWG 2025a).

In addition, any special-status species that are known to occur in the region, but that were not identified in any of the above database searches were also analyzed for their potential to occur within the Study Area.

For the purposes of this Biological Resources Assessment, special-status species is defined as those species that are:

- listed as threatened or endangered, or proposed or candidates for listing by the USFWS or National Marine Fisheries Service;
- listed as threatened or endangered and candidates for listing by CDFW;
- identified as Fully Protected species or species of special concern by CDFW;
- identified as Medium or High priority species by the WBWG (WBWG 2025a); and
- plant species considered to be rare, threatened, or endangered in California by the CNPS and CDFW [California Rare Plant Rank (CRPR) 1, 2, and 3]:
 - o CRPR 1A: Plants presumed extinct.
 - o CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere.
 - o CRPR 2A: Plants extirpated in California, but common elsewhere.
 - o CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
 - o CRPR 3: Plants about which the CNPS needs more information – a review list.

3.2 Field Surveys

Madrone biologists Dustin Brown, Matt Shaffer, Daria Snider, Tara Collins, Bonnie Peterson, and Jinnah Benn conducted field surveys of various portions of the Study Area on 10, 12, and 23 October 2023; 6 and 10 May, 16 July and 27 August 2024; 16 April, 28 May, and 18 July 2025 to assess the suitability of habitats on-site to support special-status species. A total of 91 person hours were spent conducting surveys of the site. Meandering pedestrian surveys were performed on foot throughout the accessible portions of the Study Area. A large portion of the Study Area was extremely steep and separated from the remainder of the Study Area by an 8-foot-tall deer fence; this is shown as “Inaccessible Areas” on **Figure 2**. The proposed Impact Areas are over 0.25 mile from these areas, and thus we feel that the data collected within the accessible portions of the Study Area are sufficient to allow us to analyze the Project in detail given the project description. Vegetation communities were classified in accordance with *Manual of California Vegetation, Second Edition* as updated online (CNPS 2025b), and plant taxonomy was based on the nomenclature in the Jepson eFlora (Jepson Flora Project 2025). A list of all wildlife species observed during field surveys is included as **Attachment D**. A comprehensive list of all plant species observed during field surveys is included in **Attachment E**. CNDDDB records for special-status species documented on-site are included in **Attachment F**.

The results of several additional surveys were also incorporated into this report:

- An aquatic resources delineation conducted by Madrone,
- Special-status plant surveys conducted by Madrone throughout accessible portions of the Study Area (Madrone 2025) (**Attachment E**),
- A protocol-level California red legged frog (*Rana draytonii*) and foothill yellow-legged frog (*Rana boylei*) habitat assessment of potential habitat within the Study Area,
- A California spotted owl habitat assessment conducted within the Study Area (Madrone 2024),
- An arborist survey of all trees within 25 feet of the proposed residence impact areas, and
- A bat roosting habitat survey of all trees within 25 feet of the proposed residence impact areas.

4.0 BIOLOGICAL SETTING

The Study Area is situated in the Redwood Creek watershed, within the Mayacamas Mountains, which run along the western edge of Napa County. The Mayacamas run roughly north to south and are approximately 7 miles wide. The Study Area is situated just east of the crest of the Mayacamas. An aerial photograph of the Study Area plus a one-mile buffer is shown on **Figure 2**.

The Study Area is comprised of actively cultivated vineyards on steeply rolling hills, interspersed primarily with Annual Brome Grasslands and Coast Live Oak (*Quercus agrifolia*) Woodlands, and smaller components of other terrestrial vegetation communities (**Figure 3**). The eastern edge of the Study Area runs along Veeder Hills Road, and Pickle Creek runs along the road for much of this length. Much of the creek runs through a White Alder (*Alnus rhombifolia*) Riparian Woodland, although Coast Redwood (*Sequoia sempervirens*) Forest borders several reaches, and spreads up the steep east-facing hillside. Several intermittent drainages run through the Study Area, and in some areas, they are bordered by a Willow (*Salix* species) Riparian Scrub. Occasional clearings in the Coast Live Oak Woodland support isolated patches of Disturbed Chaparral, and several areas (especially abandoned vineyard blocks) support Coyote Brush (*Baccharis pilularis*) Scrub. Some portions of the annual brome grasslands have become dominated by the perennial bunchgrass Harding grass (*Phalaris aquatica*) and have been mapped as Harding Grass Grasslands. Elevations within the Study Area range from approximately 420 feet in the southeastern corner along Mount Veeder Road to 1,100 feet on hilltops in the northern portion of the Study Area.

4.1 Terrestrial Vegetation Communities

4.1.1 Annual Brome Grassland

The Annual Brome Grassland within the Study Area is dominated by ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), false brome (*Brachypodium distachyon*), wild oat (*Avena fatua*), slender wild oat (*Avena barbata*), and hare barley (*Hordeum murinum*). Other species commonly occurring in this community on-site include spring vetch (*Vicia sativa*), English plantain (*Plantago lanceolata*), Mediterranean barley (*Hordeum marinum*), short sock destroyer (*Torilis arvensis*), crimson clover (*Trifolium incarnatum*), rose clover (*Trifolium hirtum*), Harding grass (*Phalaris aquatica*), coyote brush (*Baccharis pilularis*), Robert's geranium (*Geranium robertianum*), cut-leaved geranium (*Geranium dissectum*), California bur clover (*Medicago polymorpha*), and blue-eyed grass (*Sisyrinchium bellum*).

4.1.2 Coast Live Oak Woodland

The canopy of the Coast Live Oak Woodland is dominated by coast live oak and California bay (*Umbellularia californica*). Other trees commonly occurring in this community include big-leaf maple (*Acer macrophyllum*), Douglas fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), and black oak (*Quercus kelloggii*). Dominant shrubs in the understory of the Coast Live Oak Woodland include poison-oak (*Toxicodendron diversilobum*), white bark raspberry (*Rubus leucodermis*), and snowberry (*Symphoricarpos albus*). Other shrubs commonly observed in this community on-site include French broom (*Genista*

monspessulana), toyon (*Heteromeles arbutifolia*), wood fern (*Dryopteris arguta*), and hazelnut (*Corylus cornuta*). The herbaceous layer is sparse due to the density of tree and shrub canopy in this community, but dominant herbs in the Coast Live Oak Woodland include woodland tarweed (*Anisocarpus madioides*) and Robert's geranium. Other herbs commonly occurring in this community on-site include little California melic (*Melica imperfecta*), gumweed (*Madia gracilis*), California milkwort (*Polygala californica*), Pacific sanicle (*Sanicula crassicaulis*), and California hemp (*Hoita macrostachya*).

4.1.3 Vineyards

The vineyards are extensive fields of cultivated wine grapes (*Vitis vinifera*). These fields are regularly maintained to maximize grape yields, and as such, herbaceous vegetation is mowed regularly. Herbaceous plant species within these areas are primarily forbs typical of the Annual Brome Grassland described above.

4.1.4 Coyote Brush Scrub

There are large areas of Coyote Brush Scrub throughout the Study Area, and the composition varies. In some areas, it is dominated by coyote brush, poison-oak, and Valley oak (*Quercus lobata*) saplings. Other plant species that occur commonly in these areas include periwinkle (*Vinca major*), Italian thistle, French broom (*Genista monspessulana*), blue wild rye, and morning glory. In other areas, it is dominated by coyote brush, Indian teasel (*Dipsacus sativus*), and Harding grass (*Phalaris aquatica*). Other plant species commonly observed in this community include poison-oak, English plantain (*Plantago lanceolata*), and whitebark raspberry (*Rubus leucodermis*).

4.1.5 White Alder Riparian Woodland

The White Alder Riparian Woodland is a narrow riparian woodland that runs along either side of Pickle Creek. White alder is the dominant tree in this community, but a fair number of big-leaf maples and California bay also occur. The shrub layer is dominated by spicebush (*Calycanthus occidentalis*) with occasional dense patches of white bark raspberry. The tree and shrub canopy is fairly open, so the bulk of the herbaceous species in this community are those typical of the Annual Brome Grassland. However, some torrent sedge (*Carex nudata*) is dominant adjacent to the creek, and several areas have invaded by periwinkle (*Vinca major*).

4.1.6 Disturbed Chaparral

The shrub layer in the Disturbed Chaparral is dominated by deerweed (*Acmispon glaber*), sticky monkeyflower (*Diplacus aurantiacus*), toyon, and chamise (*Adenostoma fasciculatum*). Other shrubs commonly occurring in this community on-site include common manzanita (*Arctostaphylos manzanita*), coast live oak and Douglas fir saplings, madrone, and coyote brush. The herbaceous layer is dominated by false brome, rose clover, and soap plant (*Chlorogalum pomeridianum*). Other herbaceous species commonly occurring in this community on-site include wild oat, smooth cat's ear (*Hypochaeris glabra*),

chaparral honeysuckle (*Lonicera interrupta*), little California melic, climbing bedstraw (*Galium porrigens* ssp. *porrigens*), Indian paintbrush (*Castilleja species*), and gold wire (*Hypericum concinnum*).

4.1.7 Coast Redwood Forest

The Coast Redwood Forest occurs on a steep, east-facing slope above Pickle Creek in the northern portion of the Study Area. This community has a canopy dominated by very tall Coast redwood with occasional Douglas fir. The lower canopy features scattered California bay and big-leaf maple (*Acer macrophyllum*). The understory is almost entirely unvegetated and comprised of fallen Coast redwood tips, but scattered wood fern also occur occasionally.

4.1.8 Willow Riparian Scrub

Small areas of Willow Riparian Scrub occur adjacent to some of the drainages. This community is dominated by arroyo willow, red willow (*Salix laevigata*), Goodding's willow (*S. gooddingii*), poison-oak, and snowberry. Grape (*Vitis vinifera*), Armenian blackberry (*Rubus armeniacus*), Coast live oak, California bay, and blue elderberry (*Sambucus nigra* ssp. *cerulea*) are also common. Virtually no herbaceous plant species occur in this community.

4.1.9 California Bay Forest

The canopy of the California Bay Forest is primarily comprised of California bay. Additional tree and shrub species observed less commonly include madrone, California buckeye, big-leaf maple, Northern California black walnut (*Juglans hindsii*), blue elderberry, coyote brush, snowberry, and poison-oak. There is virtually no herbaceous layer in many areas in this community, presumably due to the density of tree and shrub canopy cover. Along the edges where light penetrates, the herbaceous community is dominated by Robert's geranium, with goose grass (*Galium aparine*), Italian thistle, and Pacific sanicle also common.

4.1.10 Harding Grass Grassland

The Harding Grass Grassland is a nearly impenetrable dense monoculture of large Harding grass clumps.

4.1.11 Indian Teasel Patch

A dense patch that is almost a monoculture of Indian teasel occurs along a steep abandoned vineyard roadbed in the southern portion of the Study Area. In addition to the Indian teasel, scattered soft brome, perennial ryegrass, and scarlet pimpernel (*Lysimachia arvensis*) also occur.

4.1.12 Purple Needlegrass Grassland

A small area of Purple Needlegrass (*Stipa pulchra*) Grassland occurs in the southern portion of the Study Area. This community supports primarily plant species typical of the Annual Brome Grassland, but is also

co-dominated by purple needlegrass. Other plant species observed in this area include yarrow, gold nugget (*Calochortus luteus*), and blue-eyed grass. This vegetation community is considered “Sensitive” by CDFW (CDFW 2023).

4.1.13 Ruderal

The Ruderal community is comprised of a variety of non-native forb species. Dominants include wild radish, California bur-clover, winter vetch, Italian thistle, and common madia (*Madia elegans*). Other plant species commonly occurring in the Ruderal community include soft brome, wall barley (*Hordeum murinum*), and meadow barley (*Hordeum brachyantherum*).

4.1.14 Developed and Unvegetated

Some areas have been mapped as developed or unvegetated. The developed areas include the vineyard facilities area, which features numerous buildings and other structures along with dirt roads and parking areas, interspersed with tree and shrubs typical of the surrounding natural vegetation communities. A second smaller developed area has been mapped on a hilltop near the center of the Study Area where a prior residence was situated; much of this area is unvegetated, and a large water tank, fencing and an abandoned shed remain. Lastly, a portion of dirt roadbed in the southern portion of the Study Area has been mapped as unvegetated.

4.2 Aquatic Resources

A protocol-level aquatic resources delineation was conducted for the Study Area in 2024. Aquatic resources mapped within the Study Area during this survey are depicted in **Figure 3**. A total of 8.136 acres of aquatic resources were mapped within the Study Area (**Table 1**). A description of each of the aquatic resource types is included below.

Table 1. Aquatic Resources Mapped within the Study Area

Waters Type	Acreage
<i>Wetlands</i>	
Seep	0.043
<i>Other Waters</i>	
Ephemeral Drainage	2.163
Intermittent Drainage	2.204
Perennial Creek	0.928
Pond/Reservoir	2.694
Roadside Ditch	0.087
Water Quality Basin	0.017
Total	8.136

4.2.1 Seep

The Study Area supports a single seep. Seeps are areas where groundwater flow reaches the surface and supports wetland vegetation. This seep is dominated by Cow parsnip (*Heracleum maximum*), common scouring rush (*Equisetum hyemale ssp. affine*), and wood fern (*Dryopteris arguta*).

4.2.2 Ephemeral Drainages and Roadside Ditches

Numerous ephemeral drainages drain this steep property. Ephemeral drainages convey only stormwater and do not have a groundwater component. As such, they do not contain water for a sufficient period of time to support hydrophytic vegetation. These features are often deeply incised within the Study Area, and are unvegetated, with a dirt or rock bottom. The roadside ditches function the same as ephemeral drainages, and likewise are unvegetated, but differ in that they are constructed and run along existing and historic roadways.

4.2.3 Intermittent Drainages

Two intermittent drainages occur within the Study Area; Pickle Creek runs along the eastern edge, and a smaller, unnamed inaccessible drainage appears to run through the western portion. This description pertains to Pickle Creek, but the inaccessible intermittent drainage is assumed to be largely the same. Pickle Creek is unvegetated within the channel and largely runs over bedrock and small cobbles. The banks of Pickle Creek are likewise almost entirely unvegetated due to the bedrock substrate and almost complete lack of soil, but torrent sedge have become established occasionally along the edges. The creek runs through White Alder Riparian Woodland and Coast Redwood Forest.

4.2.4 Perennial Creek

The Study Area includes the perennial Redwood Creek along the southern edge. This feature was entirely inaccessible due to steep slopes.

4.2.5 Ponds/Reservoirs and Water Quality Basin

Two ponds and a water quality basin occur within the Study Area. The reservoir-type ponds have been constructed by building berms within ephemeral drainages, and a single water quality basin has been excavated. Vegetation around the edges of these features is similar. The ponds are perennial in some years, but they are often drawn down to be almost empty by the end of the water year, and in some drought years, have run dry. Due to the duration of inundation, the majority of the ponds are unvegetated, but the edges are densely vegetated with a variety of hydrophytes including cattail (*Typha* species), tall nutsedge, smartweed (*Persicaria* species), hairy willowherb (*Epilobium ciliatum*), dense flowered spike primrose (*Epilobium densiflorum*), pearly everlasting (*Anaphalis margaritacea*), and Mediterranean beard grass (*Polypogon monspeliensis*).

4.3 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2025), five soil mapping units occur within the Study Area (**Figure 4**): (109) Boomer gravelly loam, volcanic bedrock, 14 to 60% slopes, MLRA 15; (113) Bressa-Dibble complex, 15 to 30% slopes; (133) Fagan clay loam, 30 to 50% slopes; (136) Felton gravelly loam, 30 to 50% slopes; and (157) Lodo-Maymen-Felton association, 30 to 75% slopes. Unit 109 is derived from volcanics but occurs in a small less than 0.1 acre corner of the western-most inaccessible area (**Figure 4**). Given the small area and the location in an inaccessible area, for purposes of plant species analysis, volcanic soils are considered absent from the Study Area. The remaining units are all derived from residuum weathered from sandstone and shale (NRCS 2025). All of the soils are mildly to moderately acidic (NRCS 2025).

5.0 RESULTS

Table 2 provides a list of special-status species that were evaluated, including their listing status, habitat associations, and their potential to occur in the Study Area. The following set of criteria was used to determine each species' potential for occurrence on the site:

- Present: Species occurs on the site based on CNDDDB records, and/or was observed on the site during field surveys.
- High: The site is within the known range of the species and suitable habitat exists.
- Moderate: The site is within the known range of the species and very limited suitable habitat exists.
- Low: The site is within the known range of the species and there is marginally suitable habitat.
- Absent: The species was not observed during protocol-level floristic surveys conducted on-site.
- No Habitat Present: The site does not contain suitable habitat for the species, or the site is outside the known range of the species.

Below is a discussion of all special-status plant and animal species with potential to occur on the site.

5.1 Plants

5.1.1 *Napa False Indigo*

Napa false indigo (*Amorpha californica* var. *napensis*) is not federally or state listed, but it is classified as a CRPR List 1B.2 species. This perennial shrub is found in chaparral, cismontane woodlands, and in openings in broadleaf upland forests. This plant occurs at elevations between 165 feet and 6,560 feet, and blooms from April through July (CNPS 2025a).

The Coast Live Oak Woodland, California Bay Forest, and Chaparral within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
Plants				
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	--	CRPR 1B.2	Prefers cismontane woodland or foothill grasslands associated with clay, serpentine soils or volcanic slopes (elevation 170'-1,000').	No Habitat Present. No serpentine or volcanic soils are located in the Study Area.
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	FE	CRPR 1B.1	Occurs in freshwater marshes and swamps and riparian scrub (elevation 15'-1,200').	No Habitat Present. The Study Area is outside of the distributional range of the species.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	--	CRPR 1B.2	Occurs in broadleafed upland forest openings, chaparral, and cismontane woodland (elevation 165'-6,560').	Absent. The Coast Live Oak Woodland, California Bay Forest, and Chaparral within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Amsinckia lunaris</i> Bent-flowered fiddleneck	--	CRPR 1B.2	Found in cismontane woodland, valley and foothill grasslands, and coastal bluff scrub (elevation 10'-1,640').	Absent. The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, and edges of Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon Ridge manzanita	--	CRPR 1B.1	Cismontane woodlands and chaparral in rhyolitic soils (elevation 245'-1,215').	No Habitat Present. Rhyolitic soils do not occur within the Study Area.
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	FE	CE, CRPR 1B.1	Occurs on clay, rocky soils in openings in chaparral, cismontane woodland, and valley and foothill grasslands. Often associated with volcanic or serpentine soils (elevation 245'-900').	No Habitat Present. Clayey rocky soils do not occur within the Study Area.
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	--	CRPR 1B.2	Occurs in playas, valley and foothill grassland (adobe clay), and vernal pools (elevation 5'-195').	No Habitat Present. Vernal pools do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot	--	CRPR 1B.2	Prefers chaparral, cismontane woodland, and valley and foothill grasslands. Often associated with serpentine soils (elevation 150'-5,100').	Absent. The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE	CE, CRPR 1B.1	Occurs in vernal pools and mesic areas in valley and foothill grasslands (elevation 30'-360'). Restricted to the Santa Rosa Plain and Sonoma Valley.	No Habitat Present. Vernal pools do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Brodiaea leptandra</i> Narrow-flowered California brodiaea	--	CRPR 1B.2	Found in volcanic soils in broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland (elevation 360'-3,000').	No Habitat Present. Volcanic soils do not occur within the Study Area.
<i>Carex lyngbyei</i> Lyngbye's sedge	–	CRPR 2B.2	Occurs in coastal, tidally influenced salt marsh wetlands from $\pm$ 0 feet (between mean lower high water and mean higher high water).	No Habitat Present. Tidally influenced salt marshes do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.
<i>Castilleja ambigua</i> var. <i>meadii</i> Mead's owls-clover	--	CRPR 1B.1	Occurs in vernal pools and other mesic areas on clay, gravelly, volcanic soils (elevation 1,475'-1,560').	No Habitat Present. Vernal pools do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	--	CRPR 1B.1	Found on volcanic or serpentine soils in closed-cone coniferous forest, chaparral, and cismontane woodland (elevation 250'-3,500').	No Habitat Present. Volcanic or serpentine soils do not occur in the Study Area.
<i>Ceanothus divergens</i> Calistoga ceanothus	--	CRPR 1B.2	Found on rocky volcanic and serpentine soils in chaparral (elevation 560 - 3,115').	No Habitat Present. Volcanic or serpentine soils do not occur in the Study Area.
<i>Ceanothus purpureus</i> Holly-leaved ceanothus	--	CRPR 1B.2	Found on rocky volcanic soils in chaparral and cismontane woodland (elevation 390-2,100').	No Habitat Present. Volcanic soils do not occur within the Study Area.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	--	CRPR 1B.2	Chaparral habitats on sandy, serpentinite, or volcanic soils (elevation 705'-2,625').	No Habitat Present. Volcanic or serpentine soils do not occur in the Study Area.
<i>Centromadia parryi</i> ssp. <i>parryi</i> Pappose tarplant	--	CRPR 1B.2	Found on alkaline soils in coastal prairie, meadows, seeps, coastal salt marshes, and valley/foothill grasslands (elevation 0'-1,380').	No Habitat Present. Alkaline soils do not occur in the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes salty bird's-beak	--	CRPR 1B.2	Marshes and swamps (coastal salt) (elevation 0'-35').	No Habitat Present. Coastal salt marshes do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.
<i>Chloropyron molle</i> ssp. <i>molle</i> Soft salty bird's-beak	FE	CR, CRPR 1B.2	Favors marshes and swamps with coastal salt (elevation 0'-10').	No Habitat Present. Coastal salt marshes do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.
<i>Chorizanthe valida</i> Sonoma spineflower	FE	CE, CRPR 1B.1	Sandy areas in coastal prairie (elevation 35'-1,000'). Currently known from only one occurrence in Point Reyes National Seashore.	No Habitat Present. Coastal prairie does not occur in the Study Area.
<i>Downingia pusilla</i> Dwarf downingia	--	CRPR 2B.2	Mesic areas in valley and foothill grassland, and vernal pools (elevation 3' – 1,460').	No Habitat Present. Vernal pools and other suitable mesic areas in annual grassland do not occur within the Study Area
<i>Erigeron biolettii</i> Streamside daisy	--	CRPR 3	Mesic and rocky areas in broadleaf upland forest, cismontane woodland, and North Coast coniferous forest (elevation 100'-3,610').	Absent. The edges of the intermittent and perennial drainages within the Study Area represent suitable habitat for the species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	--	CRPR 1B.2	Found on serpentine and volcanic soils in chaparral (elevation 260'-3,295').	No Habitat Present. Volcanic or serpentine soils do not occur in the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Eriogonum luteolum</i> var. <i>caninum</i> Tiburon buckwheat	--	CRPR 1B.2	Found on sandy or gravelly serpentine soils in chaparral, cismontane woodland, coastal prairie, and valley and foothill grasslands (elevation 0' to 2,295').	No Habitat Present. Serpentine soils do not occur in the Study Area.
<i>Eryngium jepsonii</i> Jepson's coyote-thistle	--	CRPR 1B.2	Occurs on clay soils in vernal pools, and mesic areas in valley and foothill grasslands (elevation 10'-985').	No Habitat Present. Clay soils do not occur in the Study Area.
<i>Extriplex joaquinana</i> San Joaquin spearscale	--	CRPR 1B.2	Found in seasonal alkali wetlands or alkali sink scrub (elevation 5'-2,740').	No Habitat Present. Alkaline soils do not occur in the Study Area.
<i>Fritillaria liliacea</i> Fragrant fritillary	--	CRPR 1B.2	Found in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grasslands, on serpentine and clay soils (elevation 10'-1,350').	No Habitat Present. Serpentine and clay soils do not occur in the Study Area.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> Congested-head hayfield tarweed	--	CRPR 1B.2	Occurs in valley and foothill grasslands, often on roadsides (elevation 70'-1,800').	Absent. The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, and Coyote Brush Scrub throughout the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Hesperolinon congestum</i> Marin western flax	FT	CT, CRPR 1B.1	Found in serpentine soils in chaparral, valley and foothill grassland (elevation 15'-1,215').	No Habitat Present. Serpentine soils do not occur in the Study Area.
<i>Hesperolion sharsmithiae</i> Sharsmith's western flax	--	CRPR 1B.2	Found on serpentine soils in chaparral (elevation 885'-985').	No Habitat Present. Serpentine soils do not occur in the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Horkelia tenuiloba</i> Thin-lobed horkelia	--	CRPR 1B.2	Occurs on sandy soils in mesic openings in broadleafed forests, chaparral, and valley and foothill grasslands (elevation 160'-1,640').	Absent. The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE	CRPR 1B.1	Found in alkaline mesic areas in cismontane woodland and annual grassland and in alkaline playas and vernal pools (elevation 0'-1,540').	No Habitat Present. Alkaline soils do not occur in the Study Area.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	--	CRPR 1B.2	Prefers tidally influenced channels, brackish marshes and swamps (elevation 0'-5').	No Habitat Present. Coastal salt marshes do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.
<i>Layia septentrionalis</i> Colusa layia	--	CRPR 1B.2	Favors chaparral, cismontane woodland, or foothill grasslands with sandy serpentine soils (elevation 330'-3,595').	No Habitat Present. Serpentine soils do not occur in the Study Area.
<i>Legenere limosa</i> Legenere	--	CRPR 1B.1	Occurs in vernal pools (elevation 5'-2,885').	No Habitat Present. Vernal pools do not occur in the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	--	CRPR 1B.2	Occurs in chaparral, cismontane woodland, and valley and foothill grassland, usually on volcanic soils (elevation 330'-1,640').	Absent. Marginally suitable habitat for this species occurs in the annual brome grasslands, woodlands, and chaparral throughout the Study Area. However, protocol-level surveys conducted in 2024 did not identify this species within the Study Area.
<i>Lessingia hololeuca</i> Wooly-headed lessingia	--	CRPR 3	Found on clay and serpentine soils in broadleaved upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland (elevation 50'-1,000').	No Habitat Present. Serpentine and clay soils do not occur in the Study Area.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	--	CR, CRPR 1B.1	Prefers brackish or freshwater swamps, intertidal marshes, and riparian scrub (elevation 0'-35').	No Habitat Present. Suitable marshes do not occur within the Study Area, and the Study Area is outside of the elevational range of the species.
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> Pitkin Marsh lily	FE	CE, CRPR 1B.1	Occurs in mesic, sandy areas in cismontane woodland, meadows and seeps, and freshwater marshes (elevation 115'-215').	No Habitat Present. The Study Area is outside of the distributional range of the species.
<i>Limnanthes vincularis</i> Sebastopol meadowfoam	FE	CE, CRPR 1B.1	Vernal pools, mesic areas in valley and foothill grassland, and meadows and seeps (elevation 50'-1,000').	No Habitat Present. Vernal pools and other suitable mesic areas in annual grassland do not occur within the Study Area. Also outside of the distributional range of the species.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Lupinus sericatus</i> Cobb Mountain lupine	--	CRPR 1B.2	Found in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest (elevation 900'-5,000').	Absent. The chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Micropus amphibolus</i> Mt. Diablo cottonweed	--	CRPR 3.2	Rocky areas in chaparral, forests and woodlands, and grassland (elevation 145' - 2,705').	Absent. The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	--	CRPR 1B.1	Favors vernal pools, cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grasslands (elevation 15'-5,710').	No Habitat Present. Vernal pools and other suitable mesic areas in annual grassland do not occur within the Study Area.
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> Few-flowered navarretia	FE	CT, CRPR 1B.1	Found in vernal pools on volcanic ash (elevation 1,310' to 2,805').	No Habitat Present. Vernal pools on volcanic ash do not occur within the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Penstemon newberryi</i> var. <i>sonomensis</i> Sonoma beardtongue	--	CRPR 1B.3	Found in rocky areas in chaparral (elevation 2,300'-4,500').	No Habitat Present. Study Area is outside of the elevational range of the species.
<i>Plagiobothrys mollis</i> var. <i>vestitus</i> Petaluma popcornflower	--	CRPR 1A	Found in coastal salt marshes and mesic areas in valley and foothill grasslands (elevation 35' to 165').	No Habitat Present. No coastal salt marshes are present, and the Study Area is outside of the elevational range of the species.
<i>Polygonum marinense</i> Marin knotweed	--	CRPR 3.1	Found in coastal brackish and salt marshes (elevation 0' to 35').	No Habitat Present. No coastal salt marshes are present, and the Study Area is outside of the elevational range of the species.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	--	CRPR 1B.2	Occurs in emergent marsh habitat, typically associated with drainages, canals, or irrigation ditches (elevation 0' - 2,135').	Absent. The edges of the ponds and water quality basin within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the Study Area. All habitat for this species was accessible and surveyed.
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i> Point Reyes checkerbloom	--	CRPR 1B.2	Found in coastal freshwater marshes (elevation 10' to 245').	No Habitat Present. No coastal salt marshes are present, and the Study Area is outside of the elevational range of the species.
<i>Sidalcea oregana</i> ssp. <i>valida</i> Kenwood Marsh checkerbloom	FE	CE, CRPR 1B.1	Found in freshwater marshes (elevation 375' to 490'). Restricted to Kenwood Marsh in Sonoma County.	No Habitat Present. Study Area is outside of the distributional range of the species.
<i>Streptanthus anomalus</i> Mount Burdell jewelflower	--	CRPR 1B.1	Found on serpentine soils in openings in chaparral (elevation 165' to 490').	No Habitat Present. Serpentine soils do not occur in the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Streptanthus hesperidis</i> Green jewelflower	--	CRPR 1B.2	Found on rocky serpentine soils in openings in chaparral and cismontane woodland (elevation 425'-2,500').	No Habitat Present. Serpentine soils do not occur in the Study Area.
<i>Symphyotrichum lentum</i> Suisun Marsh aster	--	CRPR 1B.2	Occurs in fresh and salt water marshes, often associated with cattails (<i>Typha</i> spp.), bulrushes (<i>Scirpus</i> spp. or <i>Schoenoplectus</i> spp.), and blackberries (<i>Rubus</i> spp.) (elevation 0'-10').	No Habitat Present. Study Area is outside of the elevational range of the species.
<i>Trichostema ruygtii</i> Napa bluecurls	--	CRPR 1B.2	Found in vernal pools and other mesic areas in chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grasslands (elevation 100' to 2,230').	Absent. Mesic areas within the Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
<i>Trifolium amoenum</i> Two-forked clover	FE	CRPR 1B.1	Considered extinct until 1993. Only known from two occurrences, one in Sonoma County and one in Marin. Occurs in coastal bluff scrub, valley and foothill grassland (elevation 15'-1,360').	Absent. The Annual Brome Grasslands, Purple Needlegrass Grassland, and Coyote Brush Scrub throughout the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Trifolium hydrophilum</i> Saline clover	--	CRPR 1B.2	Grows in marshes, swamps, and vernal pools with alkaline soils (elevation 0'-985').	No Habitat Present. Alkaline soils do not occur in the Study Area.
<i>Trifolium polyodon</i> Pacific Grove clover	--	CR, CRPR 1B.1	Found in mesic (sometimes granitic) areas in closed cone coniferous forest, coastal prairie, and valley and foothill grasslands (elevation 15' to 1,395').	No Habitat Present. Study Area is outside of the distributional range of the species.
<i>Viburnum ellipticum</i> Oval-leaved viburnum	--	CRPR 2B.3	Found in chaparral, cismontane woodlands, and lower cismontane coniferous forests generally on north-facing slopes or otherwise more mesic areas (elevation 700'-4,600').	Absent. The Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.
Invertebrates				
<i>Bombus crotchii</i> Crotch's bumble bee	--	CC	Occurs in open grasslands and scrub habitats. This species occurs primarily in California including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California (William et al 2014). This species was historically common in the Central Valley of California, but now appears to be absent from most of it, especially in the center of its historic range (Williams et al. 2014; Richardson et al 2014).	High. The Annual Brome Grasslands, Purple Needlegrass Grassland, Disturbed Chaparral, Coyote Brush Scrub, Indian Teasel Patch, and Ruderal areas throughout the Study Area could support suitable foraging flower populations and rodent burrows are present that could provide potential nesting and overwintering habitat.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Bombus occidentalis</i> Western bumble bee	--	CC	Meadows and grasslands with the blended floral resources are the appropriate habitat for this sub-species. While the Western bumble bee was historically known throughout the mountains and northern coast of California, it is now largely confined to high elevation sites and a small handful of records on the northern California coast (Cameron et al. 2011a; Xerces Society 2012; Williams et al. 2014; Xerces Society et al. 2017).	High. The Annual Brome Grasslands, Purple Needlegrass Grassland, Disturbed Chaparral, Coyote Brush Scrub, Indian Teasel Patch, and Ruderal areas throughout the Study Area could support suitable foraging flower populations and rodent burrows are present that could provide potential nesting and overwintering habitat.
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	FE	--	Occurs in very large, turbid vernal pools.	No Habitat Present. No vernal pools occur within the Study Area.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT	--	Occurs in vernal pools.	No Habitat Present. No vernal pools occur within the Study Area.
<i>Danaus plexippus</i> Monarch butterfly	FC	--	Migratory species; most prevalent in the Central Valley in summer and early fall. Dependent upon milkweed (<i>Asclepias</i> species) plants as their exclusive larval host.	Moderate. Scattered milkweed plants occur throughout the Study Area that could provide breeding habitat. No suitable overwintering groves occur within the Study Area.
<i>Syncaris pacifica</i> California freshwater shrimp	FE	--	Found in low elevation (below 3,580'), low gradient, perennial freshwater streams or intermittent streams with perennial pools where banks are structurally diverse. Known from 25 stream reaches in Marin, Sonoma, and Napa Counties north of San Francisco Bay.	Low. Pickle Creek supports a number of perennial pools, and the perennial Redwood Creek may provide marginally suitable habitat for this species. The remainder of the on-site drainages have insufficient hydrology.

Table 2. Special-Status Species with Potential to Occur within the Study Area

<i>Scientific Name</i> (Common Name)	Federal Status ¹	State Status ¹	Habitat Requirements	Potential for Occurrence
<i>Fish</i>				
<i>Acipenser medirostris</i> Green Sturgeon	FT	--	Green sturgeon live much of each year in ocean waters along the coasts of California, Oregon, and Washinton. In the summer, they often enter bays or brackish estuaries to feed. This anadromous species migrates in March-June from saltwater into the freshwater reaches of larger coastal rivers to spawn. Green Sturgeon spawn in cool, deep, swift flowing river reaches over gravel and cobble bottoms. Juveniles grow rapidly and migrate down-river after about a year, taking up residence in the freshwater region of the estuary.	No Habitat Present. No deep rivers occur within the Study Area.
<i>Hesperoleucus venustus subditus</i> Southern coastal roach	--	CSC	Found in intermittent drainages that are rocky and clear with pools that retain water through the summer. This subspecies is found in the drainages of Tomales Bay and northern San Francisco Bay in the north, and drainages of Monterey Bay in the south.	High. Pickle Creek and Redwood Creek within the Study Area provides suitable habitat for this species. Redwood Creek is perennial and Pickle Creek supports limited pools of sufficient depth to retain water through the summer.
<i>Hypomesus transpacificus</i> Delta smelt	FT	CE	Adults are found in the brackish open surface waters of the Delta and Suisun Bay. Though spawning has never been observed, it is believed to occur in tidally influenced sloughs and drainages on the freshwater side of the mixing zone.	No Habitat Present. No tidally influenced sloughs or drainages within the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Oncorhynchus mykiss irideus</i> Steelhead – Central California Coast Distinct Population Segment (DPS)	FT	--	Anadromous species requiring freshwater water courses with gravelly substrates for breeding. The young remain in freshwater areas before migrating to estuarine and marine environments.	Present. Madrone biologists observed juvenile steelhead in Pickle Creek during field surveys, and suitable habitat occurs throughout Pickle Creek and Redwood Creek within the Study Area.
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	--	CSC	Inhabits slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging opportunities for young.	No Habitat Present. Slow moving rivers do not occur within the Study Area.
<i>Spirinchus thaleichthys</i> Longfin smelt – San Francisco Bay-Delta Distinct Population Segment (DPS)	FE	CT	Prefers moderately saline water and may be found in major bays and estuaries from San Francisco Bay northward. Inhabits Bay waters throughout the summer, moving into the lower reaches of the rivers that flow into these bays in the fall to spawn.	No Habitat Present. Lower reaches of rivers and drainages with saline water do not occur within the Study Area.
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander Sonoma County DPS	FE	CT	Breeds in ponds or other deeply ponded wetlands and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	No Habitat Present. The Study Area is outside of the known range of the species.
<i>Dicamptodon ensatus</i> California giant salamander	--	CSC	Damp forests in or near clear, cold perennial streams and seeps. Found under logs, bark, rocks, and other objects near streams. Often remain in aquatic larval form for several years.	High. Suitable habitat is present in woodlands around Redwood Creek and Pickle Creek within the Study Area.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Rana boylei</i> Foothill yellow-legged frog North Coast DPS	--	CSC	Prefers gravelly or sandy streams with open banks near woodlands.	Present. A total of 47 foothill yellow-legged frogs and hundreds of tadpoles were observed within Pickle Creek within the Study Area by a Madrone biologist in 2025 surveys. Suitable habitat occurs throughout Pickle Creek and Redwood Creek within the Study Area.
<i>Rana draytonii</i> California red-legged frog	FT	CSC	Breeds in permanent to semi-permanent aquatic habitats including lakes, ponds, marshes, creeks, and other drainages.	Moderate. The species was observed within Redwood Creek (atypical habitat) in the southwestern portion of the Study Area in 2018 (CNDDDB 2025). The two ponds within the Study Area represent suitable habitat for the species. Madrone conducted USFWS protocol surveys for the species in 2022 at the southernmost pond and did not identify CRLF. However, the species may be present within the ponds and may use the onsite drainages as dispersal/migration corridors.
<i>Taricha rivularis</i> Red-bellied newt	--	CSC	Found in coastal woodlands and redwood forests along the north coast of California.	No Habitat Present. Study Area is outside of this species' known range.

Table 2. Special-Status Species with Potential to Occur within the Study Area

<i>Scientific Name</i> (Common Name)	Federal Status ¹	State Status ¹	Habitat Requirements	Potential for Occurrence
Reptiles				
<i>Actinemys marmorata</i> Northwestern pond turtle	FPT	CSC	Occurs in ponds, rivers, streams, wetlands, and irrigation ditches with associated marsh habitat.	Present. Several northwestern pond turtles were observed in each of the two ponds within the Study Area. Suitable habitat for this species is present in the ponds and intermittent and perennial creeks within the Study Area.
<i>Chelonia mydas</i> Green sea turtle	FT	--	Found in all temperate and tropical waters throughout the world near coastlines, around islands, and in bays and protected shores, especially in areas with seagrass beds.	No Habitat Present. The Study Area is not situated near the ocean.
Birds				
<i>Accipiter striatus</i> Sharp-shinned hawk	--	CSC	Inhabits forested habitats, forest edge, and riparian habitat; may forage in adjacent grassland and fields.	High. Suitable nesting habitat for this species is present in woodlands throughout the Study Area.
<i>Agelaius tricolor</i> Tricolored blackbird	--	CE, CSC	Colonial nester in cattails (<i>Typha</i> spp.), bulrushes (<i>Scirpus</i> spp. or <i>Schoenoplectus</i> spp.), blackberries (<i>Rubus</i> spp.), non-native mustards (<i>Brassica</i> spp.), thistles (<i>Cirsium</i> spp.), and mallows (<i>Malva</i> spp.) associated with marsh habitat sand in Triticale agriculture fields. Nesting habitat may be as small as 0.01 acres adjacent to suitable foraging habitat such as grazed grasslands, irrigated pasture, shallow wetlands, and agricultural fields.	No Habitat Present. Stands of cattails and blackberries are small and/or tucked in amongst woodlands without open areas for foraging access. As a result, no suitable breeding habitat is present. Grassland patches are too small and isolated to be used for foraging.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Ammodramus savannarum</i> Grasshopper sparrow	--	CSC	Typically found in expansive short to middle-height, moderately open grasslands with scattered shrubs or other song perches (Shuford and Gardali 2008).	No Habitat Present. Expansive annual grasslands do not occur within the Study Area.
<i>Aquila chrysaetos</i> Golden eagle	--	CFP	Forages in open areas including grasslands, savannahs, deserts, and early successional stages of shrub and forest communities. Nests in large trees and cliffs.	No Habitat Present. Expansive open areas do not occur within the Study Area.
<i>Athene cunicularia</i> Burrowing owl	--	CC, CSC	Nests in abandoned ground squirrel (<i>Otospermophilus beecheyi</i>) burrows associated with open grassland habitats.	No Habitat Present. Open grasslands do not occur within the Study Area. Grasslands occur as small disjunct patches among woodlands and vineyards.
<i>Buteo swainsoni</i> Swainson's hawk	--	CT	Nests in large trees, preferably in riparian areas. Forages in fields, cropland, irrigated pasture, and grassland near large riparian corridors.	No Habitat Present. Open foraging habitats do not occur within the Study Area. Grasslands occur as small disjunct patches among woodlands and vineyards, which are not suitable habitat.
<i>Anarhynchus nivosus</i> (formerly <i>Charadrius alexandrinus nivosus</i>) Western snowy plover	FT	CSC	Occurs in barren to sparsely vegetated open areas near water.	No Habitat Present. Outside of the known range of the species.
<i>Circus hudsonius</i> (formerly <i>C. cyaneus</i>) Northern harrier	--	CSC	Nests in emergent wetland/marsh, open grasslands, or savannah habitats. Forages in open areas such as marshes, agricultural fields, and grasslands.	No Habitat Present. Open grasslands do not occur within the Study Area. Grasslands occur as small disjunct patches among woodlands and vineyards.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FT	CE	Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, adjacent to slow-moving waterways, backwaters, or seeps.	No Habitat Present. The riparian habitats on-site are neither extensive nor dense.
<i>Coturnicops noveboracensis</i> Yellow rail	--	CSC	Found in perennial marshes with shallow water. Very local breeder in the northeastern interior California (Modoc and Siskiyou counties) and a winter visitor along the California coast and in the Suisun Marsh region.	No Habitat Present. Perennial marshes with shallow water do not occur within the Study Area.
<i>Cypseloides niger</i> Black swift	--	CSC	Nest on ledges or in crevices in steep cliffs, either along the coast or near streams or waterfalls in mountains. Found in over mountains and coastal cliffs. They forage over a wide array of terrain but are local in occurrence, likely limited to regions with suitable nesting sites.	No Habitat Present. No cliffs, crevices, streams or waterfalls are present within the Study Area.
<i>Elanus leucurus</i> White-tailed kite	--	CFP	Open grasslands, fields, and meadows are used for foraging. Isolated trees in close proximity to foraging habitat are used for perching and nesting.	No Habitat Present. Open grasslands do not occur within the Study Area. Grasslands occur as small disjunct patches among woodlands and vineyards.
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellow throat	--	CSC	Nests in marshy areas that are usually higher off the ground, where they are safer from flooding. Requires suitable freshwater and salt marshes with nearby willow thickets.	No Habitat Present. Outside of the known range of the species.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Haliaeetus leucocephalus</i> Bald eagle	--	CE	Nest in large trees within 1 mile of lakes, rivers, or larger streams.	No Habitat Present. Suitable breeding habitat and foraging habitat are absent.
<i>Laterallus jamaicensis coturniculus</i> California black rail	--	CT, FP	Nests and forages in salt, brackish, and fresh marshes with abundant vegetative cover.	No Habitat Present. Densely vegetated marshes are not present on-site.
<i>Melospiza melodia samuelis</i> Song sparrow "San Pablo" population	--	CSC	Year-round resident of tidal salt marshes around San Pablo Bay (Shuford and Gardali 2008).	No Habitat Present. Tidal salt marshes do not occur within the Study Area.
<i>Rallus obsoletus obsoletus</i> California Ridgway's Rail (formerly <i>Rallus longirostris obsoletus</i> , California clapper rail)	FE	CE, CFP	San Francisco and San Pablo Bay tidal marshes and sloughs, with pickleweed (<i>Salicornia</i> spp.), cordgrass (<i>Spartina</i> spp.), and gum plant (<i>Grindelia</i> spp.).	No Habitat Present. No tidal marshes occur within the Study Area.
<i>Riparia riparia</i> Bank swallow	--	CT	Colonial nester preferring vertical cliffs and banks with fine textured/sandy soils associated with riparian zones along streams, rivers, and lakes.	No Habitat Present. Fine-textured/sandy cliffs are not present on-site.
<i>Sternula antillarum browni</i> California least tern	FE	CE	Exposed tidal flats and beaches	No Habitat Present. Tidal flats and beaches do not occur within the Study Area.
<i>Strix occidentalis caurina</i> Northern spotted owl	FT	CT, CSC	Inhabits mature and old-growth conifer forests with high structural complexity.	Moderate. Northern spotted owl may be present within the larger stands of Coast Live Oak Woodland, Coast Redwood Forest, Alder Riparian Woodland, and California Bay Forest within the Study Area. The species has a low potential of nesting onsite but may regularly use suitable habitat within the Study Area to forage.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
Mammals				
<i>Antrozous pallidus</i> Pallid bat	--	CSC, WBWG H	Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances/exits, and are high above the ground, warm, and inaccessible to terrestrial predators; however, this species has also been found roosting on or near the ground under burlap sacks, stone piles, rags, and baseboards.	High. Suitable roosting habitat for this species is present in tree hollows and under exfoliating bark on trees scattered throughout the Study Area, as well as in structures throughout the Study Area.
<i>Bassariscus astutus</i> Ringtail	--	CSC	Occurs in various riparian habitats, forest brush, and shrublands in association with rocky areas. Ringtail is known to nest in rock recesses, hollow trees, logs, snags, and abandoned burrows (USFWS 2023).	No Habitat Present. The Study Area is not sufficiently rocky to support this species.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	--	CSC, WBWG H	Roosts in caves and cave analogues, such as abandoned mines, buildings, bridges, rock crevices and large basal hollows of coast redwoods (<i>Sequoia sempervirens</i>) and giant sequoia (<i>Sequoiadendron giganteum</i>). Extremely sensitive to human disturbance (WBWG 2025b).	Low. Although no caves or cave analogues are present on-site, there may be some tree hollows of sufficient size to support this species.

Table 2. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Myotis thysanodes</i> Fringed myotis	--	WBWG H	Roosts in crevices in buildings, underground mines, rocks, cliff faces, bridges, and in large decadent trees and snags.	High. Suitable roosting habitat for this species is present in large, decadent trees and structures throughout the Study Area.
<i>Myotis volans</i> Long-legged myotis	--	WBWG H	Long-legged myotis occurs in coniferous forests, but also seasonally in riparian and desert habitats. Summer day roosts consist of abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags (WBWG 2025b).	Low. Marginally suitable habitat for this species occurs in the Coast Redwood Forest and adjacent Alder Riparian Woodland. Tree hollows and exfoliating bark on trees scattered throughout these areas, as well as in structures near these areas may provide roosting habitat.
<i>Reithrodontomys raviventris</i> Salt-marsh harvest mouse	FE	CE, FP	Restricted to saline or subsaline marsh habitats around the San Francisco Bay Estuary and, with some exception, mixed saline or brackish areas in the Suisun Bay area.	No Habitat Present. No saline or subsaline marsh habitat is present on-site.
<i>Sorex ornatus sinuosus</i> Suisun shrew	--	CSC	Found in tidal marshes of the northern shores of San Pablo and Suisun bays.	No Habitat Present. No tidal marsh habitat present on-site.
<i>Taxidea taxus</i> American badger	--	CSC	This species prefers dry open fields, grasslands, and pastures.	No Habitat Present. Open grasslands do not occur within the Study Area. Grasslands occur as small disjunct patches among woodlands and vineyards.

¹Status Codes:

CC - CDFW Candidate for Listing

CE - CDFW Endangered

CFP - CDFW Fully Protected

CRPR - California Rare Plant Rank

CR - California Rare

CSC - CDFW Species of Concern

CT - CDFW Threatened

FE - Federally Endangered

FT - Federally Threatened

FC - Federal Candidate for Listing

WBWG H - Western Bat Working Group High Threat Rank

WBWG M - Western Bat Working Group Medium Threat Rank

5.1.2 Bent-Flowered Fiddleneck

Bent-flowered fiddleneck (*Amsinckia lunaris*) is not federally or state listed, but it is classified as a CRPR List 1B.2 species. This annual herb is found in valley and foothill grasslands, cismontane woodlands, and coastal bluff scrub (CNPS 2025a). This plant occurs at elevations between 10 feet and 1,640 feet, and blooms from March through June (CNPS 2025a).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, and edges of Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.3 Big-Scale Balsamroot

Big-scale balsamroot (*Balsamorhiza macrolepis*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. It is a perennial herbaceous species that occurs in chaparral, cismontane woodland and valley and foothill grasslands between 150 and 5100 feet (CNPS 2025a). Big-scale balsamroot blooms from March through June and may be found on serpentine soils, though it is known to grow on other soil types as well (CNPS 2025a).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.4 Streamside Daisy

Streamside daisy (*Erigeron biolettii*) is not federally or state listed, but it is classified as a CRPR List 3 species. This perennial herb is found in rocky, mesic areas in broadleaved upland forest, cismontane woodland, and North Coast coniferous forests, often on volcanic soils (CNPS 2025a). This plant occurs at elevations between 100 feet and 3,610 feet, and blooms from June through October (CNPS 2025a).

The edges of the intermittent and perennial drainages within the Study Area represent suitable habitat for the species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.5 Congested-Head Hayfield Tarweed

Congested-head hayfield tarweed (*Hemizonia congesta* ssp. *congesta*) is not federally or state listed, but it is classified as a CRPR List 1B.2 species. This perennial herb is found in valley and foothill grasslands, often on roadsides (CNPS 2025a). This plant occurs at elevations between 70 feet and 1,800 feet, and blooms from April through November (CNPS 2025a).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, And Coyote Brush Scrub throughout the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.6 Thin-lobed Horkelia

Thin-lobed horkelia (*Horkelia tenuiloba*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. This perennial herb occurs in various habitats such as chaparral openings, broad-leafed upland forest, and valley and foothill grassland with mesic sandy soils. Thin-lobed horkelia is found in elevations from approximately 165 to 1,640 feet and blooms from late May through July and sometimes August (CNPS 2025a).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.7 Jepson's Leptosiphon

Jepson's leptosiphon (*Leptosiphon jepsonii*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. This annual herb occurs in chaparral, cismontane woodland, and valley and foothill grasslands, usually on volcanic soils. Jepson's leptosiphon is found at elevations from approximately 330 to 1,640 feet and blooms from March through May (CNPS 2025a).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area. Although this species was not a target for the protocol-level survey, the survey was conducted during the blooming period for this species, was floristic in nature, and would have documented this species if it was present.

5.1.8 Cobb Mountain Lupine

Cobb Mountain lupine (*Lupinus sericatus*) is not listed under the federal or California Endangered Species Act; however, it is classified as a CNPS List 1B.2 plant. This perennial herb favors broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest. Cobb Mountain lupine is found at elevations ranging from approximately 900 to 5,005 feet and blooms from March to June (CNPS 2025a).

The chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.9 Mt. Diablo Cottonweed

Mt. Diablo cottonweed (*Micropus amphibolus*) is not state or federally listed, but it is classified as a CRPR List 3.2 species. This species is an annual herb that occurs in broadleafed upland forest, chaparral, cismontane woodland, as well as valley and foothill grasslands (CNPS 2025a). Mt. Diablo cottonweed blooms from March through May and is known to occur from approximately 150 feet to 2,705 feet above MSL (CNPS 2025a).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.10 Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. It generally occurs in shallow freshwater habitats associated with marshes and swamps, including drainages, canals, and larger ditches that sustain inundation and/or slow moving water into early summer. This emergent perennial rhizomatous species blooms from May to October (November), and occurs from sea level to 2,135 feet (CNPS 2025a)

The edges of the ponds and water quality basin within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the Study Area. All habitat for this species was accessible and surveyed.

5.1.11 Napa Bluecurls

Napa bluecurls (*Trichostema ruygtii*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. It occurs in vernal pools and other mesic areas in valley and foothill grassland, chaparral, cismontane woodland, and lower montane coniferous forest. This annual herb blooms from June to October, and occurs between 100 and 2,230 feet in elevation (CNPS 2025a)

Mesic areas within the Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.12 Two-fork Clover

Two-fork clover (*Trifolium amoenum*) is a federally endangered species and is classified as a CRPR List 1B.1 plant. This herbaceous annual is commonly found in coastal bluff scrub and valley and foothill grasslands,

sometimes on serpentinite soils. Two-fork clover occurs between 15 to 1,360 feet in elevation and blooms from April through June (CNPS 2025a).

The Annual Brome Grasslands, Purple Needlegrass Grassland, and Coyote Brush Scrub throughout the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.1.13 Oval Leaved Viburnum

Oval-leaved viburnum (*Viburnum ellipticum*) is not federally or state listed but is identified as a CRPR 2B.3 species. This shrub grows in cismontane woodlands, lower montane coniferous forest and chaparral habitats between about 705 feet and 4,595 feet in elevation. It blooms in May and June (CNPS 2025a).

The Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.2 Invertebrates

5.2.1 Crotch Bumble Bee

Crotch bumble bee (*Bombus crotchii*) has a limited distribution in southwestern North America. This species occurs primarily in California, including the Mediterranean region, Pacific Coast, West Desert, Great Valley, and adjacent foothills through most of southwestern California. It also occurs in Mexico (Baja California and Baja California Sur) (Williams et al. 2014) and has been documented in southwest Nevada, near the California border. This species was historically common in the Central Valley of California, but now appears to be absent from most of it, especially in the center of its historic range (Williams et al. 2014; Richardson et al 2014). In California, *B. crotchii* inhabits open grasslands and scrub habitats.

All bumble bees have three basic requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the entirety of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens. Nests are often located underground in abandoned holes made by ground squirrels, mice, and rats or occasionally abandoned bird nests (Osborne et al 2008). Some species nest on the surface of the ground (in tufts of grass) or in empty cavities. Bumble bees that nest aboveground may require undisturbed areas with nesting resources such as grass and hay to protect nests. Furthermore, areas with woody cover, or other sheltered areas provide bumble bees sites to build their nests (e.g., downed wood, rock walls, brush piles, etc.).

Bumble bees depend on the availability habitats with a rich supply of floral resources that bloom continuously during the entirety of the colony's life. The queen collects nectar and pollen from flowers to support the production of her eggs, which are fertilized by sperm she has stored from mating the previous fall. As generalist foragers, bumble bees do not depend on any one flower type. They generally prefer

flowers that are purple, blue or yellow; they are essentially blind to the color red. The plant families most commonly associated with Crotch bumblebee observations in California include Apocynaceae, Asteraceae, Boraginaceae, Fabaceae, and Lamiaceae (Xerces Society 2018). Very little is known about hibernacula, or overwintering sites utilized by most bumble bees. Generally, bumble bees overwinter in soft, disturbed soil (Goulson 2010), under leaf litter or other debris (Williams et al. 2014), in abandoned holes made by fossorial mammals or occasionally in abandoned bird nests (Osborne et al. 2008). Some species nest on the surface of the ground (in grassy tussocks) or in empty cavities (hollow logs, dead trees, under rocks, etc.). Queens most likely overwinter in small cavities just below or on the ground surface.

The Annual Brome Grasslands, Purple Needlegrass Grassland, Disturbed Chaparral, Coyote Brush Scrub, Indian Teasel Patch, and Ruderal areas throughout the Study Area could support suitable foraging flower populations and rodent burrows could provide potential nesting and overwintering habitat for this species.

5.2.2 Western Bumble Bee

Western bumble bee (*Bombus occidentalis occidentalis*) was historically broadly distributed across the West Coast of North America from southern British Columbia to central California, east through Alberta and western South Dakota, and south to Arizona and New Mexico (Williams et al. 2014; Sheffield et al. 2016). While the Western bumble bee was historically known throughout the mountains and northern coast of California, it is now largely confined to high elevation sites and a small handful of records on the northern California coast (Cameron et al. 2011a; Xerces Society 2012; Williams et al. 2014; Xerces Society et al. 2023).

All bumble bees have three basic requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the entirety of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens. Nests are often located underground in abandoned holes made by ground squirrels, mice, and rats or occasionally abandoned bird nests (Osborne et al. 2008). Some species nest on the surface of the ground (in tufts of grass) or in empty cavities. Bumble bees that nest aboveground may require undisturbed areas with nesting resources such as grass and hay to protect nests. Furthermore, areas with woody cover, or other sheltered areas provide bumble bees sites to build their nests (e.g., downed wood, rock walls, brush piles, etc.).

Bumble bees depend on the availability habitats with a rich supply of floral resources that bloom continuously during the entirety of the colony's life. The queen collects nectar and pollen from flowers to support the production of her eggs, which are fertilized by sperm she has stored from mating the previous fall. As generalist foragers, bumble bees do not depend on any one flower type. They generally prefer flowers that are purple, blue or yellow; they are essentially blind to the color red. The plant families most commonly associated with western bumblebee observations in California include: Asteraceae, Fabaceae, Rhamnaceae, and Rosaceae, as well as plants in the genera *Eriogonum* and *Penstemon* (Xerces Society 2018). Very little is known about hibernacula, or overwintering sites utilized by most bumble bees. Generally, bumble bees overwinter in soft, disturbed soil (Goulson 2010), under leaf litter or other debris (Williams et al. 2014), in abandoned holes made by fossorial mammals or occasionally in abandoned bird nests (Osborne et al. 2008). Some species nest on the surface of the ground (in grassy tussocks) or in empty

cavities (hollow logs, dead trees, under rocks, etc.). Queens most likely overwinter in small cavities just below or on the ground surface.

The Annual Brome Grasslands, Purple Needlegrass Grassland, Disturbed Chaparral, Coyote Brush Scrub, Indian Teasel Patch, and Ruderal areas throughout the Study Area could support suitable foraging flower populations and rodent burrows could provide potential nesting and overwintering habitat for this species.

5.2.3 Monarch Butterfly

The monarch butterfly (*Danaus plexippus*) is a candidate for listing pursuant to the federal Endangered Species Act. It is a large conspicuous species that occurs in North, Central, and South America; Australia; New Zealand; islands of the Pacific and Caribbean, and elsewhere (Malcolm and Zalucki 1993 in USFWS 2020). During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (*Asclepias* spp.), and larvae emerge after two to five days (Zalucki 1982 in USFWS 2020). Larvae develop over a period of eight to 18 days, feeding on the milkweed and then pupate into chrysalis before eclosing six to 14 days later as an adult butterfly (USFWS 2020). Multiple generations of monarchs are produced during the breeding season, with most adult butterflies living approximately two to five weeks (USFWS 2020).

In California, monarchs continue to occupy and breed in areas near their overwintering groves along the California coast into northern Baja California throughout the year, and also disperse over multiple generations to occupy and breed throughout the state in the spring through fall (USFWS 2020). Migrating monarchs in western North America tend to occur more frequently near water sources such as rivers, creeks, roadside ditches, and irrigated gardens (Morris et al. 2015 in USFWS 2020). Adult monarch butterflies require a diversity of blooming nectar resources during breeding and migration (spring through fall). Monarchs also need milkweed (for both oviposition and larval feeding) embedded within this diverse nectaring habitat.

Scattered milkweed plants in open habitats throughout the Study Area represent breeding habitat for this species. No suitable overwintering groves occur within the Study Area.

5.2.4 California Freshwater Shrimp

The California freshwater shrimp (*Syncaris pacifica*) is listed as endangered pursuant to the federal Endangered Species Act. The historic range of the California freshwater shrimp was likely limited to a specific area within the northern San Francisco Bay Area in Marin, Sonoma and Napa Counties in California. They are currently known from 25 stream segments across the same three counties (USFWS 2022). California freshwater shrimp inhabit low elevation, low gradient, freshwater streams. The shrimp typically shelters near the edges of stream pools and under stream banks, exposed root material, or submerged leafy branches (USFWS 1998). Submerged undercut banks, overhanging plants such as blackberry, woody debris, and exposed live root systems of willow or alder provide ideal habitat for California freshwater shrimp (USEPA 2010).

While not everything is known about the life cycle of California freshwater shrimp, mating occurs sometime in the fall (likely between September and November). The male transfers and fixes a sperm sac to the female after her last molt. Females keep the eggs, ranging in number from 50 to 120, attached to her legs through the winter. Young are then released in May or early June and are approximately 0.24 inch (6 millimeters) in length (USEPA 2010). Females reach sexual maturity by the end of their second summer of growth and may live longer than 3 years (USFWS 1998).

California freshwater shrimp is not known from the Redwood Creek watershed, but the species has a very low potential to occur in Redwood Creek or perennial pools in Pickle Creek.

5.3 Fish

5.3.1 Southern Coastal Roach

Southern coastal roach (*Hesperoleucus venustus subditus*) is classified by CDFW as a California Species of Concern. It is a sub-species of California roach and part of a complex of fish with an unsettled and complicated nomenclature. In addition to nomenclature changes, roach and hitch are genetically close and have been lumped together and then split again. Southern coastal roach was referred to as Monterey roach until 2021 when the range was expanded north to encompass roach populations all the way up to Napa and Sonoma north of the San Francisco Bay Area. The southern coastal roach refers to the southernmost sub-species of roach. The current range of this subspecies begins north of the San Francisco Bay Area and extends down to San Luis Obispo (CDFW 2022).

The southern coastal roach are found in small streams and are adapted to intermittent streams where dense populations can be observed frequently in isolated pools. Similar to California roach, southern coastal roach are associated with pools, in unshaded, warm tributaries in relatively undisturbed areas (CDFW 2022). Reproduction occurs from March to June but commonly extends into late July. Schools congregate in shallow reaches with moderate flows and gravel/rubble substrates where spawning occurs (Moyle, P.B, Yoshiyama, R.M., et. al. 1995).

Within the Study Area, Redwood Creek and Pickle Creek represent suitable habitat for southern coastal roach.

5.3.2 Central California Coast Steelhead

Steelhead (*Oncorhynchus mykiss irideus*) populations in the Central California Coast ESU have been listed by the NMFS under the ESA as threatened. Steelhead, the anadromous form of rainbow trout, historically inhabited most tributaries to the Sacramento River. Juvenile steelhead may spend up to three years in freshwater prior to emigrating to the ocean as smolts. Typically, juvenile steelhead emigrate as age class 1+ fish (one year in fresh water) through the Sacramento River and the Sacramento-San Joaquin Estuary from November through May. Spawning steelhead require gravel or cobble substrates 0.2 to 5.1 inches in diameter for egg laying. Fine sediments (e.g., silt, fine sand, and clay) may suffocate eggs by preventing the

transport of dissolved oxygen from the water to the eggs. The range of water temperatures for optimal survival and growth of rainbow trout is between 59 and 64°F (Moyle 2002). Both fry and older juveniles require instream object cover, cobble or boulders, large woody debris, undercut banks, or submerged and overhanging vegetation for protection against predators.

Both Pickle Creek and Redwood Creek within the Study Area are Critical Habitat for Central California Coast steelhead, and both Redwood Creek and Pickle Creek within the Study Area provide suitable spawning and rearing habitat for steelhead. A Madrone biologist observed juvenile steelhead in Pickle Creek during their May 2025 field survey (**Attachment F**). The intermittent tributaries to Pickle Creek do not have appropriate substrate for spawning, and their intermittent nature renders them unsuitable for rearing habitat. However, it is possible that steelhead could swim into these drainages occasionally.

5.4 Amphibians

5.4.1 California Giant Salamander

The California giant salamander (*Dicamptodon ensatus*) is not federally or state listed, but is a CDFW species of special concern. California giant salamanders typically occur in damp forests in or near clear, cold perennial streams and seeps and may also occur within coastal chaparral habitat. Very little is known about the terrestrial habitat, although adults are occasionally found under logs, bark, rocks, and other objects in wet conditions near streams. Necessary habitat components include cold, slow flowing water in springs and channels with rocks and coarse woody debris in stream bottoms. This species may use permanent man-made ponds for breeding as well (Stebbins 1985). California giant salamanders are year-round residents of north-central California from southern Santa Cruz to Southern Mendocino. They occur up to 6,500 feet in elevation and tend to be common where they occur (Stebbins 1985).

California giant salamander has been documented in the CNDDDB along Redwood Creek in the southwestern corner of the Study Area (**Figure 5**) (CNDDDB 2025). Suitable habitat for the species occurs in the Alder Riparian Woodland, Coast Live Oak Woodland, and Coast Redwood Forest along Pickle Creek and Redwood Creek within the Study Area.

5.4.2 Foothill Yellow-Legged Frog – North Coast DPS

Foothill yellow-legged frog population 1 (*Rana boylei*, FYLF) is not federally or state listed but is a CDFW species of special concern.

FYLF is a small to medium sized frog with unusual rough and granular skin with many tiny tubercles (Stebbins 2003). Their historic range extends through foothill and mountain streams from the San Gabriel River in Los Angeles County to southern Oregon west of the Sierra-Cascade crest at elevations below 5,000 feet (Nussbaum 1983, Stebbins 2003). This species occurs in different habitats depending on life stage, season, and weather conditions. Breeding habitat includes margins of relatively wide and shallow channel sections, habitats that experience reduces flow variation (Kupferberg 1996). Foothill yellow-legged frog

tadpoles also breed in water temperatures above 13 degrees Celsius in slower-moving pool habitats. The foothill yellow-legged frog occurs in a wide variety of vegetation types including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, mixed chaparral and wet meadows. The frog is closely associated with streams and is rarely observed far from the water's edge. Breeding stream habitat is typically shallow, rocky and at least partially exposed to direct sunlight.

Madrone herpetologist Dustin Brown visited the site to conduct a FYLF habitat suitability assessment of Pickle Creek within the Study Area and documented 47 adult FYLF and hundreds of tadpoles in the creek (Figure 5) (Attachment F). All reaches of Pickle Creek within the Study Area support habitat for FYLF, and Redwood Creek is presumed to support suitable habitat as well.

5.4.3 California Red-Legged Frog

The California red-legged frog (*Rana draytonii*) (CRLF) is federally listed as threatened and is a CDFW species of special concern. CRLF is the largest native frog in the western United States, ranging from 1.5 to 5 inches in length. Their historic range extends through Pacific slope drainages and parts of the Central Valley from Shasta County, California, to Baja, Mexico. This area includes the Coast Ranges and the west slope of the Sierra Nevada at elevations below 1,548 m (5,000 feet). The current range is greatly reduced, with most remaining populations occurring along the coast from Marin County to Ventura County and in isolated locations in the foothills of the western slope of the Sierra Nevada (Fellers 2005; Barry and Fellers 2013).

CRLF occur in different habitats depending on life stage, season, and weather conditions. Breeding habitat includes coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded and backwater portions of streams. California red-legged frogs also breed in artificial impoundments including stock ponds, irrigation ponds, and siltation ponds. Creeks and ponds with dense growths of woody riparian vegetation, especially willows (*Salix* spp.) are used disproportionately (Hayes and Jennings 1988). The absence of vegetation at an aquatic site does not rule out the possibility of occupancy. Adult CRLF are most often found in areas of dense, shrubby or emergent riparian vegetation near deep [$\geq 0.6 - 0.9$ m (2 - 3 feet)], still or slow-moving water, especially where dense stands of overhanging willow and an intermixed fringe of cattail (*Typha* sp.) occur adjacent to open water. CRLF breed from November through April (Jennings and Hayes 1994), and larvae generally metamorphose by mid to late summer.

Upland and riparian areas provide important habitat during summer when CRLF are known to aestivate in dense vegetation, burrows and leaf litter. CRLF often disperse from breeding habitats to forage and seek upland refugia and are often found within close proximity to a pond or deep pool in a creek where emergent vegetation, undercut banks, or semi-submerged rootballs afford shelter (USFWS 2005). The diet of CRLF is highly variable. Larvae probably graze on algae, whereas invertebrates are the most common food items of adult frogs. Vertebrates, such as Sierra chorus frogs (*Pseudacris sierra*) and California mice (*Peromyscus californicus*) are frequently eaten by larger frogs. Juvenile frogs are active both during the day and at night, whereas adult frogs are largely nocturnal.

The two ponds within the Study Area represent suitable habitat for the species. Madrone conducted USFWS protocol surveys for the species in 2022 at the southernmost pond and did not identify CRLF. However, the species may be present within the ponds and may use the onsite drainages as dispersal/migration corridors. CRLF was observed within Redwood Creek in the southwestern portion of the Study Area in May 2018 (Figure 5), but the biologist reporting the finding noted that the habitat was atypical and the individual may have dispersed from a nearby pond (CNDDDB 2025).

5.5 Reptiles

5.5.1 Northwestern Pond Turtle

The Northwestern Pond Turtle (NWPT) is a federally proposed threatened species and is considered a CDFW species of special concern. The NWPT occupies a wide variety of permanent and ephemeral aquatic habitats. It also may spend a significant amount of time in upland terrestrial habitats as well. Both adult and juvenile NWPT favor aquatic habitats with access to areas of deep water with underwater refugia and emergent basking sites. Both flowing water habitats (e.g., rivers and streams) and isolated waters (e.g., ponds and reservoirs) are used by NWPT. NWPT are relatively poor swimmers and tend to seek areas with slow, shallow, warmer water, often with emergent vegetation. Ponds that are near to streams are often the favored habitat.

The NWPT originally inhabited many of the Pacific drainage basins in California (Stebbins 2003). This medium sized turtle ranges in size to just over 8 inches (21 cm) with a low carapace that is generally olive, brownish or blackish (Stebbins 2003, Jennings and Hayes 1994). The ventral portion of the shell, the plastron, is hingeless and may have dark blotches along the rear margins. The skin is gray with a pale, yellow neck, chin, forelimbs and tail.

Its primary habits include permanent water sources such as ponds, streams and rivers. It is often seen basking on logs, mud banks or mats of vegetation, although wild populations are wary and individuals will often plunge for cover after detecting movement from a considerable distance. Although it is an aquatic species with webbed feet, it can move across land in response to fluctuating water levels, an apparent adaptation to the variable rainfall and unpredictable flows that occur in many California drainage basins (Rathbun et al. 1993). In addition, it can over-winter on land or in water or remain active in the winter, depending on environmental conditions (Rathbun et al. 1993, Jennings and Hayes 1994).

In stream situations, turtle thermal ecology includes basking during morning and late-afternoon hours, with behaviors that optimize thermal heat, such as position adjustments and partial shading and dunking into warmer saline water (Abel 2010). In addition to basking on dry surfaces, or aerial basking, turtles have also been observed basking cryptically, situating themselves in microclimate within a habitat that has elevated temperatures, such as algal mats or warm sand, with minimal exposure to predators (Germano and Rathbun 2008).

Very few observations of courtship or mating have been reported. Abel (2010) observed a male displaying to a female on emergent tules 8 meters from the bank. A second sighting was of turtles mating in shallow water in a stream (Abel 2010).

Females travel from aquatic sites into open, grassy areas to lay eggs in a shallow nest (Holland 1994, Rathbun et al. 1992). Nests have been reported from 2-400 meters or more away from water bodies (Jennings and Hayes 1994) and are typically 4-6" deep. Nesting sites are typically limited to south-facing slopes or sections of a water body (Geist et al. 2015, Rathbun et al. 1992).

It appears that most hatchlings overwinter in the nest (Holland 1994, Jennings and Hayes 1994), placing nests away from watercourses makes young less susceptible to death by the flood events that commonly occur during the winter (Rathbun et al. 1993). Additional explanations for placing nests away from watercourses include avoidance of predators such as raccoon (*Procyon lotor*) and sex determination, which may be affected by temperature (Rathbun et al. 1993).

Turtles in streams use upland areas for overwintering activity, while turtles in ponds remained in ponds during the winter season (Rathbun et al. 1993). Abel (2010) found that turtles in stream/lagoon habitats moved to a permanent pond or to upland refugia, partially buried under various substrates, during the first storms of colder months. In pond habitats, turtles will seek refuge in the floating mat of emergent vegetation, such as tule (Abel 2010). This species appears to prefer habitats with areas of extensive cover (logs, algae, vegetation) and basking sites (boulders, logs, vegetative banks) and generally avoids areas of open water (Holland 1994).

Abel (2010) found that, during the active season (between March and November), pond turtles made use of deeper water with ready access to submerged escape cover and to a (wood) basking area that can be accessed from nearby cover and were found to be basking more than 30% of the day. This makes basking a dominant requirement of turtles. Manipulation of floating wood within a stream channel increased basking behavior (Abel 2010).

Predators of western pond turtle include American bullfrog and largemouth bass (*Micropterus salmoides*) (Holland 1994).

Several northwestern pond turtles were observed in each of the two ponds within the Study Area (**Figure 5**) (**Attachment F**). Suitable aquatic habitat for this species is present in the ponds and intermittent and perennial creeks within the Study Area, and suitable upland habitat is present in adjacent uplands.

5.6 Birds

5.6.1 Sharp-Shinned Hawk

Sharp-shinned hawk (*Accipiter striatus*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a species of special concern by the CDFW. This raptor prefers to

forage by perching inside foliage and waiting for small birds and sometimes flies low over the ground taking prey by surprise. The sharp-shinned hawk also feeds on a number of rodents, bats, lizards, frogs, snakes and large insects (Kaufman 1996). This species usually nests in groves of coniferous trees in mixed woods, sometimes in dense deciduous trees or in pure coniferous forest with brush or clearings nearby (Audubon 2025).

Nesting habitat for sharp-shinned hawk is present in the Alder Riparian Woodland, California Bay Forest, Coast Live Oak Woodlands, and Coast Redwood Forest within the Study Area.

5.6.2 Northern Spotted Owl

Northern spotted owl (*Strix occidentalis caurina*) is listed as threatened under the California and federal Endangered Species Act and is categorized as a species of special concern by the CDFW. These owls are medium-sized, chocolate brown owls with dark eyes surrounded by a prominent facial disk, and have round or irregular white spots on their head, neck, back, and underparts (USFWS 2024). In California, its distribution range occurs between the southern Cascade Range in northern California, across the Klamath Mountains, and down the Coast Range through Marin County. Northern spotted owl inhabits mature and old-growth conifer forests with high structural complexity. They primarily eat small forest animals, like flying squirrels, woodrats, voles and mice.

Northern spotted owl have been documented within and immediately adjacent to the southern portion of the Study Area (**Figure 5**) (CNDDDB 2025). This species may be present within the larger stands of Coast Live Oak Woodland, Coast Redwood Forest, Alder Riparian Woodland, and California Bay Forest within the Study Area. The species has a low potential of nesting onsite but may regularly use suitable habitat within the Study Area to forage.

A portion of the site was assessed in 2024 by Madrone (see **Attachment G**). This assessment is representative of the site and was used to develop appropriate mitigation measures.

5.7 Mammals

5.7.1 Pallid Bat

Pallid bat (*Antrozous pallidus*) is not federally or state listed, but is considered a CDFW species of special concern, and is classified by the WBWG as a High priority species (WBWG 2025a). It favors roosting sites in crevices in rock outcrops, caves, abandoned mines, hollow trees, and human-made structures such as barns, attics, and sheds (WBWG 2025b). Though pallid bats are gregarious, they tend to group in smaller colonies of 10 to 100 individuals. It is a nocturnal hunter and captures prey in flight, but unlike most American bats, the species has been observed foraging for flightless insects, which it seizes after landing (WBWG 2025b).

Tree hollows and exfoliating bark on trees throughout the Study Area, and structures associated with vineyard management represent suitable roosting habitat for pallid bat. Pallid bat has been documented in the CNDDDB just south of the Study Area (Figure 5) (CNDDDB 2025).

5.7.2 Townsend's Big-Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is not listed pursuant to either the federal or California Endangered Species Acts; however, this species is considered a species of special concern by CDFW and is classified by the WBWG as a High priority species (WBWG 2025a). Townsend's big-eared bat is a fairly large bat with prominent bilateral nose lumps and large rabbit-like ears. This species occurs throughout the west and ranges from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains. This species has been reported from a wide variety of habitat types and elevations from sea level to 10,827 feet (NPS 2023). Habitats used include coniferous forests, mixed mesophytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Its distribution is strongly associated with the availability of caves and cave-like roosting habitat including abandoned mines, buildings, bridges, rock crevices, and hollow trees. This species is readily detectable when roosting due to their habit of roosting pendant-like on open surfaces. Townsend's big-eared bat is a moth specialist with over 90 percent of its diet composed of Lepidopterans. Foraging habitat includes edge habitats along streams as well as adjacent to and within a variety of wooded habitats. This species often travels long distances when foraging and large home ranges have been documented in California (WBWG 2025b).

Although no caves or cave analogues are present on-site, there may be some tree hollows of sufficient size to provide roosting habitat for this species.

5.7.3 Fringed Myotis

Fringed myotis (*Myotis thysanodes*) is not federally or state listed but is classified by the WBWG as a High priority species (WBWG 2025a). This species ranges through much of western North America from southern British Columbia, Canada, south to Chiapas, Mexico and from Santa Cruz Island in California, east to the Black Hills of South Dakota (CDFW 2021, WBWG 2025b). Fringed myotis occurs most commonly in elevations between 3,937 and 6890 feet and appears to be most common in drier woodlands, although it is also found in habitats including desert scrub, mesic coniferous forest, and grassland. This species roosts in crevices in buildings, underground mines, rocks, cliff faces, and bridges, and roosting in large decadent trees and snags, is common throughout its range in western U.S. and Canada (WBWG 2025b). Fringed myotis roosts have been documented in a large variety of tree species and it is likely that structural characteristics (e.g., height, decay stage) rather than tree species play a greater role in selection of a snag or tree as a roost (WBWG 2025b). Maternity roosts are colonial with colonies ranging from 10-2,000 individuals, though large colonies are exceedingly rare (WBWG 2025b). Much less information is available on roosts of males, but it is thought that they roost singly or in small groups (WBWG 2025b). The information available on hibernation is largely limited to an accounting of the types of structures used which include caves, mines and buildings (WBWG 2025b). Fringed myotis is adapted for foraging within forest

interiors and along forest edges and feeds on a variety of invertebrate taxa, including flying insects such as beetles and moths as well as flightless taxa such as harvestmen, spiders, and crickets, indicating that this species catches prey both aerially and via gleaning from vegetation (WBWG 2025b).

Suitable roosting habitat for this species is present in large, decadent trees and structures throughout the Study Area.

5.7.4 Long-Legged Myotis

Long-legged myotis (*Myotis volans*) is not federally or state listed but is considered a CDFW species of special concern and is classified by the WBWG as a High priority species (WBWG 2025a). This species ranges throughout the western United States from the Pacific coast to the Great Plains and central Texas (WBWG 2025b). Long-legged myotis occurs in coniferous forests, but also seasonally in riparian and desert habitats. Summer day roosts consist of abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags (WBWG 2025b).

Marginally suitable habitat for this species occurs in the Coast Redwood Forest and adjacent Alder Riparian Woodland. Tree hollows and exfoliating bark on trees scattered throughout these areas may provide roosting habitat.

5.8 Wildlife Movement Corridors

Wildlife movement corridors typically refer to movements including migration (i.e., usually one way per season) and inter-population movement (i.e., dispersal and movement from source to sink populations). These linkages can extend for miles, cross many habitat types, and occur on a large scale throughout California.

In Napa County, a least cost path analysis was conducted to provide an example of one approach to identifying movement corridors quantitatively (Napa WICC 2005). The analysis assigned all of the natural terrestrial vegetation communities within the Study Area the highest beneficial cost value of 1 [on a scale of 1 (easiest to traverse) to 10 (hardest to traverse)]. The drainages and ponds are assigned a score of 2, vineyards were assigned a value of 5, and the urban areas were assigned a value of 10.

The Study Area is located in the “Western Mountains” (Napa WICC 2005), the approximately 7-mile wide Mayacamas mountain range that runs from north to south along the western edge of Napa County. The Western Mountains are comprised of a largely natural matrix of woodlands, grasslands, and chaparral, broken up by varying densities of vineyards and occasional rural residences. The Study Area supports a particularly high density of vineyards, and an 8-foot-tall deer fence along the western and southern edges of the vineyards largely precludes terrestrial wildlife movement into the vineyards from the west. However, north to south wildlife movement corridors have been maintained along the western edge of the Study Area, through the approximate center of the Study Area, and along the eastern edge of the Study Area. These wildlife corridors as well as the deer fence are shown on **Figure 2**.

6.0 IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

This section details potential impacts to the biological resources discussed above associated with construction of residences at the two potential homesites, as discussed in **Section 1.1** and shown in **Attachment A**. As discussed in **Section 1.1**, the Project is splitting the existing 518.5-acre parcel into three parcels. As the Project involves the entire parcel, the surveys and biological resources assessment above was conducted throughout the parcel. However, at the present time, the only impacts proposed on the parcel are within the two small Impact Areas, which together comprise 1.8 acres (**Figure 6**). As such, the remainder of the document will focus on the Impact Areas only.

6.1 Aquatic Resources

No aquatic resources occur within the Impact Areas (**Figure 6**). Ephemeral drainages run adjacent to the Impact Areas, but the Impact Areas do not overlap with the required setbacks. Pickle Creek does run east of the impact areas, but in both cases, the creek is on the opposite side of Mount Veeder Road from the Impact Areas, and indirect impacts are not anticipated. Therefore, the Project is not expected to impact aquatic resources.

6.2 Special-Status Plant Species

The vegetation communities proposed for impact represent suitable habitat for a variety of special-status plant species, but protocol-level special-status plant surveys were conducted throughout the Impact Areas, and no special-status plants were found (Madrone 2025). Therefore, the Project is not expected to impact special-status plant species. However, given enough time, special-status plant populations can establish in new areas. If a new special-status plant population established within the impact area, the Project could kill individuals of the species. This would be a significant impact.

6.3 Crotch's and Western Bumble Bees

The Annual Brome Grasslands, Purple Needlegrass Grassland, Disturbed Chaparral, Coyote Brush Scrub, Indian Teasel Patch, and Ruderal areas within the Study Area is suitable habitat for Crotch's and western bumble bee. Of the communities that represent suitable habitat, only Annual Brome Grasslands occur within the Impact Area. These species could be adversely affected if construction activity results in the removal of nests of Crotch's or western bumble bee. This would be a significant impact.

6.4 Monarch Butterfly

If milkweed plants were present within the Impact Area, they would be suitable habitat for Monarch butterfly. Eggs or caterpillars could be destroyed if construction activity results in the removal of milkweed plants that they are occupying. This would be a significant impact.

6.5 California Freshwater Shrimp

Pickle and Redwood Creeks within the Study Area represent suitable habitat for California freshwater shrimp. Neither of these creeks occurs within the Impact Area, but the two Impact Areas are across Mount Veeder Road from Pickle Creek. Although direct impacts to Pickle Creek are not proposed, grading within the Impact Areas could result in indirect water quality impacts if appropriate erosion control measures were not implemented during construction. These indirect water quality impacts would be a significant impact.

6.6 Central California Coast Steelhead and Southern Coastal Roach

Pickle and Redwood Creeks within the Study Area are designated Critical Habitat for Central California Coast steelhead, and steelhead were observed in Pickle Creek. Both drainages also represent suitable habitat for southern coastal roach. Neither of these creeks occurs within the Impact Area, but the two Impact Areas are across Mount Veeder Road from Pickle Creek. Although direct impacts to Pickle Creek salmonid habitat are not proposed, grading within the Impact Areas could result in indirect water quality impacts if appropriate erosion control measures were not implemented during construction. These indirect water quality impacts would be a significant impact.

6.7 California Giant Salamander

Suitable habitat for this species is present in the Coast Live Oak Woodland, Coast Redwood Forest, and Alder Riparian Woodland around Pickle and Redwood creeks within the Study Area. The Coast Live Oak Woodlands within the Impact Area are sufficiently close to Pickle Creek to represent marginally suitable upland habitat if the salamanders crossed Mount Veeder Road. If California giant salamander were present in those areas during construction, individual salamanders could be injured or killed. This would be a significant impact.

6.8 Foothill Yellow-Legged Frog – North Coast DPS

Pickle and Redwood Creeks within the Study Area represent suitable habitat for foothill yellow-legged frog, and frogs and tadpoles of the species were observed in Pickle Creek. Neither of these creeks occurs within the Impact Area, but the two Impact Areas are across Mount Veeder Road from Pickle Creek. No impacts are proposed in the creek itself or within approximately 50 feet of the creek, and frogs of this species rarely venture far from their aquatic habitat. However, individual frogs could be killed if they crossed the road and entered the construction area. This would be a significant impact.

6.9 California Red-Legged Frog

The two ponds within the Study Area represent suitable aquatic habitat for California red-legged frog, and the onsite drainages may be used as dispersal/migration corridors. None of the ponds or drainages fall within the Impact Area. Given the limited potential for the species to utilize the drainages that occur in the

vicinity of the Impact Area, California red-legged frog are not expected to occur within the Impact Area, and the Project is not expected to impact California red-legged frog.

6.10 Northwestern Pond Turtle

Suitable aquatic habitat for this species is present in the ponds and intermittent and perennial creeks within the Study Area. None of these features falls within the Impact Area; however, the Coast Live Oak Woodlands within the Impact Area represent suitable upland habitat if the turtles crossed Mount Veeder Road. If northwestern pond turtles or their nests were present in those areas during construction, individual turtles could be injured or killed, or nests could be destroyed. This would be a significant impact.

6.11 Nesting Raptors and Songbirds

Sharp-shinned hawks have the potential to nest within and adjacent to the Impact Area, as do other more common bird species protected by the MBTA. If they were nesting on-site, removal of the nests would impact these species. Furthermore, birds nesting in avoided areas adjacent to construction could be disturbed by construction, which could result in nest abandonment. This would be a significant impact.

6.12 Northern Spotted Owl

Northern spotted owl has the potential to nest and forage in the Coast Live Oak Woodlands within and adjacent to the Impact Area. If they were nesting on-site, removal of the nests would impact these species. Furthermore, birds nesting in avoided areas within 0.25 mile of construction could be disturbed by construction, which could result in nest abandonment. This would be a significant impact.

6.13 Roosting Bats

A single Coast live oak tree in the North Impact Area (**Figure 7**) contains a cavity that represents roosting habitat for special-status bats. If special-status bats were roosting in that tree, they could be injured or killed during the removal of the tree. This would be a significant impact.

6.14 Trees and Vegetation Canopy Cover

6.14.1 Tree Impacts

Madrone inventoried 43 trees within 25 feet of the two Impact Areas (**Figures 7 and 8**) as the 25-foot area was specified by Napa County staff during discussions with Madrone about the contents of this report. Of these trees, none are in the impact area and none will be removed by the Project.

Protected trees remaining onsite could be subject to construction-related impacts as a result of work within their driplines. Construction impacts to avoided trees that resulted in mortality would be considered a significant impact.

6.14.2 Vegetation Canopy Cover Impacts

In accordance with Section 18.108.030 of the Napa County Code, vegetation canopy cover includes oak woodland, riparian oak woodland, and coniferous forest. Within the Study Area, this includes Coast Live Oak Woodland and Coast Redwood Forest. A total of 299.6 acres of vegetation canopy cover occurs within the Study Area (which comprises a single parcel). The Project proposes to impact 0.1 acre of Coast Live Oak Woodland, which is less than 0.01% of the total vegetation canopy cover currently present within the parcel. Therefore, the Project complies with the vegetation retention requirements of the Napa County Code. Impacts to less than 0.01% of Coast Live Oak Woodland in the parcel is not considered a significant impact.

6.15 Stream Setbacks

No drainages run through the Impact Areas, but several drainages occur in the vicinity of the Impact Areas. Ephemeral drainages occur adjacent to both of the Impact Areas, and these have a 35-foot setback. Additionally, Pickle Creek runs across Mount Veeder Road from both Impact Areas. Near the northern Impact Area, Pickle Creek has a slope of primarily 5-15%, and across from the southern Impact Area, Pickle Creek has a slope between 0 and 15%. In accordance with Section 18.108.25 of the Napa County Code, we have assigned Pickle Creek a 55-foot setback in the vicinity of both Impact Areas. Slopes and Stream Setbacks are shown on **Figures 9 and 10**. None of the Stream Setbacks overlap with the Impact Areas, and therefore, the Project will not impact Stream Setbacks.

6.16 Wildlife Corridors

The Impact Areas are located entirely outside of the wildlife corridors identified in **Section 5.8** above, and the Project does not involve installation of fencing cutting through any of the wildlife corridors. Therefore, no impacts to wildlife corridors are anticipated.

7.0 MITIGATION FOR IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

The following are mitigation measures that are recommended to reduce impacts to sensitive biological resources identified in **Section 6.0** to a less than significant level.

7.1 Special-Status Plant Species

Special-status plant surveys have been conducted throughout the Study Area with negative results. However, given enough time, plants may become established in areas where suitable habitat exists. If construction does not commence prior to 1 May 2027, another round of special-status plant surveys shall be conducted in areas proposed for impact prior to commencement of construction according to the following requirements:

Surveys shall be conducted in accordance with the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000), the *Botanical Survey*

Guidelines of the California Native Plant Society (CNPS 2001), and *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018). This protocol includes conducting surveys at the appropriate time of year, when plants are in bloom.

If no special-status plant species are found, no further mitigation would be required. If special-status plants are found during special-status plant surveys and cannot be avoided, the applicant and a Qualified Botanist shall, in coordination/consultation with the County, CDFW or USFWS, as appropriate depending on species status, develop and implement a site-specific mitigation strategy to compensate for loss of occupied habitat or individuals according to CDFW and USFWS guidelines.

7.2 Crotch's and Western Bumble Bee

Crotch and western bumble bees were designated as candidates for listing under the CESA in 2019, but no decision on listing has been published. If, at the time of project implementation, either species is not a CESA candidate or CESA listed, and it does not fall into any of the other "special-status" categories defined in Section 3.0, then it would not qualify for protections under CEQA and no mitigation is necessary. Furthermore, as these are candidate species, appropriate mitigation measures are still being developed and refined for these species. We have developed the following measure based on current literature and research. If at a later date, a different mitigation measure is determined to be more appropriate, that can be submitted to the County and CDFW at that time for review and approval.

If potential habitat for Crotch or western bumble bees is present within the project site, then this measure is required. In this measure, these two species are referred to collectively as "special-status bumble bees", but it is understood that the species that has potential to occur on a given parcel will be the species targeted by the survey.

- Initial ground-disturbing work (e.g., grading, vegetation removal, staging) shall take place between 1 September and 31 March (i.e., outside the colony active period), if feasible, to avoid impacts on special-status bumble bees.
- If completing all initial ground-disturbing work between 1 September and 31 March is not feasible, then a senior biologist with 10 or more years of experience conducting biological resource surveys within California shall conduct a pre-construction survey for special-status bumble bees in the area proposed for impact no more than 14 days prior to the commencement of construction activities. The survey shall occur during the period from one hour after sunrise to two hours before sunset, with temperatures between 65° F and 90° F, with low wind and no rain. If the timing of the start of construction makes the survey infeasible due to the temperature requirements, the surveying biologist shall select the most appropriate days based on the National Weather Service seven-day forecast and shall survey at a time of day that is closest to the temperature range stated above. The survey duration shall be commensurate with the extent of suitable floral resources (which represent foraging habitat) present at within the area proposed for impact and the level of effort shall be based on the metric of a minimum of one person-hour of searching per three acres of suitable floral resources/foraging habitat. A meandering pedestrian survey shall be conducted throughout the area proposed for impact in order to identify patches of suitable floral resources. Suitable floral

resources for Crotch bumble bee include species in the following families: Apocynaceae, Asteraceae, Boraginaceae, Fabaceae, and Lamiaceae. Suitable floral resources for western bumble bee include species in the following families: Asteraceae, Fabaceae, Rhamnaceae, and Rosaceae, as well as plants in the genera *Eriogonum* and *Penstemon*.

- At a minimum, pre-construction survey methods shall include the following:
 - o Search areas with floral resources for foraging bumble bees. Observed foraging activity may indicate a nest is nearby, and therefore, the survey duration shall be increased when foraging bumble bees are present.
 - o If special-status bumble bees are observed, watch any special-status bumble bees present and observe their flight patterns. Attempt to track their movements between foraging areas and the nest.
 - o Visually look for nest entrances. Observe burrows, any other underground cavities, logs, or other possible nesting habitat.
 - o If floral resources or other vegetation preclude observance of the nest, small areas of vegetation may be removed via hand removal, line trimming, or mowing to a height of no less than 4 inches to assist with locating the nest.
 - o Look for concentrated special-status bumble bee activity.
 - o Listen for the humming of a nest colony.
 - o If bumble bees are observed, attempt to photograph the individual and identify it to species.
- The biologist conducting the survey shall record when the survey was conducted, a general description of any suitable foraging habitat/floral resources present, a description of observed bumble bee activity, a list of bumble bee species observed, a description of any vegetation removed to facilitate the survey, and their determination of if survey observations suggest a special-status bumble bee nest(s) may be present or if construction activities could result in take of special-status bumble bees. The report shall be submitted to the County prior to the commencement of construction activities.
- If no bumble bees are located during the pre-construction survey or the bumble bees located are definitively identified as common (i.e., not special-status) species, then no further mitigation or coordination with CDFW is required.
- If any sign(s) of a bumble bee nest is observed, and if it cannot be established the species present is not a special-status bumble bee, then construction shall not commence until either 1) the bumble bees present are positively identification as common (i.e., not special status) by an experienced bumble bee taxonomist, or 2) the completion of coordination with CDFW to identify appropriate mitigation measures, which may include but not be limited to: waiting until the colony active season ends, establishment of nest buffers, or obtaining an Incidental Take Permit (ITP) from CDFW.
- It is recommended, but not required that the Project Applicant also survey the proposed impact areas the year before construction begins in order to avoid potential last-minute delays associated with identifying special-status bumble bees on-site immediately prior to construction activities. To be most effective, this optional survey should follow the protocol outlined above.
- If special-status bees are located, and after coordination with CDFW take of special-status bumble bees cannot be avoided, the Applicant shall obtain an ITP from CDFW prior to County approval of

permits authorizing construction, and the applicant shall implement all conditions identified in the ITP. Mitigation required by the ITP may include but will not be limited to, the Project Applicant translocating nesting substrate in accordance with the latest scientific research to another suitable location (i.e., a location that supports similar or better floral resources as the impact area), enhancing floral resources on areas of the Project site that will remain appropriate habitat, worker awareness training, and/or other measures specified by CDFW.

7.3 Monarch Butterfly

Monarch butterfly was designated as a candidate for listing under the ESA in 2020, but no decision on listing has been published. If, at the time of project implementation, it is not a ESA candidate or ESA listed, and it does not fall into any of the other “special-status” categories defined in Section 3.0, then it would not qualify for protections under CEQA and no mitigation is necessary. Furthermore, as this is a candidate species, appropriate mitigation measures are still being developed and refined for this species. We have developed the following measure based on current literature and research. If at a later date, a different mitigation measure is determined to be more appropriate, that can be submitted to the County and USFWS at that time for review and approval.

If ground disturbance occurs within annual brome grassland during the time when milkweed plants may host monarch eggs or caterpillars (approximately mid-March through late September), a pre-construction survey shall be conducted by a qualified biologist who is knowledgeable and experienced in the biology, life stages, natural history, and identification of local fish and wildlife resources at the Project Site (Qualified Biologist) no earlier than 15 days prior to construction within the proposed impact area and a 50-foot buffer in accessible areas. The biologist shall comprehensively search the Survey Area for milkweed plants, and all milkweed plants found shall be surveyed for monarch eggs, larvae (i.e., caterpillars), and chrysalises. Additionally, other plants immediately adjacent to milkweed plants shall also be searched for chrysalises. If no eggs, caterpillars, or chrysalises are detected, no additional mitigation measures are necessary. Survey results shall be provided to the County within 15 days of completion of all surveys, and prior to commencement of ground disturbance.

If eggs, caterpillars or chrysalises are found, the plants shall be avoided with a 50-foot buffer until metamorphosis is completed and adult butterflies emerge and voluntarily leave the host plant. If the eggs, larvae, or chrysalises cannot be avoided, all eggs, larvae, and chrysalises, including the portion of the plant to which they are attached, will be translocated to an alternative location. That location must be a minimum of 50 feet outside of the impact area and contain a similarly sized or larger population of larval host plants. The portions of the plants supporting eggs or chrysalises shall be tied to the live stem of the avoided larval host plant while caterpillars will be placed directly on a stem or leaf of a larval host plant. Should the species be listed under FESA in the future, coordination with USFWS shall be conducted prior to translocation.

7.4 California Freshwater Shrimp, Central California Coast Steelhead and Southern Coastal Roach

Work across the street from Pickle Creek could result in water quality impacts if appropriate runoff, erosion, and sediment control Best Management Practices (BMPs) are not implemented. Therefore, the applicant shall prepare a Stormwater Pollution Protection Plan (SWPPP) for the Project prior to issuance of the grading permit, and implement the SWPPP during construction. Examples of BMPs that may be specified by the Certified Professional in Erosion and Sediment Control (CPESC) that prepares the SWPPP include silt fencing between any areas of ground disturbance and Pickle Creek and tributaries to Pickle Creek, straw wattles or straw bales around drop inlets, compaction and hydroseeding of bare soil following construction, and locating concrete washouts, refueling areas, and materials storage, etc. a minimum of 200 feet from Pickle Creek.

7.5 California Giant Salamander and Northwestern Pond Turtle

A pre-construction survey for California giant salamander and northwestern pond turtle shall be conducted within any Coast Live Oak Woodlands within the construction area within 48 hours prior to construction. This pre-construction survey shall include looking under logs, bark, rocks, and other debris within the habitat areas. If no California giant salamander and northwestern pond turtle or their nests are found, no further mitigation is necessary. If either of the species is observed within the proposed impact area, a qualified biologist shall relocate the individual to suitable habitat outside of the proposed impact area prior to construction. If a northwestern pond turtle nest is observed within the proposed impact area, the nest shall be fenced off with an adequate buffer as determined by a qualified biologist and avoided until the eggs hatch. A qualified biologist shall monitor to ensure that hatchlings do not disperse into the construction area. Relocation of hatchlings will occur as stipulated above, if necessary.

7.6 Daily Clearance Sweeps for Special-Status Reptiles and Amphibians

Prior to construction each day, a qualified biologist or personnel trained by a qualified biologist shall conduct a survey of all areas proposed for impact that day, including areas where vehicles will be driving. The survey shall target California giant salamander, northwestern pond turtle, foothill yellow-legged frog, and any other non-avian special-status species. The survey shall include looking into and under debris as well as any remaining logs, bark, and other items that wildlife could be sheltering in or under. If no special-status species are found, construction may commence. If a special-status wildlife species¹ is observed within the proposed impact area, a qualified biologist (who has any required permits to do so) shall relocate the individual to suitable habitat outside of the proposed impact area prior to construction commencement for the day. The applicant may choose to install silt fence around the entire perimeter of the construction area to minimize encroachment of special-status species individuals within the construction area.

¹ Note that this measure does not apply to avian special-status species that can readily fly out of the construction area. Nesting avian special-status species are addressed in measure 7.7. If an avian species establishes a nest within the construction area after commencement of construction, the birds will be assumed to be tolerant of construction and no nest buffer will be required.

7.7 Nesting Raptors and Other Birds

The following nest survey requirements apply if construction activities take place during the typical bird breeding/nesting season (typically February 15 through September 1).

7.7.1 Northern Spotted Owl

A targeted northern spotted owl nest survey shall be conducted throughout all accessible areas within ¼ mile of the proposed construction area no later than 14 days prior to construction activities. If active northern spotted owl nests are found within ¼ mile of a construction area, construction shall cease within ¼ mile of the nest until a qualified biologist determines that the young have fledged or it is determined that the nesting attempt has failed. If the applicant desires to work within ¼ mile of the nest, the applicant shall consult with County to determine if the nest buffer can be reduced. The County may choose to coordinate with USFWS and CDFW at their discretion. The result of that coordination would direct the reduction of the nest avoidance buffer, and what (if any) nest monitoring is necessary.

7.7.2 Other Birds

A pre-construction nesting bird survey shall be conducted by a qualified biologist on the proposed construction area and within a 500-foot radius of proposed construction areas, where public access is available, no more than seven days prior to the initiation of construction. If there is a break in construction activity of more than two weeks, then subsequent surveys shall be conducted.

If active raptor nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. If active songbird nests are found, a 100-foot no disturbance buffer will be established. These no-disturbance buffers may be reduced if a smaller buffer is proposed by the qualified biologist and approved by the County after taking into consideration the natural history of the species of bird nesting, the proposed activity level adjacent to the nest, habituation to existing or ongoing activity, and nest concealment (are there visual or acoustic barriers between the proposed activity and the nest). A qualified biologist can visit the nest as needed to determine when the young have fledged the nest and are independent of the site or the nest can be left undisturbed until the end of the nesting season.

7.7.3 Survey Report

A report summarizing the nesting bird survey(s), including those for northern spotted owl, shall be provided to the County within 30 days of the completed survey and is valid for one construction season. If no nests are found, no further mitigation is required.

7.7.4 Changes to Buffers and Completion of Nesting

Should construction activities cause a nesting bird do any of the following in a way that would be considered a result of construction activities: vocalize, make defensive flights at intruders, get up from a brooding

position, or fly off the nest, then the exclusionary buffer shall be increased such that activities are far enough from the nest to stop this agitated behavior. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist in consultation with the County.

Construction activities may only resume within the buffer zone after a follow-up survey by the qualified biologist has been conducted and a report has been prepared indicating that the nest (or nests) are no longer active, and that no new nests have been identified.

7.8 Roosting Bats

A qualified biologist shall survey the potential bat roosting habitat identified in the northern Impact Area during the active season (generally April through October or from January through March on days with temperatures in excess of 50 degrees F) to determine presence of roosting bats. These surveys are recommended to be conducted utilizing methods that are considered acceptable by CDFW and bat experts. Methods may include evening emergence surveys, acoustic surveys, inspecting potential roosting habitat with fiberoptic cameras or a combination thereof.

If roosting bats are identified, or if presence is assumed, the trees shall be removed outside of pup season only on days with temperatures in excess of 50 degrees F. Pup season is generally during the months of May through August. Two-step tree removal shall be utilized under the supervision of the qualified biologist. Two-step tree removal involves removal of all branches of the tree that do not provide roosting habitat on the first day, and then the next day cutting down the remaining portion of the tree. Additionally, it is recommended that all other tree removal and/or structure demolition be conducted from January through March on days with temperatures in excess of 50 degrees F to avoid potential impacts to foliage-roosting bat species.

7.9 Native Trees

As summarized in **Section 6.14.1**, there are no trees within the Impact Areas and therefore none will be removed by the Project. The applicant shall retain an arborist at the time of construction to review the final construction plans and determine if any best management practices would be required to avoid impacts to adjacent avoided trees such as protective fencing or root pruning. These best management practices shall be implemented during construction.

7.10 Worker Environmental Awareness Training

Prior to any ground-disturbing or vegetation-removal activities, a Worker Environmental Awareness Training (WEAT) shall be prepared and administered to the construction crews. The WEAT will include the following: discussion of the state and federal Endangered Species Act, the Clean Water Act, the Project's permits and CEQA documentation, and associated mitigation measures; consequences and penalties for violation or noncompliance with these laws and regulations; identification of special-status wildlife, hazardous substance spill prevention and containment measures; and the contact person in the event of

the discovery of a special-status wildlife species. The WEAT will also discuss the different habitats used by the species' different life stages and the annual timing of these life stages. A handout summarizing the WEAT information shall be provided to workers to keep on-site for future reference. Upon completion of the WEAT training, workers will sign a form stating that they attended the training, understand the information presented and will comply with the regulations discussed. Workers will be shown designated "avoidance areas" during the WEAT training; worker access should be restricted to outside of those areas to minimize the potential for inadvertent environmental impacts. Fencing and signage around the boundary of avoidance areas may be helpful.

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Figures

Figure 1. Site and Vicinity

Figure 2. Wildlife Corridors and Deer Fencing within the Study Area

Figure 3. Terrestrial Vegetation Communities and Aquatic Resources

Figure 4. Natural Resources Conservation Service Soils

Figure 5. Special-Status Species within and Adjacent to the Study Area

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Figure 7. Tree Inventory (North Impact Area)

Figure 8. Tree Inventory (South Impact Area)

Figure 9. Hess Veeder Hills Slopes and Stream Setbacks (North Impact Area)

Figure 10. Hess Veeder Hills Slopes and Stream Setbacks (South Impact Area)

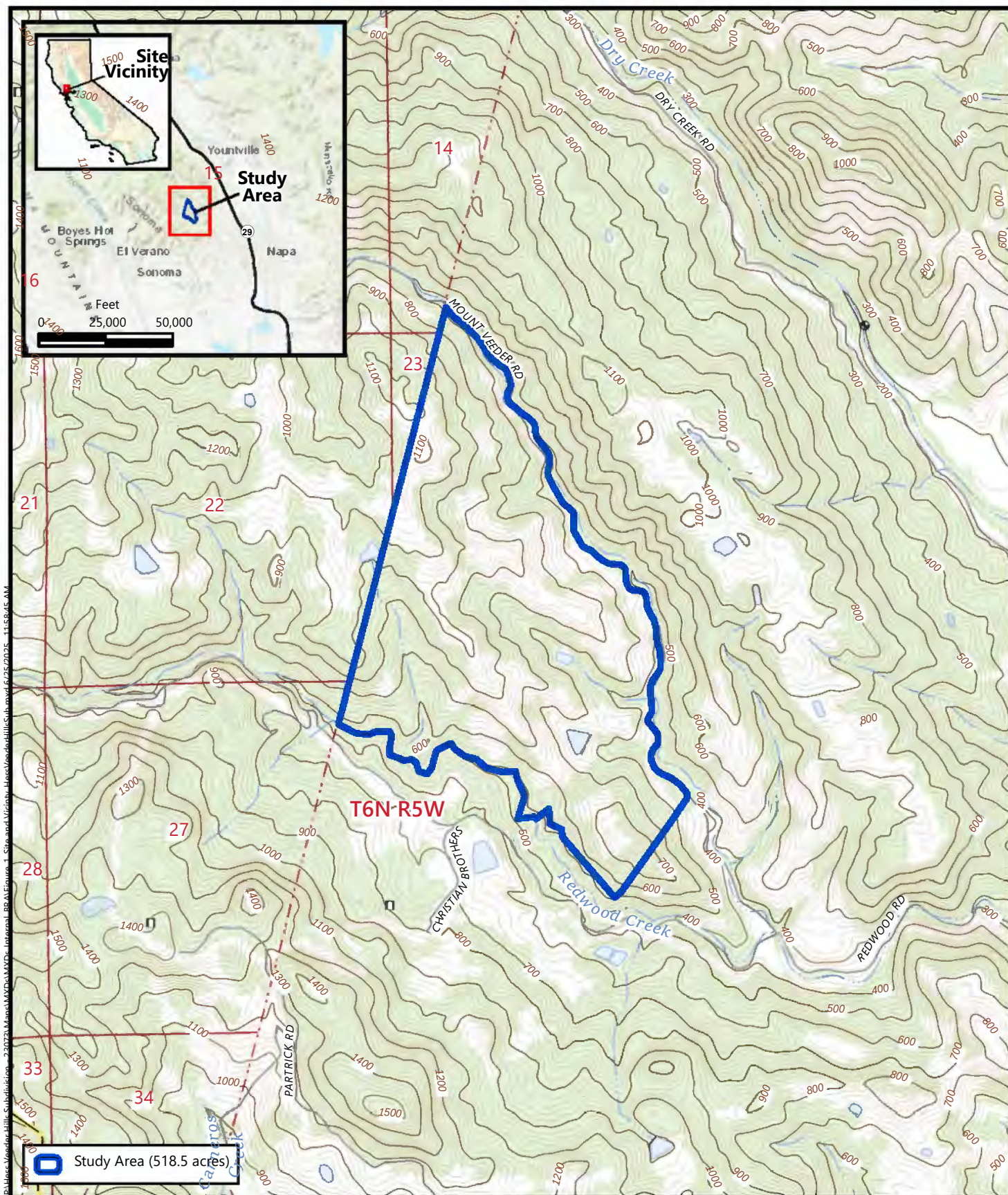


Figure 1
Site and Vicinity

Source: United States Geologic Survey, 2021
 "Sonoma, California" 7.5-Minute Topographic Quadrangle
 Napa Civil Land Grant; Township 6 North, Range 5 West, MDB&M
 Latitude (NAD83): 38.347124°, Longitude (NAD83): -122.384899°

Hess Veeder Hills Subdivision
 Napa County, California



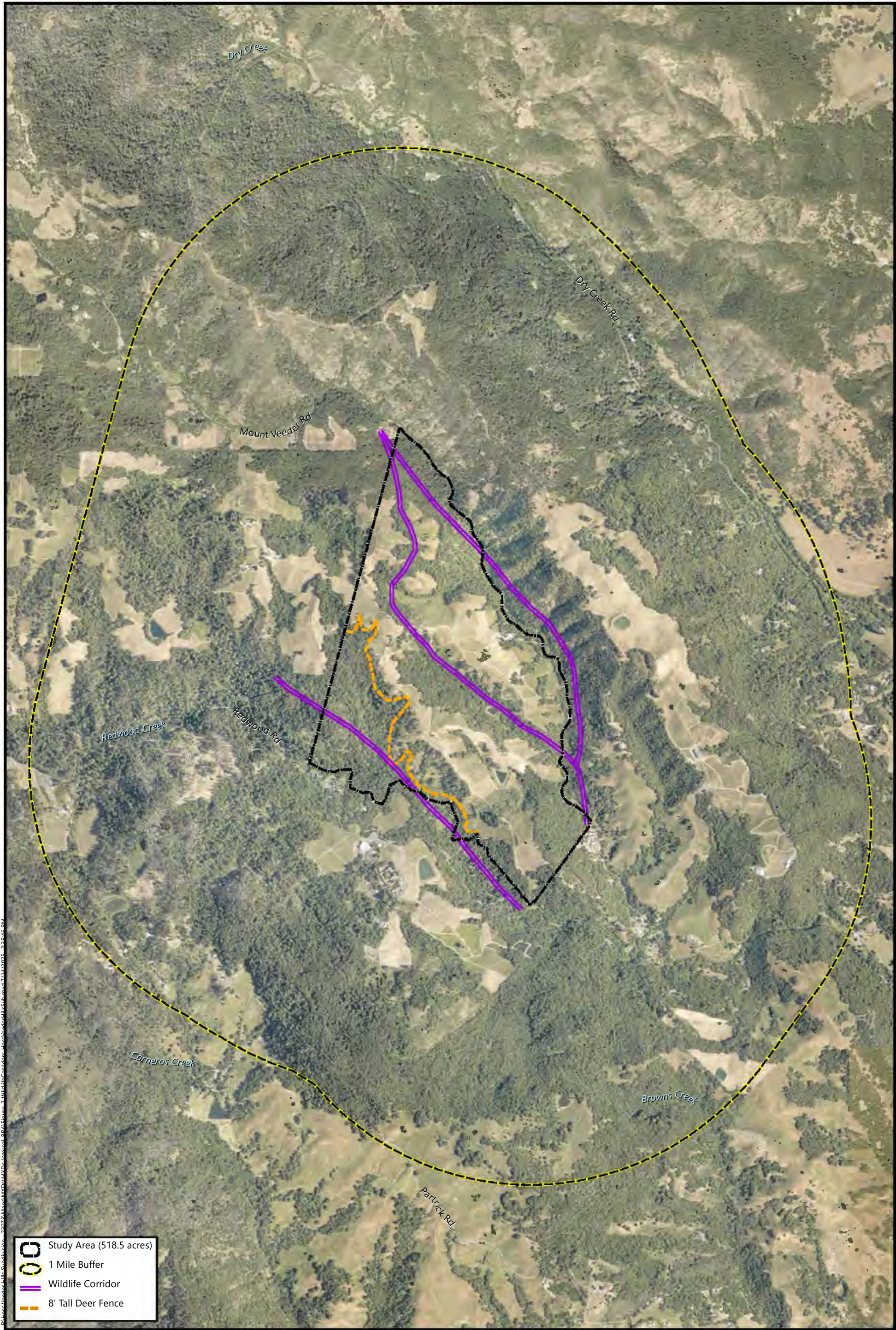


Figure 2
Wildlife Corridors and Deer Fencing
within the Study Area

Hess Veeder Hills Subdivision
Napa County, California



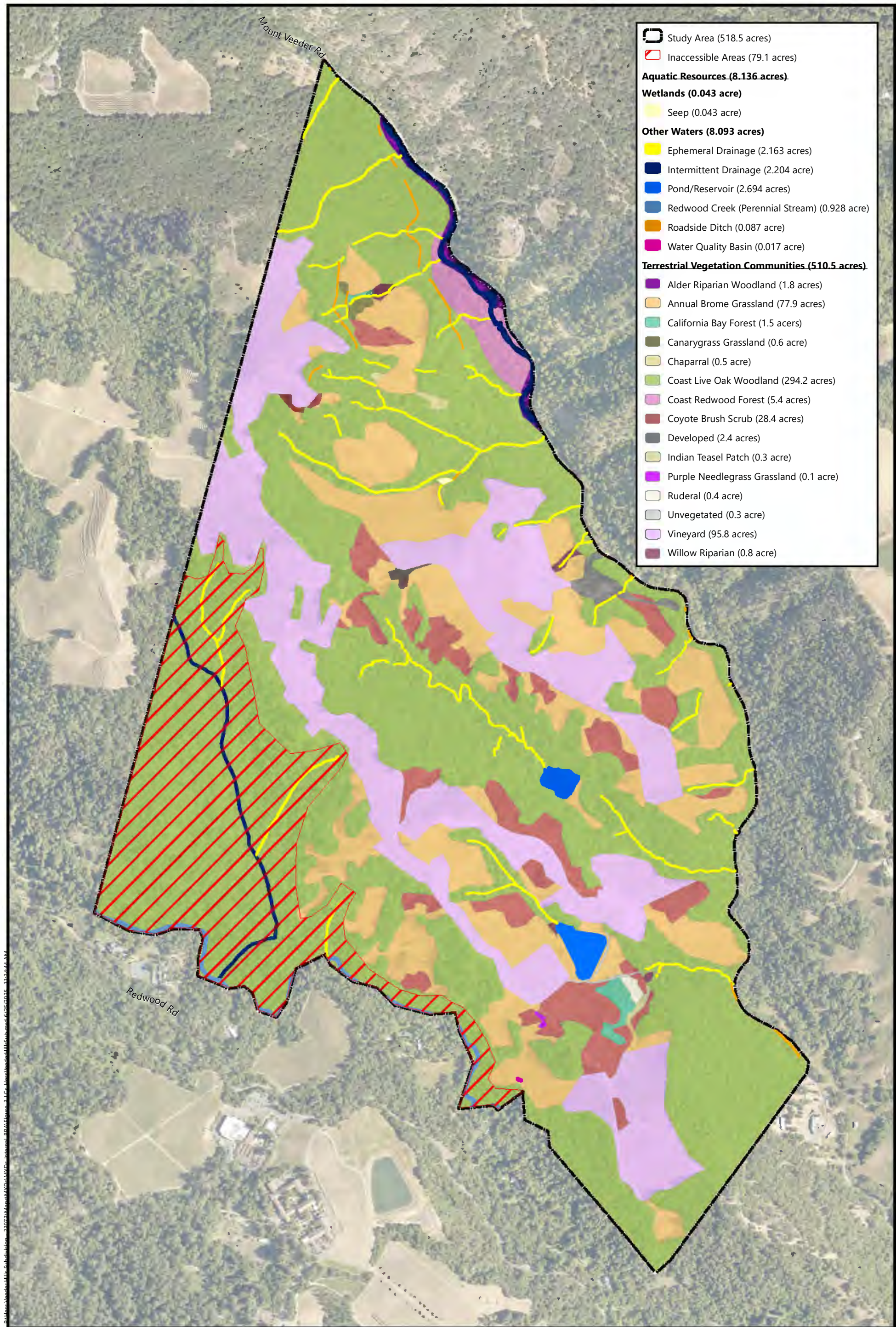


Figure 3
Terrestrial Vegetation Communities
and Aquatic Resources

Hess Veeder Hills Subdivision
Napa County, California



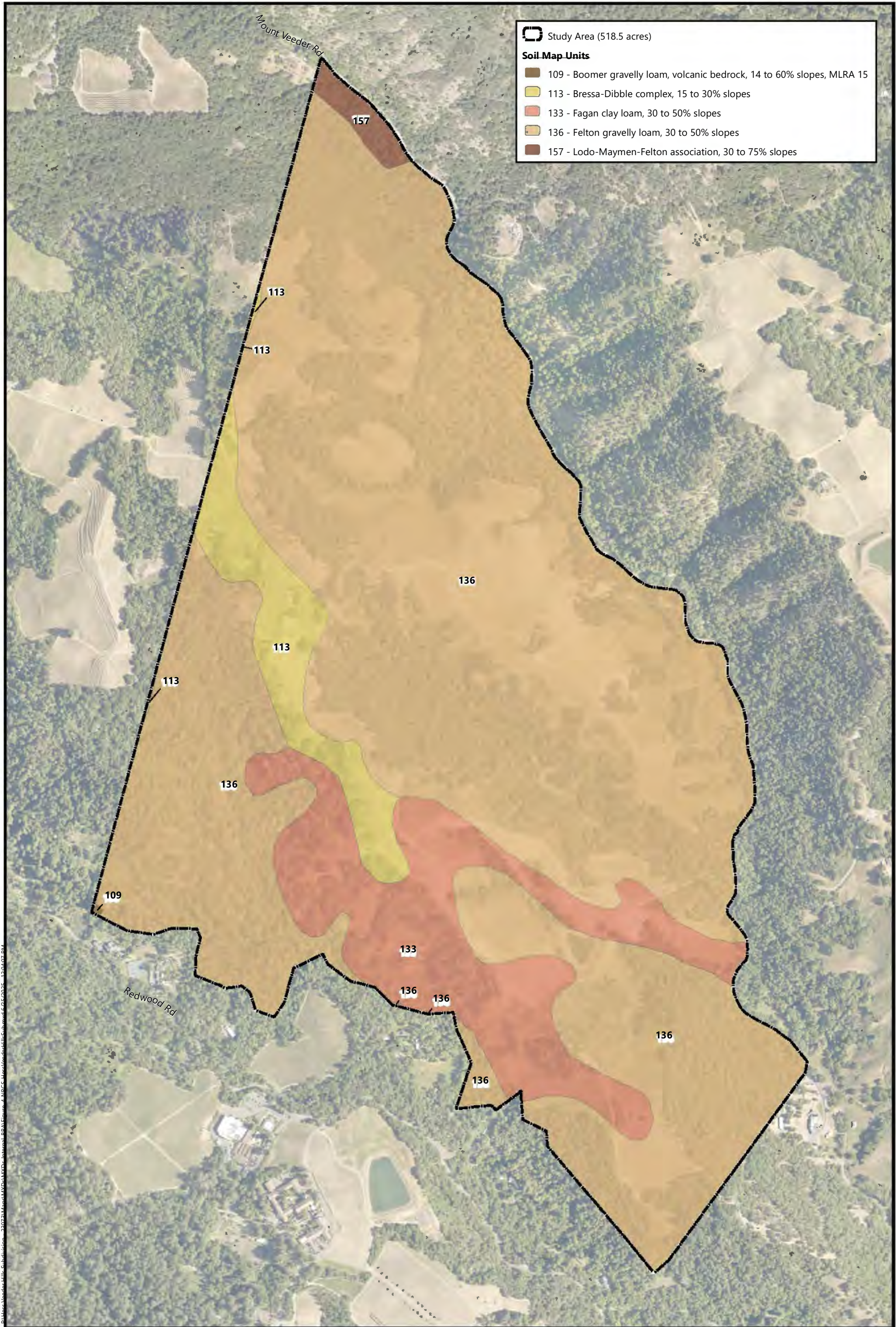


Figure 4
Natural Resources Conservation
Service Soils

Soil Survey Source: *USDA, Soil Conservation Service.*
Soil Survey Geographic (SSURGO) Database for Napa County, California
Aerial Source: Napa County/EagleView, 29 April 2021

Hess Veeder Hills Subdivision
Napa County, California



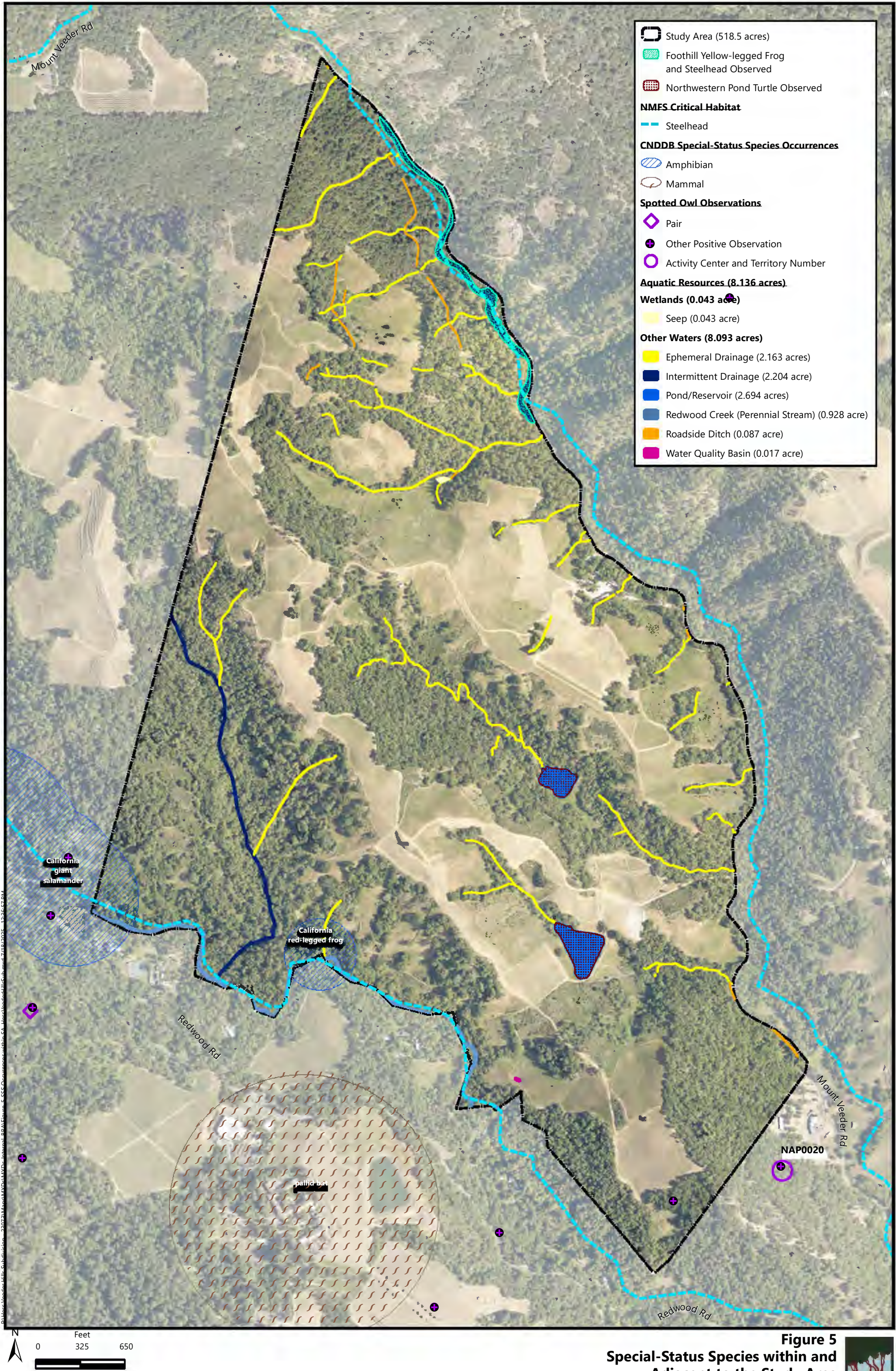


Figure 5
Special-Status Species within and Adjacent to the Study Area

Hess Veeder Hills Subdivision
Napa County, California



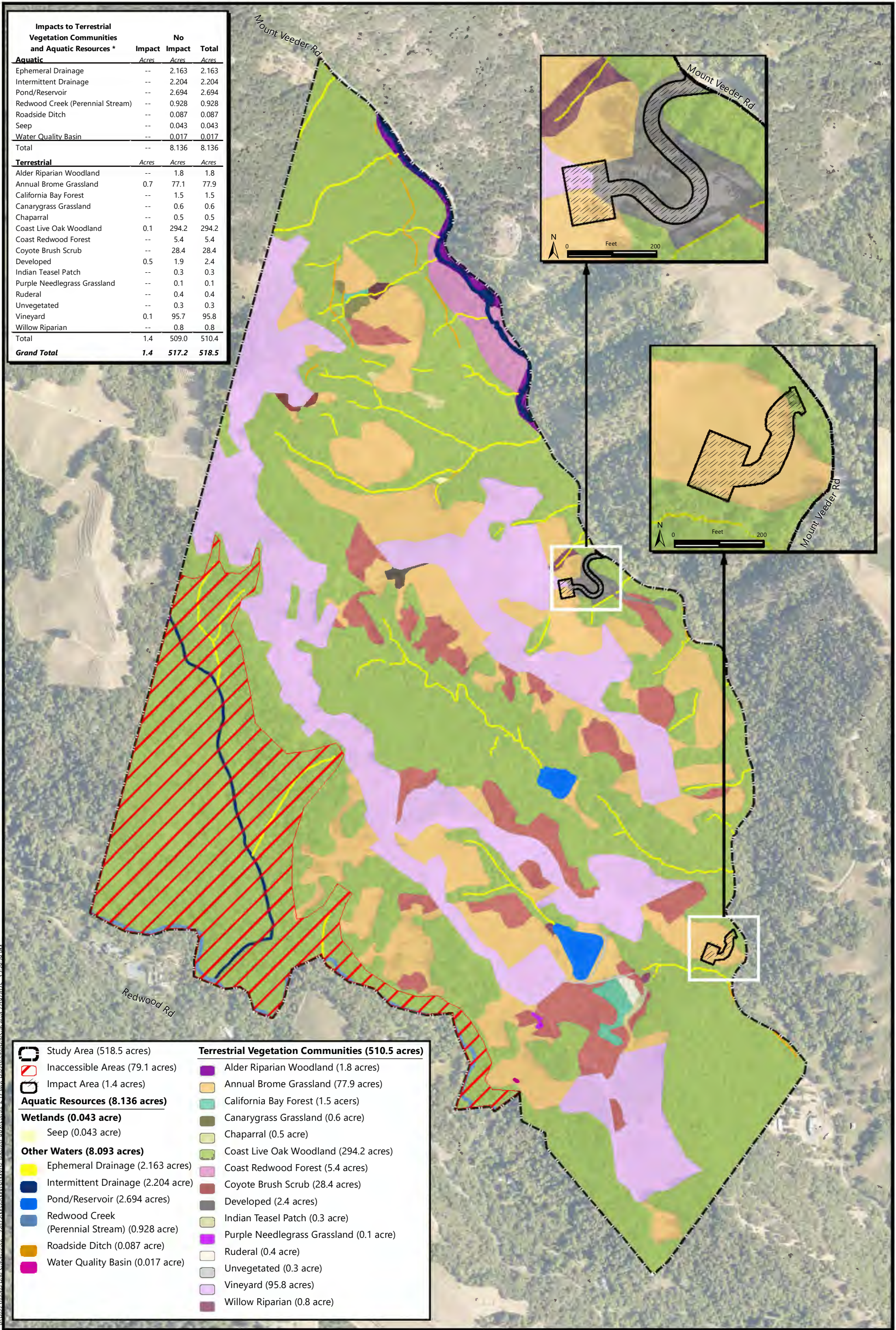


Figure 6
Impacts to Terrestrial Vegetation Communities
and Aquatic Resources

* Small summation errors may occur due to rounding
Aerial Source: Napa County/EagleView, 29 April 2021



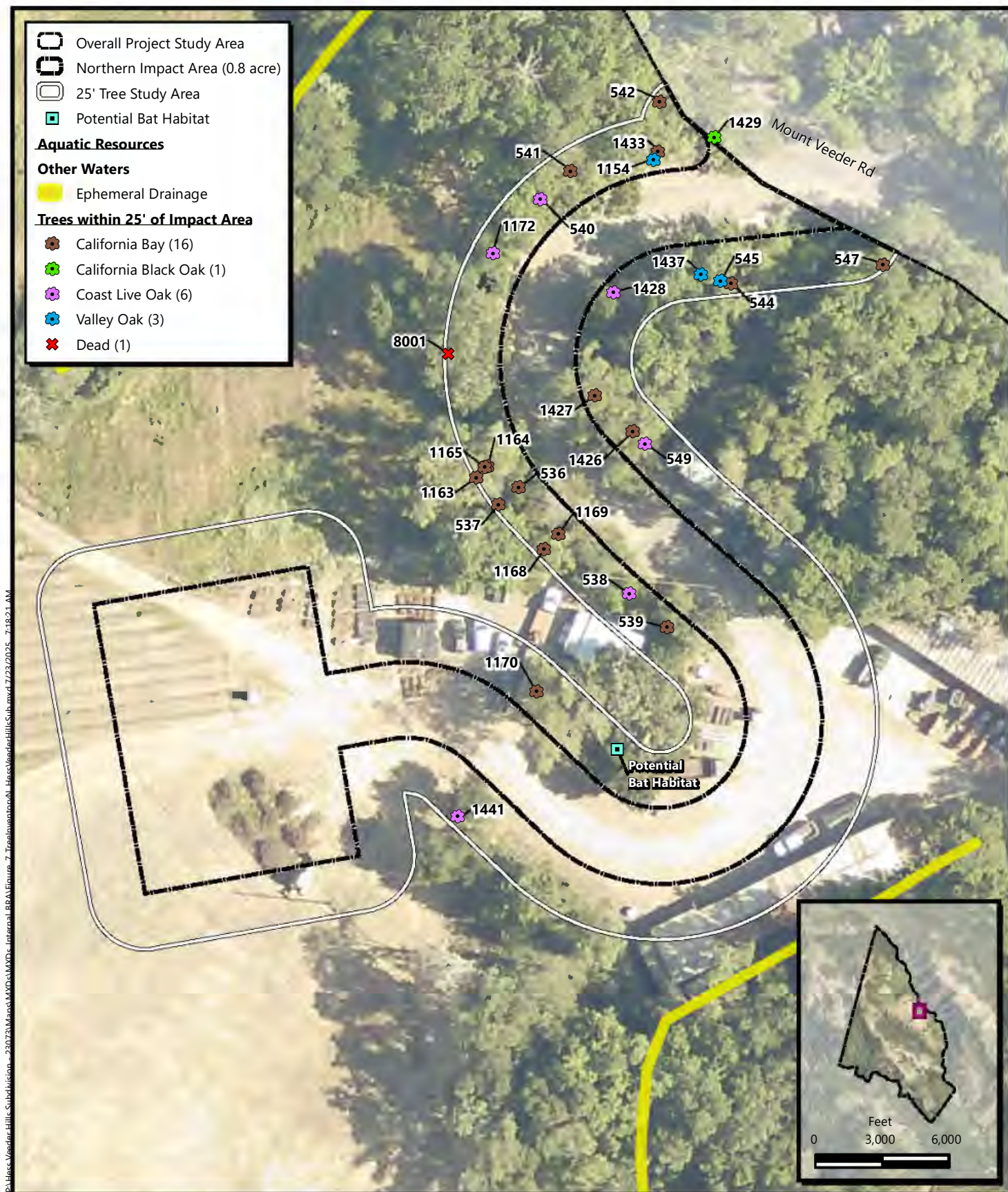


Figure 7
Tree Inventory (North Impact Area)

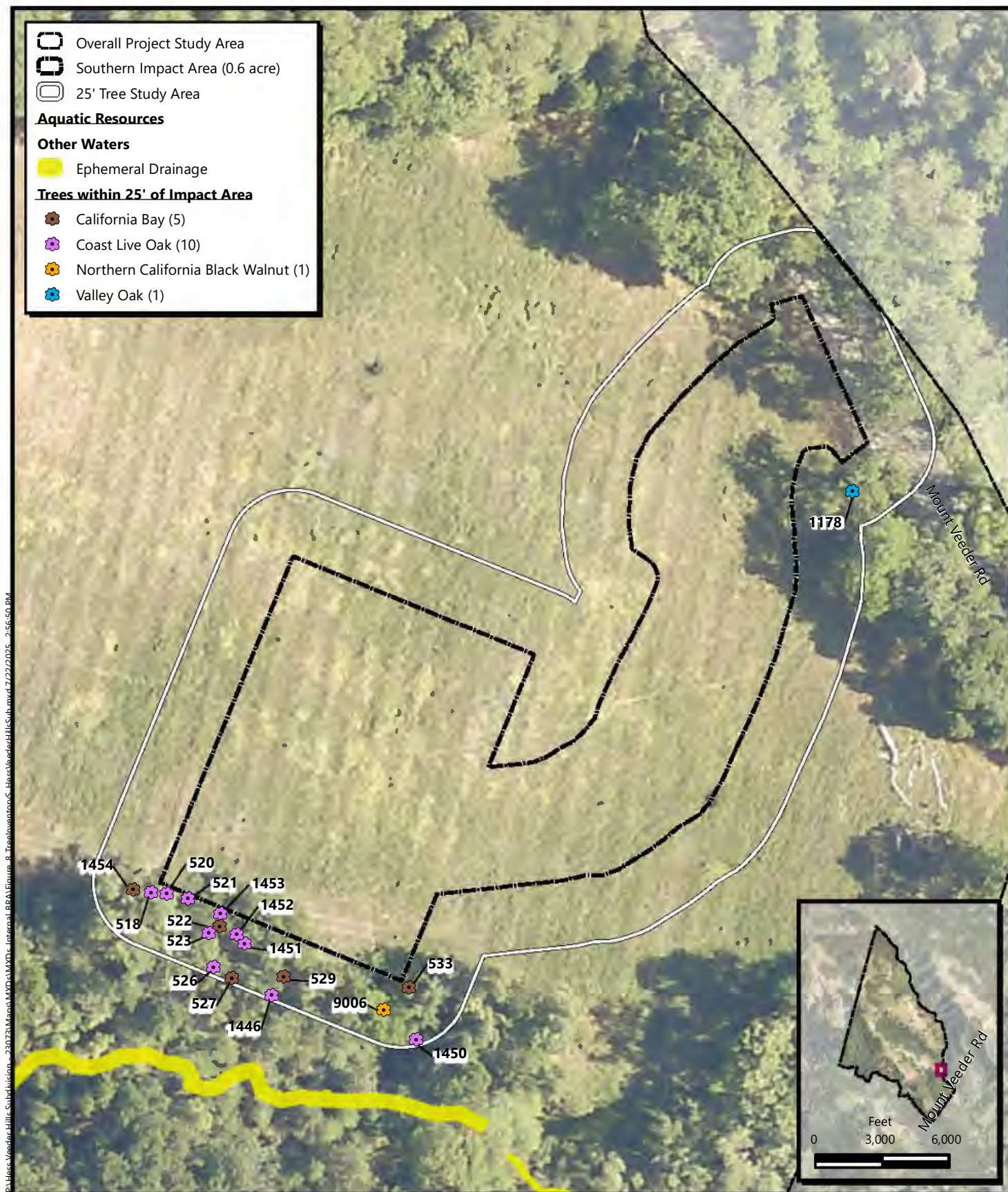


Figure 8
Tree Inventory (South Impact Area)

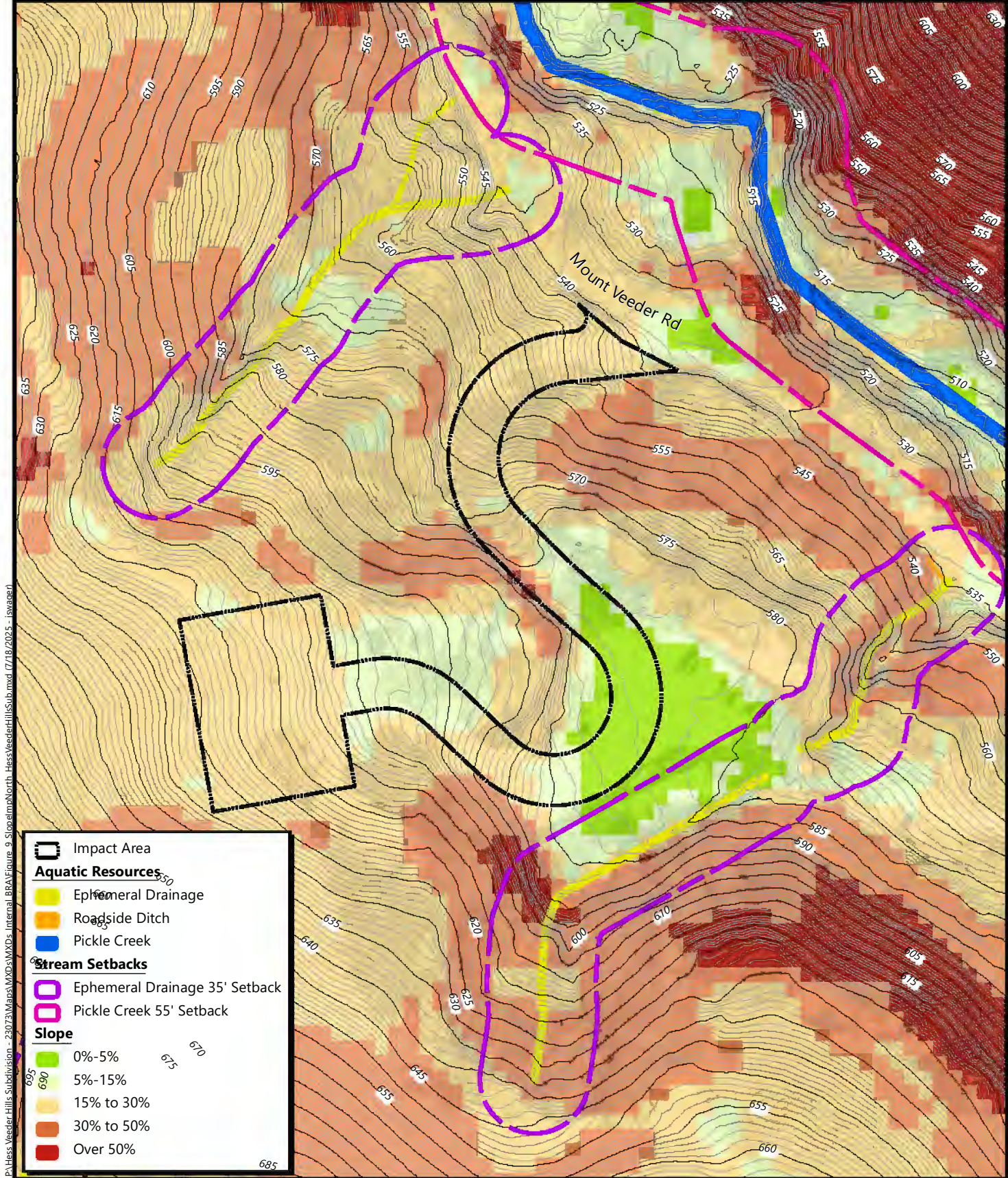
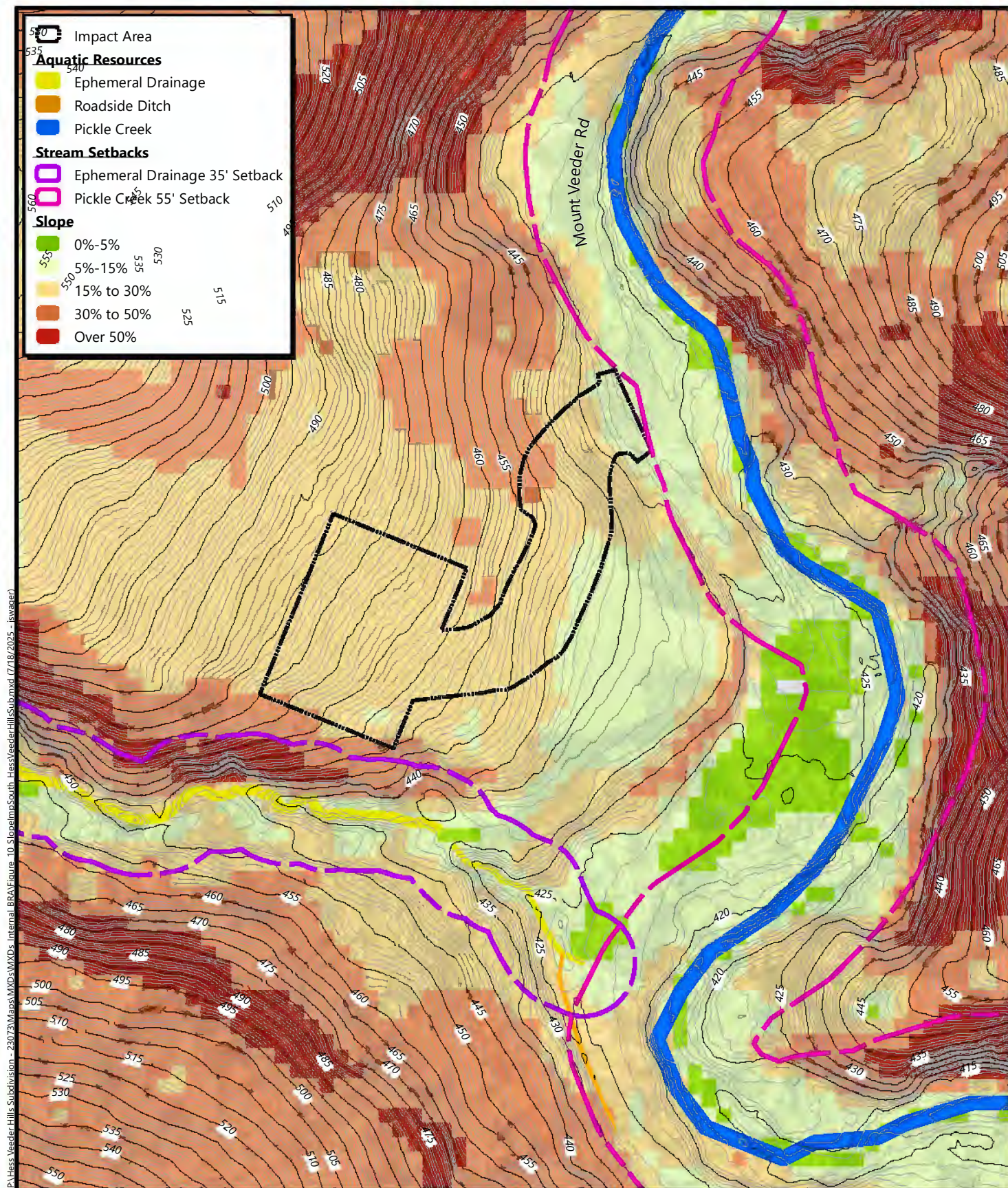


Figure 9
Hess Veeder Hills Slopes and Stream Setbacks
(North Impact Area)



Slope Data: Napa County, 2017
 Contour Data: USGS, 2018 NorCal Wildfire Lidar



Attachments

Attachment A. Hess Veeder Hills Tentative Map

Attachment B. IPaC Trust Resource Report for the Study Area

Attachment C. CNPS Inventory of Rare and Endangered Plants Query for the "Sonoma, California" USGS Quadrangle and Eight Surrounding Quadrangles

Attachment D. Wildlife List

Attachment E. Special-Status Plant Survey Report for Hess Veeder Hills

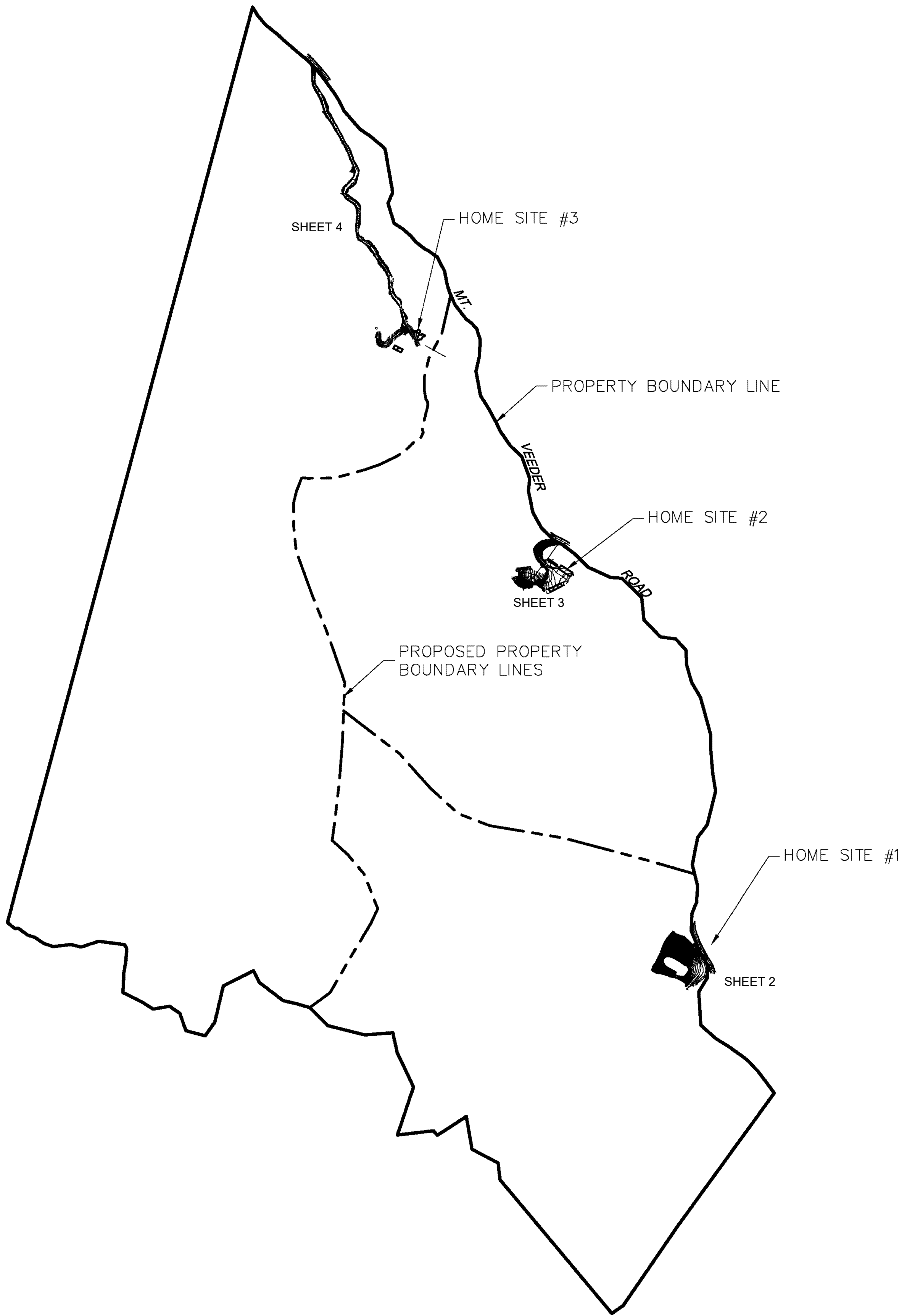
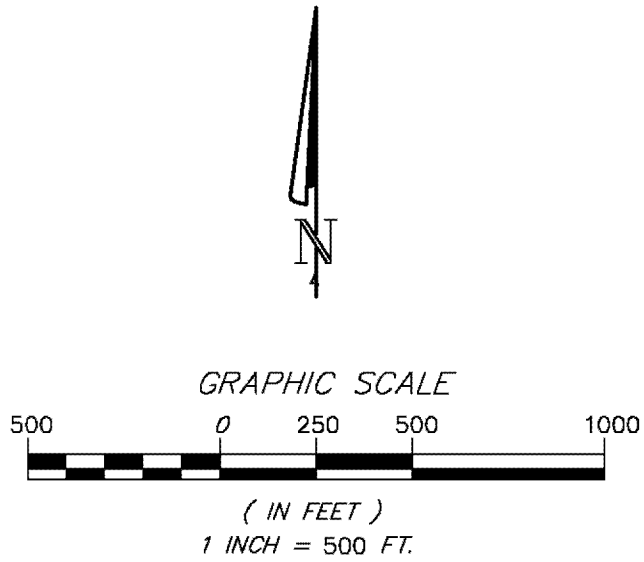
Attachment F. CNDDB Records for Special-Status Species Documented in the Study Area

Attachment G. Northern Spotted Owl Habitat Assessment

Attachment A

**Hess Veeder Hills
Tentative Map**

SITE OVERVIEW



LEGEND:

CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
DI	DRAINAGE INLET
ELEC	ELECTRIC
INV	INVERT
JP	JUNCTION POLE
PP	POWER POLE
SP	SERVICE POLE
TC	TOP OF CONCRETE
TW	TOP OF WALL
BO	BLACK OAK
LO	LIVE OAK
RW	REDWOOD
WAL	WALNUT
WO	WHITE OAK
12/25	TREE TRUNK DIA. IN INCHES/DRIPLINE IN FEET
1'	1' CONTOUR
5'	5' CONTOUR
---	PROPERTY BOUNDARY LINE; SEE DRAWING NOTES
---	PROPOSED PROPERTY BOUNDARY LINE
---	BUILDING LINE
---	EDGE OF CONC
---	EDGE OF DIRT ROAD
---	EDGE OF PAVEMENT
---	FENCE
---	FLOW LINE
---	GRADE BREAK
---	OVERHEAD POWER AND/OR TELEPHONE LINE
---	WALL
---	VINEYARD ROW



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CONSULTING LAND SURVEYORS
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ST. HELENA, CA 94574
(707) 963-1217
www.albionsurveys.com

DRAWING NOTES

THIS MAP IS NOT A BOUNDARY SURVEY.
IT IS PROVIDED TO LOCATE THE SUBJECT PROPERTY
IN RELATION TO ADJOINING LANDS, HIGHWAYS, ROADS,
STREETS AND NOT TO GUARANTEE ANY FIXED
DIMENSION, ACREAGE OR EASEMENT LOCATIONS.
A BOUNDARY SURVEY SHOULD BE PERFORMED PRIOR TO ANY
CRITICAL DESIGN WORK, CONSTRUCTION OR CONVEYANCE.
EASEMENTS MAY AFFECT THIS PROPERTY.
THIS SURVEYOR WAS NOT PROVIDED ANY INFORMATION
REGARDING EASEMENTS BY THE OWNER.

SITE INFORMATION

APN: 034-230-020
ADDRESS: 1701 MT. VEEDER RD
NAPA, CA 94558

MAP OF TOPOGRAPHY
OF A PORTION OF THE LANDS OF
NAPA MOUNTAIN VINEYARDS, INC
COUNTY OF NAPA STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF:



DATE: OCTOBER 2, 2024

REVISIONS & ADDITIONS

DATE: 10-2-2024	FB: 1015	PG: 1-3, 8-19,
DRAFTER: S. CROWLEY		23-41
DATE:	FB:	PG:
DRAFTER:		
DATE:	FB:	PG:
DRAFTER:		
DATE:	FB:	PG:
DRAFTER:		
DATE:	FB:	PG:
DRAFTER:		

SURVEY NOTES

CONTOUR INTERVAL = 1'
VERTICAL DATUM BASED ON NAVD88
HORIZONTAL DATUM BASED ON NAD83
CALIFORNIA COORDINATE SYSTEM ZONE II
PER TRIMBLE GPS OBSERVATIONS
USING NGS OPUS SOLUTION

Attachment B

IPaC Trust Resource Report for the Study Area

IPaC resource list

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

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

Location

Napa County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📅 (916) 414-6713

Federal Building

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

NOT FOR CONSULTATION

Endangered species

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

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

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

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

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

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Least Tern <i>Sternula antillarum browni</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Northern Spotted Owl <i>Strix occidentalis caurina</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6199	Threatened
Northwestern Pond Turtle <i>Actinemys marmorata</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
------	--------

California Red-legged Frog *Rana draytonii*

Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/2891>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Proposed Threatened

Wherever found

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/9743>

Crustaceans

NAME

STATUS

Conservancy Fairy Shrimp *Branchinecta conservatio*

Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/8246>

Flowering Plants

NAME

STATUS

Contra Costa Goldfields *Lasthenia conjugens*

Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/7058>

Showy Indian Clover *Trifolium amoenum*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6459>

Sonoma Sunshine *Blennosperma bakeri*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/1260>

Critical habitats

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

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The [data](#) in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the [Supplemental Information on Migratory Birds and Eagles document](#) to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Bald and Golden Eagle information is not available at this time

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated.

This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA)¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior [authorization](#) by the Department of Interior U.S. Fish and Wildlife Service (FWS). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The FWS interprets the MBTA to prohibit incidental take.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Migratory bird information is not available at this time

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird

species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPAC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPAC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

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

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPAC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

[PUBFx](#)

[PUBFh](#)

RIVERINE

[R4SBA](#)

[R3UBH](#)

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

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

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

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

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

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

Attachment C

**CNPS Inventory of Rare and Endangered Plants Query for the
"Sonoma, California" USGS Quadrangle and Eight Surrounding Quadrangles**



CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

86 matches found. Click on scientific name for details

Search Criteria: , 9-Quad include

[3812234:3812243:3812244:3812245:3812225:3812233:3812235:3812223:3812224]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	BLOOMING PERIOD	FED LIST	STATE LIST	CA RARE PLANT RANK
<i>Allium peninsulare</i> var. <i>franciscanum</i>	Franciscan onion	Alliaceae	(Apr)May-Jun	None	None	1B.2
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	Poaceae	May-Jul	FE	None	1B.1
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	Fabaceae	Apr-Jul	None	None	1B.2
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	Boraginaceae	Mar-Jun	None	None	1B.2
<i>Antirrhinum virga</i>	twig-like snapdragon	Plantaginaceae	Jun-Jul	None	None	4.3
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i>	Rincon Ridge manzanita	Ericaceae	Feb-Apr(May)	None	None	1B.1
<i>Astragalus claranus</i>	Clara Hunt's milk-vetch	Fabaceae	Mar-May	FE	CE	1B.1

<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	Fabaceae	Jun-Sep	None	None	4.3
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	Fabaceae	Mar-Jun	None	None	1B.2
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	Asteraceae	Mar-Jun	None	None	1B.2
<i>Blennosperma bakeri</i>	Sonoma sunshine	Asteraceae	Mar-May	FE	CE	1B.1
<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	Themidaceae	May-Jul	None	None	1B.2
<i>Calamagrostis ophitidis</i>	serpentine reed grass	Poaceae	Apr-Jul	None	None	4.3
<i>Calandrinia breweri</i>	Brewer's calandrinia	Montiaceae	(Jan)Mar-Jun	None	None	4.2
<i>Calochortus uniflorus</i>	pink star-tulip	Liliaceae	Apr-Jun	None	None	4.2
<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	Convolvulaceae	Apr-Jun	None	None	4.2
<i>Carex lyngbyei</i>	Lyngbye's sedge	Cyperaceae	Apr-Aug	None	None	2B.2
<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip	Orobanchaceae	Mar-Aug	None	None	4.2
<i>Castilleja ambigua</i> var. <i>meadii</i>	Mead's owls-clover	Orobanchaceae	Apr-May	None	None	1B.1
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	Rhamnaceae	Feb-Jun	None	None	1B.1
<i>Ceanothus divergens</i>	Calistoga ceanothus	Rhamnaceae	Feb-Apr	None	None	1B.2
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	glory brush	Rhamnaceae	Mar-Jun(Aug)	None	None	4.3
<i>Ceanothus purpureus</i>	holly-leaved ceanothus	Rhamnaceae	Feb-Jun	None	None	1B.2
<i>Ceanothus sonomensis</i>	Sonoma ceanothus	Rhamnaceae	Feb-Apr	None	None	1B.2
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	Asteraceae	May-Nov	None	None	1B.2

<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	Orobanchaceae	Jun-Oct	None	None	1B.2
<i>Chloropyron molle</i> ssp. <i>molle</i>	soft salty bird's-beak	Orobanchaceae	Jun-Nov	FE	CR	1B.2
<i>Chorizanthe valida</i>	Sonoma spineflower	Polygonaceae	Jun-Aug	FE	CE	1B.1
<i>Clarkia breweri</i>	Brewer's clarkia	Onagraceae	Apr-Jun	None	None	4.2
<i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Tracy's clarkia	Onagraceae	Apr-Jul	None	None	4.2
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	Orobanchaceae	Jul-Aug	None	None	4.3
<i>Downingia pusilla</i>	dwarf downingia	Campanulaceae	Mar-May	None	None	2B.2
<i>Eleocharis parvula</i>	small spikerush	Cyperaceae	(Apr)Jun-Aug(Sep)	None	None	4.3
<i>Elymus californicus</i>	California bottle-brush grass	Poaceae	May-Aug(Nov)	None	None	4.3
<i>Erigeron biolettii</i>	streamside daisy	Asteraceae	Jun-Oct	None	None	3
<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	Asteraceae	May-Sep	None	None	1B.2
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	Polygonaceae	May-Sep	None	None	1B.2
<i>Eryngium jepsonii</i>	Jepson's coyote-thistle	Apiaceae	Apr-Aug	None	None	1B.2
<i>Erythronium helenae</i>	St. Helena fawn lily	Liliaceae	Mar-May	None	None	4.2
<i>Extriplex joaquinana</i>	San Joaquin spearscale	Chenopodiaceae	Apr-Oct	None	None	1B.2
<i>Fritillaria liliacea</i>	fragrant fritillary	Liliaceae	Feb-Apr	None	None	1B.2
<i>Harmonia nutans</i>	nodding harmonia	Asteraceae	Mar-May	None	None	4.3

<i>Hemizonia congesta</i> <i>ssp. congesta</i>	congested-headed hayfield tarplant	Asteraceae	Apr-Nov	None	None	1B.2
<i>Hesperolinon</i> <i>congestum</i>	Marin western flax	Linaceae	Apr-Jul	FT	CT	1B.1
<i>Hesperolinon</i> <i>sharsmithiae</i>	Sharsmith's western flax	Linaceae	May-Jul	None	None	1B.2
<i>Horkelia tenuiloba</i>	thin-lobed horkelia	Rosaceae	May- Jul(Aug)	None	None	1B.2
<i>Hosackia gracilis</i>	harlequin lotus	Fabaceae	Mar-Jul	None	None	4.2
<i>Iris longipetala</i>	coast iris	Iridaceae	Mar- May(Jun)	None	None	4.2
<i>Lasthenia conjugens</i>	Contra Costa goldfields	Asteraceae	Mar-Jun	FE	None	1B.1
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	Fabaceae	May- Jul(Aug-Sep)	None	None	1B.2
<i>Layia septentrionalis</i>	Colusa layia	Asteraceae	Apr-May	None	None	1B.2
<i>Legenere limosa</i>	legenere	Campanulaceae	Apr-Jun	None	None	1B.1
<i>Leptosiphon ambiguus</i>	serpentine leptosiphon	Polemoniaceae	Mar-Jun	None	None	4.2
<i>Leptosiphon aureus</i>	bristly leptosiphon	Polemoniaceae	Apr-Jul	None	None	4.2
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	Polemoniaceae	Mar-May	None	None	1B.2
<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	Polemoniaceae	Apr-Jun	None	None	4.3
<i>Lessingia hololeuca</i>	woolly-headed lessingia	Asteraceae	Jun-Oct	None	None	3
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	Apiaceae	Apr-Nov	None	CR	1B.1
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i>	Pitkin Marsh lily	Liliaceae	Jun-Jul	FE	CE	1B.1

<i>Lilium rubescens</i>	redwood lily	Liliaceae	(Mar)Apr-Aug(Sep)	None	None	4.2
<i>Limnanthes vinculans</i>	Sebastopol meadowfoam	Limnanthaceae	Apr-May	FE	CE	1B.1
<i>Lomatium repostum</i>	Napa lomatium	Apiaceae	Mar-Jun	None	None	4.2
<i>Lupinus sericatus</i>	Cobb Mountain lupine	Fabaceae	Mar-Jun	None	None	1B.2
<i>Micropus amphibolus</i>	Mt. Diablo cottonweed	Asteraceae	Mar-May	None	None	3.2
<i>Monardella viridis</i>	green monardella	Lamiaceae	Jun-Sep	None	None	4.3
<i>Navarretia cotulifolia</i>	cotula navarretia	Polemoniaceae	May-Jun	None	None	4.2
<i>Navarretia heterandra</i>	Tehama navarretia	Polemoniaceae	Apr-Jun	None	None	4.3
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	Polemoniaceae	Apr-Jul	None	None	1B.1
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	Polemoniaceae	May-Jun	FE	CT	1B.1
<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	Plantaginaceae	Apr-Aug	None	None	1B.3
<i>Plagiobothrys mollis</i> var. <i>vestitus</i>	Petaluma popcornflower	Boraginaceae	Jun-Jul	None	None	1A
<i>Polygonum marinense</i>	Marin knotweed	Polygonaceae	(Apr)May-Aug(Oct)	None	None	3.1
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	Ranunculaceae	Feb-May	None	None	4.2
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	Alismataceae	May-Oct(Nov)	None	None	1B.2
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Point Reyes checkerbloom	Malvaceae	Apr-Sep	None	None	1B.2

<i>Sidalcea oregana</i> ssp. <i>valida</i>	Kenwood Marsh checkerbloom	Malvaceae	Jun-Sep	FE	CE	1B.1
<i>Streptanthus anomalus</i>	Mount Burdell jewelflower	Brassicaceae	May-Jun	None	None	1B.1
<i>Streptanthus barbiger</i>	bearded jewelflower	Brassicaceae	May-Jul	None	None	4.2
<i>Streptanthus hesperidis</i>	green jewelflower	Brassicaceae	May-Jul	None	None	1B.2
<i>Symphyotrichum</i> <i>lentum</i>	Suisun Marsh aster	Asteraceae	(Apr)May- Nov	None	None	1B.2
<i>Trichostema ruygtii</i>	Napa bluecurls	Lamiaceae	Jun-Oct	None	None	1B.2
<i>Trifolium amoenum</i>	two-fork clover	Fabaceae	Apr-Jun	FE	None	1B.1
<i>Trifolium hydrophilum</i>	saline clover	Fabaceae	Apr-Jun	None	None	1B.2
<i>Trifolium polyodon</i>	Pacific Grove clover	Fabaceae	Apr-Jun(Jul)	None	CR	1B.1
<i>Triteleia lugens</i>	dark-mouthed triteleia	Themidaceae	Apr-Jun	None	None	4.3
<i>Viburnum ellipticum</i>	oval-leaved viburnum	Viburnaceae	May-Jun	None	None	2B.3

Showing 1 to 86 of 86 entries

Go to top

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website <https://www.rareplants.cnps.org> [accessed 30 May 2025].

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Attachment D

Wildlife List

Wildlife Species Observed within the Hess Veeder
Hills Study Area
During 2025 Field Surveys

Species Name	Common Name
Amphibians	
<i>Lithobates catesbeianus</i>	American bullfrog
Birds	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Anas platyrhynchos</i>	Mallard
<i>Aphelocoma californica</i>	California scrub jay
<i>Baeolophus inornatus</i>	Oak titmouse
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lineatus</i>	Red-shouldered hawk
<i>Callipepla californica</i>	California quail
<i>Calypte anna</i>	Anna's hummingbird
<i>Carpodacus mexicanus</i>	House finch
<i>Cathartes aura</i>	Turkey vulture
<i>Catharus guttatus</i>	Hermit thrush
<i>Colaptes auratus</i>	Northern flicker
<i>Corvus corax</i>	Common raven
<i>Haemorhous purpureus</i>	Purple finch
<i>Junco hyemalis</i>	Dark-eyed junco
<i>Loxia curvirostra</i>	Red crossbill
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Picoides nuttallii</i>	Nuttall's woodpecker
<i>Picoides pubescens</i>	Downy woodpecker
<i>Pipilo maculatus</i>	Spotted towhee
<i>Regulus calendula</i>	Ruby-crowned kinglet
<i>Sayornis nigricans</i>	Black phoebe
<i>Setophaga coronata</i>	Yellow-rumped warbler
<i>Setophaga townsendi</i>	Townsend's warbler
<i>Spinus psaltria</i>	Lesser goldfinch
<i>Streptopelia decaocto</i>	Eurasian collared dove
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Zenaida macroura</i>	Mourning dove

Mammals

Odocoileus hemionus

Sciurus carolinensis

Mule deer

Grey squirrel

Reptiles

Actinemys marmorata

Cryptoblepharus egeriae

Trachemys

Northwestern pond turtle

Blue-tailed skink

Slider

Attachment E

Special-Status Plant Survey Report for Hess Veeder Hills



Special-Status Plant Survey Report

Hess Veeder Hills

Napa County, California
January 2025



Prepared for:

The Hess Collection, Mount Veeder
4411 Redwood Road
Napa, CA 94558

Recommended Citation:

Madrone Ecological Consulting, LLC (Madrone). 2025. *Special-Status Plant Survey Report for Hess Veeder Hills*. Prepared for The Hess Collection, Mount Veeder. Published on 29 January 2025.

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1.0 INTRODUCTION

This report presents the results of a special-status plant survey conducted for the approximately 518.5-acre Hess Veeder Hills Subdivision Project (Study Area). The Study Area is located generally west of Mount Veeder Road and north of Redwood Road in western Napa County, California. The Study Area is located in an unsectioned portion of the Napa Civil Land Grant, Township 6 North, Range 5 West (MDB&M) of the "Sonoma, California" 7.5-Minute Series USGS Topographic Quadrangle (USGS 2021) (Figure 1).

2.0 METHODOLOGY

Madrone Ecological Consulting, LLC (Madrone) biologists Daria Snider, Tara Collins, and Bonnie Peterson conducted special-status plant surveys of the Study Area on 6 and 10 May, 16 July and 27 August 2024. The special-status plant survey was conducted in accordance with the U.S. Fish and Wildlife Service's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000), California Department of Fish and Wildlife's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018), and the *CNPS Botanical Survey Guidelines* (CNPS 2001).

A list of special-status plant species with potential to occur within the Study Area was developed by reviewing the following literature, and then refining the list based on habitats present within the Study Area:

- California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (CNPS 2024a) query of CRPR Lists 1A, 1B, 2A, 2B, and 3 within the "Sonoma, California" (USGS 2021) and eight surrounding quadrangles;
- the California Natural Diversity Database occurrences of special-status plant species within 5 miles of the Study Area (CNDDB 2024).

The target species for this survey were:

- Napa false indigo (*Amorpha californica* var. *napensis*);
- Bent-flowered fiddleneck (*Amsinckia lunaris*);
- Big-scale balsamroot (*Balsamorhiza macrolepis*);
- Streamside daisy (*Erigeron biolettii*);
- Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*);
- Thin-lobed Horkelia (*Horkelia tenuiloba*);
- Cobb Mountain lupine (*Lupinus sericatus*);
- Mt. Diablo cottonweed (*Micropus amphibolus*);
- Sanford's arrowhead (*Sagittaria sanfordii*).
- Kenwood Marsh checkerbloom (*Sidalcea oregana* ssp. *valida*);
- Napa bluecurls (*Trichostema ruygtii*);
- Two-fork clover (*Trifolium amoenum*); and
- Oval-leaved viburnum (*Viburnum ellipticum*).

Meandering pedestrian surveys were conducted throughout the accessible portions of the Study Area. Some areas in the southern portion of the Study Area were inaccessible due to excessively steep slopes and 8 foot tall deer fencing (shown on **Figure 2** as “Inaccessible Area”); as a result, this area was not surveyed. The surveys were floristic in nature, which means that all plant species observed were identified to the taxonomic level necessary to determine rarity. Thus, if a special-status plant was present but not on the target list, it would have been detected and documented. Plant taxonomy was based on the nomenclature in the *Jepson eFlora* (Jepson Flora Project 2024). Vegetation communities were classified according to the *Manual of California Vegetation, Second Edition* as updated online (CNPS 2024b). Qualifications for the biologists that conducted the survey are included in **Attachment A**, a list of reference populations of target plants visited is included in **Attachment B**, and a comprehensive list of all plant species observed during surveys of the Study Area is included in **Attachment C**. Note that reference populations could not be located for many of the target plant species.

3.0 EXISTING SITE CONDITIONS

The Study Area is comprised of actively cultivated vineyards on steeply rolling hills, interspersed primarily with Annual Brome Grasslands and Coast Live Oak (*Quercus agrifolia*) Woodlands, and smaller components of other terrestrial vegetation communities. The eastern edge of the Study Area runs along Veeder Hills Road, and Pickle Creek runs along the road for much of this length. Much of the creek runs through a White Alder (*Alnus rhombifolia*) Riparian Woodland, although Coast Redwood (*Sequoia sempervirens*) Forest borders several reaches, and spreads up the steep east-facing hillside. Several intermittent drainages run through the Study Area, and in some areas, they are bordered by a Willow (*Salix* species) Riparian Scrub. Occasional clearings in the Coast Live Oak Woodland support isolated patches of Disturbed Chaparral, and several areas (especially abandoned vineyard blocks) support Coyote Brush (*Baccharis pilularis*) Scrub. Some portions of the annual brome grasslands have become dominated by the perennial bunchgrass Harding grass (*Phalaris aquatica*), and have been mapped as Harding Grass Grasslands. Elevations within the Study Area range from approximately 420 feet in the southeastern corner along Mount Veeder Road to 1,100 feet on hilltops in the northern portion of the Study Area.

3.1 Terrestrial Vegetation Communities

3.1.1 Annual Brome Grassland

The Annual Brome Grassland within the Study Area is dominated by ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), false brome (*Brachypodium distachyon*), wild oat (*Avena fatua*), slender wild oat (*Avena barbata*), and hare barley (*Hordeum murinum*). Other species commonly occurring in this community on-site include spring vetch (*Vicia sativa*), English plantain (*Plantago lanceolata*), Mediterranean barley (*Hordeum marinum*), short sock destroyer (*Torilis arvensis*), crimson clover (*Trifolium incarnatum*), rose clover (*Trifolium hirtum*), Harding grass (*Phalaris aquatica*), coyote brush (*Baccharis pilularis*), Robert's geranium (*Geranium robertianum*), cut-leaved geranium (*Geranium dissectum*), California bur clover (*Medicago polymorpha*), and blue-eyed grass (*Sisyrinchium bellum*).

3.1.2 Coast Live Oak Woodland

The canopy of the Coast Live Oak Woodland is dominated by coast live oak and California bay. Other trees commonly occurring in this community include big-leaf maple (*Acer macrophyllum*), Douglas fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), and black oak (*Quercus kelloggii*). Dominant shrubs in the understory of the Coast Live Oak Woodland include poison-oak (*Toxicodendron diversilobum*), white bark raspberry (*Rubus leucodermis*), and snowberry (*Symphoricarpos albus*). Other shrubs commonly observed in this community on-site include French broom (*Genista monspessulana*), toyon (*Heteromeles arbutifolia*), wood fern (*Dryopteris arguta*), and hazelnut (*Corylus cornuta*). The herbaceous layer is sparse due to the density of tree and shrub canopy in this community, but dominant herbs in the Coast Live Oak Woodland include woodland tarweed (*Anisocarpus madioides*) and Robert's geranium. Other herbs commonly occurring in this community on-site include little California melic (*Melica imperfecta*), gumweed (*Madia gracilis*), California milkwort (*Polygala californica*), Pacific sanicle (*Sanicula crassicaulis*), and California hemp (*Hoita macrostachya*).

3.1.3 Vineyards

The vineyards are extensive fields of cultivated wine grapes (*Vitis vinifera*). These fields are regularly maintained to maximize grape yields, and as such, herbaceous vegetation is mowed regularly. Herbaceous plant species within these areas are primarily forbs typical of the Annual Brome Grassland described above.

3.1.4 Coyote Brush Scrub

There are large areas of Coyote Brush Scrub throughout the Study Area, and the composition varies. In some areas, it is dominated by coyote brush, poison-oak, and Valley oak (*Quercus lobata*) saplings. Other plant species that occur commonly in these areas include periwinkle (*Vinca major*), Italian thistle, French broom (*Genista monspessulana*), blue wild rye, and morning glory. In other areas, it is dominated by coyote brush, Indian teasel (*Dipsacus sativus*), and Harding grass (*Phalaris aquatica*). Other plant species commonly observed in this community include poison-oak, English plantain (*Plantago lanceolata*), and whitebark raspberry (*Rubus leucodermis*).

3.1.5 White Alder Riparian Woodland

The White Alder Riparian Woodland is a narrow riparian woodland that runs along either side of Pickle Creek. White alder is the dominant tree in this community, but a fair number of big-leaf maples and California bay also occur. The shrub layer is dominated by spicebush (*Calycanthus occidentalis*) with occasional dense patches of white bark raspberry. The tree and shrub canopy is fairly open, so the bulk of the herbaceous species in this community are those typical of the Annual Brome Grassland. However, some torrent sedge (*Carex nudata*) is dominant adjacent to the creek, and several areas have invaded by periwinkle (*Vinca major*).

3.1.6 Disturbed Chaparral

The shrub layer in the Disturbed Chaparral is dominated by deerweed (*Acmispon glaber*), sticky monkeyflower (*Diplacus aurantiacus*), toyon, and chamise (*Adenostoma fasciculatum*). Other shrubs commonly occurring in this community on-site include common manzanita (*Arctostaphylos manzanita*), coast live oak and Douglas fir saplings, madrone, and coyote brush. The herbaceous layer is dominated by false brome, rose clover, and soap plant (*Chlorogalum pomeridianum*). Other herbaceous species commonly occurring in this community on-site include wild oat, smooth cat's ear (*Hypochaeris glabra*), chaparral honeysuckle (*Lonicera interrupta*), little California melic, climbing bedstraw (*Galium porrigens* ssp. *porrigens*), Indian paintbrush (*Castilleja species*), and gold wire (*Hypericum concinnum*).

3.1.7 Coast Redwood Forest

The Coast Redwood Forest occurs on a steep, east-facing slope above Pickle Creek in the northern portion of the Study Area. This community has a canopy dominated by very tall Coast redwood with occasional Douglas fir. The lower canopy features scattered California bay and big-leaf maple (*Acer macrophyllum*). The understory is almost entirely unvegetated and comprised of fallen Coast redwood tips, but scattered wood fern also occur occasionally.

3.1.8 Willow Riparian Scrub

Small areas of Willow Riparian Scrub occur adjacent to some of the drainages. This community is dominated by arroyo willow, red willow (*Salix laevigata*), Goodding's willow (*S. gooddingii*), poison-oak, and snowberry. Grape (*Vitis vinifera*), Armenian blackberry (*Rubus armeniacus*), Coast live oak, California bay, and blue elderberry (*Sambucus nigra* ssp. *cerulea*) are also common. Virtually no herbaceous plant species occur in this community.

3.1.9 California Bay Forest

The canopy of the California Bay Forest is primarily comprised of California bay. Additional tree and shrub species observed less commonly include madrone, California buckeye, big-leaf maple, Northern California black walnut (*Juglans hindsii*), blue elderberry, coyote brush, snowberry, and poison-oak. There is virtually no herbaceous layer in many areas in this community, presumably due to the density of tree and shrub canopy cover. Along the edges where light penetrates, the herbaceous community is dominated by Robert's geranium, with goose grass (*Galium aparine*), Italian thistle, and Pacific sanicle also common.

3.1.10 Harding Grass Grassland

The Harding Grass Grassland is a nearly impenetrable dense monoculture of large Harding grass clumps.

3.1.11 Indian Teasel Patch

A dense patch that is almost a monoculture of Indian teasel occurs along a steep abandoned vineyard roadbed in the southern portion of the Study Area. In addition to the Indian teasel, scattered soft brome, perennial ryegrass, and scarlet pimpernel (*Lysimachia arvensis*) also occur.

3.1.12 Purple Needlegrass Grassland

A small area of Purple Needlegrass (*Stipa pulchra*) Grassland occurs in the southern portion of the Study Area. This community supports primarily plant species typical of the Annual Brome Grassland, but is also co-dominated by purple needlegrass. Other plant species observed in this area include yarrow, gold nugget (*Calochortus luteus*), and blue-eyed grass. This vegetation community is considered "Sensitive" by CDFW (CDFW 2023).

3.1.13 Ruderal

The Ruderal community is comprised of a variety of non-native forb species. Dominants include wild radish, California bur-clover, winter vetch, Italian thistle, and common madia (*Madia elegans*). Other plant species commonly occurring in the Ruderal community include soft brome, wall barley (*Hordeum murinum*), and meadow barley (*Hordeum brachyantherum*).

3.1.14 Developed and Unvegetated

Some areas have been mapped as developed or unvegetated. The developed areas include the vineyard facilities area, which features numerous buildings and other structures along with dirt roads and parking areas, interspersed with tree and shrubs typical of the surrounding natural vegetation communities. A second smaller developed area has been mapped on a hilltop near the center of the Study Area where a prior residence was situated; much of this area is unvegetated, and a large water tank, fencing and an abandoned shed remain. Lastly, a portion of dirt roadbed in the southern portion of the Study Area has been mapped as unvegetated.

3.2 Aquatic Resources

A protocol-level aquatic resources delineation was conducted for the Study Area (Madrone 2024). Aquatic resources mapped within the Study Area during this survey are depicted in **Figure 2**. **Table 1** summarizes these mapped aquatic resource types and a description by type is included below.

Table 1. Aquatic Resources Mapped within the Study Area

Waters Type	Acreage
<i>Wetlands</i>	
Seep	0.043
<i>Other Waters</i>	
Ephemeral Drainage	2.163
Intermittent Drainage	2.204
Perennial Creek	0.928
Pond/Reservoir	2.694
Roadside Ditch	0.087
Water Quality Basin	0.017
Total	8.136

3.2.1 Seep

The Study Area supports a single seep. Seeps are areas where groundwater flow reaches the surface and supports wetland vegetation. This seep is dominated by Cow parsnip (*Heracleum maximum*), common scouring rush (*Equisetum hyemale ssp. affine*), and wood fern (*Dryopteris arguta*).

3.2.2 Ephemeral Drainages and Roadside Ditches

Numerous ephemeral drainages drain this steep property. Ephemeral drainages convey only stormwater and do not have a groundwater component. As such, they do not contain water for a sufficient period of time to support hydrophytic vegetation. These features are often deeply incised within the Study Area, and are unvegetated, with a dirt or rock bottom. The roadside ditches function the same as ephemeral drainages, and likewise are unvegetated, but differ in that they are constructed and run along existing and historic roadways.

3.2.3 Intermittent Drainages

Two intermittent drainages occur within the Study Area; Pickle Creek runs along the eastern edge, and a smaller, unnamed inaccessible drainage appears to run through the western portion. This description pertains to Pickle Creek, but the inaccessible intermittent drainage is assumed to be largely the same. Pickle Creek is unvegetated within the channel, and largely runs over bedrock and small cobbles. The banks of Pickle Creek are likewise almost entirely unvegetated due to the bedrock substrate and almost complete lack of soil, but torrent sedge have become established occasionally along the edges. The creek runs through White Alder Riparian Woodland and Coast Redwood Forest.

3.2.4 Perennial Creek

The Study Area includes the perennial Redwood Creek along the southern edge. This feature was entirely inaccessible due to steep slopes.

3.2.5 Ponds/Reservoirs and Water Quality Basin

Two ponds and a water quality basin occur within the Study Area. The reservoir-type ponds have been constructed by building berms within ephemeral drainages, and a single water quality basin has been excavated. Vegetation around the edges of these features is similar. The ponds are perennial in some years, but they are often drawn down to be almost empty by the end of the water year, and in some drought years, have run dry. Due to the duration of inundation, the majority of the pond is unvegetated, but the edges are densely vegetated with a variety of hydrophytes including cattail (*Typha* species), tall nutsedge, smartweed (*Persicaria* species), hairy willowherb (*Epilobium ciliatum*), dense flowered spike primrose (*Epilobium densiflorum*), pearly everlasting (*Anaphalis margaritacea*), and Mediterranean beard grass (*Polypogon monspeliensis*).

3.3 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2024), five soil mapping units occur within the Study Area: (109) Boomer gravelly loam, volcanic bedrock, 14 to 60% slopes, MLRA 15; (113) Bressa-Dibble complex, 15 to 30% slopes; (133) Fagan clay loam, 30 to 50% slopes; (136) Felton gravelly loam, 30 to 50% slopes; and (157) Lodo-Maymen-Felton association, 30 to 75% slopes. Unit 109 is derived from volcanics but occurs only in a small corner of the western-most inaccessible area. The remaining units are all derived from residuum weathered from sandstone and shale (NRCS 2024). All of the soils are mildly to moderately acidic (NRCS 2024).

4.0 SURVEY RESULTS

4.1 Napa False Indigo

Napa false indigo (*Amorpha californica* var. *napensis*) is not federally or state listed, but it is classified as a CRPR List 1B.2 species. This perennial shrub is found in chaparral, cismontane woodlands, and in openings in broadleaf upland forests. This plant occurs at elevations between 165 feet and 6,560 feet, and blooms from April through July (CNPS 2024).

The Coast Live Oak Woodland, California Bay Forest, and Chaparral within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.2 Bent-Flowered Fiddleneck

Bent-flowered fiddleneck (*Amsinckia lunaris*) is not federally or state listed, but it is classified as a CRPR List 1B.2 species. This annual herb is found in valley and foothill grasslands, cismontane woodlands, and coastal bluff scrub (CNPS 2024). This plant occurs at elevations between 10 feet and 1,640 feet, and blooms from March through June (CNPS 2024).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, and edges of Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.3 Big-Scale Balsamroot

Big-scale balsamroot (*Balsamorhiza macrolepis*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. It is a perennial herbaceous species that occurs in chaparral, cismontane woodland and valley and foothill grasslands between 150 and 5100 feet (CNPS 2022). Big-scale balsamroot blooms from March through June and may be found on serpentine soils, though it is known to grow on other soil types as well (CNPS 2022).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.4 Streamside Daisy

Streamside daisy (*Erigeron biolettii*) is not federally or state listed, but it is classified as a CRPR List 3 species. This perennial herb is found in rocky, mesic areas in broadleaved upland forest, cismontane woodland, and North Coast coniferous forests, often on volcanic soils (CNPS 2024). This plant occurs at elevations between 100 feet and 3,610 feet, and blooms from June through October (CNPS 2024).

The edges of the intermittent and perennial drainages within the Study Area represent suitable habitat for the species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.5 Congested-Head Hayfield Tarweed

Congested-head hayfield tarweed (*Hemizonia congesta* ssp. *congesta*) is not federally or state listed, but it is classified as a CRPR List 1B.2 species. This perennial herb is found in valley and foothill grasslands, often on roadsides (CNPS 2022). This plant occurs at elevations between 70 feet and 1,800 feet, and blooms from April through November (CNPS 2022).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, And Coyote Brush Scrub throughout the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.6 Thin-lobed Horkelia

Thin-lobed horkelia (*Horkelia tenuiloba*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. This perennial herb occurs in various habitats such as chaparral openings, broad-leafed upland forest, and valley and foothill grassland with mesic sandy soils. Thin-lobed horkelia is found in elevations from approximately 165 to 1,640 feet and blooms from late May through July and sometimes August (CNPS 2023).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.7 Cobb Mountain Lupine

Cobb Mountain lupine (*Lupinus sericatus*) is not listed under the federal or California Endangered Species Act; however, it is classified as a CNPS List 1B.2 plant. This perennial herb favors broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest. Cobb Mountain lupine is found at elevations ranging from approximately 900 to 5,005 feet and blooms from March to June (CNPS 2024).

The chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.8 Mt. Diablo Cottonweed

Mt. Diablo cottonweed (*Micropus amphibolus*) is not state or federally listed, but it is classified as a CRPR List 3.2 species. This species is an annual herb that occurs in broadleafed upland forest, chaparral, cismontane woodland, as well as valley and foothill grasslands (CNPS 2024). Mt. Diablo cottonweed blooms from March through May and is known to occur from approximately 150 feet to 2,705 feet above MSL (CNPS 2024).

The Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.9 Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. It generally occurs in shallow freshwater habitats associated with marshes and swamps, including

drainages, canals, and larger ditches that sustain inundation and/or slow moving water into early summer. This emergent perennial rhizomatous species blooms from May to October (November), and occurs from sea level to 2,135 feet (CNPS 2024a)

The edges of the ponds and water quality basin within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the Study Area. All habitat for this species was accessible and surveyed.

4.10 Kenwood Marsh checkerbloom

Kenwood Marsh checkerbloom (*Sidalcea oregana ssp. valida*) is classified as endangered under both the federal and California endangered species acts, and is classified as a CRPR List 1B.1 plant. It is known from only two occurrences, both of which are in freshwater marshes. This perennial rhizomatous species blooms from June through September, and occurs between 375 and 490 feet in elevation (CNPS 2024a)

The edges of the ponds and water quality basin within the Study Area represent extremely marginal suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the Study Area. All habitat for this species was accessible and surveyed.

4.11 Napa Bluecurls

Napa bluecurls (*Trichostema ruygtii*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. It occurs in vernal pools and other mesic areas in valley and foothill grassland, chaparral, cismontane woodland, and lower montane coniferous forest. This annual herb blooms from June to October, and occurs between 100 and 2,230 feet in elevation (CNPS 2024a)

Mesic areas within the Annual Brome Grasslands, Purple Needlegrass Grassland, Ruderal, Indian Teasel Patch, Coyote Brush Scrub, Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.12 Two-fork Clover

Two-fork clover (*Trifolium amoenum*) is a federally endangered species and is classified as a CRPR List 1B.1 plant. This herbaceous annual is commonly found in coastal bluff scrub and valley and foothill grasslands, sometimes on serpentinite soils. Two-fork clover occurs between 15 to 1,360 feet in elevation and blooms from April through June (CNPS 2023).

The Annual Brome Grasslands, Purple Needlegrass Grassland, and Coyote Brush Scrub throughout the Study Area represent marginally suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

4.13 Oval Leaved Viburnum

Oval-leaved viburnum (*Viburnum ellipticum*) is not federally or state listed but is identified as a CRPR 2B.3 species. This shrub grows in cismontane woodlands, lower montane coniferous forest and chaparral habitats between about 705 feet and 4,595 feet in elevation. It blooms in May and June (CNPS 2024).

The Chaparral, Coast Live Oak Woodland and California Bay Forest within the Study Area represent suitable habitat for this species. This species was not observed during the 2024 protocol-level special status plant survey of the accessible portion of the Study Area.

5.0 CONCLUSION

No special-status plant species were observed during the 2024 protocol-level special-status plant surveys of the accessible portions of the Hess Veeder Hills Study Area.

6.0 REFERENCES

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Figures

Figure 1. Site and Vicinity

Figure 2. Terrestrial Vegetation Communities and Aquatic Resources

Figure 3. NRCS Soils

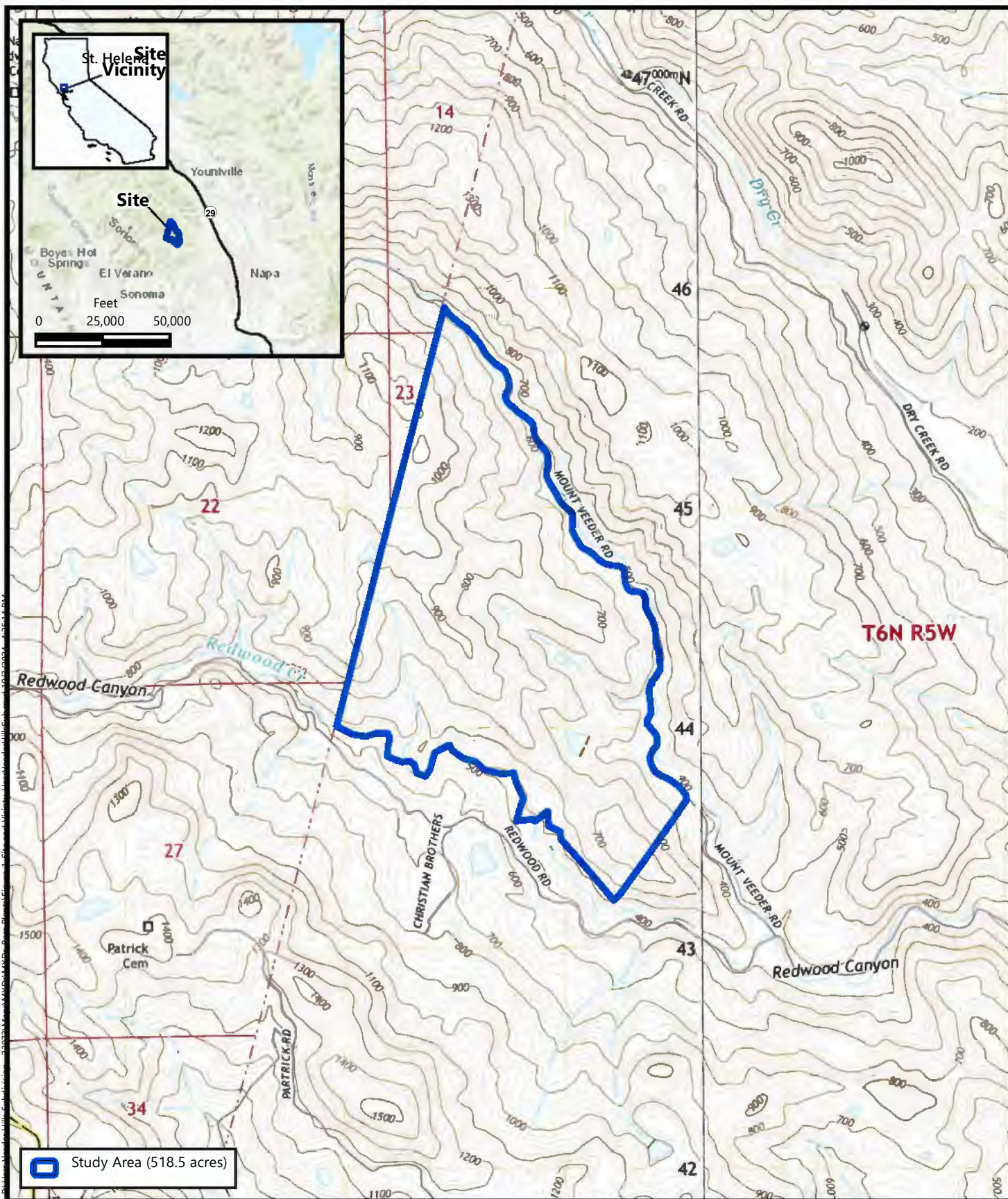


Figure 1
Site and Vicinity

Source: United States Geologic Survey, 2021
 "Sonoma, California" 7.5-Minute Topographic Quadrangle
 Napa Civil Land Grant; Township 6 North, Range 5 West, MDB&M
 Latitude 38.347124, Longitude -122.384899

Hess Veeder Hills Subdivision
 Napa County, California



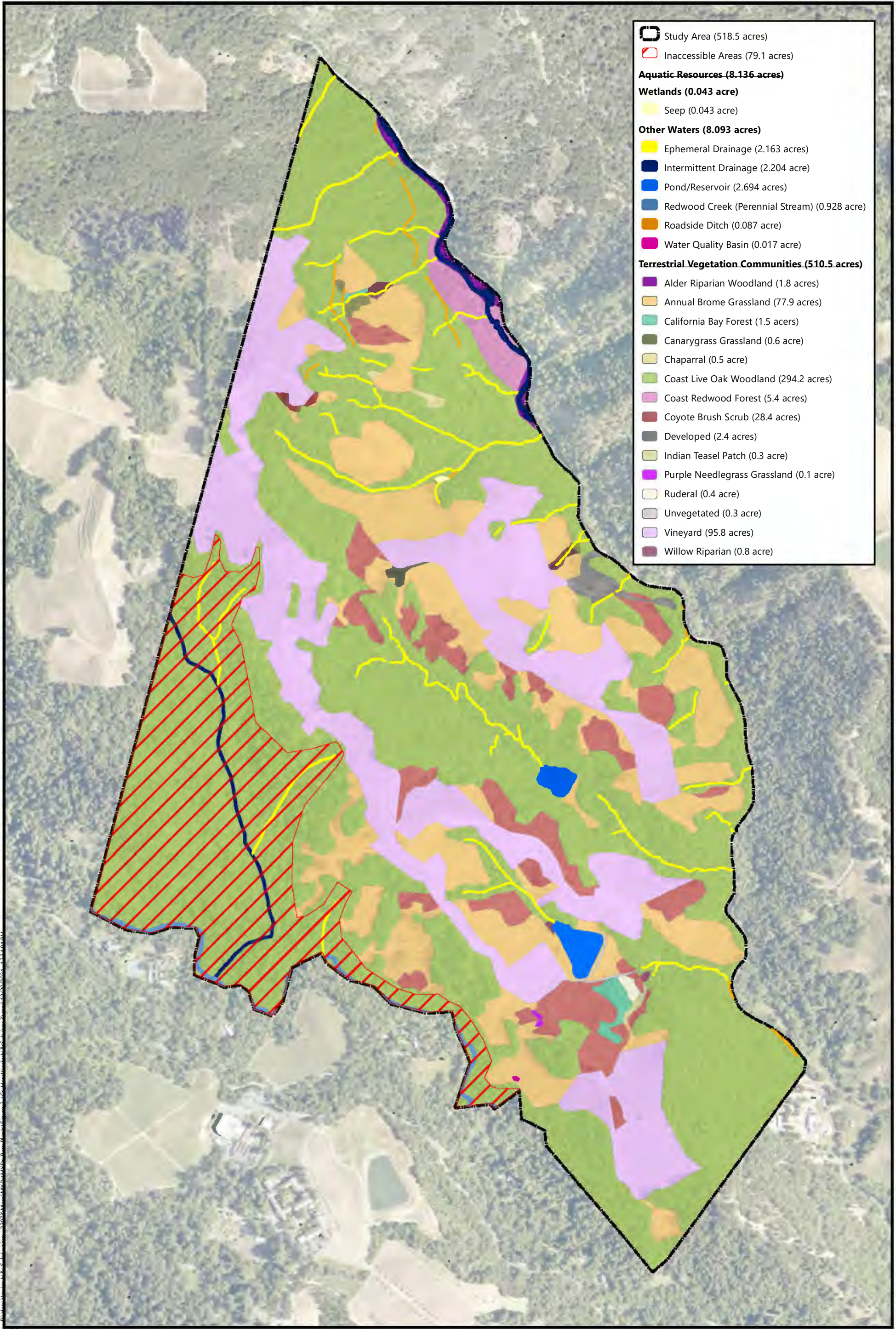


Figure 2
Terrestrial Vegetation Communities
and Aquatic Resources

Hess Veeder Hills Subdivision
Napa County, California



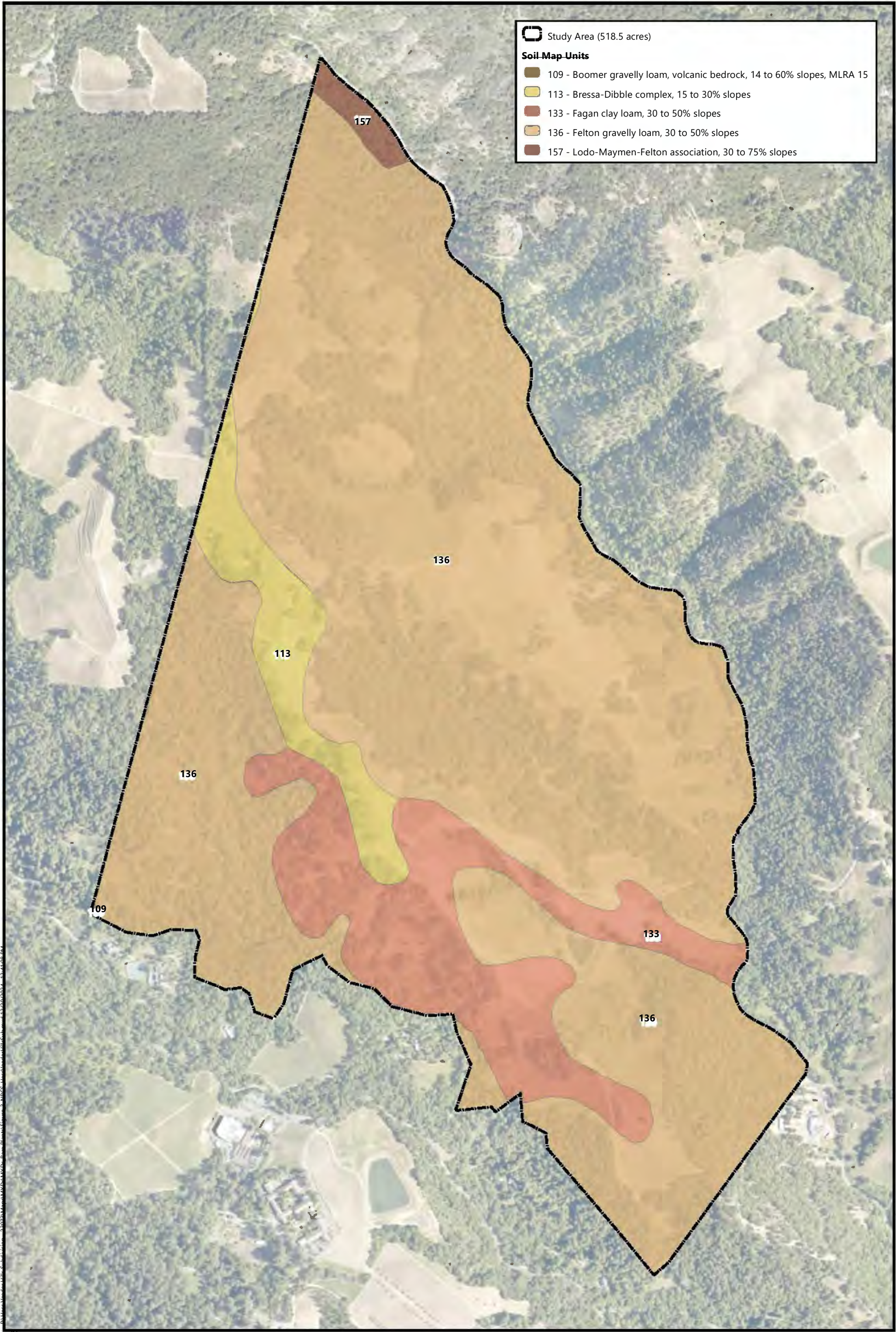


Figure 3
Natural Resources Conservation
Service Soils

Soil Survey Source: *USDA, Soil Conservation Service.*
Soil Survey Geographic (SSURGO) Database for Napa County, California
Aerial Source: Maxar, 30 April 2021, and 22 November 2022.

Hess Veeder Hills Subdivision
Napa County, California



Attachments

Attachment A: Botanist Qualifications

Attachment B: Target Plant Species Reference Population Information

Attachment C: Plant Species Observed within the Hess Veeder Hills Study Area

Attachment A

Botanist Qualifications

Special-Status Plant Survey Botanist Qualifications

Daria Snider

Ms. Snider has more than 20 years of experience conducting botanical inventories. As a senior biologist, she specializes in rare plant surveys, wetland delineations, and general biological resource inventories. In addition to rare plant surveys, her botanical experience includes general vegetation surveys, aerial and field vegetation mapping, Certified Arborist tree inventories, CRAM Assessments, floristic monitoring, and invasive species identification and mapping. Ms. Snider's experience includes a wide variety of habitat types, including vernal pools, annual grasslands, oak woodland, riparian communities, coastal sage scrub, chaparral, cismontane and montane forests, and desert. Her geographic expertise covers much of California, from Shasta County in the north to the Mojave Desert and San Gabriel Mountains in the south, and from Sonoma County in the west to the Sierra Nevada foothills and mountains in the east. Her primary focus is on the Sacramento Valley and the adjacent Sierra Nevada foothills.

Tara Collins

Ms. Collins has a B.S. in Botany from Humboldt State University and more than 24 years of experience conducting botanical inventories. As a senior biologist, she specializes in rare plant surveys, constructed/restored wetland floristic monitoring, and open space preserve management. In addition to rare plant surveys, her botanical experience includes general vegetation surveys, aerial and field vegetation mapping, CRAM assessments, measuring and monitoring special-status species plant populations, and invasive species identification and mapping. Ms. Collins' experience includes a wide variety of upland and wetland vegetation communities including annual grassland, vernal pool complex, ephemeral and emergent wetlands, preserved and created/restored vernal pools, seasonal marshes, floodplain wetlands, managed marshes, oak woodlands, riparian woodland/scrub, chaparral, coastal sage scrub, Mojave Desert scrub, desert riparian, iodine bush scrub, alkali sink habitat, and coniferous forests. Her geographic expertise covers much of California, from Shasta County in the north to the Mojave Desert and San Gabriel Mountains in the south, and from Contra Costa County in the west to the Sierra Nevada foothills in the east. Her primary focus is on the Sacramento Valley and San Joaquin Valley.

Bonnie Peterson

Ms. Peterson has a B.S. in Conservation Biology from California State University, Sacramento, and more than 20 years of experience in environmental consulting. As a senior biologist she conducts a range of activities to aid in planning and to assure regulatory compliance, including rare plant surveys, wetland delineations, environmental awareness training, and surveys and habitat assessments for valley elderberry longhorn beetle, burrowing owl, Swainson's hawk, giant garter snake, listed vernal pool branchiopods, and other special-status species; riparian and oak tree monitoring; and vernal pool floristic monitoring. She has monitored constructed and reference wetlands, monitored conservation areas and mitigation banks, prepared annual reports; prepared Mitigation Monitoring Plans and Open Space Monitoring Plans; and prepared a variety of other biological resource documentation. She has completed plant taxonomy courses at the University level, as well as continuing education through participation in California Native Plant

Society sponsored plant identification workshops. She possesses a plant voucher collecting permit issued by the California Department of Fish and Wildlife.

Attachment B

Target Plant Species
Reference Population Information

**Target Plant Species Reference Population Information
for the Hess Veeder Hills
Special-Status Plant Survey**

Plant Species	Location of Reference Population	Date of Visit	Phenology of Reference Population/ Distinctive Characteristics
<i>Amsinckia lunaris</i> Bent flowered fiddleneck	Briones Regional Park (CNDDDB Occurrence #41)	14 April 2023	About 100 plants are in full bloom. Flowers are large with two distinct dots on a bent corolla. Growing in a grassland right on the fringe of woodland/chaparral.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot	Herbarium specimen at UC Davis Center for Plant Diversity	23 April 2019	Pressed specimen. Similar to <i>Wyethia</i> , but with grey, dissected leaves. Leaves are mostly basal (as opposed to <i>Wyethia</i> , which has basal and cauline leaves).
<i>Sagittaria sanfordii</i> Sanford's arrowhead	Population in Laguna Creek north of Elk Grove Blvd in Elk Grove (CNDDDB Occurrence #43)	20 May 2024	Plants were in early bloom, with some plants still entirely aquatic. Those that had terrestrial leaves exhibited the typical triangular cross-section, and the blooms and fruit made blooming plants readily identifiable to species.
<i>Viburnum ellipticum</i> Oval-leaved viburnum	Herbarium specimen at UC Davis Center for Plant Diversity	31 March 2016	Pressed specimen. Leaves are very distinctive; rounded with serrated tips. When in bloom, the inflorescence is also very distinctive; a bright white umbel of flowers.

Attachment C

Plant Species Observed within the Hess Veeder Hills Study Area

Plant Species Observed within the
Hess Veeder Hills Study Area
6 and 10 May, 16 July, and 27 August 2024

Family / Species Name	Common Name	Native / Non-Native
AGAVACEAE		
<i>Chlorogalum angustifolium</i>	Narrow-leaved soap plant	Native
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Common soap plant	Native
ALISMATACEAE		
<i>Alisma triviale</i>	Northern water plantain	Native
AMARANTHACEAE		
<i>Amaranthus albus</i>	Tumbleweed	Non-Native
<i>Amaranthus blitoides</i>	Procumbent pigweed	Native
ANACARDIACEAE		
<i>Toxicodendron diversilobum</i>	Western poison oak	Native
APIACEAE		
<i>Angelica californica</i>	California angelica	Native
<i>Anthriscus caucalis</i>	Bur-chervil	Non-Native
<i>Conium maculatum</i>	Poison hemlock	Non-Native
<i>Daucus carota</i>	Queen Anne's lace	Non-Native
<i>Foeniculum vulgare</i>	Fennel	Non-Native
<i>Heracleum maximum</i>	Cow parsnip	Native
<i>Osmorhiza berteroi</i>	Sweet cicely	Native
<i>Perideridia kelloggii</i>	Kellogg's yampah	Native
<i>Sanicula bipinnatifida</i>	Purple sanicle	Native
<i>Sanicula crassicaulis</i>	Pacific sanicle	Native
<i>Scandix pecten-veneris</i>	Venus' needle	Non-Native
<i>Torilis arvensis</i>	Tall sock-destroyer	Non-Native
APOCYNACEAE		
<i>Asclepias fascicularis</i>	Narrow-leaf milkweed	Native
<i>Vinca major</i>	Greater periwinkle	Non-Native
ARALIACEAE		
<i>Hedera helix</i>	English ivy	Non-Native

Plant Species Observed within the
Hess Veeder Hills Study Area
6 and 10 May, 16 July, and 27 August 2024

Family / Species Name	Common Name	Native / Non-Native
ARISTOLOCHIACEAE		
<i>Aristolochia californica</i>	California pipevine	Native
ASTERACEAE		
<i>Achillea millefolium</i>	Yarrow	Native
<i>Agoseris grandiflora</i> var. <i>grandiflora</i>	Giant mountain dandelion	Native
<i>Agoseris retrorsa</i>	Spear leaved agoseris	Native
<i>Anisocarpus madioides</i>	Woodland tarweed	Native
<i>Anthemis cotula</i>	Mayweed	Non-Native
<i>Artemisia douglasiana</i>	Mugwort	Native
<i>Baccharis pilularis</i>	Coyote brush	Native
<i>Calendula arvensis</i>	Field-marigold	Non-Native
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle	Non-Native
<i>Centaurea solstitialis</i>	Yellow star-thistle	Non-Native
<i>Cichorium intybus</i>	Chicory	Non-Native
<i>Cirsium vulgare</i>	Bull thistle	Non-Native
<i>Erigeron canadensis</i>	Horseweed	Native
<i>Eurybia radulina</i>	Rough leaved aster	Native
<i>Gamochaeta ustulata</i>	Featherweed	Native
<i>Helianthella californica</i> var. <i>californica</i>	California helianthella	Native
<i>Helminthotheca echioides</i>	Bristly ox-tongue	Non-Native
<i>Heterotheca grandiflora</i>	Telegraph weed	Native
<i>Hieracium albiflorum</i>	White hawkweed	Native
<i>Hypochaeris glabra</i>	Smooth cat's-ear	Non-Native
<i>Lactuca saligna</i>	Willow lettuce	Non-Native
<i>Lactuca serriola</i>	Prickly lettuce	Non-Native
<i>Lapsana communis</i>	Common nipplewort	Non-Native
<i>Logfia gallica</i>	Daggerleaf cottonrose	Non-Native
<i>Madia elegans</i>	Common madia	Native
<i>Madia gracilis</i>	Gumweed	Native
<i>Matricaria discoidea</i>	Pineapple weed	Native
<i>Micropus californicus</i>	Q-tips	Native
<i>Pseudognaphalium californicum</i>	Ladies' tobacco	Native
<i>Psilocarphus chilensis</i>	Round woolly-marbles	Native
<i>Rhagadiolus stellatus</i>	Endive daisy	Non-Native
<i>Senecio vulgaris</i>	Common groundsel	Non-Native

Plant Species Observed within the
Hess Veeder Hills Study Area
6 and 10 May, 16 July, and 27 August 2024

Family / Species Name	Common Name	Native / Non-Native
ASTERACEAE (continued)		
<i>Silybum marianum</i>	Milk thistle	Non-Native
<i>Soliva sessilis</i>	South American soliva	Non-Native
<i>Sonchus asper ssp. asper</i>	Prickly sow thistle	Non-Native
<i>Symphyotrichum chilense</i>	Pacific aster	Native
<i>Tragopogon porrifolius</i>	Salsify	Non-Native
<i>Wyethia angustifolia</i>	Narrow leaved mule ears	Native
<i>Wyethia glabra</i>	Smooth mule ears	Native
BETULACEAE		
<i>Alnus rhombifolia</i>	White alder	Native
<i>Corylus cornuta ssp. californica</i>	California hazel	Native
BORAGINACEAE		
<i>Adelinia grandis</i>	Hounds tongue	Native
<i>Amsinckia intermedia</i>	Common fiddleneck	Native
<i>Amsinckia menziesii</i>	Common fiddleneck	Native
<i>Phacelia imbricata var. imbricata</i>	Imbricate phacelia	Native
BRASSICACEAE		
<i>Brassica nigra</i>	Black mustard	Non-Native
<i>Brassica rapa</i>	Field mustard	Non-Native
<i>Cardamine oligosperma</i>	Little western bittercress	Native
<i>Lepidium nitidum</i>	Shining peppergrass	Native
<i>Raphanus sativus</i>	Radish	Non-Native
CACTACEAE		
<i>Opuntia ficus-indica</i>	Mission prickly-pear	Non-Native
CALYCANTHACEAE		
<i>Calycanthus occidentalis</i>	Spicebush	Native
CAPRIFOLIACEAE		
<i>Lonicera interrupta</i>	Chaparral honeysuckle	Native
<i>Symphoricarpos albus var. laevigatus</i>	Snowberry	Native

Plant Species Observed within the
Hess Veeder Hills Study Area
6 and 10 May, 16 July, and 27 August 2024

Family / Species Name	Common Name	Native / Non-Native
CARYOPHYLLACEAE		
<i>Cerastium glomeratum</i>	Sticky mouse-ear chickweed	Non-Native
<i>Stellaria media</i>	Common chickweed	Non-Native
CONVOLVULACEAE		
<i>Calystegia occidentalis ssp. occidentalis</i>	Modoc morning glory	Native
<i>Convolvulus arvensis</i>	Bindweed	Non-Native
CUCURBITACEAE		
<i>Marah fabacea</i>	California man-root	Native
CUPRESSACEAE		
<i>Sequoia sempervirens</i>	Coast redwood	Native
CYPERACEAE		
<i>Carex nudata</i>	Torrent sedge	Native
<i>Carex praegracilis</i>	Field sedge	Native
<i>Cyperus difformis</i>	Variable flatsedge	Non-Native
<i>Cyperus eragrostis</i>	Tall nutsedge	Native
<i>Eleocharis macrostachya</i>	Creeping spikerush	Native
<i>Schoenoplectus acutus var. occidentalis</i>	Common tule	Native
DIPSACACEAE		
<i>Dipsacus sativus</i>	Fuller's teasel	Non-Native
DRYOPTERIDACEAE		
<i>Dryopteris arguta</i>	Wood fern	Native
EQUISETACEAE		
<i>Equisetum hyemale ssp. affine</i>	Common scouring rush	Native
ERICACEAE		
<i>Arbutus menziesii</i>	Pacific madrone	Native
<i>Arctostaphylos manzanita ssp. manzanita</i>	Common manzanita	Native
<i>Arctostaphylos viscida ssp. viscida</i>	White leaf manzanita	Native

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Hess Veeder Hills Study Area
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Family / Species Name	Common Name	Native / Non-Native
EUPHORBIACEAE		
<i>Croton setiger</i>	Turkey-mullein	Native
<i>Euphorbia oblongata</i>	Eggleaf spurge	Non-Native
FABACEAE		
<i>Acemisson americanus</i> var. <i>americanus</i>	Spanish lotus	Native
<i>Acemisson glaber</i>	Deerweed	Native
<i>Acemisson micranthus</i>	Small flowered lotus	Native
<i>Acemisson parviflorus</i>	Hill lotus	Native
<i>Genista monspessulana</i>	French broom	Non-Native
<i>Hoita macrostachya</i>	California hemp	Native
<i>Lathyrus latifolius</i>	Perennial sweet pea	Non-Native
<i>Lathyrus vestitus</i> var. <i>vestitus</i>	Hillside pea	Native
<i>Lupinus albifrons</i>	Silver bush lupine	Native
<i>Lupinus bicolor</i>	Miniature lupine	Native
<i>Lupinus formosus</i>	Summer lupine	Native
<i>Medicago polymorpha</i>	California burclover	Non-Native
<i>Trifolium angustifolium</i>	Narrow-leaved clover	Non-Native
<i>Trifolium campestre</i>	Hop clover	Non-Native
<i>Trifolium dubium</i>	Little hop clover	Non-Native
<i>Trifolium glomeratum</i>	Clustered clover	Non-Native
<i>Trifolium hirtum</i>	Rose clover	Non-Native
<i>Trifolium incarnatum</i>	Crimson clover	Non-Native
<i>Trifolium striatum</i>	Knotted clover	Non-Native
<i>Trifolium subterraneum</i>	Subterranean clover	Non-Native
<i>Vicia disperma</i>	Two-seeded vetch	Non-Native
<i>Vicia hirsuta</i>	Hairy vetch	Non-Native
<i>Vicia sativa</i> ssp. <i>nigra</i>	Narrow-leaved vetch	Non-Native
<i>Vicia sativa</i> ssp. <i>sativa</i>	Spring vetch	Non-Native
<i>Vicia villosa</i> ssp. <i>varia</i>	Winter vetch	Non-Native
FAGACEAE		
<i>Quercus agrifolia</i>	Coast live oak	Native
<i>Quercus kelloggii</i>	California black oak	Native
<i>Quercus lobata</i>	Valley oak	Native

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Family / Species Name	Common Name	Native / Non-Native
GERANIACEAE		
<i>Erodium botrys</i>	Filaree	Non-Native
<i>Erodium cicutarium</i>	Redstem filaree	Non-Native
<i>Geranium dissectum</i>	Cut-leaf geranium	Non-Native
<i>Geranium molle</i>	Soft geranium	Non-Native
<i>Geranium robertianum</i>	Robert's geranium	Non-Native
HYPERICACEAE		
<i>Hypericum concinnum</i>	Gold-wire	Native
IRIDACEAE		
<i>Sisyrinchium bellum</i>	Western blue-eyed-grass	Native
JUGLANDACEAE		
<i>Juglans regia</i>	Persian or english walnut	Non-Native
JUNCACEAE		
<i>Juncus bufonius</i>	Toad rush	Native
<i>Juncus effusus</i>	Soft or lamp rush	Native
<i>Juncus occidentalis</i>	Western rush	Native
<i>Juncus oxymers</i>	Pointed rush	Native
<i>Juncus patens</i>	Spreading rush	Native
<i>Luzula comosa</i> var. <i>comosa</i>	Hairy wood rush	Native
LAMIACEAE		
<i>Lamium amplexicaule</i>	Henbit	Non-Native
<i>Melissa officinalis</i>	Lemon balm	Non-Native
<i>Mentha arvensis</i>	Field mint	Non-Native
<i>Mentha pulegium</i>	Pennyroyal	Non-Native
<i>Stachys rigida</i> var. <i>quercetorum</i>	Rough hedgenettle	Native
LAURACEAE		
<i>Umbellularia californica</i>	California bay	Native
LILIACEAE		
<i>Calochortus amabilis</i>	Diogenes' lantern	Native
<i>Calochortus luteus</i>	Gold nugget	Native

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LILIACEAE (continued)		
<i>Prosartes hookeri</i>	Hookers' fairy bells	Native
LYTHRACEAE		
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	Non-Native
MALVACEAE		
<i>Fremontodendron californicum</i>	California flannelbush	Native
<i>Malva parviflora</i>	Cheeseweed	Non-Native
MELANTHIACEAE		
<i>Trillium albidum</i>	Giant white wakerobin	Native
MONTIACEAE		
<i>Calandrinia menziesii</i>	Red maids	Native
<i>Claytonia perfoliata</i>	Miner's lettuce	Native
MYRSINACEAE		
<i>Lysimachia arvensis</i>	Scarlet pimpernel	Non-Native
<i>Lysimachia latifolia</i>	Pacific starflower	Native
MYRTACEAE		
<i>Callistemon citrinus</i>	Bottlebrush	Non-Native
OLEACEAE		
<i>Fraxinus latifolia</i>	Oregon ash	Native
<i>Olea europaea</i>	Olive	Non-Native
ONAGRACEAE		
<i>Clarkia affinis</i>	Chaparral fairy fan	Native
<i>Clarkia purpurea</i>	Purple clarkia	Native
<i>Epilobium brachycarpum</i>	Willowherb	Native
<i>Epilobium canum</i>	California fuchsia	Native
<i>Epilobium ciliatum</i>	Slender willow herb	Native
<i>Epilobium densiflorum</i>	Willow herb	Native
<i>Epilobium torreyi</i>	Torrey's willowherb	Native

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OROBANCHACEAE		
<i>Bellardia trixago</i>	Mediterranean linseed	Non-Native
<i>Castilleja attenuata</i>	Valley tassels	Native
<i>Pedicularis densiflora</i>	Warrior's plume	Native
OXALIDACEAE		
<i>Oxalis micrantha</i>	Dwarf wood-sorrel	Non-Native
PAPAVERACEAE		
<i>Eschscholzia californica</i>	California poppy	Native
PHRYMACEAE		
<i>Diplacus aurantiacus</i>	Orange bush monkeyflower	Native
PINACEAE		
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas-fir	Native
PLANTAGINACEAE		
<i>Kickxia spuria</i>	Fluellin	Non-Native
<i>Plantago lanceolata</i>	English plantain	Non-Native
<i>Veronica persica</i>	Persian speedwell	Non-Native
POACEAE		
<i>Aira caryophyllea</i>	Silver hair grass	Non-Native
<i>Arundo donax</i>	Giant reed	Non-Native
<i>Avena barbata</i>	Slender wild oat	Non-Native
<i>Avena fatua</i>	Wild oat	Non-Native
<i>Brachypodium distachyon</i>	False brome	Non-Native
<i>Briza maxima</i>	Rattlesnake grass	Non-Native
<i>Briza minor</i>	Annual quaking grass	Non-Native
<i>Bromus diandrus</i>	Ripgut grass	Non-Native
<i>Bromus hordeaceus</i>	Soft chess	Non-Native
<i>Bromus laevipes</i>	Chinook brome	Native
<i>Bromus sitchensis</i> var. <i>carinatus</i>	California brome	Native
<i>Bromus sterilis</i>	Sterile brome	Non-Native
<i>Crypsis schoenoides</i>	Swamp prickle grass	Non-Native
<i>Cynosurus echinatus</i>	Bristly dogtail grass	Non-Native

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POACEAE (continued)		
<i>Dactylis glomerata</i>	Orchardgrass	Non-Native
<i>Deschampsia cespitosa</i>	Tufted hair grass	Native
<i>Elymus glaucus</i>	Blue wild-rye	Native
<i>Festuca arundinacea</i>	Tall fescue	Non-Native
<i>Festuca bromoides</i>	Brome fescue	Non-Native
<i>Festuca californica</i>	California fescue	Native
<i>Festuca perennis</i>	Rye grass	Non-Native
<i>Festuca trachyphylla</i>	Hard or sheep fescue	Non-Native
<i>Gastridium phleoides</i>	Nit grass	Non-Native
<i>Glyceria declinata</i>	Low manna grass	Non-Native
<i>Hordeum brachyantherum</i>	Meadow barley	Native
<i>Hordeum brachyantherum</i> ssp. <i>californicum</i>	California barley	Native
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	Non-Native
<i>Hordeum murinum</i>	Wall barley	Non-Native
<i>Melica californica</i>	California melic	Native
<i>Melica imperfecta</i>	Little california melica	Native
<i>Muhlenbergia rigens</i>	Deer grass	Native
<i>Phalaris aquatica</i>	Harding grass	Non-Native
<i>Phyllostachys species</i>	Bamboo	Non-Native
<i>Poa annua</i>	Annual blue grass	Non-Native
<i>Stipa cernua</i>	Nodding needle grass	Native
<i>Stipa pulchra</i>	Purple needle grass	Native
POLYGALACEAE		
<i>Rhinotropis californica</i>	California milkwort	Native
POLYGONACEAE		
<i>Eriogonum fasciculatum</i>	California buckwheat	Native
<i>Persicaria hydropiper</i>	Waterpepper	Non-Native
<i>Polygonum aviculare</i>	Prostrate knotweed	Non-Native
<i>Polygonum aviculare</i> ssp. <i>depressum</i>	Prostrate knotweed	Non-Native
<i>Rumex acetosella</i>	Sheep sorrel	Non-Native
<i>Rumex crispus</i>	Curly dock	Non-Native
<i>Rumex dentatus</i>	Toothed dock	Non-Native
<i>Rumex pulcher</i>	Fiddle dock	Non-Native

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Family / Species Name	Common Name	Native / Non-Native
POLYPODIACEAE		
<i>Polypodium calirhiza</i>	Licorice fern	Native
POTAMOGETONACEAE		
<i>Potamogeton diversifolius</i>	Diverse-leaved pondweed	Native
PTERIDACEAE		
<i>Adiantum jordanii</i>	California maidenhair	Native
<i>Pentagramma triangularis</i>	Goldback fern	Native
RANUNCULACEAE		
<i>Ranunculus californicus</i> var. <i>californicus</i>	California buttercup	Native
<i>Ranunculus muricatus</i>	Spiny-fruit buttercup	Non-Native
RHAMNACEAE		
<i>Frangula californica</i> ssp. <i>californica</i>	California coffee berry	Native
<i>Frangula californica</i> ssp. <i>tomentella</i>	Hoary coffeeberry	Native
<i>Rhamnus ilicifolia</i>	Hollyleaf redberry	Native
ROSACEAE		
<i>Adenostoma fasciculatum</i>	Chamise	Native
<i>Cotoneaster species</i>	Cotoneaster	Non-Native
<i>Drymocallis glandulosa</i>	Sticky cinquefoil	Native
<i>Fragaria vesca</i>	Wood strawberry	Native
<i>Heteromeles arbutifolia</i>	Toyon	Native
<i>Holodiscus discolor</i>	Oceanspray	Native
<i>Prunus cerasifera</i>	Cherry plum	Non-Native
<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>	Holly-leafed cherry	Native
<i>Pyrus calleryana</i>	Callery pear	Non-Native
<i>Rosa californica</i>	California rose	Native
<i>Rosa pisocarpa</i>	Cluster rose	Native
<i>Rubus armeniacus</i>	Armenian blackberry	Non-Native
<i>Rubus leucodermis</i>	Whitebark raspberry	Native
<i>Rubus ursinus</i>	California blackberry	Native
RUBIACEAE		
<i>Galium aparine</i>	Goose grass	Native

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RUBIACEAE (continued)		
<i>Galium nuttallii</i>	San diego bedstraw	Native
<i>Galium parisiense</i>	Wall bedstraw	Non-Native
<i>Galium porrigens</i> var. <i>porrigens</i>	Climbing bedstraw	Native
<i>Sherardia arvensis</i>	Field madder	Non-Native
SALICACEAE		
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood	Native
<i>Salix gooddingii</i>	Goodding's black willow	Native
<i>Salix laevigata</i>	Red willow	Native
<i>Salix lasiolepis</i>	Arroyo willow	Native
SAPINDACEAE		
<i>Acer macrophyllum</i>	Big-leaf maple	Native
<i>Aesculus californica</i>	California buckeye	Native
SCROPHULARIACEAE		
<i>Scrophularia californica</i>	California figwort	Native
STRELITZIACEAE		
<i>Strelitzia reginae</i>	Bird of Paradise	Non-Native
THEMIDACEAE		
<i>Dichelostemma multiflorum</i>	Wild hyacinth	Native
<i>Dipterostemon capitatus</i>	Blue dicks	Native
TYPHACEAE		
<i>Typha latifolia</i>	Broad-leaved cattail	Native
VALERIANACEAE		
<i>Plectritis ciliosa</i>	Long-spurred plectritis	Native
VIBURNACEAE		
<i>Sambucus mexicana</i>	Elderberry	Native
VITACEAE		
<i>Vitis californica</i>	California wild grape	Native

Plant Species Observed within the
Hess Veeder Hills Study Area
6 and 10 May, 16 July, and 27 August 2024

Family / Species Name	Common Name	Native / Non-Native
VITACEAE (continued)		
<i>Vitis vinifera</i>	Wine grape	Non-Native

Attachment F

CNDDB Records for Special-Status Species Documented in the Study Area

CNDDDB Online Field Survey Form Report



California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/



Source code BRO25F0005
Quad code 3812234
Occ. no. _____
EO index no. _____
Map index no. _____

This data has been reported to the CNDDDB, but may not have been evaluated by the CNDDDB staff

Scientific name: *Actinemys marmorata*

Common name: *northwestern pond turtle*

Date of field work (mm-dd-yyyy): *05-29-2025*

Comment about field work date(s):

OBSERVER INFORMATION

Observer: *Dustin R. Brown*

Affiliation: *Madrone Ecological*

Address: *6220 Green Top Way Orangevale, CA 95662*

Email: *dbrown@madroneeco.com*

Phone: *(916) 335-0503*

Other observers:

DETERMINATION

Personal expertise: *Yes*

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: *Very confident*

Species found: *Yes* If not found, why not?

Level of survey effort: *Non-protocol wildlife inventory survey of vineyard property.*

Total number of individuals: *2*

Collection? *No*

Collection number:

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? *Seen*

Number detected in each age class:

2

adults

juveniles

larvae

egg mass

other

Age class comment:

Site use description:

What was the observed behavior? [Basking and foraging](#)

Describe any evidence of reproduction: [none](#)

SITE INFORMATION

Habitat description: [Semi-perennial earthen reservoir within a vineyard.](#)

Slope:

Landowner/manager: [Hess Veeder Estates](#)

Aspect:

Site condition + population viability: [Excellent](#)

Immediate & surrounding land use: [Vineyard, annual grassland, and California bay woodland](#)

Visible disturbances: [Water is drawn down for irrigation in the summer](#)

Threats: [Non-native sliders](#)

General comments: [Owner has installed turtle basking platforms as mitigation for a spillway repair project in 2024. Platforms are being used by native and non-native turtles.](#)

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Napa	Sonoma	539	38.34200	-122.38152	554047	4243943	10
1	Public Land Survey	Feature Comment						
	M T06N R05W 26							

The mapped feature is accurate within: [5 m](#)

Source of mapped feature: [Aerial photograph](#)

Mapping notes:

Location/directions comments:

Attachment(s):

CNDDDB Online Field Survey Form Report



California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/



Source code BRO25F0006
Quad code 3812234
Occ. no. _____
EO index no. _____
Map index no. _____

This data has been reported to the CNDDDB, but may not have been evaluated by the CNDDDB staff

Scientific name: *Actinemys marmorata*

Common name: *northwestern pond turtle*

Date of field work (mm-dd-yyyy): 05-29-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: *Dustin R. Brown*

Affiliation: *Madrone Ecological*

Address: *6220 Green Top Way Orangevale, CA 95662*

Email: *dbrown@madroneeco.com*

Phone: *(916) 335-0503*

Other observers:

DETERMINATION

Personal expertise: *Yes*

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: *Very confident*

Species found: *Yes* If not found, why not?

Level of survey effort: *Non-protocol wildlife inventory survey of vineyard property.*

Total number of individuals: *1*

Collection? *No*

Collection number:

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? *Seen*

Number detected in each age class:

1

adults

juveniles

larvae

egg mass

other

Age class comment:

Site use description: [Earthen reservoir within a vineyard.](#)

What was the observed behavior? [Basking on shore.](#)

Describe any evidence of reproduction: [none](#)

SITE INFORMATION

Habitat description: [Earthen reservoir used for irrigation of vineyards.](#)

Slope: Landowner/manager: [Hess Veeder Estates](#)

Aspect:

Site condition + population viability: [Excellent](#)

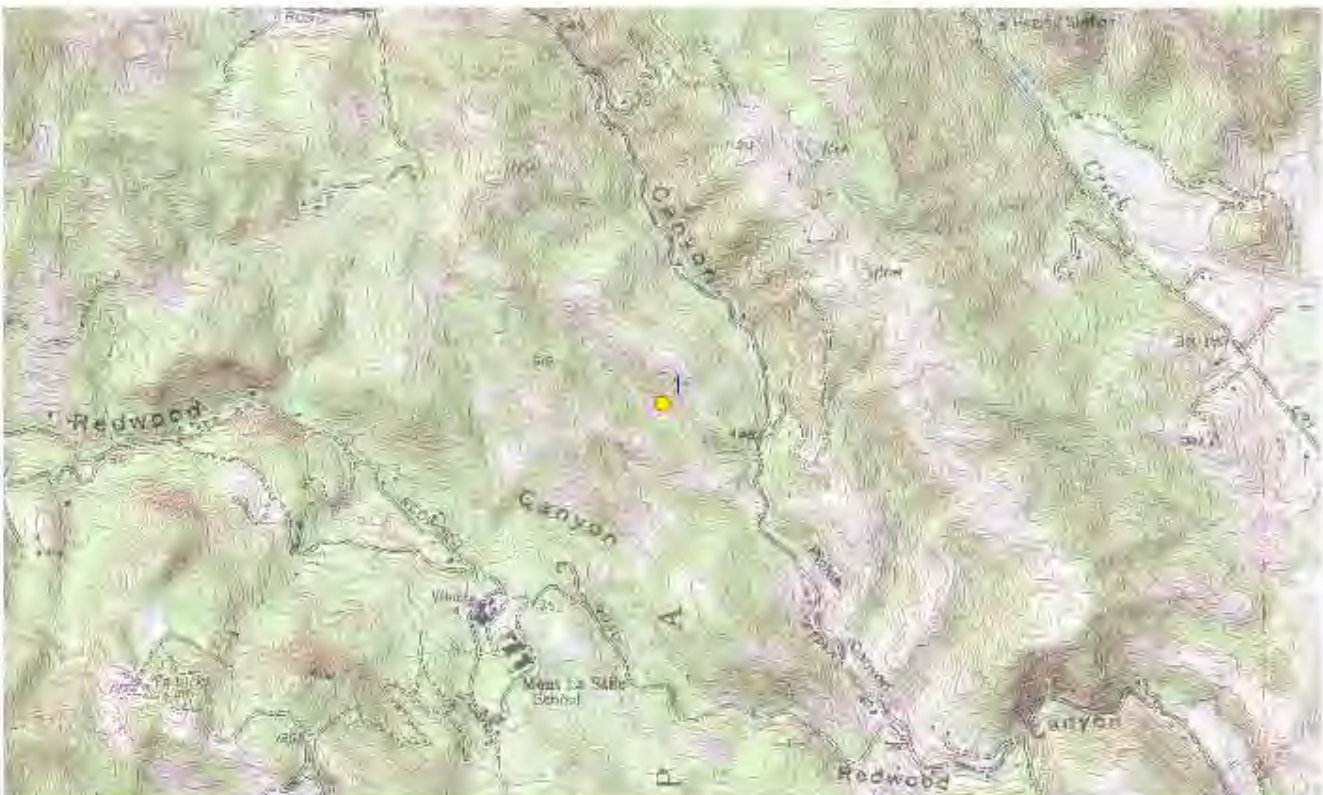
Immediate & surrounding land use: [California bay woodland and vineyard](#)

Visible disturbances: [Water is sometimes drawn down for irrigation of vineyards](#)

Threats: [None](#)

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Napa	Sonoma	561	38.34542	-122.38192	554010	4244322	10
1	Public Land Survey	Feature Comment						
	M T06N R05W 23	1 adult NWPT						

The mapped feature is accurate within: [5 m](#)

Source of mapped feature: [aerial photograph](#)

Mapping notes:

Location/directions comments:

Attachment(s):

CNDDDB Online Field Survey Form Report



California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/



Source code BRO25F0007
Quad code 3812234
Occ. no. _____
EO index no. _____
Map index no. _____

This data has been reported to the CNDDDB, but may not have been evaluated by the CNDDDB staff

Scientific name: *Oncorhynchus mykiss irideus pop. 8*

Common name: steelhead - central California coast DPS

Date of field work (mm-dd-yyyy): 05-29-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Dustin R. Brown

Affiliation: Madrone Ecological

Address: 6220 Green Top Way Orangevale, CA 95662

Email: dbrown@madroneeco.com

Phone: (916) 335-0503

Other observers:

DETERMINATION

Personal expertise: Yes

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes If not found, why not?

Level of survey effort: Non-protocol wildlife inventory survey.

Total number of individuals: 25

Collection? No

Collection number:

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

25

adults

juveniles

larvae

egg mass

other

Age class comment: Approximately 6 2-3" TL fish and 20 fry.

Site use description: [Rearing habitat for steelhead trout.](#)

What was the observed behavior? [Fish swimming in stream.](#)

Describe any evidence of reproduction: [Fry observed](#)

SITE INFORMATION

Habitat description: [A semi-perennial portion of Pickle Creek.](#)

Slope:

Landowner/manager: [Hess Veeder Estates vineyard.](#)

Aspect:

Site condition + population viability: [Excellent](#)

Immediate & surrounding land use: [Mount Veeder Road is immediately east of stream. Uplands adjacent to the stream consist of woodland dominated by Douglas fir, coast redwood, and California bay.](#)

Visible disturbances: [none](#)

Threats: [none](#)

General comments: [No invasive species observed. Foothill yellow-legged frog and western toad also observed reproducing in the creek. Abundant tadpoles are present and represent a food source for steelhead trout.](#)

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Napa	Sonoma	554	38.35278	-122.38300	553910	4245139	10
1	Public Land Survey	Feature Comment						
	M T06N R05W 23							

The mapped feature is accurate within: [5 m](#)

Source of mapped feature: [GPS](#)

Mapping notes:

Location/directions comments:

Attachment(s):

CNDDDB Online Field Survey Form Report



California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/



Source code BRO25F0008
Quad code 3812234
Occ. no. _____
EO index no. _____
Map index no. _____

This data has been reported to the CNDDDB, but may not have been evaluated by the CNDDDB staff

Scientific name: *Rana boylei pop. 1*

Common name: foothill yellow-legged frog - north coast DPS

Date of field work (mm-dd-yyyy): 05-28-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Dustin R. Brown

Affiliation: Madrone ecological

Address: 6220 Green Top Way Orangevale, CA 95662

Email: dbrown@madroneeco.com

Phone: (916) 335-0503

Other observers:

DETERMINATION

Personal expertise: Yes

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes If not found, why not?

Level of survey effort: Pedestrian survey of Pickle Creek (1km stretch)

Total number of individuals: 47

Collection? No

Collection number:

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

47

1,000s

adults

juveniles

larvae

egg mass

other

Age class comment: 47 frogs consisting of adult and subadult frogs. 1,000s of FYLF tadpoles of various ages and Gosner stages.

Site use description: Undisturbed stretch of Pickle Creek. Within Veeder Hills Estates vineyard property.

What was the observed behavior? Basking/foraging (adults and subadults). Swimming and foraging for tadpoles.

Describe any evidence of reproduction: Larvae observed.

SITE INFORMATION

Habitat description: Semi-perennial stretch of Pickle Creek. Moderate-gradient rocky stream with abundant emergent Carex for cover. Interspersed main-channel pools provide habitat for tadpoles.

Slope: Landowner/manager: Hess Veeder Estates Vineyard

Aspect:

Site condition + population viability: Excellent

Immediate & surrounding land use: Mount Veeder Road is immediately east of the survey site. Uplands are woodland dominated by douglas fir, coast redwood, and California bay.

Visible disturbances: None

Threats: Only native species observed within the stream consisting of steelhead and western toad.

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Napa	Sonoma	593	38.35504	-122.38414	553809	4245389	10
1	Public Land Survey	Feature Comment						
	M T06N R05W 23	Center point of 1km survey area of Pickle Crk						

The mapped feature is accurate within: 5 m

Source of mapped feature: GPS

Mapping notes: Point is located near middle of 1km long survey area along Pickle Creek.

Location/directions comments: Survey started and ended at Mt. Veeder Road crossings over Pickle Creek.

Attachment(s):

Attachment G

Northern Spotted Owl Habitat Assessment



Northern Spotted Owl Habitat Assessment

VH New Pond

Napa County, California

12 July 2024



Prepared for:

Lorenzo Dalla Brea
Hess Persson Estates
4411 Redwood Road
Napa, CA 94558

Recommended Citation:

Madrone Ecological Consulting, LLC (Madrone). 2024. *Northern Spotted Owl Habitat Assessment for VH New Pond*. Prepared for Hess Persson Estates. Published 12 July 2024.

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VH New Pond**

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- Figure 2. Northern Spotted Owl Territories within 1.3-Miles of Grading Limits
- Figure 3. Northern Spotted Owl Habitat Assessment Results

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1.0 Introduction

This report represents the results of a habitat assessment for the federally-threatened and California-threatened northern spotted owl (*Strix occidentalis caurina*) (NSO) for the approximately 8.6-acre VH New Pond project area (Study Area). This habitat assessment was conducted to fulfill portions of Avoidance and Minimization Measure 2.10 of the Final Lake or Streambed Alteration Agreement (EPIMS-NAP-30571-R3) for the project.

The Study Area is located west of Mount Veeder Road and east of Redwood Road in western Napa County, California. The Study Area is within an unsectioned portion of the Napa Civil Land Grant in Township 6 North, Range 5 West (MDB&M) of the "Sonoma, California" 7.5-Minute Series USGS Topographic Quadrangle (USGS 2018) (Figure 1).

1.1 Existing Conditions

The Study Area is comprised primarily of a water retention pond located within a vineyard complex. As such, the Study Area is surrounded to the west and north by vineyards in active agricultural production. South of the pond, both within and outside of the Study Area is an area that was previously planted in vineyards, but that was abandoned in the early 2000s and now supports a coyote brush (*Baccharis pilularis*) scrub community. Surrounding the Study Area to the east and the southeast is a Coast live oak (*Quercus agrifolia*) woodland. The southern portion of the Study Area is a steep north-facing slope that runs down to the pond and dam in the approximate center of the site. At the bottom of the dam, a relatively steep canyon heads east toward Pickle Creek. An ephemeral drainage starts where a pipe releases water from the pond (Figure 3). Elevations within the Study Area generally range from 600 feet on the top of the slope along the southern edge of the Study Area to 475 feet where the ephemeral drainage exits the Study Area along the eastern edge.

As mentioned above, the central feature of the Study Area is a constructed pond. The pond is almost entirely surrounded by annual brome grassland, except in the northwestern corner, where an arroyo willow (*Salix lasiolepis*) riparian thicket occurs on the bottom of the upstream valley, and a Coast live oak woodland occurs on the steep south-facing slope to the north of the upstream valley. A similar Coast live oak woodland occurs on the steep south-facing slope to the east of the pond, and above the dam. Coyote brush scrub has established in disturbed areas at the base of the dam, in the abandoned vineyard, and just southeast of an abandoned road in the southeastern portion of the Study Area. A small stand of California bay (*Umbellularia californica*) forest occurs on the steep north-facing slope south of the dam. A large patch of ruderal habitat occurs in a relatively flat area just south of the dam, and a dense Indian teasel (*Dipsacus sativus*) patch has established along the abandoned road in the southeastern portion of the Study Area. A narrow band of arroyo willow riparian occurs in the eastern portion of the Study Area associated with an off-site seep or drainage to the east of the Study Area (Figure 3).

The area surrounding the Study Area consists of a mixture of active vineyards, areas that were formerly vineyards that are either grassland or coyote brush scrub, and coast live oak woodland.

2.0 Species Background

The NSO is listed as threatened under both the Federal Endangered Species Act (ESA) and California State Endangered Species Act (CESA), as well as Sensitive under California Department of Forestry and Fire Protection (CalFire). They are a common to uncommon owl in the coniferous forest of the Pacific Northwest, ranging from southern British Columbia south to Marin County in northwestern California (CDFW 2016).

The NSO is a subspecies of spotted owl (*Strix occidentalis*) found in western North America. They are a medium-sized (16 to 20 inches) dark brown owl with a barred tail, white spots on their head and breast; and dark brown eyes surrounded by a prominent facial disk. The NSO is a permanent resident in suitable habitat residing in dense, old-growth, and multi-layered second-growth stands of mixed conifer, redwood, and Douglas-fir habitats (CDFW 2016).

The NSO are rodent specialists, primarily feeding on woodrats (*Neotoma fuscipes*), deer mice (*Peromyscus* spp.), Sonoma tree voles (*Arborimus pomo*), voles (*Microtus* spp.) and northern flying squirrels (*Glaucomys sabrinus*); but has been known to consume small birds, bats, amphibians, and large arthropods. Foraging is completed by searching for prey from a perch and swooping/pouncing on the prey. NSOs usually nest in stick nests (mistletoe clump, abandoned raptor or squirrel nest), in a cavity tree or snag, or in the broken top of a large tree. In the interior region of their range (as seen in Napa County), there appears to be a preference to well-shaded habitat in narrow, steep-sided canyons with north or east-facing slopes to assist in thermoregulatory needs, as they are intolerant of high temperatures.

The spotted owl life-history traits suggest coevolution with late-seral, old growth forests, and second growth forest with scattered late-seral characteristics. They are relatively long-lived and have high adult survival, low reproductive output, and high parental investment in offspring.

The Study Area is located within the range of the NSO.

3.0 Methods

Prior to conducting the habitat assessment field survey, a review of the NSO Viewer was conducted (CDFW 2023) to identify known NSO activity centers and territories within 1.3 miles of the Study Area. Activity Centers are locations or points within a core use area that represent a central place where individuals return to roost and nest and represent the center of a home range.

To reduce potential impacts to NSO, the standard survey methods and take-avoidance measures from CalFire (CalFire 2008) and the U.S. Fish and Wildlife Service (USFWS 2012 and USFWS 2019) were adapted for this project.

In general, NSO prefer forests with dense, multi-layered canopy of several tree species, trees of various sizes and ages, abundant logs, snags/cavity trees, and trees with broken tops or platform-like substrates, and open spaces among lower branches to allow flight under the canopy. The U.S. Fish and Wildlife Service NSO Take Avoidance Analysis (USFWS 2008) further defines NSO habitat as follows:

- High Quality Nesting/Roosting Habitat: Mixed tree species with basal area of 210+ ft² and > 15" quadratic mean diameter, and > 8 trees per acre of trees >26" in diameter at breast height, and > 60% canopy closure.
- Suitable Nesting/Roosting Habitat: Mixed tree species with basal area ranging from 150-180+ ft² and > 15" quadratic mean diameter, and > 8 trees per acre of trees > 26" in diameter at breast height, and > 60% canopy closure.
- Suitable Foraging Habitat: Mixed tree species with basal area ranging from 120-180+ ft² and > 13" quadratic mean diameter, and > 5 trees per acre of trees > 26" in diameter at breast height, and a mix of > 40% to 100% canopy closure.
- Low Quality Foraging Habitat: Mixed tree species with basal area ranging from 80-120+ ft² and > 11" quadratic mean diameter, and > 40% canopy closure.

Prior to conducting the field visit, four random one-acre plots were identified and located within forested portions of the greater Veeder Hills property within 0.25-mile of the Study Area. These plots are located on slopes with a mixture of aspects facing south, southwest, and northeast.

On 4 April 2023, Madrone biologist Dustin Brown Data collected the following data within each of these plots: total basal area (ft²/acre), total number of trees with diameter at breast-height (DBH) of greater than 26 inches, estimated percent canopy cover, mean DBH in inches, and the estimated number of trees per acre.

4.0 Results

Spotted Owl Viewer

The Spotted Owl Viewer revealed three NSO Activity Centers within 1.3 miles of the Study Area with the nearest located approximately 0.35 mile southeast of the Study Area (NAP0020)(Figure 2).

Habitat Assessment Plot Data

The basal area for the four plots ranged from 82.62 to 98.77 ft²/acre, there were between 4 and 9 trees per plot with a greater than 26 inch DBH, canopy cover within the plots ranged from 50 to 75 percent, mean DBH ranged from 9.73 and 14.16 inches, and number of trees per acre within the plots ranged from 86 to 160. See the table below for a summary of the plot data.

Table 1. NSO Plot Data Summary

Plot Number	Basal Area (ft ² /ac.)	Number of trees per acre	Percent Canopy Cover	Mean DBH (per tree)	Number of trees per acre
1	98.77	4	75	13.39	101
2	94.05	6	60	14.16	86
3	82.62	9	50	9.73	160
4	90.49	9	60	12.57	105

Data collected revealed that the forests within 0.25 mile of the Study Area represent low quality foraging habitat for NSO. The plots did not contain high enough basal area to represent suitable nesting habitat for NSO.

5.0 Recommendations

The forests within 0.25 mile of the Study Area do not represent suitable nesting habitat for NSO. As such, we do not recommend additional NSO surveys and work can commence prior to August 31 per LSAA AMM 2.10.

It should be noted that the nearest suitable nesting habitat for NSO was observed by the biologist within redwood stands along Pickle Creek 0.75 mile north of the Study Area and along Redwood Creek 0.5 mile south of the Study Area. There is a low potential that work within the Study Area will impact nesting NSO.

6.0 REFERENCES

- California Department of Fish and Wildlife (CDFW). 2016. *Status Review of the Northern Spotted Owl in California*. 27 January 2016.
- California Department of Forestry and Fire Protection (CalFire). 2008. *Important Information for Timber Operations Proposed within the Range of the Northern Spotted Owl*. February 2008.
- California Department of Fish and Wildlife (CDFW). 2023. Spotted Owl Viewer - California Natural Diversity Database (CNDDDB), Rarefind 5 Commercial Version. Accessed July 2023.
- U.S. Fish and Wildlife Service (USFWS). 2008. *Northern Spotted Owl Take Avoidance Analysis and Guidance for Private lands in California. Attachment B: Take Avoidance Analysis – Interior*. February 2008.
- U.S. Fish and Wildlife Service (USFWS). 2019. *Northern Spotted Owl Take Avoidance Analysis and Guidance for Private lands in California. Attachment B: Take Avoidance Analysis – Interior*. Updated November 2019.
- U.S. Geological Survey. 2018. Sonoma, California 7.5-Minute Series USGS Topographic Quadrangle.
- Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer, and M. White, eds. 1988 – 1990. *California's Wildlife*. Vol. I – III. California Department of Fish & Game, Sacramento, CA.

Figures

Figure 1. Site Vicinity

Figure 2. Northern Spotted Owl Territories within 1.3-Miles of Grading Limits

Figure 3. Northern Spotted Owl Habitat Assessment Results

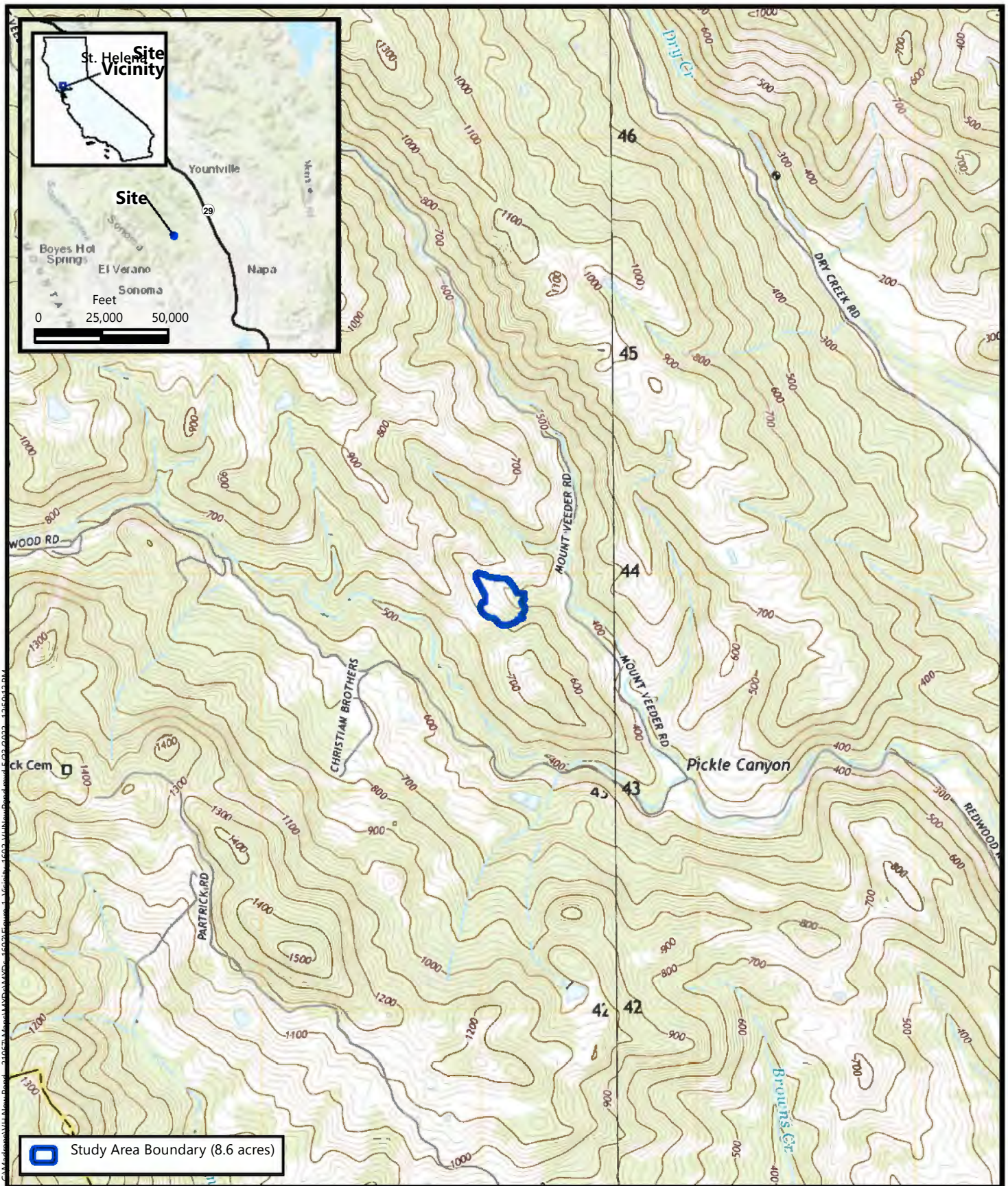


Figure 1
Site Vicinity

Source: United States Geologic Survey, 2018.
 "Sonoma, California" 7.5-Minute Topographic Quadrangle
 Napa Civil Land Grant; Township 6 North, Range 5 West, MDB&M
 Longitude -122.380963, Latitude 38.341412

VH New Pond
 Napa County, California



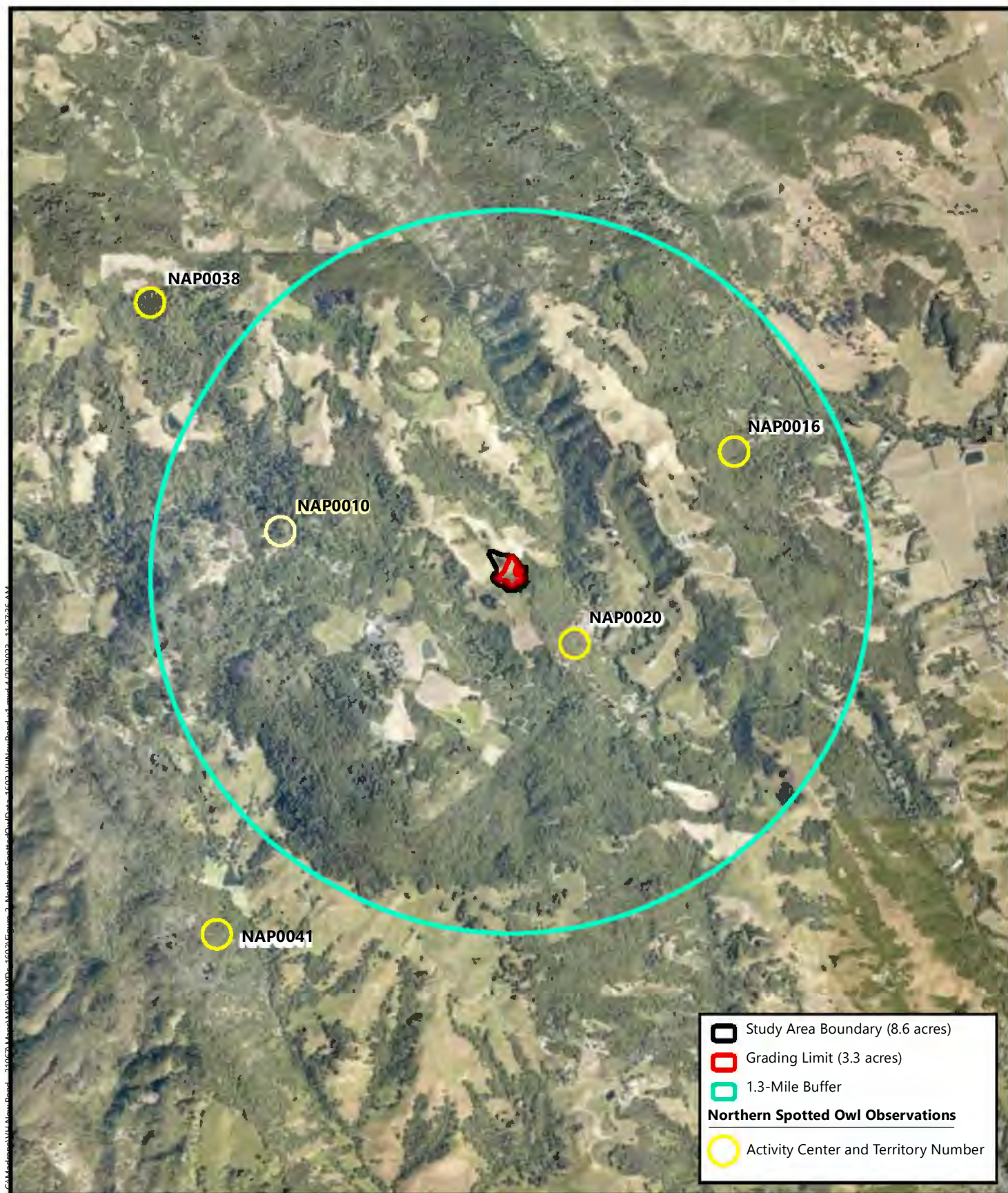
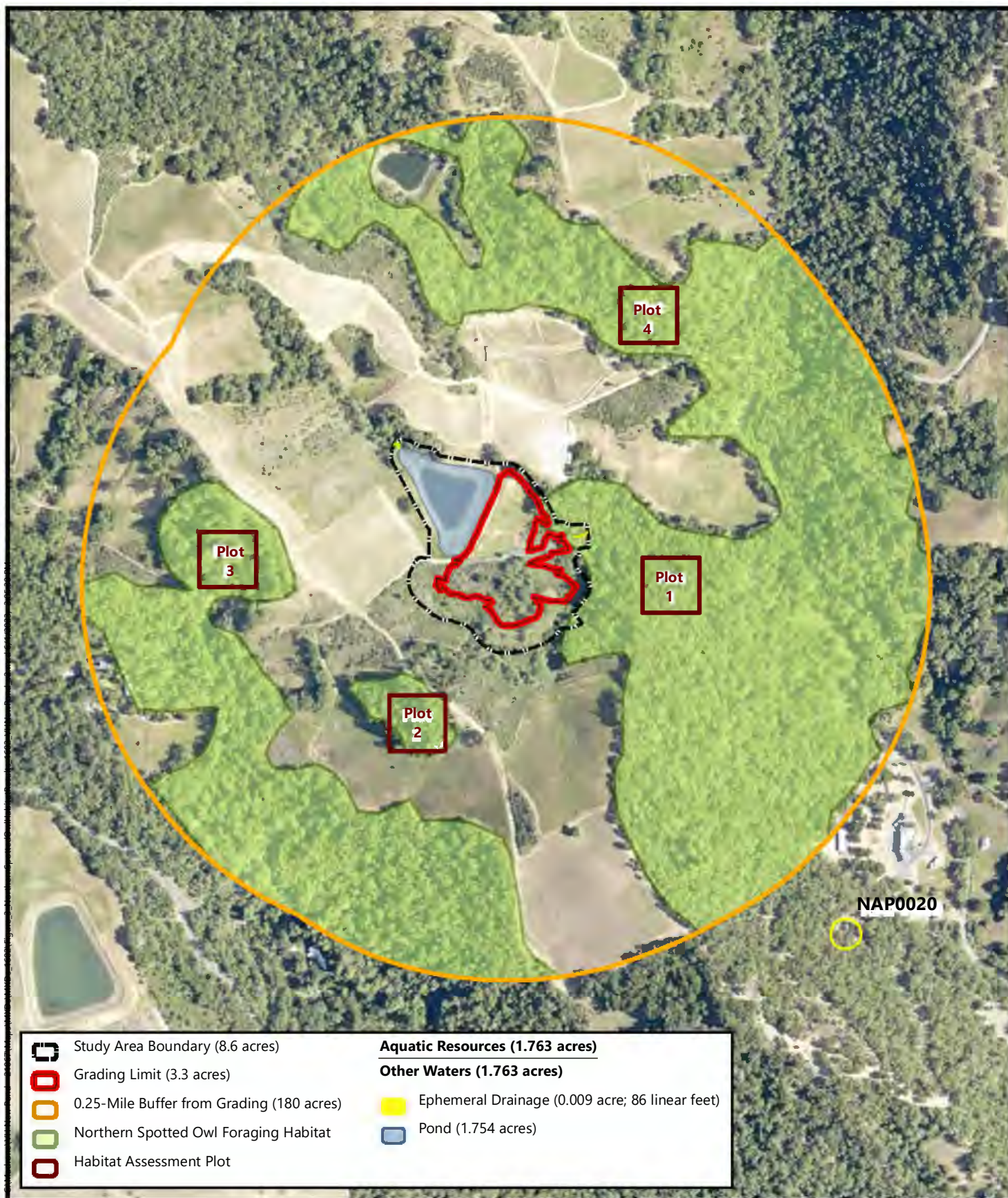


Figure 2
Northern Spotted Owl Territories
Within 1.3-Miles of Grading Limits

VH New Pond
 Napa County, California



Northern Spotted Owl Data Source: *California Department of Fish and Wildlife*, March 2023.
 Aerial Source: Maxar, 30 April 2021.



Aerial Source: Maxar, 30 April 2021.

VH New Pond
 Napa County, California



Attachments

Attachment A: Site Photographs

Attachment A

Site Photographs



Photograph 1. NSO Plot 1 facing south



Photograph 2. Facing northwest at NSO Plot 2



Photograph 3. Facing north at NSO Plot 3



Photograph 4. Facing north at NSO Plot 4



Photograph 5. Facing south at the face of the dam and hillside where construction will take place.



Photograph 6. Facing west upslope at the existing spillway and dam where construction will take place.



Photograph 7. Facing south across the water-side of the dam on 2 July 2024.



Photograph 8. Facing south at the proposed work area on 2 July 2024.