BIOLOGICAL RESOURCES ASSESSMENT FOR THE CANNABIS CULTIVATION OPERATION AT 9141 STATE HWY 175, KELSEYVILLE, CALIFORNIA

Prepared: September 21, 2020
Revised: March 3, 2022

Prepared by:

G.O. Graening, PhD and Tim Nosal, MS
Natural Investigations Company, Inc.
3104 O Street, #221, Sacramento, CA 95816

NATURAL INVESTIGATIONS CO.
WWW.NATURALINVESTIGATIONS.COM

TABLE OF CONTENTS

1. INTRODUCTION

1.1. PROJECT LOCATION AND DESCRIPTION

Pacific Cann, Inc. (Pacific Cann) is seeking a Major Use Permit from the County of Lake, for a proposed commercial cannabis cultivation operation at 9141 State Highway 175 near Kelseyville, California on Lake County APN 011-060-01 (Project Parcel). The proposed commercial cannabis cultivation operation will be developed in two phases, over three years. The total cultivation area (as defined in Chapter 21, Article 27 of the Lake County Code) of the proposed cannabis cultivation operation during the first phase of site/project development, will be 102,184 ft^2, composed of a 31,920 ft^2 outdoor cultivation area (with 22,800 ft^2 of cannabis canopy), two 13,200 ft^2 outdoor cultivation areas (each with 9,600 ft^2 of cannabis canopy), sixteen 2,304 ft^2 mixed-light cultivation areas/greenhouses (each with up to 1,880 ft^2 of cannabis canopy), a 5,000 ft^2 Processing Building/Facility, and a 2,000 ft^2 barn that will be used as a Security Center and Pesticides & Agricultural Chemicals Storage Area. The total cultivation area of the proposed cannabis cultivation operation during the second and final phase of site/project development, will be 121,240 ft^2, composed of a 31,920 ft^2 outdoor cultivation area (with 22,800 ft^2 of cannabis canopy), a 13,200 ft^2 outdoor cultivation area (with 9,600 ft^2 of cannabis canopy), thirty 2,304 ft^2 mixed-light cultivation areas/greenhouses (each with up to 1,880 ft^2 of cannabis canopy), a 5,000 ft^2 Processing Building/Facility, and a 2,000 ft^2 barn that will be used as a Security Center and Pesticides & Agricultural Chemicals Storage Area. The first phase of site/project development is proposed for 2022, after a Major Use Permit and Provisional State Cultivation Licenses have been obtained, as well as applicable Building Permits. The second phase of site/project development is proposed for 2024, after Annual State Cultivation Licenses and Building Permits have been obtained.

Pacific Cann is owned and operated by Mr. Randall Bock, Mr. Tyler Betts, Mrs. Robin Betts, and Mr. Kirk Betts. The Project Property is owned by Mrs. Robin Betts, who has given Pacific Cann, permission to establish the proposed cultivation operation and conduct the proposed cannabis cultivation activities, once the appropriate permits and licenses have been obtained. The Project Property has been enrolled for coverage under the State Water Resources Control Board's Cannabis General Order since October 2nd, 2020.

The 145-acre four-parcel Rural Lands-zoned Project Property (Lake County APNs 011-018-05 & 06 and 011-060-01 & 03) is located along Highway 175, within the Cole Creek Watershed (HUC 12), in southern Lake County, CA. The Project Parcel is accessed via a private gravel access road that connects Wildcat Road and Highway 175 through the Project Parcel. Current and past land uses of the Project Property are/were extensive agriculture and rural residences. The Project Parcel has been improved with a groundwater well, a barn, and two residences. The proposed cultivation operation will be established in three areas of the Project Parcel that currently support annual grassland and mixed oak woodland habitats.

Cole Creek, a Perennial Class I watercourse, flows through the Project Property from east to west, paralleling Highway 175. A metal framed bridge on concrete abutments spans Cole Creek and provides access to the southern half of the Project Property from Highway 175 via the private access road. There are two springs on the Project Parcel and a small pond that discharges to Cole Creek via an ephemeral Class III watercourse. One of the springs has been developed (spring box) to supply domestic water to the two residences of the Project Property. No cannabis cultivation activities nor agricultural chemicals storage will occur within 150 feet of any surface waterbody. Water for the proposed cultivation operation will come from an existing onsite groundwater well located at Latitude 38.89974° and Longitude -122.74777°. Pacific Cann proposes to drill another groundwater well on the Project Property in the future, to provide and additional/back-up water supply source for the proposed cultivation operation.

6-foot tall wire fences will be erected around the proposed cultivation areas, with privacy mesh where necessary to screen the cultivation operation from public view. The growing medium of the proposed

cultivation operation will be an imported organic soil mixture in garden beds and nursery pots, with drip and micro-spray irrigation systems. Pacific Cann's proposed mixed-light cultivation areas will be established within gutter-connected greenhouse structures composed of steel frames with polycarbonate glaze on concrete foundations, equipped with light deprivation curtains and light traps, horticultural lights, and dehumidifiers. Pacific Cann will obtain Building Permits for these structures prior to constructing them.

Development of the proposed cultivation operation will result in the disturbance of approximately two acres of oak woodland habitat and the removal of 40 mature (+6" DBH) oak trees. To comply with the California Oak Woodlands Conservation Act, a 6-acre No Development Zone will be established in the southeastern portion of the Project Parcel around and directly adjacent to the onsite pond, to mitigate for the two acres of the Blue Oak Woodland habitat disturbed as a result of developing the proposed cultivation operation. Additionally, three oaks seedlings will be planted, protected and irrigated for seven years in the portion of the Project Parcel between Cole Creek and Highway 175, for each oak tree removed (total of 120 oak seedlings) to mitigate for their loss within the area of the proposed cultivation operation.

Self-Distribution
Pacific Cann is seeking to obtain a Type 13 Cannabis Distributor Transport Only, Self-Distribution license, so that they may transport cannabis from the proposed cultivation operation to licensed cannabis distribution and manufacturing facilities throughout the State of California. Pacific Cann will utilize an unmarked, registered, and insured distribution vehicle to transport cannabis from their cultivation operation. The distribution vehicle will only travel from the Project Property to the premises of licensed cannabis manufacturing and distribution facilities, and back to the Project Property. The distribution vehicle will be locked and secured whenever it is not being loaded or unloaded, and it will never be left unattended while transporting cannabis. Pacific Cann will adhere to the reporting requirements of the California Cannabis Track-and-Trace system at all times, to record and report all cannabis transfers and movements.

For this assessment, the Project Area was defined as the 4 cultivation area plus the processing building, barn, parking lot, and re-aligned road segments , and this 6-acre area was the subject of the impact analysis (see Exhibits). The entire 148-acre property was defined as the Study Area. The Study Area is defined to identify biological resources adjacent to the Project Area, and is the area subject to potential indirect effects from Project implementation.

1.2. PURPOSE AND SCOPE OF ASSESSMENT

This Biological Resources Assessment was prepared to assist in compliance with the California Environmental Quality Act and the state and federal Endangered Species Acts. This assessment also functions to fulfill requirements for obtaining enrollment (a Notice of Applicability) in the State Water Resources Control Board's Order WQ 2019-0007-DWQ General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order).

This assessment provides information about the biological resources within the Study Area, the regulatory environment affecting such resources, any potential Project-related impacts upon these resources, and finally, to identify mitigation measures and other recommendations to reduce the significance of these impacts. The specific scope of services performed for this assessment consisted of the following tasks:

- Compile all readily-available historical biological resource information about the Study Area;
- Spatially query state and federal databases for any occurrences of special-status species or habitats within the Study Area and vicinity;

- Perform a reconnaissance-level field survey of the Study Area, including photographic documentation;
- Inventory all flora and fauna observed during the field survey;
- Characterize and map the habitat types present within the Study Area, including any potentially-jurisdictional water resources;
- Evaluate the likelihood for the occurrence of any special-status species;
- Assess the potential for the Project to adversely impact any sensitive biological resources;
- Recommend mitigation measures designed to avoid or minimize Project-related impacts; and
- Prepare and submit a report summarizing all of the above tasks.

The scope of services does not include other services that are not described in this Section, such as formal aquatic resource delineations or protocol-level surveys for special-status species.

1.3. REGULATORY SETTING

The following section summarizes some applicable regulations of biological resources on real property in California.

1.3.1. Special-status Species Regulations

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service implement the Federal Endangered Species Act of 1973 (FESA) (16 USC §1531 et seq.). Threatened and endangered species on the federal list (50 CFR §17.11, 17.12) are protected from "take" (direct or indirect harm), unless a FESA Section 10 Permit is granted or a FESA Section 7 Biological Opinion with incidental take provisions is rendered. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation. Species that are candidates for listing are not protected under FESA; however, USFWS advises that a candidate species could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

The California Endangered Species Act of 1970 (CESA) (California Fish and Game Code §2050 *et seq*., and CCR Title 14, §670.2, 670.51) prohibits "take" (defined as hunt, pursue, catch, capture, or kill) of species listed under CESA. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Section 2081 establishes an incidental take permit program for state-listed species. Under CESA, California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFG Code 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to requirements of CESA, an agency reviewing proposed projects within its jurisdiction must determine whether any state-listed species may be present in the Study Area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation.

California Fish and Game Code Sections 4700, 5050, and 5515 designates certain mammal, amphibian, and reptile species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The California Native Plant Protection Act of 1977 (CFG Code §1900 *et seq*.) requires CDFW to establish criteria for determining if a species or variety of native plant is

endangered or rare. Section 19131 of the code requires that landowners notify CDFW at least 10 days prior to initiating activities that will destroy a listed plant to allow the salvage of plant material.

Many bird species, especially those that are breeding, migratory, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs. Fish and Game Code §3511 designates certain bird species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC §668) specifically protects bald and golden eagles from harm or trade in parts of these species.

California Environmental Quality Act (CEQA) (Public Resources Code §15380) defines "rare" in a broader sense than the definitions of threatened, endangered, or fully protected. Under the CEQA definition, CDFW can request additional consideration of species not otherwise protected. CEQA requires that the impacts of a project upon environmental resources must be analyzed and assessed using criteria determined by the lead agency. Sensitive species that would qualify for listing but are not currently listed may be afforded protection under CEQA. The CEQA Guidelines (§15065) require that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines (§15380) provide for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Plant species on the California Native Plant Society (CNPS) Lists 1A, 1B, or 2 are typically considered rare under CEQA. California "Species of Special Concern" is a category conferred by CDFW on those species that are indicators of regional habitat changes or are considered potential future protected species. While they do not have statutory protection, Species of Special Concern are typically considered rare under CEQA and thereby warrant specific protection measures.

1.3.2. Water Resource Protection

Real property that contains water resources are subject to various federal and state regulations and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies, as described next.

The Federal Water Pollution Control Act Amendments of 1972 (as amended), commonly known as the Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into "waters of the United States". Waters of the US includes essentially all surface waters, all interstate waters and their tributaries, all impoundments of these waters, and all wetlands adjacent to these waters. CWA Section 404 requires approval prior to dredging or discharging fill material into any waters of the US, especially wetlands. The permitting program is designed to minimize impacts to waters of the US, and when impacts cannot be avoided, requires compensatory mitigation. The US Army Corps of Engineers (USACE) is responsible for administering Section 404 regulations. Substantial impacts to jurisdictional wetlands may require an Individual Permit. Small-scale projects may require only a Nationwide Permit, which typically has an expedited process compared to the Individual Permit process. Mitigation of wetland impacts is required as a condition of the CWA Section 404 Permit and may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. The California State Water Resources Control Board is responsible for administering CWA Section 401 regulations.

Section 10 of the Rivers and Harbors Act of 1899 requires approval from USACE prior to the commencement of any work in or over navigable Waters of the US, or which affects the course, location, condition or capacity of such waters. Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use, as a means to transport interstate or foreign commerce up to the head of navigation. Rivers and Harbors Act Section 10 permits are required for construction activities in these waters.

California Fish and Game Code (§1601 - 1607) protects fishery resources by regulating "*any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake*." CDFW requires notification prior to commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of ''waters of the State". The limit of CDFW jurisdiction is subject to the judgment of the Department; currently, this jurisdiction is interpreted to be the "stream zone", defined as "*that portion of the stream channel that restricts lateral movement of water*" and delineated at "*the top of the bank or the outer edge of any riparian vegetation, whichever is more landward*". CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. Projects that require a Streambed Alteration Agreement may also require a CWA 404 Section Permit and/or CWA Section 401 Water Quality Certification.

For construction projects that disturb one or more acres of soil, the landowner or developer must obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ).

The State Water Resources Control Board's Order WQ 2019-0007-DWQ General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities protects receiving water bodies from water-quality impacts associated with cannabis cultivation using a combination of Best Management Practices, buffer zones, sediment and erosion controls, site management plans, inspections and reporting, and regulatory oversight.

1.3.3. Tree Protection

At the State level, in areas inside timberland, any tree removal is subject to the conditions and requirements set forth in the Z'berg-Nejedly Forest Practice Act and the California Forest Practice Rules. If development of a project will result in the removal of commercial tree species, one of the following permits is needed: Less than 3 Acre Conversion Exemption; Christmas Tree; Dead, Dying or Diseased, Fuelwood, or Split Products Exemption; a Public Agency, Public and Private Utility Right of Way Exemption; a Notice of Exemption from Timberland Conversion Permit for Subdivision; or an Application for Timberland Conversion Permit.

Lake County does not have a specific ordinance protecting native trees. However, under the Cannabis Ordinance 3084, Section 4, Subsection iii) Prohibited Activities (a) Tree Removal, Lake County restricts tree removal as follows:

> *"The removal of any commercial tree species as defined by the California Code of Regulations section 895.1, Commercial Species for the Coast Forest District and Northern Forest District, and the removal of any true oak species (Quercus species) or Tan Oak (Notholithocarpus species) for the purpose of developing a cannabis cultivation site should be avoided and minimized. This shall not include the pruning of any such tree species for the health of the tree or the removal of such trees if necessary for safety or disease concerns."*

During the permitting process, Lake County requires mitigation for the removal of protected trees; typical mitigation is tree replacement at a ratio of 2:1 or 3:1.

2. ENVIRONMENTAL SETTING

The Study Area is located within the Inner North Coast Range geographic subregion, which is contained within the Northwestern California geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). This region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately-cold winters. The Study Area and vicinity is in Climate Zone 14 "Northern California's Inland Areas with Some Ocean Influence", with maritime air moderating temperatures that would otherwise be hotter in summer and colder in the winter (Sunset, 2020).

The topography of the Study Area is rugged, and consists of a flat valley with steep sloping hills. The elevation ranges from approximately 2,400 feet to 2,800 feet above mean sea level. Drainage runs to the middle of the property to Cole Creek.

3. METHODOLOGY

3.1. PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey, the following information sources were reviewed:

- Any readily-available previous biological resource studies pertaining to the Study Area or vicinity
- Aerial photography of the Study Area (current and historical)
- United States Geologic Service 7.5 degree-minute topographic quadrangles of the Study Area and vicinity
- USFWS National Wetland Inventory
- USDA Natural Resources Conservation Service soil survey maps
- California Natural Diversity Database (CNDDB), electronically updated monthly by subscription
- USFWS species list (IPaC Trust Resources Report).

3.2. FIELD SURVEY

Consulting biologist Tim Nosal, MS. conducted a reconnaissance-level field survey on September 10, 2020. Weather conditions were warm (80-90 F), few clouds, light smoke and light wind. A variable-intensity pedestrian survey was performed, and modified to account for differences in terrain, vegetation density, and visibility. All visible fauna and flora observed were recorded in a field notebook, and identified to the lowest possible taxon. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDB within the vicinity of the Study Area and those species on the USFWS species list (Appendix 1).

When a specimen could not be identified in the field, a photograph or voucher specimen (depending upon permit requirements) was taken and identified in the laboratory using a dissecting scope where necessary. Dr. Graening holds the following scientific collection permits: CDFW Scientific Collecting Permit No. SC-006802; and CDFW Plant Voucher Specimen Permit 09004. Tim Nosal holds CDFW Plant Voucher Specimen Permit 2081(a)-16-102-V. Taxonomic determinations were facilitated by referencing museum specimens or by various texts, including the following: Powell and Hogue (1979); Pavlik (1991); (1993); Brenzel (2012); Stuart and Sawyer (2001); Lanner (2002); Sibley (2003); Baldwin et al. (2012); Calflora (2020); CDFW (2020b,c); NatureServe 2020; and University of California at Berkeley (2020a,b).

The locations of any special-status species sighted were marked on aerial photographs and/or georeferenced with a geographic positioning system (GPS) receiver. Habitat types occurring in the Study Area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded. The Study Area was also informally assessed for the presence of potentially-jurisdictional water features, including riparian zones, isolated wetlands and vernal pools, and other biologically-sensitive aquatic habitats

3.3. MAPPING AND OTHER ANALYSES

Locations of species' occurrences and habitat boundaries within the Study Area were digitized to produce the final habitat maps. The boundaries of potentially jurisdictional water resources within the Study Area were identified and measured in the field, and similarly digitized to calculate acreage and to produce informal delineation maps. Geographic analyses were performed using geographical information system software (ArcGIS 10, ESRI, Inc.). Vegetation communities (assemblages of plant species growing in an area of similar biological and environmental factors), were classified by Vegetation Series (distinctive associations of plants, described by dominant species and particular environmental setting) using the CNPS Vegetation Classification system (Sawyer and Keeler-Wolf, 1995). Informal wetland delineation methods consisted of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Wildlife habitats were classified according to the CDFW's California Wildlife Habitat Relationships System (CDFW, 2020c). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2020), Calflora (2020); CDFW (2020a,b,c); and University of California at Berkeley (2020a,b).

4. RESULTS

4.1. INVENTORY OF FLORA AND FAUNA FROM FIELD SURVEY

All plants detected during the field survey of the Study Area are listed in Appendix 2. The following animals were detected within the Study Area during the field survey:

American bullfrog (*Lithobates catesbeianus*); Northern Pacific treefrog (*Pseudacris regilla*); American black bear (*Ursus americana*); Botta's pocket gopher (*Thomomys bottae*); Columbian black-tailed deer (*Odocoileus hemionus columbianus*); dog (*Canis lupis familiaris*); dusky-footed wood rat (*Neotoma fuscipes*); horse (*Equus caballus*); Sonoma chipmunk (*Neotamias sonomae*); western gray squirrel (*Sciurus griseus*); acorn woodpecker (*Melanerpes formicivorus*); band-tailed pigeon (*Patagioenas fasciata*); black phoebe (*Sayornis nigricans*); dark-eyed junco (*Junco hyemalis*); northern flicker (*Colaptes auratus*); Nuttall's woodpecker (*Picoides nuttallii*); oak titmouse (*Baeolophus inornatus*); pileated woodpecker (*Dryocopus pileatus*); red-shouldered hawk (*Buteo lineatus*); sparrow (Emberizidae); spotted towhee (*Pipilo maculatus*); Stellar's jay (*Cyanocitta stelleri*); white-breasted nuthatch (*Sitta carolinensis*); and other common songbirds.

4.2. VEGETATION COMMUNITIES AND WILDLIFE HABITAT TYPES

4.2.1. Terrestrial Vegetation Communities

The Study Area contains the following terrestrial vegetation communities: Grassland, Chaparral and Oak Woodland, and Urbanized. These vegetation communities are discussed here and are delineated in the Exhibits.

Annual Grassland: Several areas near the creek and highway are largely devoid of trees and are characterized by grassland habitat. This vegetation is comprised of native and non-native grasses and native and non-native herbs including Medusa-head (*Elymus caput-medusae*), reed grass (*Calamagrostis sp.*), bromes (*Bromus spp.*), western needle grass (*Stipa occidentalis*), canary grass (*Phalaris* spp.), tall fescue (*Festuca arundinacea*), yarrow (Achillea millefolium), common madia (*Madia elegans*), English plantain (*Plantago lanceolata*), vetch (*Vicia* spp.), hairy bird's beak (*Cordylanthus pilosus*), moth mullein (*Verbascum blattaria*) and common mullein (*Verbascum thapsus*). This vegetation can be classified as the Holland Type "Valley and Foothill Grassland".

Chaparral: The south-facing slopes within the northwestern portion of the Study Area are vegetated with a dense cover of shrubs. The vegetation within this area is a mix of several evergreen shrubs, including shrub interior live oak (*Quercus wislizeni var. frutescens*), common manzanita (*Arctostaphylos manzanita ssp. manzanita*), Fremont's silktassel (*Garrya fremontii*), chamise (*Adenostoma fasciculatum*), lemonade berry (*Rhus aromatica*), California bay (*Umbellularia californica*) with an occasional ponderosa pine (Pinus ponderosa) emerging through the shrubs. The canopy of this vegetation is very dense, and few plants were observed growing underneath the shrubs. This type of chaparral can be classified as the Holland Type "Northern North Slope Chaparral" or as "37.420.01 *Quercus wislizeni* var. *frutescens*" (CDFW 2019).

Forest. Tree dominated forest habitat is found throughout the Study Area. The forest is dominated by a variety of conifers and hardwoods. This habitat consists of a moderate-to-dense canopy of ponderosa pine, California black oak (*Quercus kelloggii*), Douglas fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), big leaf maple (*Acer macrophyllum*), valley oak (*Quercus lobata*) and California bay. Where sunlight penetrates the canopy, numerous shrubs are present, including common manzanita. poison oak (*Toxicodendron diversilobum*), common

snowberry (*Symphoricarpos albus*), and birch leaf mountain mahogany (*Cercocarpus betuloides*). The herbaceous layer within the forest consists of fescues (*Festuca* spp.), western needlegrass, bedstraw (*Galium* sp.), coyote mint (*Monardella villosa*) and firecracker flower (*Dichelostemma ida-maia*). This type of forest can be classified as the Holland Type "Upland Coast Range Ponderosa Pine Forest" or as "87.010.00 Ponderosa Pine Forest" (CDFW 2019).

Urbanized. Road building has removed natural habitats and only ruderal/urbanized habitats remain.

4.2.2. Wildlife Habitat Types

Wildlife habitat types were classified using CDFW's Wildlife Habitat Relationship System. The Study Area contains the following wildlife habitat types: Montane Hardwood-Conifer; Montane Riparian; Montane Chaparral; Mixed Chaparral; Valley Foothill Riparian; Blue Oak Woodland; Annual Grassland; Fresh Emergent Wetland; Riverine;; Urban; and Barren.

4.2.3. Critical Habitat and Special-status Habitat

No critical habitat for any federally-listed species occurs within the Project Area or the surrounding Study Area. The CNDDB reported no special-status habitats within the Project Area, but the CNDDB did report the following special-status habitats within the surrounding Study Area: "Clear Lake Drainage Resident Trout Stream," which is mapped along the segment of Cole Creek that flows across the Study Area. The CNDDB reported the following special-status habitats in a 10-mile radius outside of the Study Area: Central Valley Drainage Rainbow Trout/Cyprinid Stream; Clear Lake Drainage Resident Trout Stream; Clear Lake Drainage Cyprinid/Catostomid Stream; Clear Lake Drainage Seasonal Lakefish Spawning Stream; Northern Basalt Flow Vernal Pool; Northern Volcanic Ash Vernal Pool; Coastal and Valley Freshwater Marsh and Great Valley Mixed Riparian Forest. No special-status habitats were detected within the Project Area. However, the surrounding Study Area contains the following special-status habitat: a watercourse (Cole Creek).

4.2.4. Habitat Plans and Wildlife Corridors

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human disturbance, but natural barriers such as rugged terrain and abrupt changes in vegetation cover are also possible. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between these separated populations.

No fishery resources exist in the Project Area. A fishery resource exists in the Study Area: Cole Creek. Although there are no designated wildlife corridors, the open space within the Study Area allows for unrestricted animal movement. The Study Area is not located within any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

4.3. LISTED SPECIES AND OTHER SPECIAL-STATUS SPECIES

For the purposes of this assessment, "special status" is defined to be species that are of management concern to state or federal natural resource agencies, and include those species that are:

- Listed as endangered, threatened, proposed, or candidate for listing under the Federal Endangered Species Act;
- Listed as endangered, threatened, rare, or proposed for listing, under the California Endangered Species Act of 1970;
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as a species of special concern by CDFW;

- Plants considered to be rare, threatened or endangered in California by the California Native Plant Society (CNPS); this consists of species on Lists 1A, 1B, and 2 of the CNPS Ranking System; or
- Plants listed as rare under the California Native Plant Protection Act.

4.3.1. Reported Occurrences of Listed Species and Other Special-status Species

A list of special-status plant and animal species that have occurred within the Study Area and vicinity was compiled based upon the following:

- Any previous and readily-available biological resource studies pertaining to the Study Area;
- Informal consultation with USFWS by generating an electronic Species List (Information for Planning and Conservation website at https://ecos.fws.gov/ipac/); and
- A spatial query of the CNDDB.

The CNDDB was queried and any reported occurrences of special-status species were plotted in relation to the Study Area boundary using GIS software (see exhibits). The CNDDB reported special-status species occurrences within, or near, the Study Area: western pond turtle (*Emys marmorata*); Raiche's manzanita (*Arctostaphylos stanfordiana* ssp*. raichei*) and Konocti manzanita (*Arctostaphylos manzanita* ssp*. elegans*). The precise location of these occurrences is not known. Suitable habitat for these species may be found within the Study Area. Within a 10-mile buffer of the Study Area boundary, the CNDDB reported several special-status species occurrences, summarized in the following table.

A USFWS species list was generated online using the USFWS' IPaC Trust Resource Report System (see Appendix 1). This list is generated using a regional and/or watershed approach and does not necessarily indicate that the Study Area provides suitable habitat. The following listed species should be considered in the impact assessment:

- Northern Spotted Owl (*Strix occidentalis caurina*) Threatened
- Yellow-billed Cuckoo (*Coccyzus americanus*) Threatened
- California Red-legged Frog (*Rana draytonii*) Threatened
- Delta Smelt (*Hypomesus transpacificus*) Threatened
- Conservancy Fairy Shrimp (*Branchinecta conservation*) Endangered
- Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) Threatened
- Burke's Goldfields (*Lasthenia burkei*) Endangered
- Few-flowered Navarretia (*Navarretia leucocephala ssp. pauciflora)* Endangered
- Lake County Stonecrop (*Parvisedum leiocarpum)* Endangered
- Loch Lomond Coyote Thistle (*Eryngium constancei)* Endangered
- Many-flowered Navarretia (*Navarretia leucocephala ssp. plieantha)* Endangered
- Slender Orcutt Grass (*Orcuttia tenuis*) Threatened

Migratory birds should also be considered in the impact assessment.

Special-status Species Reported by CNDDB in the Vicinity of the Study Area

Common Name Scientific Name	Status*	General Habitat**	Microhabitat**
Red-bellied newt *Taricha rivularis*	CSSC	Found in coastal woodlands and redwood forests along the coast of Northern California	A stream or river dweller. Larvae retreat into vegetation and under stones during the day.
California giant salamander *Dicamptodon ensatus*	SSC	Mendocino and Lake Counties south to Santa Cruz and Santa Clara Counties.	Wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages.
Foothill yellow-legged frog *Rana boylii*	CCT/CSSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.
Osprey *Pandion haliaetus*	CWL	Ocean shore, bays, fresh-water lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.
Golden eagle *Aquila chrysaetos*	CFP/CWL	Rolling foothills, mountain areas, sage-juniper flats, & desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT/CE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.
Purple martin *Progne subis*	CSSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, & Monterey pine.	Nests in old woodpecker cavities mostly, also in human-made structures. Nest often located in tall, isolated tree/snag.
Bell's sage sparrow *Artemisiospiza belli belli*	CWL	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yds apart.
Tricolored blackbird *Agelaius tricolor*	CT/CSSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.
Steelhead - central California coast DPS *Oncorhynchus mykiss irideus pop. 8*	FT	From Russian River, south to Soquel Cr & to, but not including, Pajaro River. Also San Francisco & San Pablo Bay basins.	
Clear Lake hitch *Lavinia exilicauda chi*	CT	Found only in Clear Lake, Lake Co, and associated ponds. Spawns in streams flowing into Clear Lake.	Adults found in the limnetic zone. Juveniles found in the nearshore shallow-water habitat hiding in the vegetation.
Sacramento perch *Archoplites interruptus*	CSSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley.	Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of physio-chemical water conditions.
Long-eared myotis *Myotis evotis*	CSSC	Found in all brush, woodland & forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands & forests.	Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts.
Fringed myotis *Myotis thysanodes*	CSSC	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer.	Uses caves, mines, buildings or crevices for maternity colonies and roosts.
Hoary bat *Lasiurus cinereus*	CSSC	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding.	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.
Western red bat *Lasiurus blossevillii*	CSSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests.	Prefers habitat edges & mosaics with trees that are protected from above & open below with open areas for foraging.
Townsend's big-eared bat *Corynorhinus townsendii*	CSSC	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
Pallid bat *Antrozous pallidus*	CSSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
North American porcupine *Erethizon dorsatum*	CSSC	Coast ranges, Klamath Mountains, southern Cascades, Modoc Plateau, Sierra Nevada and Transverse Ranges.	Montane conifer and wet meadow habitats.

Western pond turtle *Emys marmorata*	CSSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, be	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying
An isopod *Calasellus californicus*	CSSC	Known from Lake, Napa, Marin, Santa Cruz and Santa Clara Counties.	
Brownish dubiraphian riffle beetle *Dubiraphia brunnescens*	CSSC	Aquatic; known only from the NE shore of Clear Lake, Lake County.	Inhabits exposed, wave-washed willow roots.
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	CSSC	Aquatic.	
Western bumble bee *Bombus occidentalis*	CSSC	Once common & widespread, species has declined precipitously from central Ca to southern B.C., perhaps from disease.	
Obscure bumble bee *Bombus caliginosus*	CSSC	Open grassy coastal prairies and Coast Range meadows. Nesting occurs underground as well as above ground in abandoned bird nests.	Food plants include *Ceanothus, Cirsium, Clarkia, Keckiella, Lathyrus, Lotus, Lupinus, Rhododendron, Rubus, Trifolium,* and *Vaccinium.*
Borax Lake cuckoo wasp *Hedychridium milleri*	CSSC	Endemic to Central California. Only collection is from the type locality.	External parasite of wasp and bee larva.
Clear Lake pyrg *Pyrgulopsis ventricosa*	CSSC	Restricted to Seigler Creek drainage in the south end of the Clear Lake Basin.	Freshwater.
Toren's grimmia *Grimmia torenii*	1B.3	Cismontane woodland, lower montane coniferous forest, chaparral.	Openings, rocky, boulder and rock walls, carbonate, volcanic. 325-1160 m.
Elongate copper moss *Mielichhoferia elongata*	4.3	Cismontane woodland. Commonly called "copper mosses".	Moss growing on very acidic, metamorphic rock or substrate; usually in higher portions in fens. Often on substrates natu
Loch Lomond button-celery *Eryngium constancei*	FE/CE/1B.1	Vernal pools.	Volcanic ash flow vernal pools. 460-855 m.
Greene's narrow-leaved daisy *Erigeron greenei*	1B.2	Chaparral.	Serpentine and volcanic substrates, generally in shrubby vegetation. 80-1005 m.
Burke's goldfields *Lasthenia burkei*	FE/CE/1B.1	Vernal pools, meadows and seeps.	Most often in vernal pools and swales. 15-600 m.
Colusa layia *Layia septentrionalis*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Scattered colonies in fields and grassy slopes in sandy or serpentine soil. 145-1095m.
Hall's harmonia *Harmonia hallii*	1B.2	Chaparral.	Serpentine hills and ridges. Open, rocky areas within chaparral. 500-900 m.
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Cismontane woodland, valley and foothill grassland.	50-500m.
Serpentine cryptantha *Cryptantha dissita*	1B.2	Chaparral.	Serpentine outcrops. 330-730m.
Freed's jewelflower *Streptanthus brachiatus ssp. hoffmanii*	1B.2	Chaparral, cismontane woodland.	Serpentine rock outcrops, primarily in geothermal development areas. 490-1220 m.
Socrates Mine jewelflower *Streptanthus brachiatus ssp. brachiatus*	1B.2	Chaparral, closed-cone coniferous forest.	Serpentine areas and serpentine chaparral. 545-1000 m.
Hoffman's bristly jewelflower *Streptanthus glandulosus ssp. hoffmanii*	1B.3	Chaparral, cismontane woodland, valley and foothill grassland.	Moist, steep rocky banks, in serpentine and non-serpentine soil. 120-475m.
Green jewelflower *Streptanthus hesperidis*	1B.2	Chaparral, cismontane woodland.	Openings in chaparral or woodland; serpentine, rocky sites. 130-760m.
Watershield *Brasenia schreberi*	2B.3	Freshwater marshes and swamps.	Aquatic from water bodies both natural and artificial in california.
Cascade downingia *Downingia willamettensis*	2B.2	Cismontane woodland, valley and foothill grasslands.	Lake margins and vernal pools.
Legenere *Legenere limosa*	1B.1	Vernal pools.	In beds of vernal pools. 1-880 m.
Three-fingered morning-glory *Calystegia collina ssp. tridactylosa*	1B.2	Chaparral, cismontane woodland.	Rocky, gravelly openings in serpentine. 0-600 m.

Oval-leaved viburnum *Viburnum ellipticum*	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	215-1400 m.
Lake County stonecrop *Sedella leiocarpa*	FE/CE/1B.1	Valley and foothill grassland, vernal pools, cismontane woodland.	Level areas that are seasonally wet and dry out in late spring; substrate usually of volcanic origin. 365-790 m.
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	1B.1	Chaparral, lower montane coniferous forest.	Rocky, serpentine sites. Slopes and ridges. 450-1000 m.
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	Volcanic soils. 395-1615 m.
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	1B.2	Cismontane woodland, valley and foothill grassland, chaparral.	Commonly on serpentine in grassland or openings in chaparral. 180-1000 m.
Cobb Mountain lupine *Lupinus sericatus*	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, broadleafed upland forest.	In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine. 275-1525 m.
Napa bluecurls *Trichostema ruygtii*	1B.2	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools, lower montane coniferous forest.	Often in open, sunny areas. Also has been found in vernal pools. 30-590m.
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	4.2	Chapparal, cismontane woodland, valley and foothill grassland, vernal pools.	Vernally wet areas, ditches, and ponds. 60-1335 m.
Glandular western flax *Hesperolinon adenophyllum*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils; generally found in serpentine chaparral. 150-1315 m.
Two-carpellate western flax *Hesperolinon bicarpellatum*	1B.2	Serpentine chaparral.	Serpentine barrens at edge of chaparral. 60-1005 m.
Lake County western flax *Hesperolinon didymocarpum*	CE/1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soil in open grassland and near chaparral. 330-365m.
Marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	1B.2	Meadows and seeps, riparian forest.	Wet soil of streambanks, meadows. 1100-2300 m.
Snow Mountain buckwheat *Eriogonum nervulosum*	1B.2	Chaparral.	Dry serpentine outcrops, balds, and barrens. 300-2100 m.
Brandegee's eriastrum *Eriastrum brandegeeae*	1B.1	Chaparral, cismontane woodland.	On barren volcanic soils; often in open areas. 425-840 m.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	1B.1	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	Vernal pools and swales; adobe or alkaline soils. 5-1740 m.
Few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE/CT/1B.1	Vernal pools.	Volcanic ash flow, and volcanic substrate vernal pools. 400-855 m.
Many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE/CE/1B.2	Vernal pools.	Volcanic ash flow vernal pools. 30-950 m.
Rincon Ridge ceanothus *Ceanothus confusus*	1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland.	Known from volcanic or serpentine soils, dry shrubby slopes. 75-1065 m.
Calistoga ceanothus *Ceanothus divergens*	1B.2	Chaparral.	Rocky, serpentine or volcanic sites. 170-950 m.
Bolander's horkelia *Horkelia bolanderi*	1B.2	Lower montane coniferous forest, chaparral, meadows, valley and foothill grassland.	Grassy margins of vernal pools and meadows. 450-1100 m.
Pink creamsacs *Castilleja rubicundula var. rubicundula*	1B.2	Chaparral, meadows and seeps, valley and foothill grassland.	Openings in chaparral or grasslands. On serpentine. 20-900 m.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	CE/1B.2	Marshes and swamps (freshwater), vernal pools.	Clay soils; usually in vernal pools, sometimes on lake margins. 10-2375 m.
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	1B.3	Chaparral.	Crevices in rock outcrops and talus slopes. 700-1370 m.
Dimorphic snapdragon *Antirrhinum subcordatum*	4.3	Chaparral, lower montane coniferous forest.	Generally on serpentine or shale in foothill woodland or chaparral on s- and w-facing slopes. 185-800 m.
Northern meadow sedge	2B.2	Meadows and seeps.	Moist to wet meadows. 0-3200 m.

Carex praticola			
Dwarf soaproot *Chlorogalum pomeridianum var. minus*	1B.2	Chaparral, valley and foothill grassland.	Serpentine. 240-970 m.
Geysers panicum *Panicum acuminatum var. thermale*	CE/1B.2	Closed-cone coniferous forest, riparian forest, valley and foothill grassland.	Usually around moist, warm soil in the vicinity of hot springs. 305-2470 m.
California satintail *Imperata brevifolia*	2B.1	Coastal scrub, chaparral, riparian scrub, Mojavean scrub, meadows and seeps (alkali), riparian scrub.	Mesic sites, alkali seeps, riparian areas. 0-1215 m.
Slender Orcutt grass *Orcuttia tenuis*	FT/CT/1B.1	Vernal pools.	Often in gravelly pools. 35-1760 m.
Eel-grass pondweed *Potamogeton zosteriformis*	2B.2	Marshes and swamps.	Ponds, lakes, streams. 0-1860 m.

*Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CR = California rare species; CFP = California fully protected species; CNPS (California Native Plant Society) List 1A = Plants presumed extinct in California by CNPS; CNPS List 1B = CNPS designated rare or endangered plants in California and elsewhere; and CNPS List 2 = CNPS designated rare or endangered plants in California, but more common elsewhere. Global Ranking: G1 = Critically Imperiled; G2 = Imperiled; G3 = Vulnerable. State Ranking: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.
**Copied verbatim from CNDDB, unless otherwise noted.

4.3.2. Listed Species or Special-status Species Observed During Field Survey

During the field survey, no special-status species were detected within the Project Area or the surrounding Study Area.

4.3.3. Potential for Listed Species or Special-status Species to Occur in the Study Area

The footprint for the proposed project is within grassland and woodland habitat. These habitats contain abundant native species and may provide suitable habitat for special status plant species. The pond and creek may provide suitable habitat for special status animals including the western pond turtle.

Soils found within the Study Area are derived from volcanic rocks - obsidian and andesite. No soils derived from serpentine parent materials is mapped in or adjacent to the Study Area.

4.4. POTENTIALLY-JURISDICTIONAL WATER RESOURCES

The USFWS National Wetland Inventory reported no water features within the Project Area, but the Inventory did report one water feature within the Study Area (see Exhibits): riverine wetlands associated with the Cole Creek channel.

An informal assessment for the presence of potentially-jurisdictional water resources within the Study Area was also conducted during the field survey. For purposes of this biological site assessment, non-wetland waters (i.e., channels) were classified using the California Forest Practice Rules. The California Forest Practice Rules define a Class I watercourse as 1) a watercourse providing habitat for fish always or seasonally, and/or 2) providing a domestic water source; a Class II watercourse is 1) a watercourse capable of supporting non-fish aquatic species, or 2) a watercourse within 1000 feet of a watercourse that seasonally or always has fish present; a Class III watercourse is a watercourse with no aquatic life present and that shows evidence of being capable of transporting sediment to Class I and Class II waters during high water flow conditions.

The field survey determined that the Project Area does not contain any channels or wetlands. Two water features were detected within the larger Study Area during the field survey (see Exhibits): Cole Creek, a perennial channel (Class I watercourse); and a spring-fed pond. A narrow band of riparian vegetation is present in some places in this channel. There is a fringe of wetland vegetation around the pond. There are no vernal pools or other isolated wetlands in the Study Area.

5. IMPACT ANALYSES AND MITIGATION MEASURES

This section establishes the impact criteria, then analyzes potential Project-related impacts upon the known biological resources within the Study Area, and then suggests mitigation measures to reduce these impacts to a less-than-significant level.

5.1. IMPACT SIGNIFICANCE CRITERIA

The significance of impacts to biological resources depends upon the proximity and quality of vegetation communities and wildlife habitats, the presence or absence of special-status species, and the effectiveness of measures implemented to protect these resources from Project-related impacts. As defined by CEQA, the Project would be considered to have a significant adverse impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a special-status species in local or regional plans, policies, or regulations, or by USFWS or CDFW
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by USFWS or CDFW
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any county or municipal policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved governmental habitat conservation plan.

5.2. IMPACT ANALYSIS

The following discussion evaluates the potential for Project-related activities to adversely affect biological resources. The Project boundaries were digitized and then overlaid on the habitat map using GIS to quantify potential impacts. Historical aerial photos were also analyzed for changes in land use.

5.2.1. Potential Direct / Indirect Adverse Effects Upon Special-status Species

- *Will the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

During the field survey, no listed species or special-status species were observed within the Project Area or the surrounding Study Area. The footprint for the proposed project is within grassland and woodland habitat. These habitats contain abundant native species and may provide suitable habitat for special status plant species. The pond and creek may provide suitable habitat for special status animals including the western pond turtle. No direct impacts to listed species or special-status species are expected from implementation of the proposed project. However, special-status species could migrate into Project Areas between the time that the field survey was completed and the start of construction. This is a potentially significant impact before mitigation.

Indirect impacts to special-status species could occur from destruction of unoccupied suitable habitat; impacts to habitats are discussed in the next section, and impacts to oak woodland are addressed in Section 5.2.5.

Special-status bird species were reported in databases (CNDDB and USFWS) in the vicinity of the Project Area. The Project Area, and adjacent trees, contain suitable nesting habitat for various bird species. However, no nests were observed during the field survey. If construction activities are conducted during the nesting season, nesting birds could be directly impacted by tree removal and indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, Project construction is considered a potentially significant adverse impact to nesting birds.

Recommended Mitigation Measures

Because special-status species that occur in the vicinity could migrate onto the Study Area between the time that the field survey was completed and the start of construction, a pre-construction survey for special-status species should be performed by a qualified biologist to ensure that special-status species are not present. If any listed species are detected, construction should be delayed, and the appropriate wildlife agency (CDFW and/or USFWS) should be consulted and project impacts and mitigation reassessed. With the implementation of this mitigation measure, adverse impacts upon special-status species would be reduced to a less-than-significant level.

If construction activities would occur during the nesting season (typically February through August), a pre-construction survey for the presence of special-status bird species or any nesting bird species should be conducted by a qualified biologist within 500 feet of proposed construction areas. If active nests are identified in these areas, CDFW and/or USFWS should be consulted to develop measures to avoid "take" of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site. With the implementation of this mitigation measure, adverse impacts upon special-status bird species and nesting birds would be reduced to a less-than-significant level.

5.2.2. Potential Direct / Indirect Adverse Effects Upon Special-status Habitats or Natural Communities or Corridors

- *Will the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

The Project Area and surrounding Study Area are not within any designated listed species' critical habitat. The Project Area does not contain special-status habitats. The Study Area contains one terrestrial special-status habitat: riparian vegetation along Cole Creek and wetland vegetation in the pond. Implementation of the proposed project will not require the destruction of riparian habitat or other sensitive habitats. The cultivation compounds were designed to have a minimum 150 foot buffer from Cole Creek and 100 foot buffer from the pond. There is no evidence that project implementation will impact any special-status habitats. Impacts to oak woodland are addressed in Section 5.2.5.

Recommended Mitigation Measures

No mitigation is necessary.

5.2.3. Potential Direct / Indirect Adverse Effects on Jurisdictional Water Resources

- *Will the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

There are no water resources within the Project Area. There are several water resources within the surrounding Study Area: one Class I Watercourse (Cole Creek), a pond, and a spring. Potential direct impacts to water resources could occur during construction by modification or destruction of stream banks or riparian vegetation or the filling of wetlands or channels. However, the cultivation areas have been designed to have a minimum 150-foot buffer from Cole Creek and 100-foot buffer from the pond, and are situated on flat ridgetops. Because of these avoidance measures, no direct impacts to water resources are expected.

Potential indirect impacts to water resources could occur during construction by increased erosion and sedimentation in receiving water bodies due to soil disturbance. If the total area of ground disturbance from installation of the cultivation operation is 1 acre or more, the Cultivator must enroll for coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ). Implementation of a stormwater pollution prevention plan, and erosion control plan, along with regular inspections, will ensure that construction activities do not pollute receiving waterbodies.

Potential adverse impacts to water resources could occur during operation of cultivation activities resources by discharge of sediment or other pollutants (fertilizers, pesticides, human waste, etc.) into receiving waterbodies. However, the project proponent must file a Notice of Intent and enroll in Cannabis Cultivation Order WQ 2019-0007-DWQ. Compliance with this Order will ensure that cultivation operations will not significantly impact water resources by using a combination of Best Management Practices (BMPs), buffer zones, sediment and erosion controls, site management plans, inspections and reporting, and regulatory oversight.

Cultivators who enroll in the State Water Board's Waste Discharge Requirements for Cannabis Cultivation Order WQ 2019-0007-DWQ must comply with the Minimum Riparian Setbacks, as summarized in the following table. The Project would be considered to have a significant adverse impact on jurisdictional water resources if it would be non-compliant with these requirements. The minimum riparian setbacks apply to all land disturbance, cannabis cultivation activities, and facilities (e.g., material or vehicle storage, diesel powered pump locations, water storage areas, and chemical toilet placement). The proposed project is compliant with the setback requirements of Cannabis Cultivation Order WQ 2019-0007-DWQ.

Minimum Riparian Setbacks

Common Name	Watercourse Class	Distance
Perennial watercourses, waterbodies (e.g. lakes, ponds), or springs	I	150 ft.
Intermittent watercourses or wetlands	II	100 ft.
Ephemeral watercourses	III	50 ft.
Man-made irrigation canals, water supply reservoirs, or hydroelectric canals that support native aquatic species	IV	Established riparian zone vegetation

Recommended Mitigation Measures

No impacts were identified, and therefore no mitigation measures are proposed.

It is recommended that a formal delineation of jurisdictional waters be performed before construction work, or ground disturbance, is performed within 50 feet of any wetland or drainage.

5.2.4. Potential Impacts to Wildlife Movement, Corridors, etc.

- *Will the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Although no mapped wildlife corridors (such as the California Essential Habitat Connectivity Area layer in CNDDB) exist within or near the Study Area, the open space and the stream corridor in the Study Area facilitate animal movement and migrations. While the Study Area may be used by wildlife for movement or migration, the Project would not have a significant impact on this movement because it would not block movement and the majority of the open space in the Study Area would still be available.

Implementation of the proposed project would necessitate erection of security fences around the cultivation compounds. These fences do not allow animal movement and may act as a local barrier to wildlife movement. However, the fenced cultivation areas are surrounded by open space, allowing wildlife to move around these fenced areas. Thus, implementation of the proposed project is a less than significant impact upon wildlife movement. Implementation of the project will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Recommended Mitigation Measures

No mitigation is necessary.

5.2.5. Potential Conflicts with Ordinances, Habitat Conservation Plans, etc.

- *Will the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
- *Will the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Development of the proposed cultivation operation will result in the disturbance of approximately two acres of oak woodland habitat and the removal of 40 mature oak trees. This is a potentially significant impact before mitigation. The project does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or another approved governmental habitat conservation plan. The Study Area is not within the coverage area of any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Recommended Mitigation Measures

To mitigate for the loss of oak woodland and the removal of 40 oak trees, and to comply with the California Oak Woodlands Conservation Act, the following oak mitigation plan will be implemented:

- Jacobszoon and Associates, Inc. 2021. Oak Mitigation Plan. Prepared for Tyler Bets, 9141 State Highway 175, Kelseyville, California. 8 pp.

According to the mitigation plan, a 6-acre No Development Zone will be established in the southeastern portion of the Project Parcel around and directly adjacent to the onsite pond (see Exhibits), to mitigate for the two acres of the Blue Oak Woodland habitat disturbed as a result of developing the proposed cultivation operation. Additionally, three oaks seedlings will be planted, protected and irrigated for seven

years in the portion of the Project Parcel between Cole Creek and Highway 175, for each oak tree removed (total of 120 oak seedlings) to mitigate for their loss within the area of the proposed cultivation operation. With implementation of this oak mitigation plan, impacts to oak woodlands and oak trees will be mitigated to a less than significant level.

If development of the project will result in the removal of commercial tree species, one of the following permits is needed: Less than 3 Acre Conversion Exemption; Christmas Tree; Dead, Dying or Diseased, Fuelwood, or Split Products Exemption; a Public Agency, Public and Private Utility Right of Way Exemption; a Notice of Exemption from Timberland Conversion Permit for Subdivision; or an Application for Timberland Conversion Permit.

6. REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, and T.J. Rosatti, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition, thoroughly revised and expanded. University of California Press, Berkeley, California. 1,600 pp.

Calflora. 2020. Calflora, the on-line gateway to information about native and introduced wild plants in California. Internet database available at http://calflora.org/.

California Department of Fish and Wildlife. 2019. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Available on the Internet at: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

California Department of Fish and Wildlife. 2020a. RareFind, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

California Department of Fish and Wildlife, 2020b. California's Plants and Animals. Habitat Conservation Planning Branch, California Department of Fish and Wildlife, Sacramento, California. http://www.dfg.ca.gov/hcpb/species/search_species.shtml.

California Department of Fish and Wildlife. 2020c. California's Wildlife. California Wildlife Habitat Relationships System, Biogeographic Data Branch, California Department of Fish and Wildlife. Internet database available at http://www.dfg.ca.gov/whdab/html/cawildlife.html.

California Native Plant Society. 2020. Inventory of Rare and Endangered Plants. Rare Plant Scientific Advisory Committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, California. Internet database available at http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi. 92 pp.

Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency, Nongame Heritage Program, Department of Fish and Wildlife, Sacramento, California. 156 pp.

Lanner, R. M. 2002. Conifers of California. Cachuma Press, Los Olivos, California. 274 pp.

Natural Resources Conservation Service. 2020. Web Soil Survey. National Cooperative Soil Survey, U.S. Department of Agriculture. NRCS Soils Website (Internet database and digital maps) available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

NatureServe. 2020. NatureServe Explorer: An online encyclopedia of life. NatureServe, Arlington, Virginia. Internet database available at http://www.natureserve.org/explorer.

Pavlik, B. M., P. C. Muick, S. G. Johnson, and M. Popper. 1991. Oaks of California. Cachuma Press and the California Oak Foundation. Los Olivos, California. 184 pp.

Sawyer, J. O., and T. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society, Sacramento, California. Available electronically at http://davisherb.ucdavis.edu/cnpsActiveServer/index.html.

Sibley, D. A. 2003. The Sibley Field Guide to Birds of Western North America. Alfred A. Knopf, Inc., New York, New York.

Stuart, J. D., and J. O. Sawyer. 2001. Trees and Shrubs of California. California Natural History Guides. University of California Press, Berkeley, California. 467 pp.

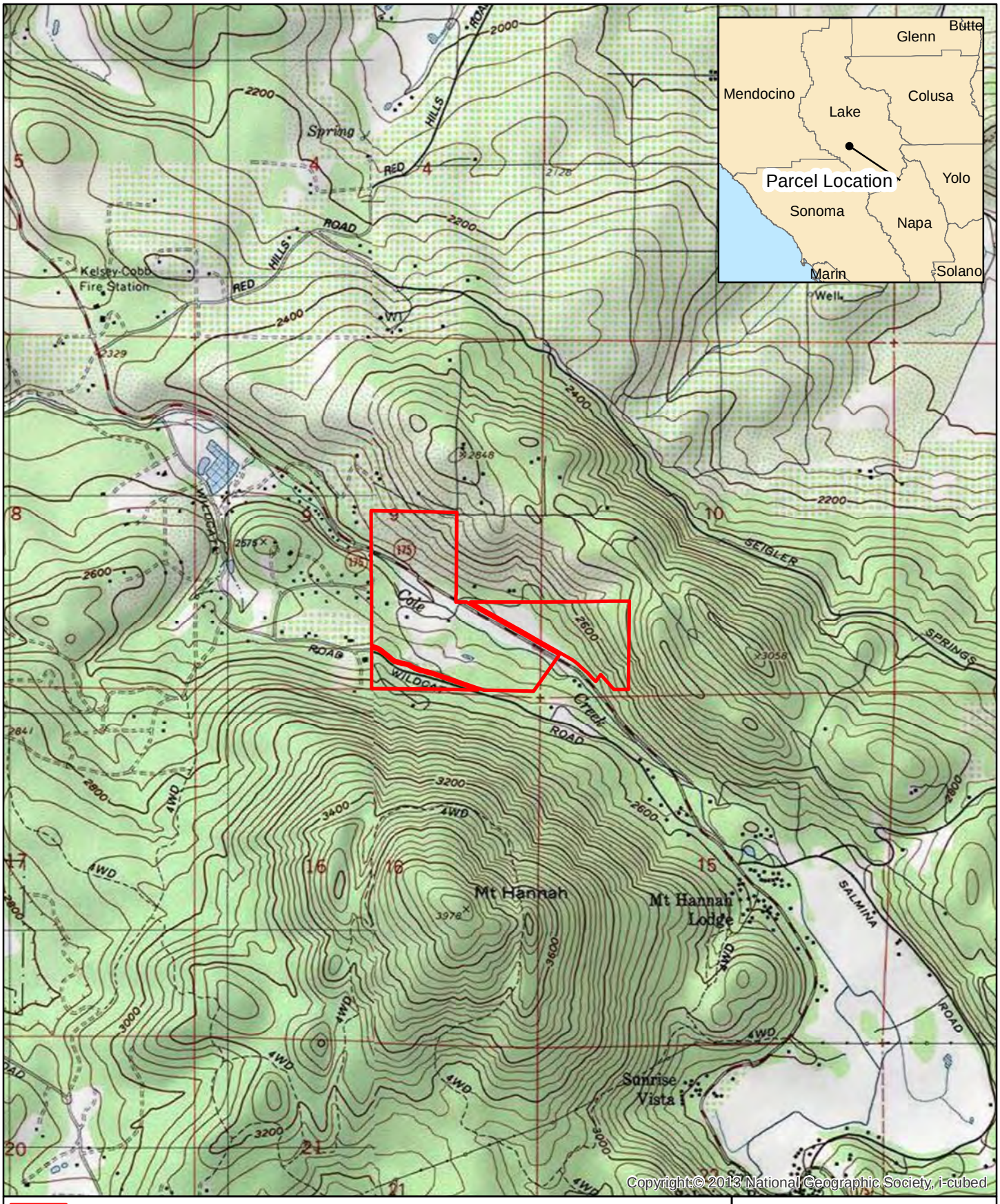
Sunset Western Garden Collection. 2020. Sunset Climate Zones. Sunset Publishing Corporation. Available on the Internet at: https://www.sunsetwesterngardencollection.com/climate-zones.

University of California at Berkeley. 2020a. Jepson Online Interchange for California Floristics. Jepson Flora Project, University Herbarium and Jepson Herbarium, University of California at Berkeley. Internet database available at http://ucjeps.berkeley.edu/interchange.html.

University of California at Berkeley. 2020b. CalPhotos. Biodiversity Sciences Technology Group, University of California at Berkeley. Internet database available at http://calphotos.berkeley.edu/

United States Fish and Wildlife Service. 2020. Wetlands Digital Data. National Wetlands Inventory Center. Digital maps downloaded from the Internet at https://www.fws.gov/wetlands/.

EXHIBITS



Parcel Location

0 0.5 1 Kilometers

0 0.5 1 Miles

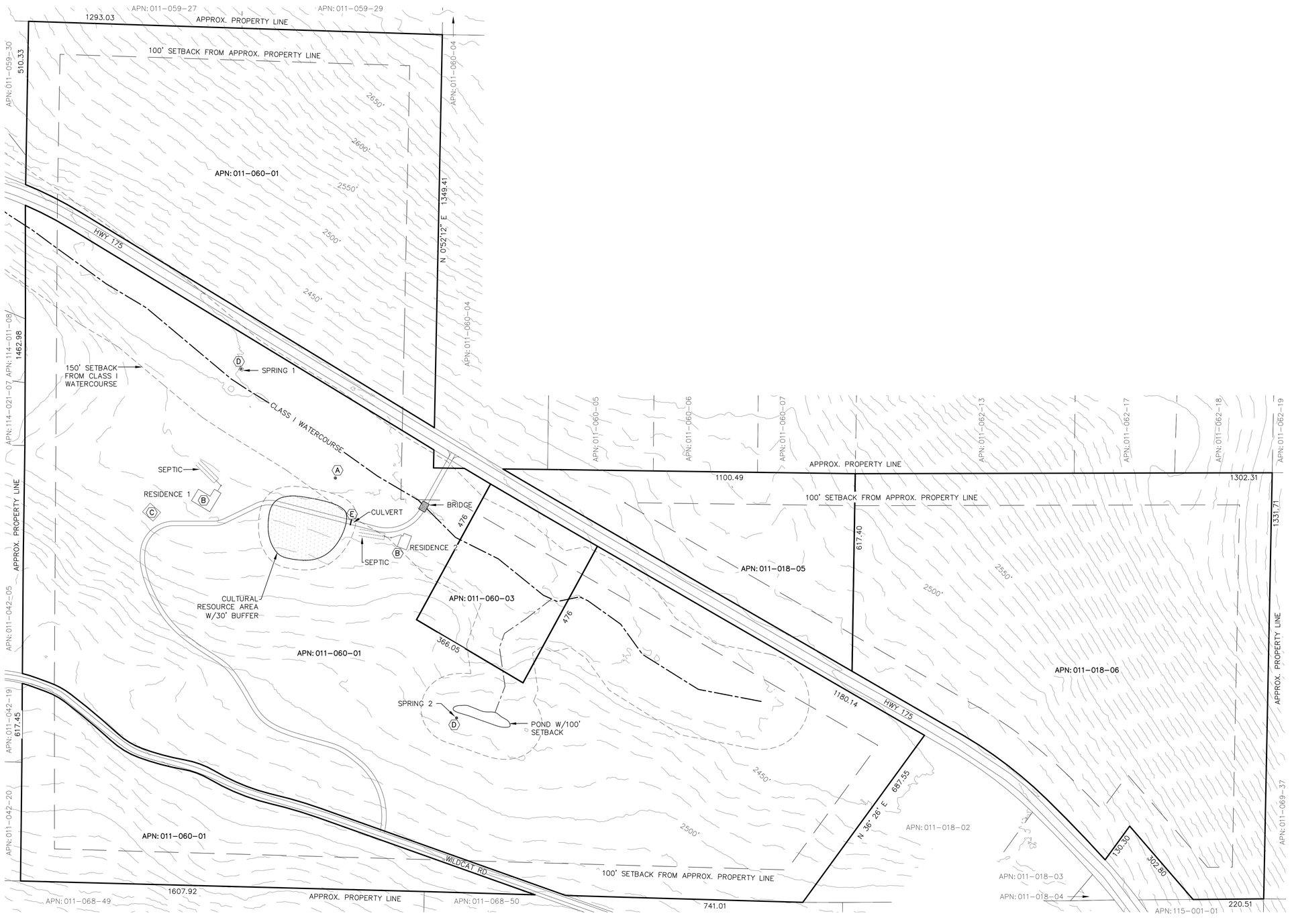
1:24,000

9141 State Hwy 175
Parcel Location Map

Natural Investigations Company

Map Date 8/31/2020

Clearlake Highlands 1993 Quadrangle:Township 12N, Range 8W, Section 9,10



EXISTING CONDITIONS SITE PLAN

GRAPHIC SCALE

150 0 75 150

(IN FEET)
1 inch = 150 ft.

VICINITY MAP
NO SCALE

9141 STATE HIGHWAY 175
KELSEYVILLE, CA 95451
LAKE COUNTY
APN'S:011-018-05 & 06 AND
011-060-01 & 03

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
	CREEK / SWALE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:
1. CONTOUR INTERVAL IS 10'

(A) (E) GROUNDWATER WELL
LAT: 38.89974°
LONG: -122.74777°
BENEFICIAL USES:
-IRRIGATION
-FIRE PROTECTION

(B) (E) RESIDENCE

(C) (E) BARN

(D) (E) SPRING

(E) (E) CULVERT

(F) (P) 31,920 SF OUTDOOR CULTIVATION AREA W/ 22,800 SF OF CANOPY

(G) (P) 13,200 SF OUTDOOR CULTIVATION AREA W/ 9,600 SF OF CANOPY

(H) (P) (18 TOTAL) 6'X90' MIXED-LIGHT CANOPY AREAS (LOW HOOPS)

Revisions:

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE c
REDDING, CA. 96001
530-526-7493

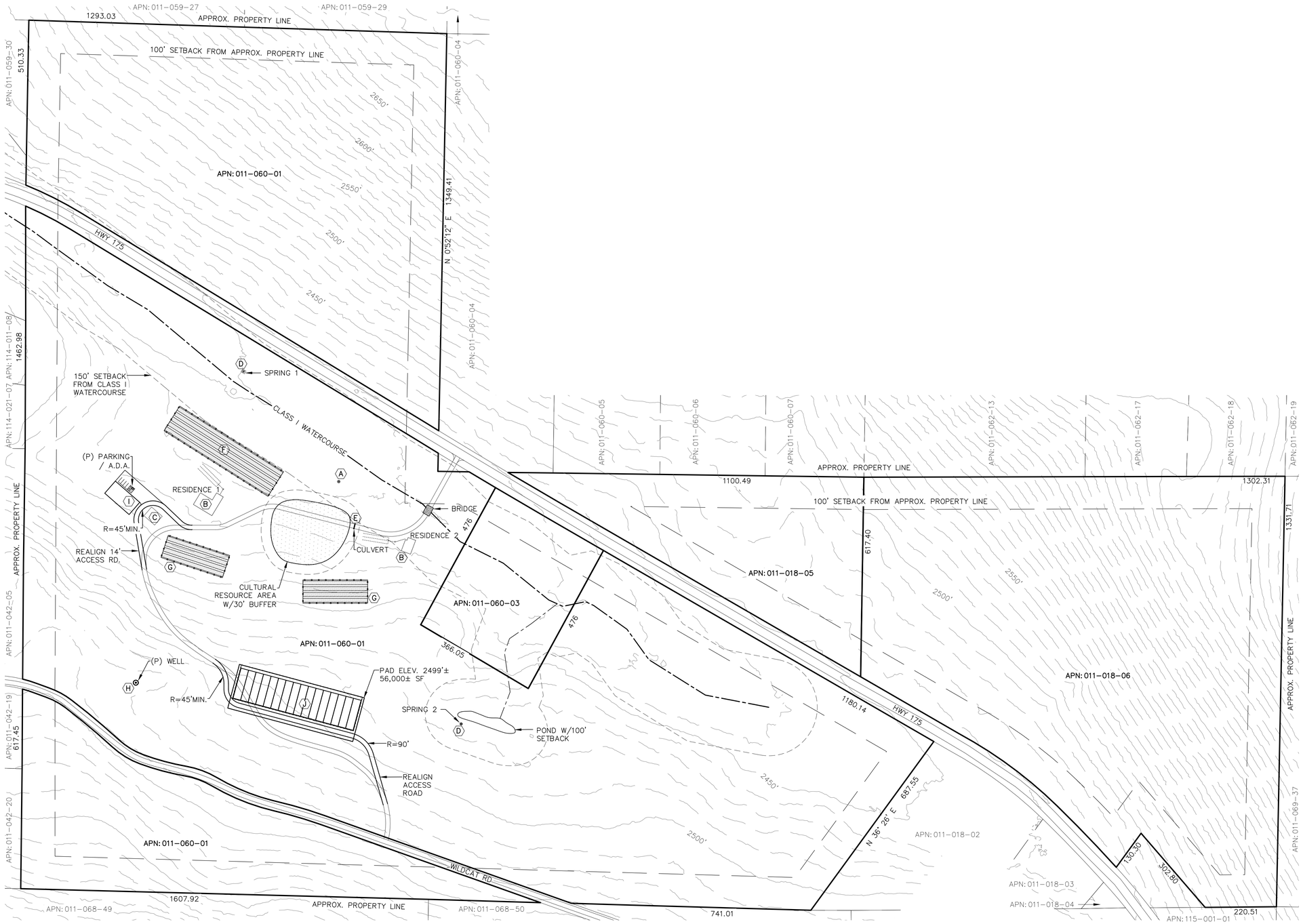
PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
exp.06/30/21
CIVIL
STATE OF CALIFORNIA

EXISTING CONDITIONS SITE PLAN

9141 STATE HIGHWAY 175
KELSEYVILLE, CA 95451
LAKE COUNTY
APN:S:011-018-05 & 06 and 011-060-01 & 03

PLOTTED BY: ---
DATE PLOTTED: 2/26/21
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1



PROPOSFD CONDITIONS SITE PLAN

GRAPHIC SCALE

150 0 75 150

(IN FEET)

1 inch = 150 ft.

VICINITY MAP

NO SCALE

9141 STATE HIGHWAY 175
KELSEYVILLE, CA 95451
LAKE COUNTY
APN'S:011-018-05 & 06 AND
011-060-01 & 03

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
	CREEK / SWALE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:

1. CONTOUR INTERVAL IS 10'

(A) (E) GROUNDWATER WELL
LAT: 38.89974°
LONG: -122.74777°
BENEFICIAL USES:
-IRRIGATION
-FIRE PROTECTION

(B) (E) RESIDENCE

(C) (E) BARN

(D) (E) SPRING

(E) (E) CULVERT

(F) (E) 31,920 SF OUTDOOR CULTIVATION AREA W/ 22,800 SF OF CANOPY

(G) (E) 13,200 SF OUTDOOR CULTIVATION AREA W/ 9,600 SF OF CANOPY

(H) (P) GROUNDWATER WELL
LAT: 38.89824°
LONG: -122.75085°
BENEFICIAL USES: IRRIGATION & FIRE PROTECTION

(I) (P) 50'x100' (5,000 SF) PROCESSING FACILITY

(J) (P) SIXTEEN 24'x96' GUTTER CONNECTED GREENHOUSES

Revisions:

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE c
REDDING, CA. 96001
530-526-7493

PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
exp.06/30/21
CIVIL
STATE OF CALIFORNIA

PROPOSED CONDITIONS SITE PLAN - PHASE II

9141 STATE HIGHWAY 175
KELSEYVILLE, CA 95451
LAKE COUNTY
APN'S:011-018-05 & 06 and 011-060-01 & 03

PLOTTED BY: ---

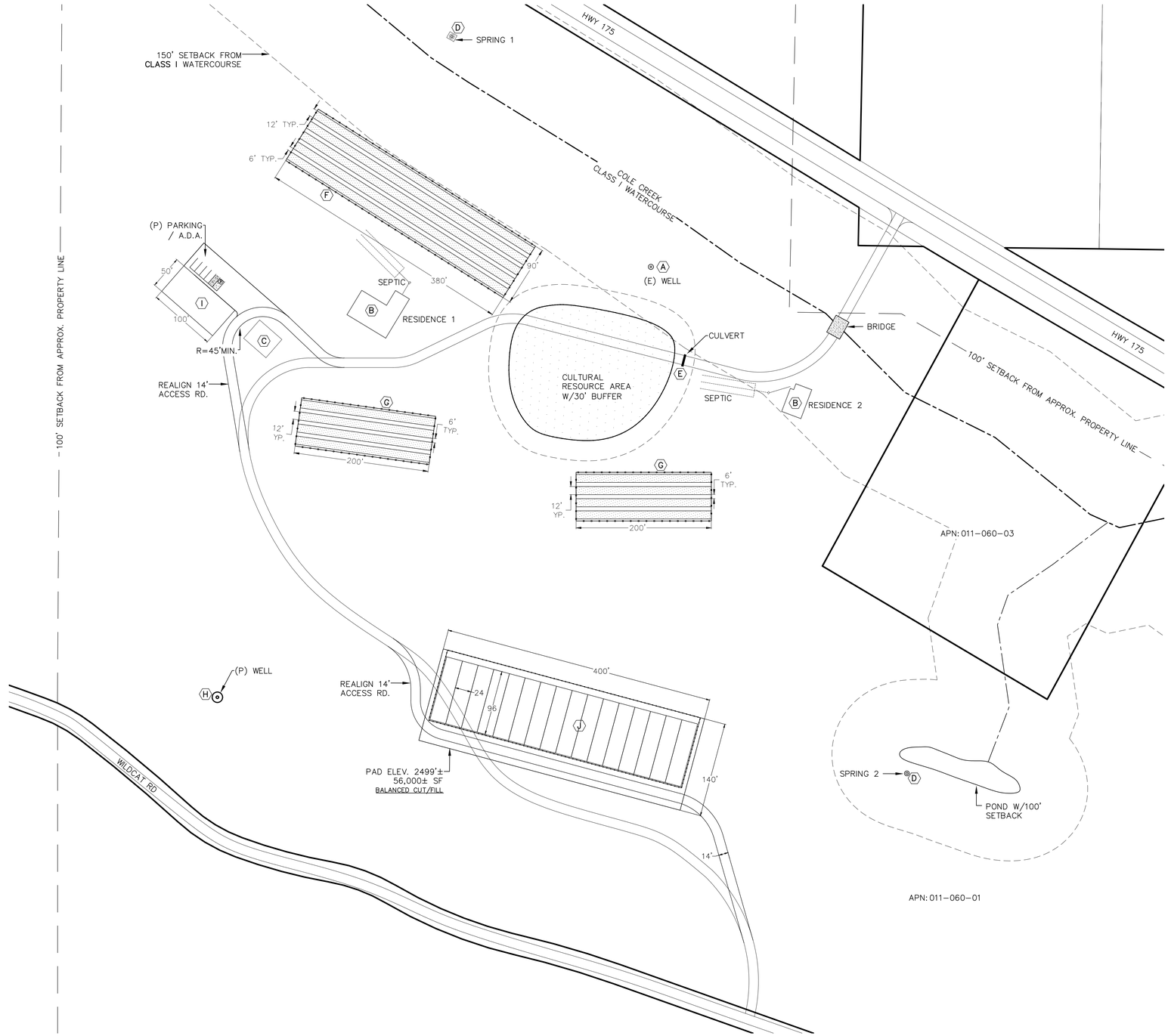
DATE PLOTTED: 2/26/21

SCALE OF DRAWING: SEE PLAN

JOB NUMBER:

CADD FILE:

SHEET: 1



CULTIVATION SITE PLAN WITH CANOPY

GRAPHIC SCALE

80 0 40 80

(IN FEET)
1 inch = 80 ft.

VICINITY MAP
NO SCALE

9141 STATE HIGHWAY 175
KELSEYVILLE, CA 95451
LAKE COUNTY
APN'S:011-018-05 & 06 AND
011-060-01 & 03

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
	CREEK / SWALE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:
1. CONTOUR INTERVAL IS 10'

(A) (E) GROUNDWATER WELL
LAT: 38.89974°
LONG: -122.74777°
BENEFICIAL USES:
-IRRIGATION
-FIRE PROTECTION

(B) (E) RESIDENCE

(C) (E) BARN

(D) (E) SPRING

(E) (E) CULVERT

(F) (E) 31,920 SF OUTDOOR CULTIVATION AREA W/ 22,800 SF OF CANOPY

(G) (E) 13,200 SF OUTDOOR CULTIVATION AREA W/ 9,600 SF OF CANOPY

(H) (E) GROUNDWATER WELL
LAT: 38.89824°
LONG: -122.75085°
BENEFICIAL USES: IRRIGATION & FIRE PROTECTION

(I) (E) 50'x100' (5,000 SF) PROCESSING FACILITY

(J) (E) SIXTEEN 24'x96' GUTTER CONNECTED GREENHOUSES

Revisions:

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE c
REDDING, CA. 96001
530-526-7493

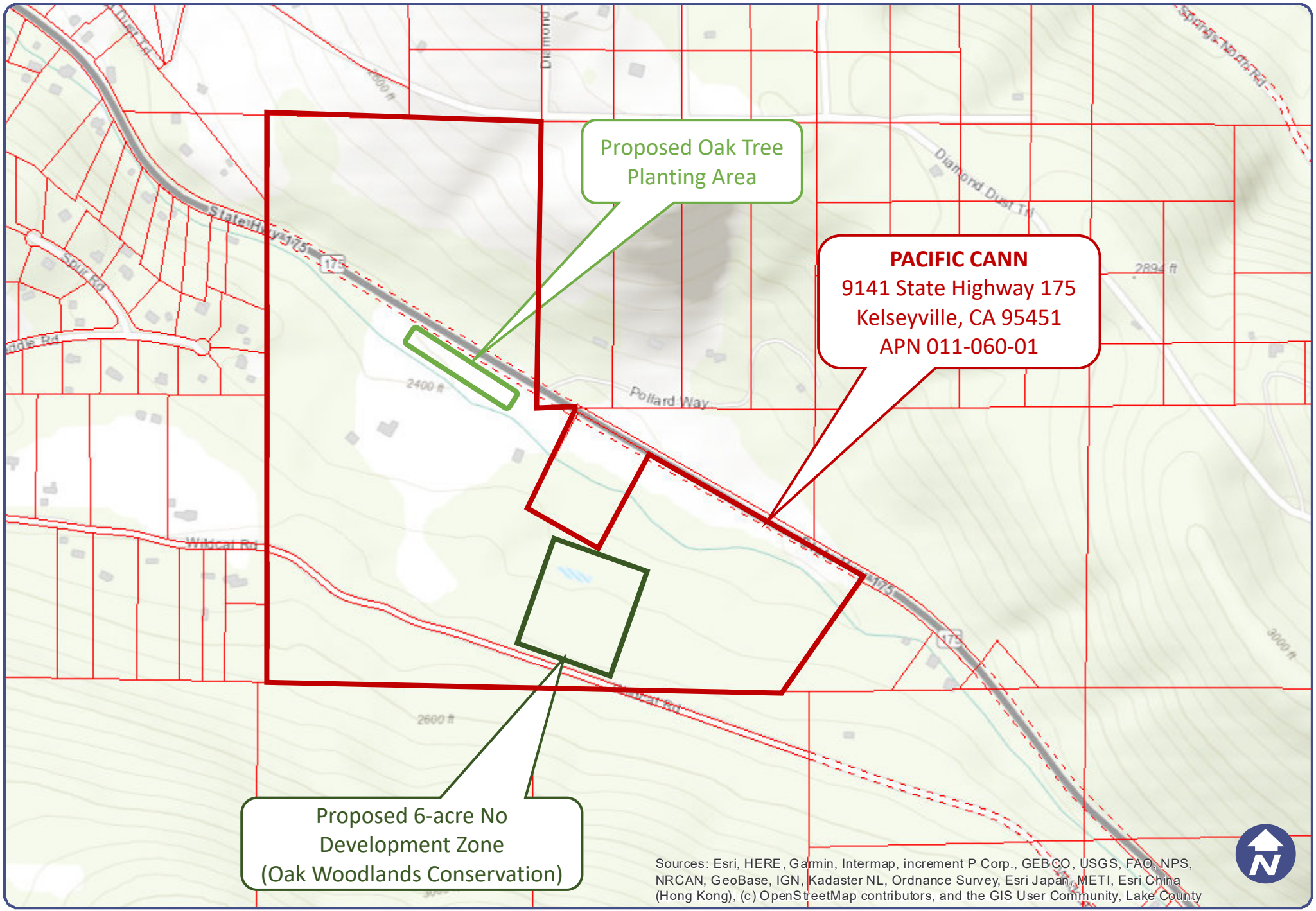
PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
exp.06/30/21
CIVIL
STATE OF CALIFORNIA

CULTIVATION SITE PLAN WITH CANOPY

9141 STATE HIGHWAY 175
KELSEYVILLE, CA 95451
LAKE COUNTY
APN'S011-018-05 & 06 and 011-060-01 & 03

PLOTTED BY: ---
DATE PLOTTED: 2/26/21
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1

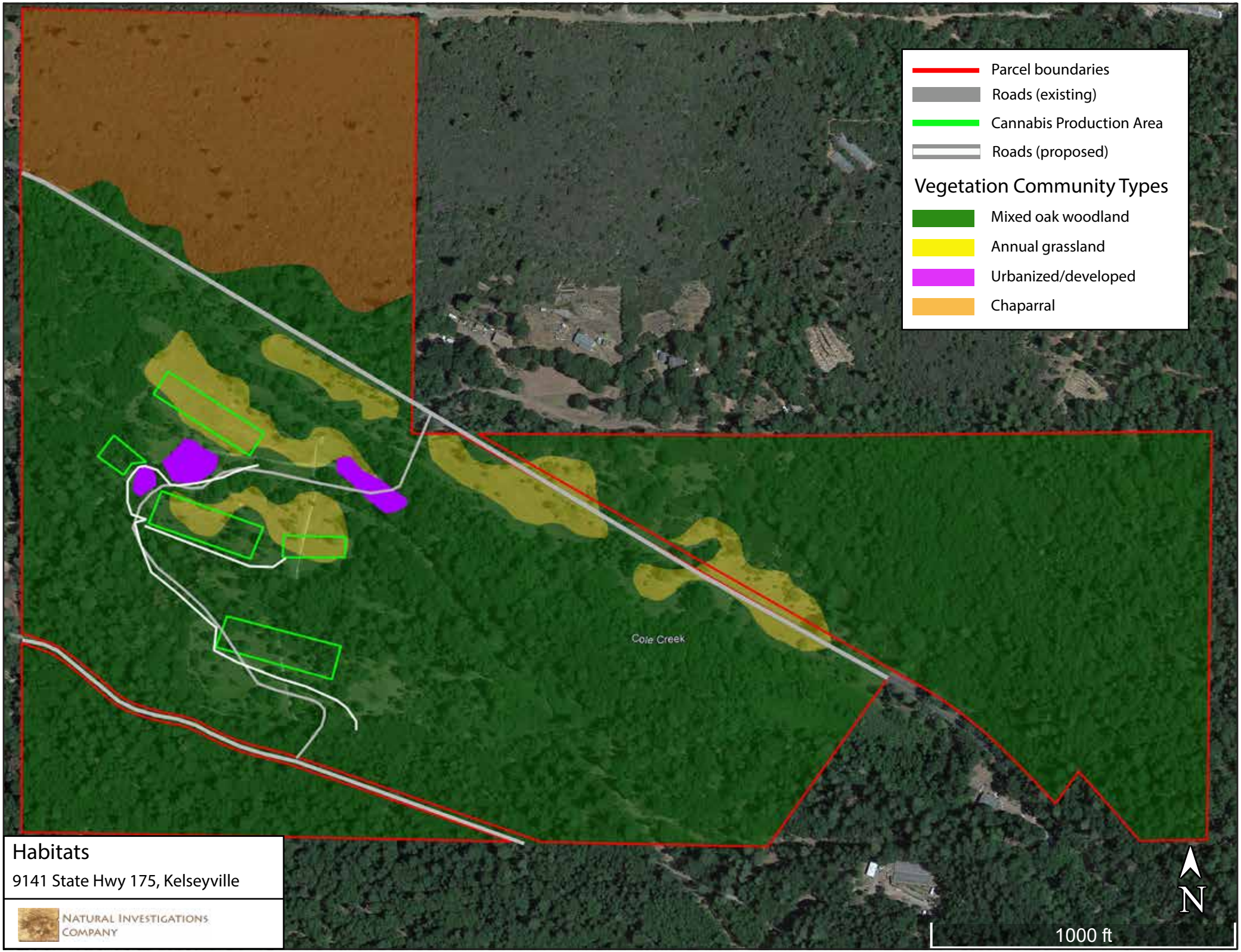


Lake County, CA

Oak Mitigation Diagram

mi
0 0.1 0.2

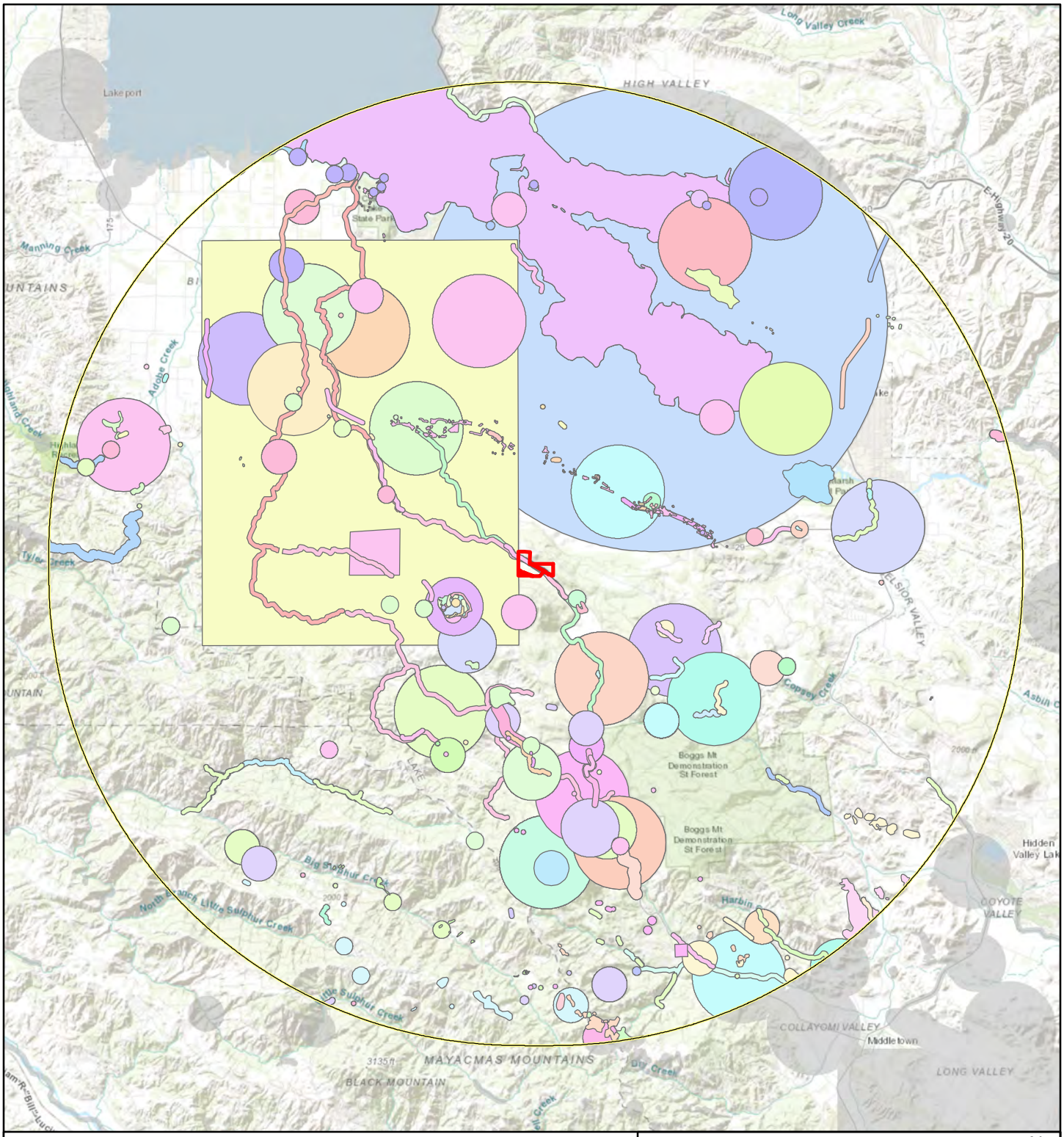
Print Date: 8/20/2021



Habitats

9141 State Hwy 175, Kelseyville

Natural Investigations Company



Parcel Location 10 Mile Buffer

1:190,000 1 inch = 3 miles

0 3 6 Miles

N

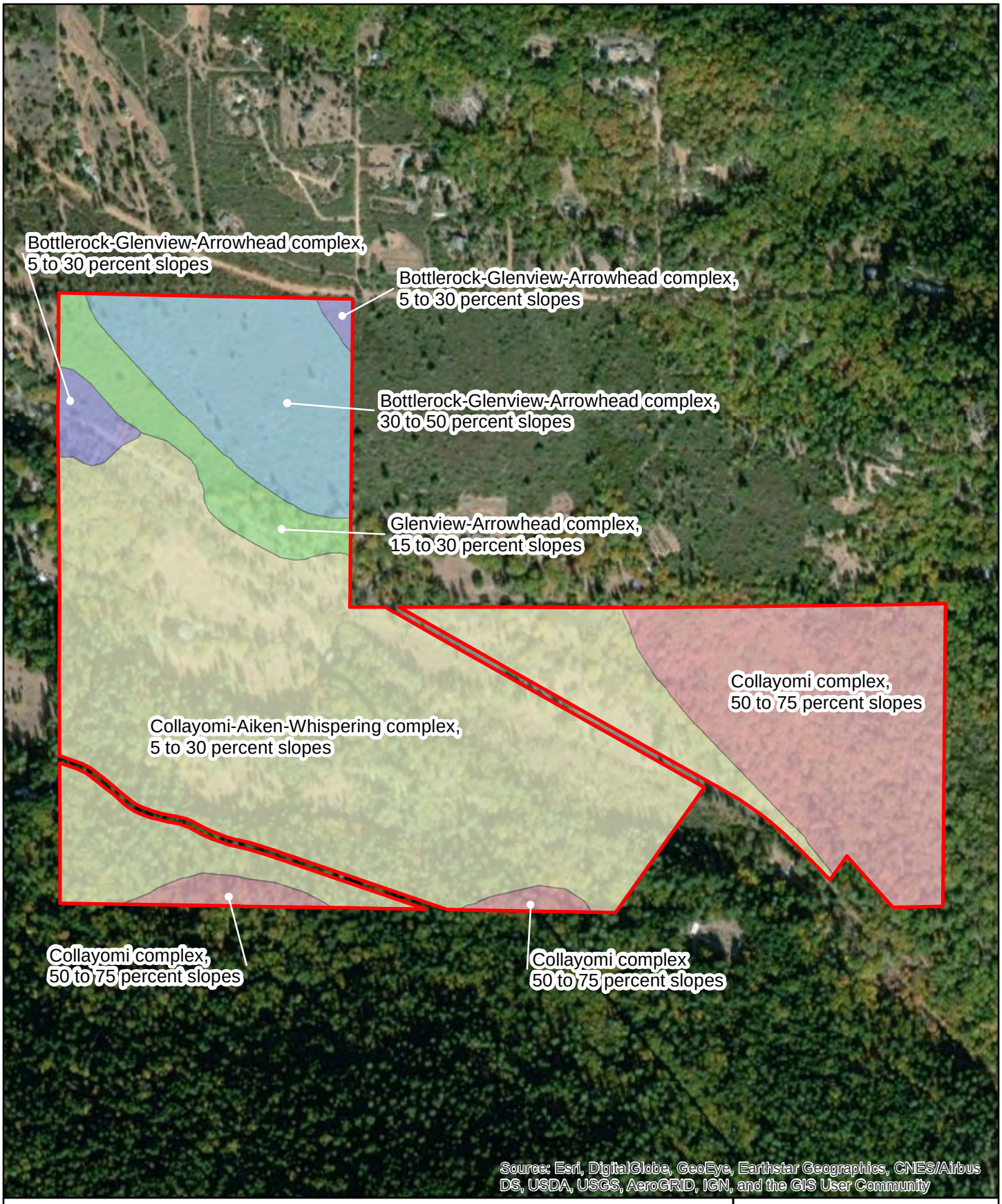
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist inshowing features discussed in an attached document. Natural Investigations Company can not guarantee the accuracy and content of electronic files.The master file is stored by Natural Investigations Company and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.Data Sources: California Department of Fish and Wildlife. 2020. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California.
(updated monthly by subscription service)

Special-Status Species Occurrences Map

9141 State Hwy 175

Clearlake Highlands 1993 Quadrangle:
Township 12N, Range 8W, Section 9,10

NATURAL INVESTIGATIONS CO.
WWW.NATURALINVESTIGATIONS.COM



Parcel Location

0 100 200 Meters

0 500 1,000 Feet

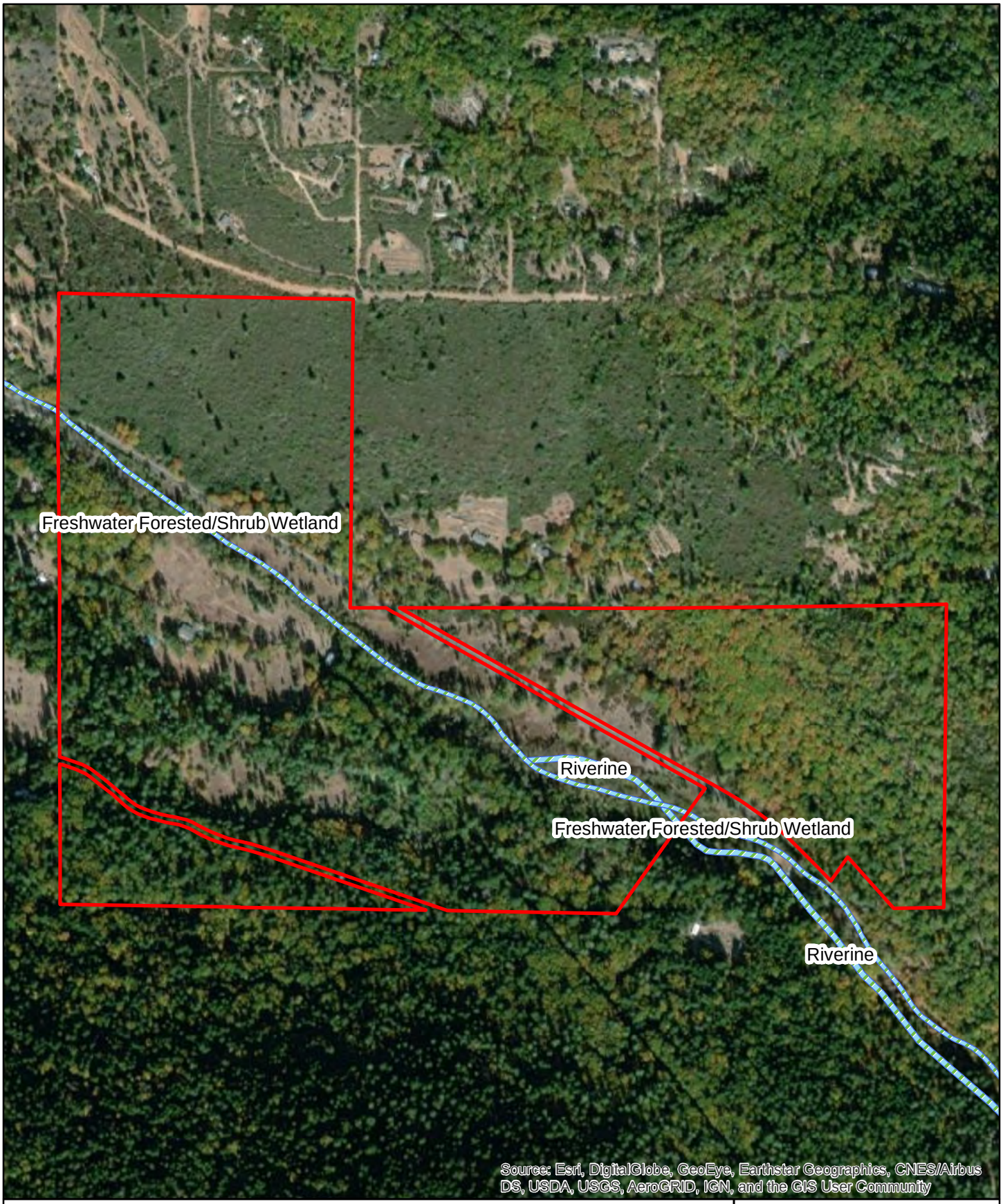
1:7,000

9141 State Hwy 175
USDA Soils Map

Natural Investigations Company

Map Date 8/31/2020

Clearlake Highlands 1993 Quadrangle:Township 12N, Range 8W, Section 9,10



Parcel Location

Wetlands and Channels

0 100 200 Meters

0 500 1,000 Feet

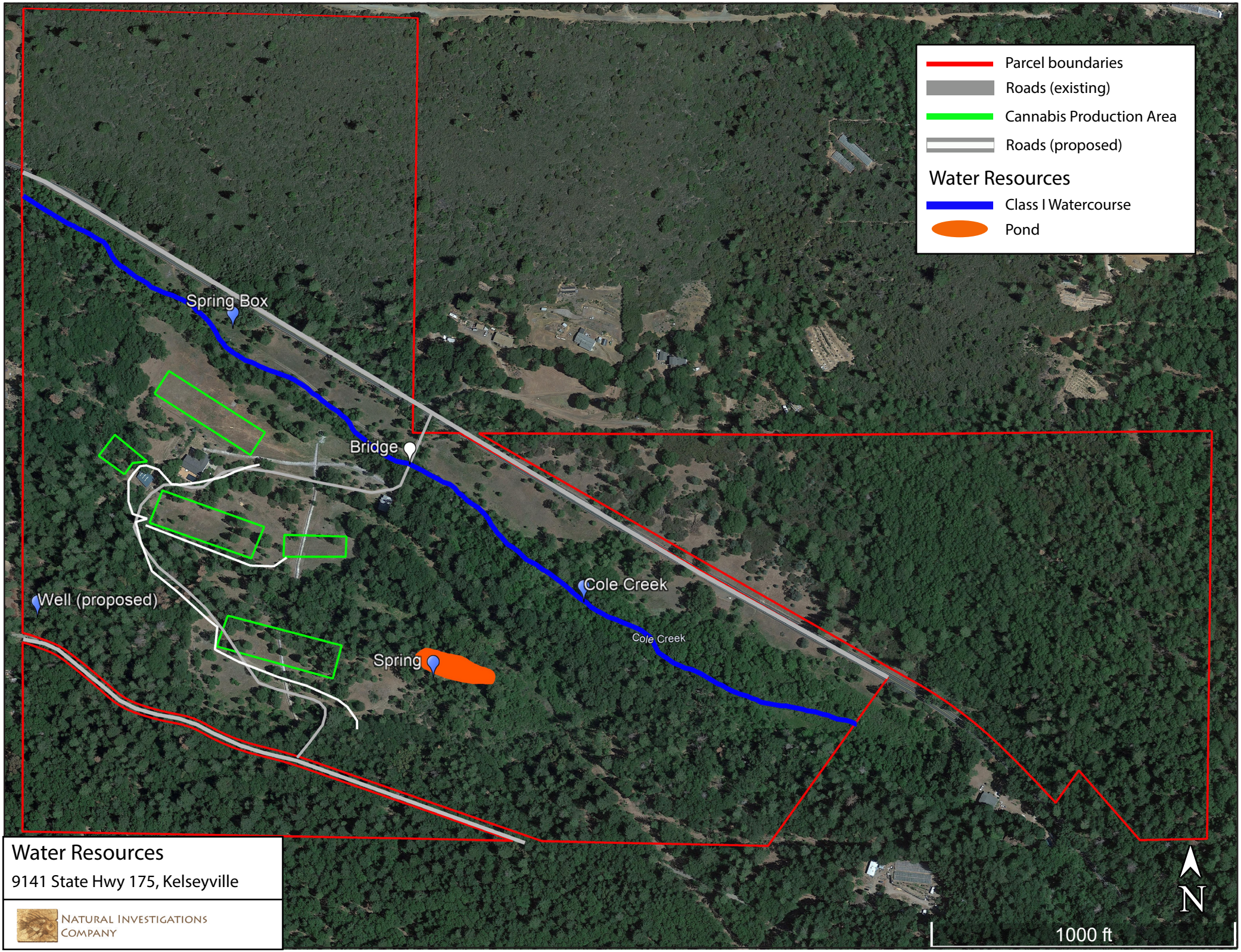
1:7,000

9141 State Hwy 175
National Wetlands Inventory
Features Map

Natural Investigations Company

Map Date 8/31/2020

Clearlake Highlands 1993 Quadrangle:Township 12N, Range 8W, Section 9,10


Parcel boundaries
Roads (existing)
Cannabis Production Area
Roads (proposed)
Water Resources
Class I Watercourse
Pond
Spring Box
Bridge
Well (proposed)
Cole Creek
Cole Creek
Spring
Water Resources
9141 State Hwy 175, Kelseyville
Natural Investigations Company
N
1000 ft

APPENDIX 1: USFWS SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2020-SLI-2773
Event Code: 08ESMF00-2020-E-08492
Project Name: 9141 State Hwy 175

August 31, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-2773

Event Code: 08ESMF00-2020-E-08492

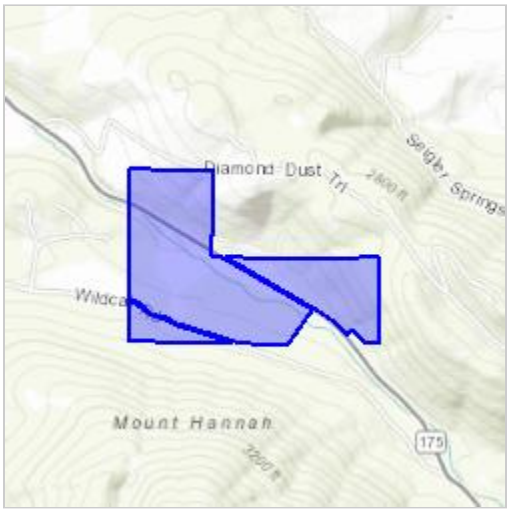
Project Name: 9141 State Hwy 175

Project Type: ** OTHER **

Project Description: Bio Assessment

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.89990166904668N122.74891844017036W



Counties: Lake, CA

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. 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.

Birds

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered

Flowering Plants

NAME	STATUS
Burke's Goldfields *Lasthenia burkei* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	Endangered
Few-flowered Navarretia *Navarretia leucocephala ssp. pauciflora (=N. pauciflora)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8242	Endangered
Lake County Stonecrop *Parvisedum leiocarpum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2263	Endangered
Loch Lomond Coyote Thistle *Eryngium constancei* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5106	Endangered
Many-flowered Navarretia *Navarretia leucocephala ssp. plieantha* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2491	Endangered
Slender Orcutt Grass *Orcuttia tenuis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX 2: CHECKLIST OF PLANTS DETECTED IN THE STUDY AREA

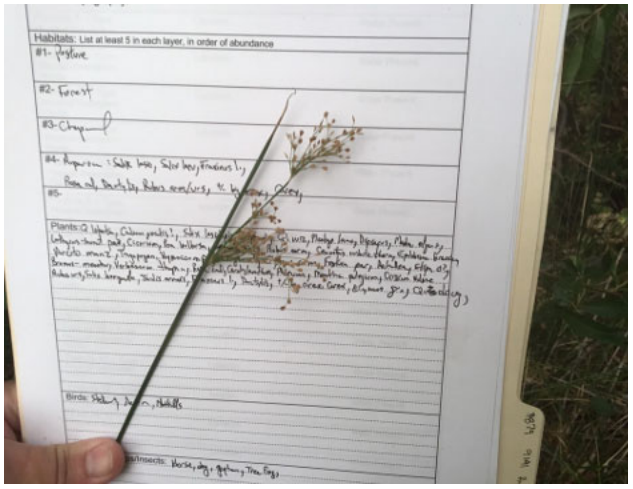
Appendix 2:
Plants Observed During Field Survey

Common Name	Scientific Name
Big leaf maple	*Acer macrophyllum*
Yarrow	*Achillea millefolium*
Chamise	*Adenostoma fasciculatum*
Common agrimony	*Agrimonia gryposepala*
Sweet vernal grass	*Anthoxanthum odoratum*
Spreading dogbane	*Apocynum androsaemifolium*
Madrone	*Arbutus menziesii*
Hoary manzanita	*Arctostaphylos canescens ssp. canescens*
Common manzanita	*Arctostaphylos manzanita ssp. manzanita*
California mugwort	*Artemisia douglasiana*
Wild oat	*Avena fatua*
Coyote bush	*Baccharis pilularis*
Brodiaea	*Brodiaea sp.*
Meadow brome	*Bromus commutatus*
Ripgut brome	*Bromus diandrus*
Soft chess	*Bromus hordeaceus*
Reed grass	*Calamagrostis sp.*
Incense cedar	*Calocedrus decurrens*
Nebraska sedge	*Carex nebrascensis*
Deer brush	*Ceanothus integerrimus*
Chaparral whitethorn	*Ceanothus leucodermis*
Little leaf ceanothus	*Ceanothus parvifolius*
Birchleaf mountain mahogany	*Cercocarpus betuloides*
Wavy leaf soap plant	*Chlorogalum pomeridianum*
Chicory	*Cichorium intybus*
Canada thistle	*Cirsium arvense*
Bull thistle	*Cirsium vulgare*
Clarkia	*Clarkia sp.*
Hairy bird's beak	*Cordylanthus pilosus ssp. pilosus*
Brown dogwood	*Cornus glabrata*
Dogtail grass	*Cynosurus echinoides*
Orchard grass	*Dactylis glomerata*
Larkspur	*Delphinium sp.*
Annual hairgrass	*Deschampsia danthonioides*
Firecracker flower	*Dichelostemma ida-maia*
Fuller's teasel	*Dipsacus fullonum*
Medusahead grass	*Elymus caput-medusae*
Blue wildrye	*Elymus glaucus*
Tall willowherb	*Epilobium brachycarpum*
Fringed willowherb	*Epilobium ciliatum*
Yerba santa	*Eriodictyon californicum*
Naked buckwheat	*Eriogonum nudum*
Yellow monkeyflower	*Erythranthe guttata*
California poppy	*Eschscholzia californica*
Tall fescue	*Festuca arundinacea*
California fescue	*Festuca californica*
Italian ryegrass	*Festuca perennis*
Wild strawberry	*Fragaria vesca*
California coffeeberry	*Frangula californica*

Oregon ash	*Fraxinus latifolius*
Fragrant bedstraw	*Galium triflorum*
Fremont's silk tassel	*Garrya fremontii*
Nit grass	*Gastridium phleoides*
Horkelia	*Horkelia sp.*
Big deervetch	*Hosackia crassifolia var. crassifolia*
Gold wire	*Hypericum concinnum*
Klamath weed	*Hypericum perforatum*
Iris	*Iris sp.*
Northern California black walnut	*Juglans hindsii*
English walnut	*Juglans regius*
Baltic rush	*Juncus balticus*
Rush	*Juncus sp.*
Lemmon's	*Keckiella lemmonii*
Sweet pea	*Lathyrus latifolius*
Peavine	*Lathyrus sp.*
Duckweed	*Lemna sp.*
Pink honeysuckle	*Lonicera hispidula*
Chaparral honeysuckle	*Lonicera interrupta*
Silver bush lupine	*Lupinus albifrons*
Lupine	*Lupinus sp.*
Common madia	*Madia elegans*
Apple	*Malus pumila*
American cornmint	*Mentha canadensis*
Pennyroyal	*Mentha pulegium*
Coyote mint	*Monardella villosa*
Foothill penstemon	*Penstemon heterophyllus*
Harding grass	*Phalaris aquatica*
Canarygrass	*Phalaris sp.*
American mistletoe	*Phoradendron leucarpum*
Ponderosa pine	*Pinus ponderosa*
English plantain	*Plantago lanceolata*
Bulbous bluegrass	*Poa bulbosa*
California milkwort	*Polygala californica*
Douglas fir	*Pseudotsuga menziesii*
Bracken	*Pteridium aquilinum*
Pear	*Pyrus communis*
California scrub oak	*Quercus berberidifolia*
Blue oak	*Quercus douglasii*
California black oak	*Quercus kelloggii*
Valley oak	*Quercus lobata*
Bush interior live oak	*Quercus wislizeni ssp. frutescens*
Interior live oak	*Quercus wislizeni ssp. wislizeni*
Lemonade berry	*Rhus aromatica*
California rose	*Rosa californica*
Himalayan blackberry	*Rubus armeniacus*
California blackberry	*Rubus ursinus*
Red willow	*Salix laevigata*
Arroyo willow	*Salix lasiolepis*
Blue elderberry	*Sambucus nigra ssp. caerulea*
Pacific sanicle	*Sanicula crassicaulis*
Common tule	*Schoenoplectus acutus*
Panicled bulrush	*Scirpus microcarpus*

Threenerve goldenrod	*Solidago velutina*
Western needlegrass	*Stipa occidentalis*
Purple needlegrass	*Stipa pulchra*
Common snowberry	*Symphoricarpos albus*
Western aster	*Symphyotrichum sp.*
Tall sock destroyer	*Torilis arvensis*
Poison oak	*Toxicodendron diversilobum*
Salsify	*Tragopogon porrifolius*
Broad leaf cattail	*Typha latifolia*
California bay	*Umbellularia californica*
Common nettles	*Urtica dioica*
Moth mullein	*Verbascum blattaria*
Common mullein	*Verbascum thapsus*
Western vervain	*Verbena lasiostachys*
American vetch	*Vicia americana*
Spring vetch	*Vicia sativa*
Giant chain fern	*Woodwardia fimbriata*
Smooth mule ears	*Wyethia glabra*

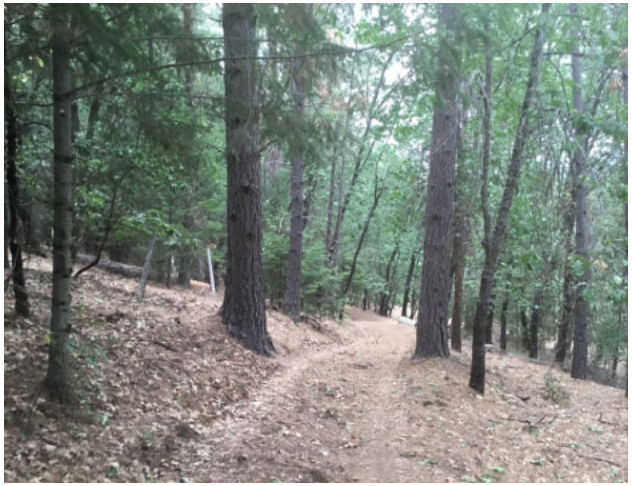
APPENDIX 3: SITE PHOTOS


Habitats: List at least 5 in each layer, in order of abundance
#1- Pasture
#2- Forest
#3- Clearing
#4- Riparian
#5-
Plants:
Birds:
Insects:

















BOTANICAL SURVEY REPORT
FOR THE
CANNABIS CULTIVATION OPERATION
AT
9141 STATE HWY 175, KELSEYVILLE, CALIFORNIA

June 12, 2021

Prepared by:

G.O. Graening, PhD and/or Tim Nosal, MS
Natural Investigations Company, Inc.
3104 O Street, #221, Sacramento, CA 95816

NATURAL INVESTIGATIONS CO.
WWW.NATURALINVESTIGATIONS.COM

TABLE OF CONTENTS

1. PROJECT LOCATION AND DESCRIPTION

Natural Investigations Company conducted botanical surveys for a cannabis cultivation operation on a 148-acre Property (APNs 011-060-010, 011-018-050, 011-018-060, 011-060-030) at 9141 State Hwy 175, Kelseyville, California. The proposed project is the maximum Cannabis canopy production, which is allowed by the County, which is currently 7 acres of canopy (5 Acres Outdoor and 2 Acres Mixed Light). The buildout of cultivation areas will occur in three phases, all of which are on APN 011-060-010). Phase 1 (Year 2021/2022) will consist of 2 acres of outdoor canopy in the middle cultivation compound. Phase 2 (Year 2022/2023) will consist of 3 acres of outdoor canopy in the upper cultivation compound. Phase 3 (year unknown) will consist of 1.5 acres of mixed light greenhouses in the lower cultivation compound. Outdoor plants will be grown with full sun in amended native soil. Greenhouse plants will be grown with mixed light in plastic nursery pots. A new well will be developed for the cultivation compounds; the location is not yet determined. Approximately 20,000-40,000 gallons of water storage will be stored in tanks. Drip irrigation will be used; a mixing tank will be used to inject nutrients. Between 4 and 8 shipping containers will be brought in to be used for equipment and chemical storage. Portable toilets will be utilized during Phase 1 & 2. Phase 1 and Phase 2 will access the parcel from Wildcat Road, along the southern portion of the parcel. No grading will be required for Phase 1 and 2, but the ground will be tilled before planting. Phase 3 will require road improvements in order to access the proposed greenhouses. Grading will also be necessary for preparation of the building pad for the installation of a processing building (15,000 square feet). Some trees are likely to be removed. This structure will have flush toilets serviced by a septic system. During Phase 1 and 2, harvested Cannabis will be dried onsite but processed offsite. When Phase 3 is completed, processing will occur in the new processing building. Two existing residences and one barn are already on the Property. Up to 6 people (employees and families) will live in the residences. No Cannabis activities will take place in the residences or barn.

2. BIOLOGICAL SETTING

The Property is located within the Inner North Coast Range geographic subregion, which is contained within the Northwestern California geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). This region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately-cold winters. The Property and vicinity is in Climate Zone 14 “Northern California’s Inland Areas with Some Ocean Influence“, with maritime air moderating temperatures that would otherwise be hotter in summer and colder in the winter (Sunset, 2020).

The topography of the Property is rugged, and consists of a flat valley with steep sloping hills. The elevation ranges from approximately 2,400 feet to 2,800 feet above mean sea level. Drainage runs to the middle of the property to Cole Creek. The grasslands within the Property have been used as horse pasture.

Soils found within the Property are derived from volcanic rocks - obsidian and andesite. No soils derived from serpentine parent materials is mapped in or adjacent to the Property.

3. SURVEY METHODOLOGY

Survey methodology followed the following protocols:

- California Department of Fish and Wildlife. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.

- U.S. Fish and Wildlife Service. 1996. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants. Sacramento Fish and Wildlife Office, Sacramento, California. 2 pp.

- California Native Plant Society. 2001. CNPS botanical survey guidelines.

3.1. PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey, the following information sources were reviewed:

- Aerial photography of the Project Area (current and historical)
- United States Geologic Service 7.5 degree-minute topographic quadrangles
- USFWS National Wetland Inventory
- USDA Natural Resources Conservation Service soil survey maps
- California Natural Diversity Database (CNDDB), electronically updated monthly by subscription
- California Native Plant Society's database *Inventory of Rare and Endangered Plants of California* (online edition).

The following reference sites were visited: deemed not necessary.

3.2. FIELD SURVEYS

Dates of botanical field surveys (indicating the botanical field surveyor(s) that surveyed each area on each survey date), and total person-hours spent: Tim Nosal, MS., September 10, 2020, majority of day; March 17, 2021, half day; June 8, 2021, half day.

> Note: The qualifications of the botanical field surveyors and report authors are summarized at the end of this report.

Description of Survey Area: The survey area was the 3 cultivation areas are plus a buffer of several hundred feet.

> Note: A map of the survey area relative to the project area is shown in the Exhibits.

A variable-intensity pedestrian survey was performed, and modified to account for differences in terrain, vegetation density, and visibility. All visible taxa observed were recorded in a field notebook. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDB within the vicinity of the Project Area and those species on the CNPS or USFWS species lists.

Taxa were identified to the taxonomic level necessary to determine whether or not they are a special status plant. When a specimen could not be identified in the field, a photograph was taken and/or a specimen was pressed and identified in the laboratory using a dissecting scope where necessary. Dr. Graening holds the following scientific collection permits: CDFW Scientific Collecting Permit No. SC-006802; and CDFW Plant Voucher Specimen Permit 09004. Tim Nosal holds CDFW Plant Voucher Specimen Permit 2081(a)-16-102-V. Taxonomic determinations were facilitated by referencing museum specimens or by various texts, including the following: Powell and Hogue (1979); Pavlik (1991); (1993); Brenzel (2012); Stuart and Sawyer (2001); Lanner (2002); Sibley (2003); Baldwin et al. (2012); Calflora (2021); CDFW (2021b,c); NatureServe 2021; and University of California at Berkeley (2021a,b).

3.3. MAPPING AND OTHER ANALYSES

The locations of any special-status species or vegetation communities sighted were marked on aerial photographs and/or georeferenced with a geographic positioning system (GPS) receiver. Vegetation community types occurring in the Survey Area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded. Locations of any species' occurrences and sensitive natural community boundaries detected within the Project Area were digitized to produce the final maps. Geographic analyses were performed using geographical information system software (ArcGIS 11, ESRI, Inc.). Vegetation communities (assemblages of plant species growing in an area of similar biological and environmental factors), were classified by Vegetation Series (distinctive associations of plants, described by dominant species and

particular environmental setting) using the CNPS Vegetation Classification system (Sawyer and Keeler-Wolf, 1995). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2021), Calflora (2021); CDFW (2021a,b,c); and University of California at Berkeley (2021a,b).

3.4. Previous Studies

The following previous studies have been performed:

- Natural Investigations Co. 2020. Biological Resources Assessment for the Cannabis Cultivation Operation at 9141 State Highway 175, Kelseyville, California.

  Natural Investigations Company conducted a botanical survey during the biological resources assessment. No special-status plant species were detected within the Project Area or the surrounding Property.

3.5. List of Sensitive Natural Communities with Potential to Occur in the Region

The CNDDB reported no special-status habitats within the Project Area or surrounding Property boundary. No sensitive natural communities were identified that could occur in the Project Area.

3.6. List of Special Status Plants with Potential to Occur in the Region

A list of special-status plant species with potential to occur in the region was compiled based upon the following:

- A spatial query of the CNDDB.
- A query of the California Native Plant Society's database *Inventory of Rare and Endangered Plants of California* (online edition).

The databases were queried and any reported occurrences of special-status species were plotted in relation to the Project Area boundary using GIS software (see exhibits).

The CNDDB was queried and any reported occurrences of special-status species within 10 miles were plotted in relation to the Property boundary using GIS software (see exhibits). The CNDDB reported 2 special-status species occurrences within, or near, the Property: Raiche's manzanita (*Arctostaphylos stanfordiana* ssp. *raichei*) and Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*). The precise location of these occurrences is not known. Suitable habitat for these species does not occur in the Project Areas, but suitable habitat occurs within the surrounding Property. Within a 10-mile buffer of the Property boundary, the CNDDB reported several special-status species occurrences, summarized in the appendicized table.

A USFWS species list was generated online using the USFWS' IPaC Trust Resource Report System. This list is generated using a regional and/or watershed approach and does not necessarily indicate that the Project Area provides suitable habitat. The following listed species should be considered in the assessment:

- Burke's Goldfields (*Lasthenia burkei*) Endangered
- Few-flowered Navarretia (*Navarretia leucocephala ssp. pauciflora)* Endangered
- Lake County Stonecrop (*Parvisedum leiocarpum)* Endangered
- Loch Lomond Coyote Thistle (*Eryngium constancei)* Endangered
- Many-flowered Navarretia (*Navarretia leucocephala ssp. plieantha)* Endangered
- Slender Orcutt Grass (*Orcuttia tenuis*) Threatened

3.7. Target Species and Blooming Periods

A list of target species was created from the larger list of special-status plant species by selecting those species with potential to occur in the region. Species were removed if the project area lacked suitable habitat.

Target Species and Their Ranks, Habitats, and Blooming Periods

Common name *Scientific Name*	Blooming Period	CRPR	CESA	FESA	Habitat	Micro Habitat
Bent-flowered fiddleneck *Amsinckia lunaris*	Mar-Jun	1B.2	None	None	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland	
Dimorphic snapdragon *Antirrhinum subcordatum*	Apr-Jul	4.3	None	None	Chaparral, Lower montane coniferous forest	sometimes serpentinite
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	(Jan)Mar-May(Jul)	1B.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest	volcanic
Rincon Ridge ceanothus *Ceanothus confusus*	Feb-Jun	1B.1	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland	volcanic or serpentinite
Congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	Apr-Nov	1B.2	None	None	Valley and foothill grassland	sometimes roadsides
Bristly leptosiphon *Leptosiphon acicularis*	Apr-Jul	4.2	None	None	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland	
Jepson's leptosiphon *Leptosiphon jepsonii*	Mar-May	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	usually volcanic
Cobb Mountain lupine *Lupinus sericatus*	Mar-Jun	1B.2	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest	
Michael's rein orchid *Piperia michaelii*	Apr-Aug	4.2	None	None	Coastal bluff scrub, Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest	
Oval-leaved viburnum *Viburnum ellipticum*	May-Jun	2B.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest	

4. RESULTS

4.1. LIST OF PLANT TAXA DETECTED DURING FIELD SURVEY(S)

All plant taxa detected during the botanical field survey are listed in Appendix 2. No species of *Amsinckia, Antirrhinum, Hemizonia, Leptosiphon, Lupinus Piperia* or *Viburnum* were observed within the Property. Several species of *Arctostaphylos* and *Ceanothus* were observed within the Property. These were identified as common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), hoary manzanita (*Arctostaphylos canescens* ssp. *canescens*), deer brush (*Ceanothus integerrimus*), chaparral whitethorn (*Ceanothus leucodermis*) and little leaf ceanothus (*Ceanothus parvifolius*).

Deposition locations of voucher specimens: n/a

4.2. LIST OF VEGETATION COMMUNITIES DETECTED DURING FIELD SUVERY(S)

General vegetation communities occurring in the Project Area and surrounding Property boundary were mapped (see Exhibits). The Property contains the following terrestrial vegetation communities: Grassland, Chaparral and Oak Woodland, and Urbanized. These vegetation communities are discussed here and are delineated in the Exhibits.

Annual Grassland: Several areas near the creek and highway are largely devoid of trees and are characterized by grassland habitat. This vegetation is comprised of native and non-native grasses and native and non-native herbs including Medusa-head (*Elymus caput-medusae*), reed grass (*Calamagrostis sp.*), bromes (*Bromus spp.*), western needle grass (*Stipa occidentalis*), canary grass (*Phalaris* spp.), tall fescue (*Festuca arundinacea*), yarrow (Achillea millefolium), common madia (*Madia elegans*), English plantain (*Plantago lanceolata*), vetch (*Vicia* spp.), hairy bird's beak (*Cordylanthus pilosus*), moth mullein (*Verbascum blattaria*) and common mullein (*Verbascum thapsus*). This vegetation can be classified as the Holland Type "Valley and Foothill Grassland".

Chaparral: The south-facing slopes within the northwestern portion of the Property are vegetated with a dense cover of shrubs. The vegetation within this area is a mix of several evergreen shrubs, including shrub interior live oak (*Quercus wislizeni var. frutescens*), common manzanita (*Arctostaphylos manzanita ssp. manzanita*), Fremont's silktassel (*Garrya fremontii*), chamise (*Adenostoma fasciculatum*), lemonade berry (*Rhus aromatica*), California bay (*Umbellularia californica*) with an occasional ponderosa pine (Pinus ponderosa) emerging through the shrubs. The canopy of this vegetation is very dense, and few plants were observed growing underneath the shrubs. This type of chaparral can be classified as the Holland Type "Northern North Slope Chaparral" or as "37.420.01 *Quercus wislizeni* var. *frutescens*" (CDFW 2019).

Forest. Tree dominated forest habitat is found throughout the Property. The forest is dominated by a variety of conifers and hardwoods. This habitat consists of a moderate-to-dense canopy of ponderosa pine, California black oak (*Quercus kelloggii*), Douglas fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), big leaf maple (*Acer macrophyllum*), valley oak (*Quercus lobata*) and California bay. Where sunlight penetrates the canopy, numerous shrubs are present, including common manzanita. poison oak (*Toxicodendron diversilobum*), common snowberry (*Symphoricarpos albus*), and birch leaf mountain mahogany (*Cercocarpus betuloides*). The herbaceous layer within the forest consists of fescues (*Festuca* spp.), western needlegrass, bedstraw (*Galium* sp.), coyote mint (*Monardella villosa*) and firecracker flower (*Dichelostemma ida-maia*). This type of forest can be classified as the Holland Type "Upland Coast Range Ponderosa Pine Forest" or as "87.010.00 Ponderosa Pine Forest" (CDFW 2019).

Urbanized. Road building has removed natural habitats and only ruderal/urbanized habitats remain.

The following terrestrial natural communities occur in the Project Area (as categorized by CDFW 2019):

- 42.040.000 California Annual Grassland
    - 42.020.03 Elymus caput-medusae
- 87.010.00 Pinus ponderosa

During the botanical field survey, no sensitive vegetation communities were detected within the Project Area.

4.3. Adequacy of Botanical Field Survey(s)

Potential for a false negative botanical field survey: Unlikely since multiple surveys were performed (in early, mid and late season).

Did climatic conditions affect the botanical field survey results? There were no unusual climatic conditions.

Did the timing of botanical field surveys affect the comprehensiveness of botanical field surveys?

No species of *Amsinckia, Antirrhinum, Hemizonia, Leptosiphon, Lupinus Piperia* or *Viburnum* were observed within the Property. Several species of *Arctostaphylos* and *Ceanothus* were observed within the Property. These were identified as common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), hoary manzanita (*Arctostaphylos canescens* ssp. *canescens*), deer brush (*Ceanothus integerrimus*), chaparral whitethorn (*Ceanothus leucodermis*) and little leaf ceanothus (*Ceanothus parvifolius*).

The phenology was late during the September survey and early for the March survey. However, stems and fruit from the previous season or early season basal leaves would be visible on these dates. A follow-up survey in June 2021 made the effort completely comprehensive.

5. POTENTIAL PROJECT IMPACTS

The footprint for the proposed project is within grassland and woodland habitat and horse pasture. These habitats contain may provide suitable habitat for special status plant species. No special-status plant species were detected during the surveys. There is sufficient natural habitat on the Property that will remain undeveloped such no significant cumulative impacts will occur.

The Property contains special-status habitats: riparian vegetation along Cole Creek and wetland vegetation in the pond. Implementation of the proposed project will not require the destruction of riparian habitat or other sensitive habitats. The cultivation compounds were designed to have a minimum 150 foot buffer from Cole Creek and 100 foot buffer from the pond. There is no evidence that project implementation will impact any special-status habitats. No sensitive natural communities will be adversely impacted by project implementation.

6. MITIGATIONS MEASURES / RECOMMENDATIONS

No special status plant species were observed within the Property. It is unlikely that special status plant species are present within the Project Area. Additional special status plant surveys are not necessary.

No sensitive natural communities will be adversely impacted by project implementation. No mitigation is necessary.

7. QUALIFICATIONS OF BOTANICAL FIELD SURVEYORS AND REPORT AUTHORS

G.O. GRAENING, Ph.D., M.S.E.
Dr. Graening holds a PhD in Biological Sciences and a Master of Science in Biological and Agricultural Engineering. Dr. Graening is an adjunct Professor at California State University at Sacramento, and is an active researcher in the area of conservation biology; his publication list is available online at http://www.csus.edu/indiv/g/graeningg/pubs.htm. Dr. Graening is also a Certified Arborist (ISA # WE-6725A). Dr. Graening has 24 years of experience in environmental assessment, including previous employment with The Nature Conservancy, Tetra Tech Inc., and CH2M Hill, Inc.

TIMOTHY R. D. NOSAL, M.S.
Mr. Nosal holds a B.S. and M.S. in Biological Sciences. Mr. Nosal has statewide experience performing sensitive plant and animal surveys in addition to terrestrial vegetation investigations. Mr. Nosal has over 25 years of experience in botanical surveys, environmental assessment, and teaching with employers that include California Department of Fish and Wildlife, State Water Resources Control Board, American River College, MTI College and Pacific Municipal Consultants. Mr. Nosal has intensive experience with the flora of the Pine Hill region includes leading numerous field trips exploring the botany of the region, co-authoring a fuel management plan for Pine Hill, and a Master's thesis on Stebbins's morning glory (*Calystegia stebbinsii*), an endangered plant of this region.

8. REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, and T.J. Rosatti, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition, thoroughly revised and expanded. University of California Press, Berkeley, California. 1,600 pp.

Calflora. 2021. Calflora, the on-line gateway to information about native and introduced wild plants in California. Internet database available at http://calflora.org/.

California Department of Fish and Wildlife. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. California Natural Resources Agency, Department of Fish and Wildlife, Sacramento, California. 12 pp.

California Department of Fish and Wildlife. 2021. RareFind, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

California Department of Fish and Wildlife. 2021. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Available on the Internet at: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

California Native Plant Society. 2021. Inventory of Rare and Endangered Plants. Rare Plant Scientific Advisory Committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, California. Internet database available at http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi.

California Native Plant Society. 2001. CNPS botanical survey guidelines. Pages 38-40 in California Native Plant Society's inventory of rare and endangered vascular plants of California (D.P. Tibor, editor). Sixth edition. Special Publication No. 1, California Native Plant Society, Sacramento, 387 pp.

Lanner, R. M. 2002. Conifers of California. Cachuma Press, Los Olivos, California. 274 pp.

Natural Resources Conservation Service. 2021. Web Soil Survey. National Cooperative Soil Survey, U.S. Department of Agriculture. NRCS Soils Website (Internet database and digital maps) available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

Pavlik, B. M., P. C. Muick, S. G. Johnson, and M. Popper. 1991. Oaks of California. Cachuma Press and the California Oak Foundation. Los Olivos, California. 184 pp.

Sawyer, J. O., and T. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society, Sacramento, California. Available electronically at http://davisherb.ucdavis.edu/cnpsActiveServer/index.html.

Stuart, J. D., and J. O. Sawyer. 2001. Trees and Shrubs of California. California Natural History Guides. University of California Press, Berkeley, California. 467 pp.

Sunset Western Garden Collection. 2021. Sunset Climate Zones. Sunset Publishing Corporation. Available on the Internet at: https://www.sunsetwesterngardencollection.com/climate-zones.

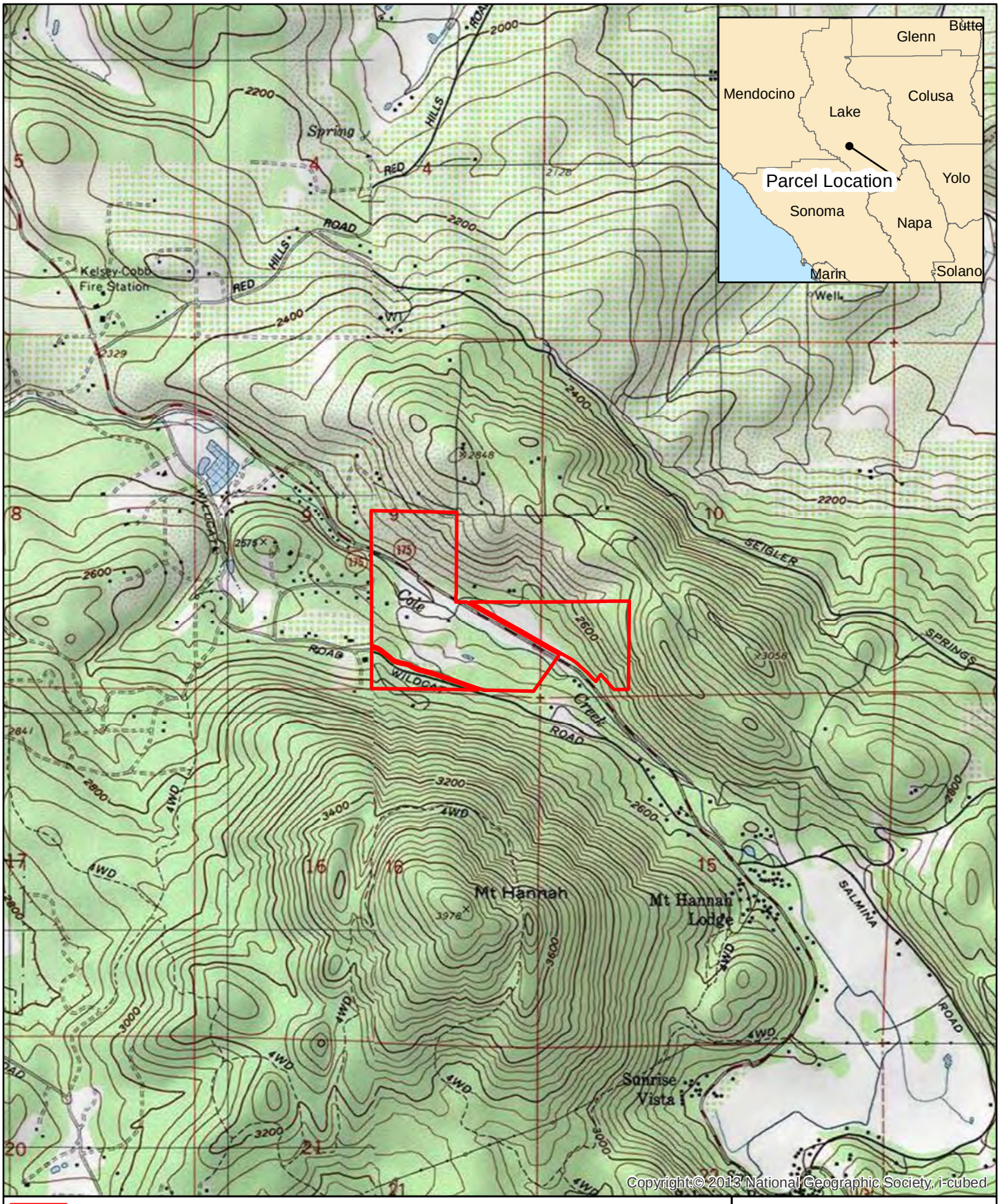
University of California at Berkeley. 2021a. Jepson Online Interchange for California Floristics. Jepson Flora Project, University Herbarium and Jepson Herbarium, University of California at Berkeley. Internet database available at http://ucjeps.berkeley.edu/interchange.html.

University of California at Berkeley. 2021b. CalPhotos. Biodiversity Sciences Technology Group, University of California at Berkeley. Internet database available at http://calphotos.berkeley.edu/

U.S. Fish and Wildlife Service. 1996. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants. Sacramento Fish and Wildlife Office, Sacramento, California. 2 pp.

United States Fish and Wildlife Service. 2021. Wetlands Digital Data. National Wetlands Inventory Center. Digital maps downloaded from the Internet at https://www.fws.gov/wetlands/.

EXHIBITS



Parcel Location

0 0.5 1 Kilometers

0 0.5 1 Miles

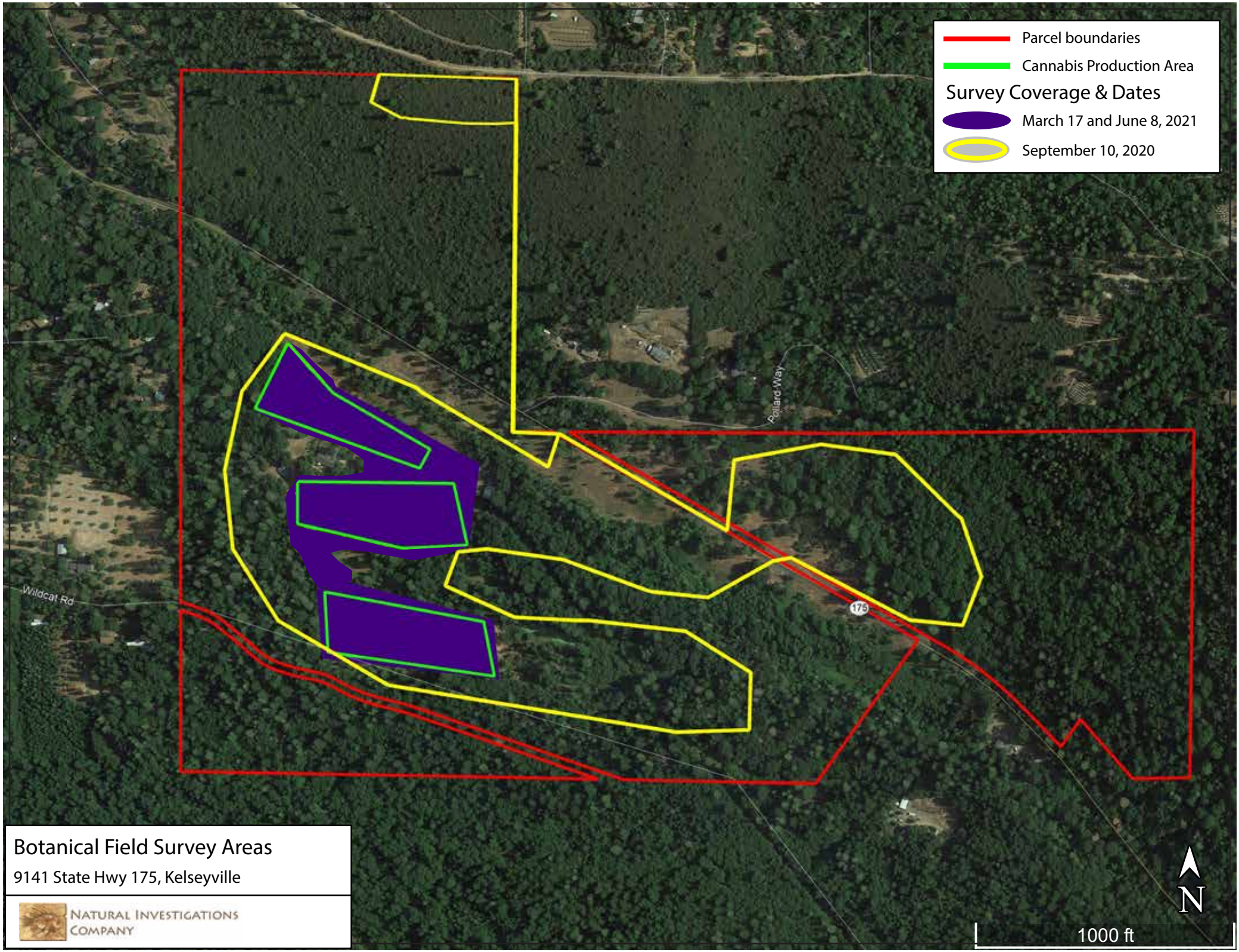
1:24,000

9141 State Hwy 175
Parcel Location Map

Natural Investigations Company

Map Date 8/31/2020

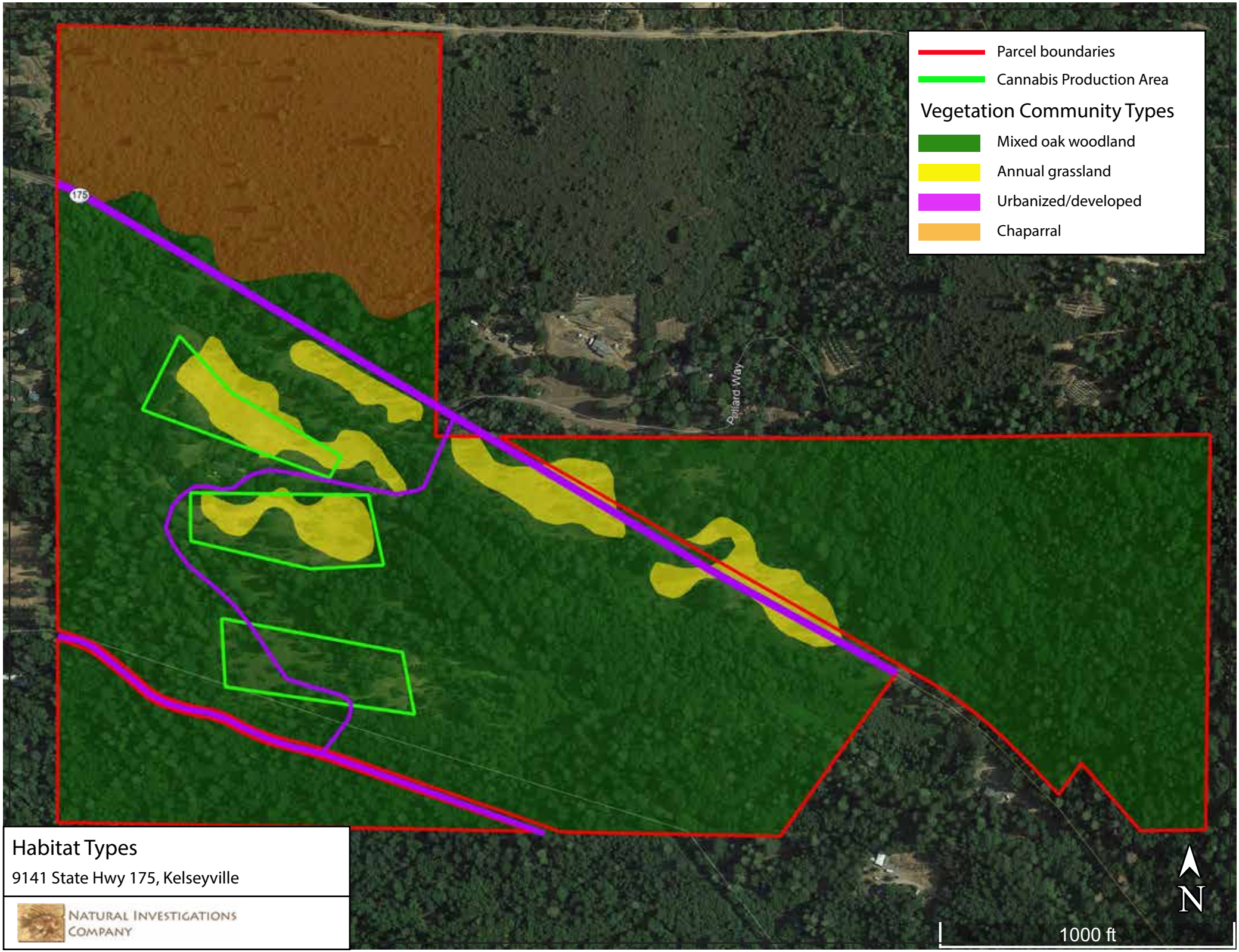
Clearlake Highlands 1993 Quadrangle:Township 12N, Range 8W, Section 9,10



Botanical Field Survey Areas

9141 State Hwy 175, Kelseyville

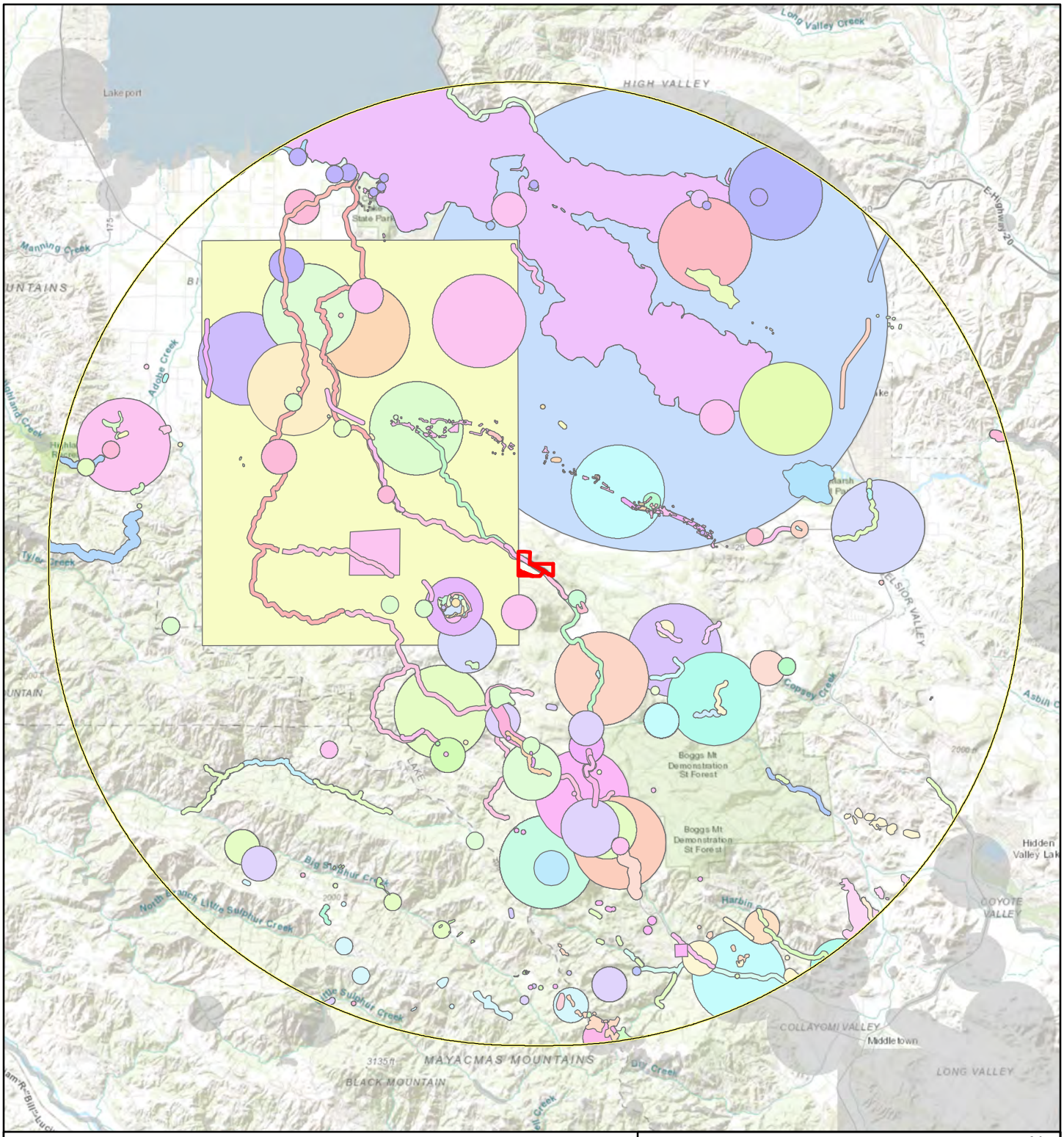
Natural Investigations Company



Habitat Types

9141 State Hwy 175, Kelseyville

Natural Investigations Company



Parcel Location 10 Mile Buffer

1:190,000 1 inch = 3 miles

0 3 6 Miles

N

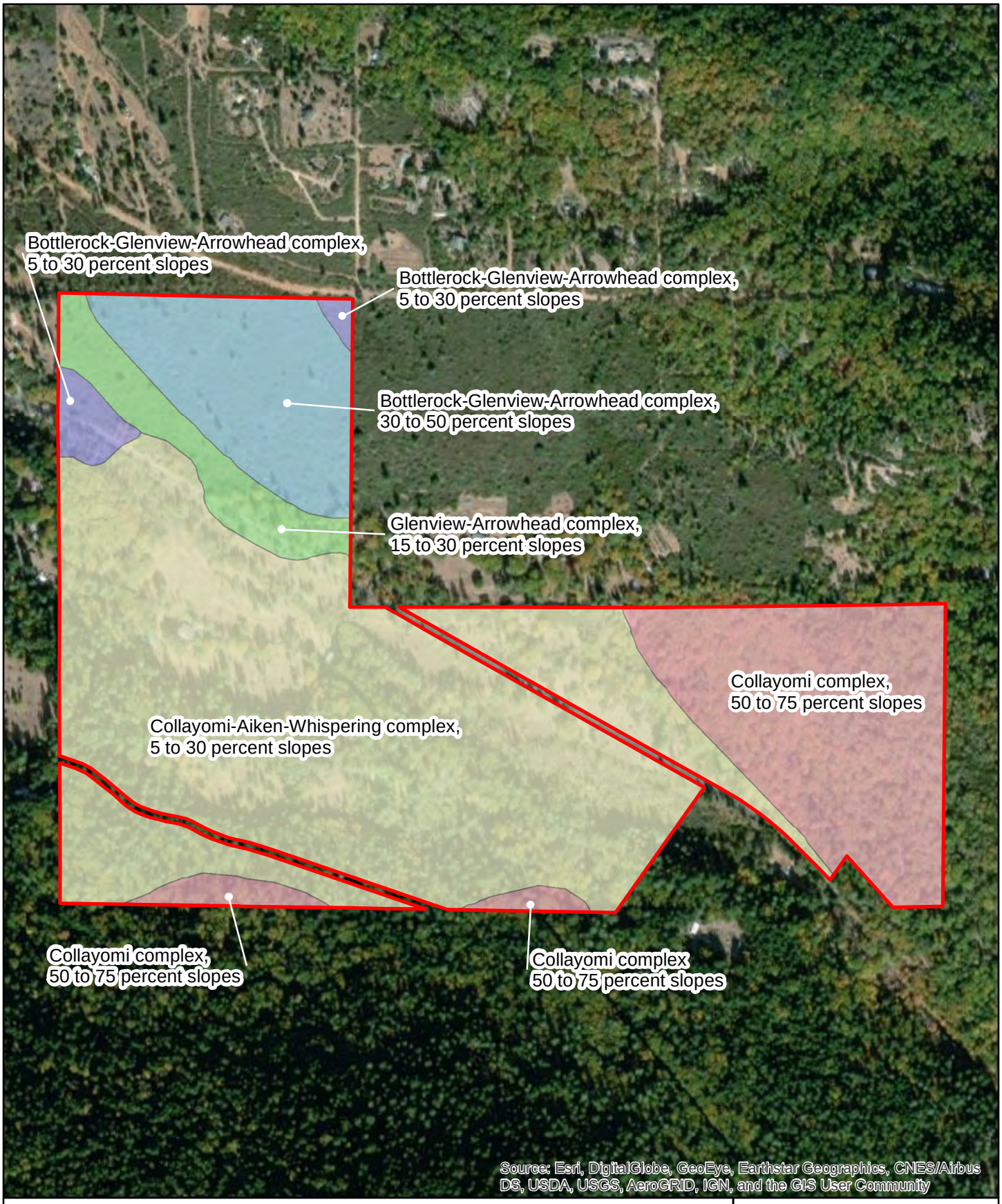
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist inshowing features discussed in an attached document. Natural Investigations Company can not guarantee the accuracy and content of electronic files.The master file is stored by Natural Investigations Company and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.Data Sources: California Department of Fish and Wildlife. 2020. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California.
(updated monthly by subscription service)

Special-Status Species Occurrences Map

9141 State Hwy 175

Clearlake Highlands 1993 Quadrangle:
Township 12N, Range 8W, Section 9,10

NATURAL INVESTIGATIONS CO.
WWW.NATURALINVESTIGATIONS.COM



Parcel Location

0 100 200 Meters

0 500 1,000 Feet

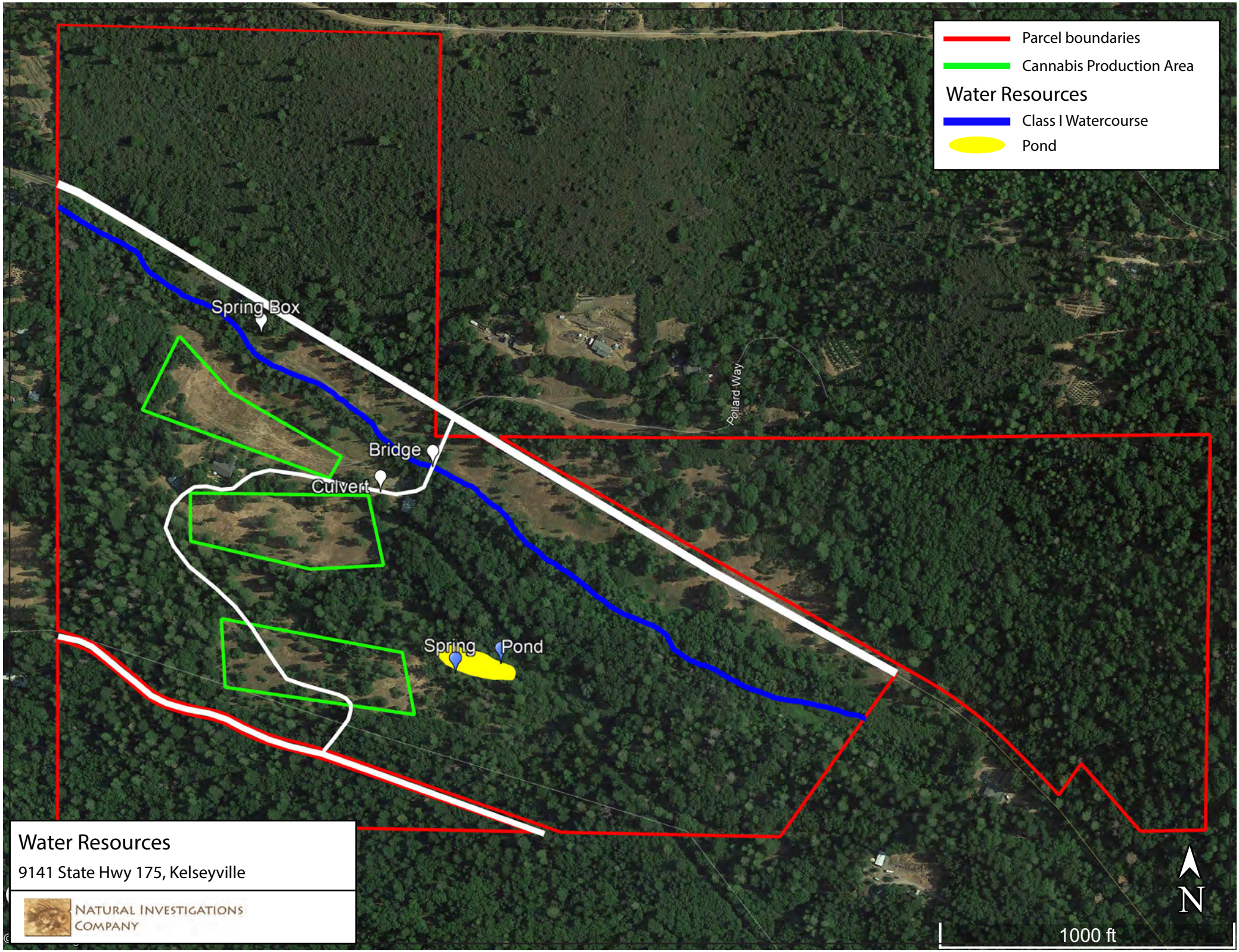
1:7,000

9141 State Hwy 175
USDA Soils Map

Natural Investigations Company

Map Date 8/31/2020

Clearlake Highlands 1993 Quadrangle:Township 12N, Range 8W, Section 9,10


Parcel boundaries
Cannabis Production Area
Water Resources
Class I Watercourse
Pond
Spring Box
Bridge
Culvert
Spring
Pond
Pollard Way
Water Resources
9141 State Hwy 175, Kelseyville
Natural Investigations Company
N
1000 ft

APPENDIX: CNDDB AND CNPS SPECIES LISTS

Special-status Species Reported by CNPS in the Vicinity of the Project Area (9-quadrangle query)

Common name *Scientific Name*	Blooming Period	CRPR	CESA	FESA	Habitat	Micro Habitat
Bent-flowered fiddleneck *Amsinckia lunaris*	Mar-Jun	1B.2	None	None	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland	
Dimorphic snapdragon *Antirrhinum subcordatum*	Apr-Jul	4.3	None	None	Chaparral, Lower montane coniferous forest	sometimes serpentinite
Twig-like snapdragon *Antirrhinum virga*	Jun-Jul	4.3	None	None	Chaparral, Lower montane coniferous forest	rocky, openings, often serpentinite
Coast rockcress *Arabis blepharophylla*	Feb-May	4.3	None	None	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub	rocky
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	(Jan)Mar-May(Jul)	1B.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest	volcanic
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	Feb-Apr	1B.1	None	None	Chaparral, Lower montane coniferous forest (openings)	rocky, often serpentinite
Serpentine milkweed *Asclepias solanoana*	May-Jul(Aug)	4.2	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest	serpentinite
Brewer's milk-vetch *Astragalus breweri*	Apr-Jun	4.2	None	None	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly)	often serpentinite, volcanic
Cleveland's milk-vetch *Astragalus clevelandii*	Jun-Sep	4.3	None	None	Chaparral, Cismontane woodland, Riparian forest	serpentinite seeps
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	Mar-Jun	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	often serpentinite
Mexican mosquito fern *Azolla microphylla*	Aug	4.2	None	None	Marshes and swamps (ponds, slow water)	
Watershield *Brasenia schreberi*	Jun-Sep	2B.3	None	None	Marshes and swamps (freshwater)	
Indian Valley brodiaea *Brodiaea rosea ssp. rosea*	May-Jun	3.1	CE	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland	serpentinite
Serpentine reed grass *Calamagrostis ophitidis*	Apr-Jul	4.3	None	None	Chaparral (open, often north-facing slopes), Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland	serpentinite, rocky
Pink star-tulip *Calochortus uniflorus*	Apr-Jun	4.2	None	None	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest	
Four-petaled pussypaws *Calyptridium quadripetalum*	Apr-Jun	4.3	None	None	Chaparral, Lower montane coniferous forest	sandy or gravelly, usually serpentinite
Mt. Saint Helena morning-glory *Calystegia collina ssp. oxyphylla*	Apr-Jun	4.2	None	None	Chaparral, Lower montane coniferous forest, Valley and foothill grassland	serpentinite
Three-fingered morning-glory	Apr-Jun	1B.2	None	None	Chaparral, Cismontane woodland	serpentinite, rocky, gravelly, openings

Calystegia collina ssp. tridactylosa						
Northern meadow sedge *Carex praticola*	May-Jul	2B.2	None	None	Meadows and seeps (mesic)	
Pink creamsacs *Castilleja rubicundula var. rubicundula*	Apr-Jun	1B.2	None	None	Chaparral (openings), Cismontane woodland, Meadows and seeps, Valley and foothill grassland	serpentinite
Rincon Ridge ceanothus *Ceanothus confusus*	Feb-Jun	1B.1	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland	volcanic or serpentinite
Calistoga ceanothus *Ceanothus divergens*	Feb-Apr	1B.2	None	None	Chaparral (serpentinite or volcanic, rocky)	
Dwarf soaproot *Chlorogalum pomeridianum var. minus*	May-Aug	1B.2	None	None	Chaparral (serpentinite)	
Tracy's clarkia *Clarkia gracilis ssp. tracyi*	Apr-Jul	4.2	None	None	Chaparral (openings, usually serpentinite)	
Serpentine collomia *Collomia diversifolia*	May-Jun	4.3	None	None	Chaparral, Cismontane woodland	serpentinite, rocky or gravelly
Serpentine bird's-beak *Cordylanthus tenuis ssp. brunneus*	Jul-Aug	4.3	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland	usually serpentinite
Serpentine cryptantha *Cryptantha dissita*	Apr-Jun	1B.2	None	None	Chaparral (serpentinite)	
Swamp larkspur *Delphinium uliginosum*	May-Jun	4.2	None	None	Chaparral, Valley and foothill grassland	serpentinite seeps
Cascade downingia *Downingia willamettensis*	Jun-Jul(Sep)	2B.2	None	None	Cismontane woodland (lake margins), Valley and foothill grassland (lake margins), Vernal pools	
Brandegee's eriastrum *Eriastrum brandegeeae*	Apr-Aug	1B.1	None	None	Chaparral, Cismontane woodland	volcanic, sandy
Greene's narrow-leaved daisy *Erigeron greenei*	May-Sep	1B.2	None	None	Chaparral (serpentinite or volcanic)	
Snow Mountain buckwheat *Eriogonum nervulosum*	Jun-Sep	1B.2	None	None	Chaparral (serpentinite)	
Loch Lomond button-celery *Eryngium constancei*	Apr-Jun	1B.1	CE	FE	Vernal pools	
Adobe-lily *Fritillaria pluriflora*	Feb-Apr	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	often adobe
Boggs Lake hedge-hyssop *Gratiola heterosepala*	Apr-Aug	1B.2	CE	None	Marshes and swamps (lake margins), Vernal pools	clay
Toren's grimmia *Grimmia torenii*		1B.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest	Openings, rocky, boulder and rock walls, carbonate, volcanic
Hall's harmonia *Harmonia hallii*	Apr-Jun	1B.2	None	None	Chaparral (serpentinite)	
Congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	Apr-Nov	1B.2	None	None	Valley and foothill grassland	sometimes roadsides

Glandular western flax *Hesperolinon adenophyllum*	May-Aug	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	usually serpentinite
Two-carpellate western flax *Hesperolinon bicarpellatum*	May-Jul	1B.2	None	None	Chaparral (serpentinite)	
Lake County western flax *Hesperolinon didymocarpum*	May-Jul	1B.2	CE	None	Chaparral, Cismontane woodland, Valley and foothill grassland	serpentinite
Sharsmith?S western flax *Hesperolinon sharsmithiae*	May-Jul	1B.2	None	None	Chaparral	serpentinite
Bolander's horkelia *Horkelia bolanderi*	(May)Jun-Aug	1B.2	None	None	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland	edges, vernally mesic areas
California satintail *Imperata brevifolia*	Sep-May	2B.1	None	None	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps (often alkali), Riparian scrub	mesic
Burke's goldfields *Lasthenia burkei*	Apr-Jun	1B.1	CE	FE	Meadows and seeps (mesic), Vernal pools	
Colusa layia *Layia septentrionalis*	Apr-May	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	sandy, serpentinite
Legenere *Legenere limosa*	Apr-Jun	1B.1	None	None	Vernal pools	
Bristly leptosiphon *Leptosiphon acicularis*	Apr-Jul	4.2	None	None	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland	
Jepson's leptosiphon *Leptosiphon jepsonii*	Mar-May	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	usually volcanic
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	Mar-May(Jun)	4.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland, Vernal pools	vernally mesic
Napa lomatium *Lomatium repostum*	Mar-Jun	4.3	None	None	Chaparral, Cismontane woodland	serpentinite
Cobb Mountain lupine *Lupinus sericatus*	Mar-Jun	1B.2	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest	
Heller's bush-mallow *Malacothamnus helleri*	May-Jul	3.3	None	None	Chaparral (sandstone), Riparian woodland (gravel)	
Mt. Diablo cottonweed *Micropus amphibolus*	Mar-May	3.2	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland	rocky
Elongate copper moss *Mielichhoferia elongata*		4.3	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest	Metamorphic rock, usually acidic, usually vernally mesic, often roadsides, sometimes carbonate
Little mousetail *Myosurus minimus ssp. apus*	Mar-Jun	3.1	None	None	Valley and foothill grassland, Vernal pools (alkaline)	
Cotula navarretia *Navarretia cotulifolia*	May-Jun	4.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	adobe
Jepson's navarretia *Navarretia jepsonii*	Apr-Jun	4.3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland	serpentinite
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	Apr-Jul	1B.1	None	None	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Mesic
Few-flowered navarretia	May-Jun	1B.1	CT	FE	Vernal pools (volcanic ash flow)	

Navarretia leucocephala ssp. pauciflora						
Many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	May-Jun	1B.2	CE	FE	Vernal pools (volcanic ash flow)	
Porter?S navarretia *Navarretia paradoxinota*	May-Jun(Jul)	1B.3	None	None	Meadows and seeps	Serpentinite, openings, vernally mesic, often drainages
Slender Orcutt grass *Orcuttia tenuis*	May-Sep(Oct)	1B.1	CE	FT	Vernal pools	Often gravelly.
Geysers panicum *Panicum acuminatum var. thermale*	Jun-Aug	1B.2	CE	None	Closed-cone coniferous forest, Riparian forest, Valley and foothill grassland	geothermally-altered soil, sometimes streamsides
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	Apr-Aug	1B.3	None	None	Chaparral (rocky)	
Michael's rein orchid *Piperia michaelii*	Apr-Aug	4.2	None	None	Coastal bluff scrub, Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest	
Eel-grass pondweed *Potamogeton zosteriformis*	Jun-Jul	2B.2	None	None	Marshes and swamps (assorted freshwater)	
Lake County stonecrop *Sedella leiocarpa*	Apr-May	1B.1	CE	FE	Cismontane woodland, Valley and foothill grassland, Vernal pools	vernally mesic depressions in volcanic outcrops
Cleveland's ragwort *Senecio clevelandii var. clevelandii*	Jun-Jul	4.3	None	None	Chaparral (serpentinite seeps)	
Marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	(Jun)Jul-Aug	1B.2	None	None	Meadows and seeps, Riparian forest	mesic
Bearded jewelflower *Streptanthus barbiger*	May-Jul	4.2	None	None	Chaparral (serpentinite)	
Socrates Mine jewelflower *Streptanthus brachiatus ssp. brachiatus*	May-Jun	1B.2	None	None	Closed-cone coniferous forest, Chaparral	usually serpentinite
Freed's jewelflower *Streptanthus brachiatus ssp. hoffmanii*	May-Jul	1B.2	None	None	Chaparral, Cismontane woodland	serpentinite
Hoffman's bristly jewelflower *Streptanthus glandulosus ssp. hoffmanii*	Mar-Jul	1B.3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland (often serpentinite)	rocky
Green jewelflower *Streptanthus hesperidis*	May-Jul	1B.2	None	None	Chaparral (openings), Cismontane woodland	serpentinite, rocky
Three Peaks jewelflower *Streptanthus morrisonii ssp. elatus*	Jun-Sep	1B.2	None	None	Chaparral (serpentinite)	
Kruckeberg's jewelflower *Streptanthus morrisonii ssp. kruckebergii*	Apr-Jul	1B.2	None	None	Cismontane woodland (serpentinite)	
Marsh zigadenus *Toxicoscordion fontanum*	Apr-Jul	4.2	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps	vernally mesic, often serpentinite

Napa bluecurls *Trichostema ruygtii*	Jun-Oct	1B.2	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools	
Saline clover *Trifolium hydrophilum*	Apr-Jun	1B.2	None	None	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools	
Oval-leaved viburnum *Viburnum ellipticum*	May-Jun	2B.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest	

Special-status Species Reported by CNDDB in the Vicinity of the Project Area (10-mile buffer)

Common Name Scientific Name	Status*	General Habitat**	Microhabitat**
Toren's grimmia *Grimmia torenii*	1B.3	Cismontane woodland, lower montane coniferous forest, chaparral.	Openings, rocky, boulder and rock walls, carbonate, volcanic. 325-1160 m.
Elongate copper moss *Mielichhoferia elongata*	4.3	Cismontane woodland. Commonly called "copper mosses".	Moss growing on very acidic, metamorphic rock or substrate; usually in higher portions in fens. Often on substrates natu
Loch Lomond button-celery *Eryngium constancei*	FE/CE/1B.1	Vernal pools.	Volcanic ash flow vernal pools. 460-855 m.
Greene's narrow-leaved daisy *Erigeron greenei*	1B.2	Chaparral.	Serpentine and volcanic substrates, generally in shrubby vegetation. 80-1005 m.
Burke's goldfields *Lasthenia burkei*	FE/CE/1B.1	Vernal pools, meadows and seeps.	Most often in vernal pools and swales. 15-600 m.
Colusa layia *Layia septentrionalis*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Scattered colonies in fields and grassy slopes in sandy or serpentine soil. 145-1095m.
Hall's harmonia *Harmonia hallii*	1B.2	Chaparral.	Serpentine hills and ridges. Open, rocky areas within chaparral. 500-900 m.
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Cismontane woodland, valley and foothill grassland.	50-500m.
Serpentine cryptantha *Cryptantha dissita*	1B.2	Chaparral.	Serpentine outcrops. 330-730m.
Freed's jewelflower *Streptanthus brachiatus ssp. hoffmanii*	1B.2	Chaparral, cismontane woodland.	Serpentine rock outcrops, primarily in geothermal development areas. 490-1220 m.
Socrates Mine jewelflower *Streptanthus brachiatus ssp. brachiatus*	1B.2	Chaparral, closed-cone coniferous forest.	Serpentine areas and serpentine chaparral. 545-1000 m.
Hoffman's bristly jewelflower *Streptanthus glandulosus ssp. hoffmanii*	1B.3	Chaparral, cismontane woodland, valley and foothill grassland.	Moist, steep rocky banks, in serpentine and non-serpentine soil. 120-475m.
Green jewelflower *Streptanthus hesperidis*	1B.2	Chaparral, cismontane woodland.	Openings in chaparral or woodland; serpentine, rocky sites. 130-760m.
Watershield *Brasenia schreberi*	2B.3	Freshwater marshes and swamps.	Aquatic from water bodies both natural and artificial in california.
Cascade downingia *Downingia willamettensis*	2B.2	Cismontane woodland, valley and foothill grasslands.	Lake margins and vernal pools.
Legenere *Legenere limosa*	1B.1	Vernal pools.	In beds of vernal pools. 1-880 m.
Three-fingered morning-glory *Calystegia collina ssp. tridactylosa*	1B.2	Chaparral, cismontane woodland.	Rocky, gravelly openings in serpentine. 0-600 m.
Oval-leaved viburnum *Viburnum ellipticum*	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	215-1400 m.
Lake County stonecrop *Sedella leiocarpa*	FE/CE/1B.1	Valley and foothill grassland, vernal pools, cismontane woodland.	Level areas that are seasonally wet and dry out in late spring; substrate usually of volcanic origin. 365-790 m.
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	1B.1	Chaparral, lower montane coniferous forest.	Rocky, serpentine sites. Slopes and ridges. 450-1000 m.
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	Volcanic soils. 395-1615 m.
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	1B.2	Cismontane woodland, valley and foothill grassland, chaparral.	Commonly on serpentine in grassland or openings in chaparral. 180-1000 m.
Cobb Mountain lupine *Lupinus sericatus*	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, broadleafed upland forest.	In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine. 275-1525 m.

Napa bluecurls *Trichostema ruygtii*	1B.2	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools, lower montane coniferous forest.	Often in open, sunny areas. Also has been found in vernal pools. 30-590m.
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	4.2	Chapparal, cismontane woodland, valley and foothill grassland, vernal pools.	Vernally wet areas, ditches, and ponds. 60-1335 m.
Glandular western flax *Hesperolinon adenophyllum*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils; generally found in serpentine chaparral. 150-1315 m.
Two-carpellate western flax *Hesperolinon bicarpellatum*	1B.2	Serpentine chaparral.	Serpentine barrens at edge of chaparral. 60-1005 m.
Lake County western flax *Hesperolinon didymocarpum*	CE/1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soil in open grassland and near chaparral. 330-365m.
Marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	1B.2	Meadows and seeps, riparian forest.	Wet soil of streambanks, meadows. 1100-2300 m.
Snow Mountain buckwheat *Eriogonum nervulosum*	1B.2	Chaparral.	Dry serpentine outcrops, balds, and barrens. 300-2100 m.
Brandegee's eriastrum *Eriastrum brandegeeae*	1B.1	Chaparral, cismontane woodland.	On barren volcanic soils; often in open areas. 425-840 m.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	1B.1	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	Vernal pools and swales; adobe or alkaline soils. 5-1740 m.
Few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE/CT/1B.1	Vernal pools.	Volcanic ash flow, and volcanic substrate vernal pools. 400-855 m.
Many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE/CE/1B.2	Vernal pools.	Volcanic ash flow vernal pools. 30-950 m.
Rincon Ridge ceanothus *Ceanothus confusus*	1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland.	Known from volcanic or serpentine soils, dry shrubby slopes. 75-1065 m.
Calistoga ceanothus *Ceanothus divergens*	1B.2	Chaparral.	Rocky, serpentine or volcanic sites. 170-950 m.
Bolander's horkelia *Horkelia bolanderi*	1B.2	Lower montane coniferous forest, chaparral, meadows, valley and foothill grassland.	Grassy margins of vernal pools and meadows. 450-1100 m.
Pink creamsacs *Castilleja rubicundula var. rubicundula*	1B.2	Chaparral, meadows and seeps, valley and foothill grassland.	Openings in chaparral or grasslands. On serpentine. 20-900 m.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	CE/1B.2	Marshes and swamps (freshwater), vernal pools.	Clay soils; usually in vernal pools, sometimes on lake margins. 10-2375 m.
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	1B.3	Chaparral.	Crevices in rock outcrops and talus slopes. 700-1370 m.
Dimorphic snapdragon *Antirrhinum subcordatum*	4.3	Chaparral, lower montane coniferous forest.	Generally on serpentine or shale in foothill woodland or chaparral on s- and w-facing slopes. 185-800 m.
Northern meadow sedge *Carex praticola*	2B.2	Meadows and seeps.	Moist to wet meadows. 0-3200 m.
Dwarf soaproot *Chlorogalum pomeridianum var. minus*	1B.2	Chaparral, valley and foothill grassland.	Serpentine. 240-970 m.
Geysers panicum *Panicum acuminatum var. thermale*	CE/1B.2	Closed-cone coniferous forest, riparian forest, valley and foothill grassland.	Usually around moist, warm soil in the vicinity of hot springs. 305-2470 m.
California satintail *Imperata brevifolia*	2B.1	Coastal scrub, chaparral, riparian scrub, Mojavean scrub, meadows and seeps (alkali), riparian scrub.	Mesic sites, alkali seeps, riparian areas. 0-1215 m.
Slender Orcutt grass *Orcuttia tenuis*	FT/CT/1B.1	Vernal pools.	Often in gravelly pools. 35-1760 m.
Eel-grass pondweed *Potamogeton zosteriformis*	2B.2	Marshes and swamps.	Ponds, lakes, streams. 0-1860 m.

*Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CR = California rare species; CFP = California fully protected species; CNPS (California Native Plant Society) List 1A = Plants presumed extinct in California by CNPS; CNPS List 1B = CNPS designated rare or endangered plants in California and elsewhere; and CNPS List 2 = CNPS designated rare or endangered plants in California, but more common elsewhere. Global Ranking: G1 = Critically Imperiled; G2 = Imperiled; G3 = Vulnerable. State Ranking: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.

**Copied verbatim from CNDDB, unless otherwise noted.

APPENDIX: LIST OF PLANT TAXA DETECTED IN THE PROJECT AREA AND IMMEDIATE VICINITY

A list of all plant taxa occurring in the project area, with all taxa identified to the taxonomic level necessary to determine whether or not they are a special status plant;

Plants Observed at 9141 Highway 175, Kelseyville
on September 10, 2020, March 17, 2021, and June 8, 2021

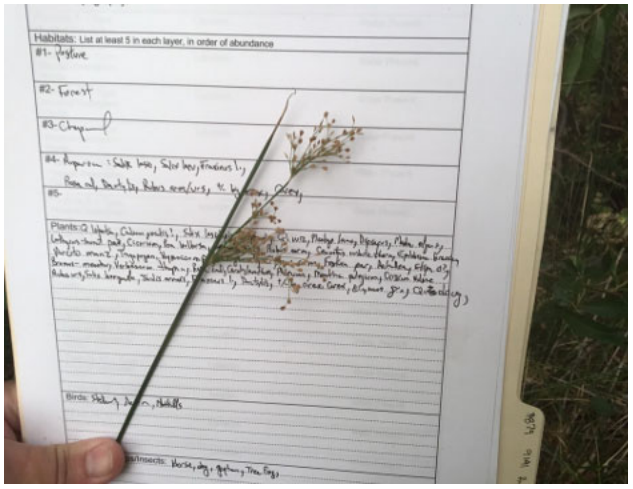
Common Name	Scientific Name
Big leaf maple	*Acer macrophyllum*
Yarrow	*Achillea millefolium*
Spanish lotus	*Acmispon americanus*
Lotus	*Acmispon sp.*
Chamise	*Adenostoma fasciculatum*
California dandelion	*Agoseris grandiflora ssp. grandiflora*
Mountain dandelion	*Agoseris sp.*
Common agrimony	*Agrimonia gryposepala*
Bentgrass	*Agrostis sp.*
Meadow foxtail	*Alopecurus pratensis*
Sweet vernal grass	*Anthoxanthum odoratum*
Spreading dogbane	*Apocynum androsaemifolium*
Madrone	*Arbutus menziesii*
Hoary manzanita	*Arctostaphylos canescens ssp. canescens*
Common manzanita	*Arctostaphylos manzanita ssp. manzanita*
Tall oatgrass	*Arrhenatherum elatius*
California mugwort	*Artemisia douglasiana*
Slender wild oat	*Avena barbata*
Wild oat	*Avena fatua*
Coyote brush	*Baccharis pilularis*
Elegant brodiaea	*Brodiaea elegans*
Brodiaea	*Brodiaea sp.*
California brome	*Bromus carinatus*
Rescue brome	*Bromus catharticus*
Meadow brome	*Bromus commutatus*
Ripgut brome	*Bromus diandrus*
Soft chess	*Bromus hordeaceus*
Woodland brome	*Bromus laevipes*
Cheat grass	*Bromus tectorum*
Reed grass	*Calamagrostis sp.*
Incense cedar	*Calocedrus decurrens*
Nebraska sedge	*Carex nebrascensis*
Field sedge	*Carex praegracilis*
Sedge	*Carex sp.*
Hairy owl's clover	*Castilleja tenuis*
Deer brush	*Ceanothus integerrimus*
Chaparral whitethorn	*Ceanothus leucodermis*
Little leaf ceanothus	*Ceanothus parvifolius*
Bachelor's buttons	*Centaurea cyanus*
Maltese star thistle	*Centaurea melitensis*
Yellow star thistle	*Centaurea solstitialis*
Birchleaf mountain mahogany	*Cercocarpus betuloides*
Wavy leaf soap plant	*Chlorogalum pomeridianum*
Chicory	*Cichorium intybus*
Canada thistle	*Cirsium arvense*
Bull thistle	*Cirsium vulgare*
Chaparral fairyfan	*Clarkia affinis*
Clarkia	*Clarkia sp.*
Large flowered collomia	*Collomia grandiflora*

Common Name	Scientific Name
Field bindweed	*Convolvulus arvensis*
Hairy bird's beak	*Cordylanthus pilosus ssp. pilosus*
Brown dogwood	*Cornus glabrata*
Pacific houndstooth	*Cynoglossum grande*
Dogtail grass	*Cynosurus echinatus*
Orchard grass	*Dactylis glomerata*
Rattlesnake weed	*Daucus pusillus*
Larkspur	*Delphinium sp.*
Annual hairgrass	*Deschampsia danthonioides*
Fork-toothed ookow	*Dichelostemma congestum*
Fuller's teasel	*Dipsacus fullonum*
Medusahead grass	*Elymus caput-medusae*
Blue wildrye	*Elymus glaucus*
Wildrye	*Elymus sp.*
Tall willowherb	*Epilobium brachycarpum*
Fringed willowherb	*Epilobium ciliatum*
Willowherb	*Epilobium sp.*
Torrey's willowherb	*Epilobium torreyi*
Erigeron	*Erigeron sp.*
Yerba santa	*Eriodictyon californicum*
Naked buckwheat	*Eriogonum nudum*
Broad leaved filaree	*Erodium botrys*
Red-stemmed filaree	*Erodium cicutarium*
Yellow monkeyflower	*Erythranthe guttata*
California poppy	*Eschscholzia californica*
Tall fescue	*Festuca arundinacea*
Brome fescue	*Festuca bromoides*
California fescue	*Festuca californica*
Idaho fescue	*Festuca idahoensis*
Pacific fescue	*Festuca microstachys*
Italian ryegrass	*Festuca perennis*
Wild strawberry	*Fragaria vesca*
California coffeeberry	*Frangula californica*
Oregon ash	*Fraxinus latifolius*
Bedstraw	*Galium aparine*
California bedstraw	*Galium californicum*
Wall bedstraw	*Galium parisiense*
Fragrant bedstraw	*Galium triflorum*
Fremont's silk tassel	*Garrya fremontii*
Nit grass	*Gastridium phleoides*
Gumplant	*Grindelia sp.*
Hayfield tarplant	*Hemizonia congesta ssp. luzulifolia*
Meadow barley	*Hordeum brachyantherum*
Mediterranean barley	*Hordeum marinum ssp. gussoneanum*
California horkelia	*Horkelia californica*
Horkelia	*Horkelia sp.*
Big deervetch	*Hosackia crassifolia var. crassifolia*
Gold wire	*Hypericum concinnum*
Klamath weed	*Hypericum perforatum*
Iris	*Iris sp.*
Northern California black walnut	*Juglans hindsii*
English walnut	*Juglans regia*

Common Name	Scientific Name
Baltic rush	*Juncus balticus*
Mexican rush	*Juncus mexicanus*
Rush	*Juncus sp.*
Slender rush	*Juncus tenuis*
Iris-leaved rush	*Juncus xiphioides*
Lemmon's	*Keckiella lemmonii*
Sweet pea	*Lathyrus latifolius*
Peavine	*Lathyrus sp.*
Pacific pea	*Lathyrus vestitus*
Duckweed	*Lemna sp.*
Douglas' meadowfoam	*Limnanthes douglasii*
Pink honeysuckle	*Lonicera hispidula*
Chaparral honeysuckle	*Lonicera interrupta*
Bird's-foot trefoil	*Lotus corniculatus*
Silver bush lupine	*Lupinus albifrons*
Miniature lupine	*Lupinus bicolor*
Lupine	*Lupinus sp.*
Pacific woodrush	*Luzula comosa*
Hyssop loosestrife	*Lythrum hyssopifolia*
Common madia	*Madia elegans*
Small tarplant	*Madia exigua*
Slender madia	*Madia gracilis*
Tarplant	*Madia sp.*
Apple	*Malus pumila*
American cornmint	*Mentha canadensis*
Pennyroyal	*Mentha pulegium*
Coyote mint	*Monardella villosa*
Interwoven navarretia	*Navarretia intertexta*
Navarretia	*Navarretia sp.*
Nemophila	*Nemophila pedunculata*
Sweet Cicely	*Osmorhiza berteroi*
Foothill penstemon	*Penstemon heterophyllus*
Harding grass	*Phalaris aquatica*
Canarygrass	*Phalaris sp.*
American mistletoe	*Phoradendron leucarpum*
Ponderosa pine	*Pinus ponderosa*
English plantain	*Plantago lanceolata*
Seablush	*Plectritis sp.*
Bulbous bluegrass	*Poa bulbosa*
Kentucky bluegrass	*Poa pratensis*
Bluegrass	*Poa sp.*
California milkwort	*Polygala californica*
Henderson's shooting star	*Primula hendersonii*
Cherry plum	*Prunus cerasifera*
Douglas fir	*Pseudotsuga menziesii*
Bracken	*Pteridium aquilinum*
Pear	*Pyrus communis*
California scrub oak	*Quercus berberidifolia*
Canyon live oak	*Quercus chrysolepis*
Blue oak	*Quercus douglasii*
California black oak	*Quercus kelloggii*
Valley oak	*Quercus lobata*

Common Name	Scientific Name
Bush interior live oak	*Quercus wislizeni ssp. frutescens*
Interior live oak	*Quercus wislizeni ssp. wislizeni*
Buttercup	*Ranunculus sp.*
Lemonade berry	*Rhus aromatica*
Bog yellowcress	*Rorippa palustris*
California rose	*Rosa californica*
Wood rose	*Rosa gymnocarpa*
Himalayan blackberry	*Rubus armeniacus*
California blackberry	*Rubus ursinus*
Sheep sorrel	*Rumex acetosella*
Curly dock	*Rumex crispus*
Dock	*Rumex sp.*
Red willow	*Salix laevigata*
Arroyo willow	*Salix lasiolepis*
Blue elderberry	*Sambucus nigra ssp. caerulea*
Pacific sanicle	*Sanicula crassicaulis*
Common tule	*Schoenoplectus acutus*
Panicled bulrush	*Scirpus microcarpus*
Sidalcea	*Sidalcea sp.*
Indian pinks	*Silene laciniata*
Goldenrod	*Solidago sp.*
Threenerve goldenrod	*Solidago velutina*
Hedge nettle	*Stachys sp.*
Lemmon's needlegrass	*Stipa lemmonii*
Western needlegrass	*Stipa occidentalis*
Purple needlegrass	*Stipa pulchra*
Needlegrass	*Stipa sp.*
Common snowberry	*Symphoricarpos albus*
Aster	*Symphyotrichum sp.*
Dandelion	*Taraxacum officinale*
Tall sock destroyer	*Torilis arvensis*
Poison-oak	*Toxicodendron diversilobum*
Goat's beard	*Tragopogon dubius*
Salsify	*Tragopogon porrifolius*
Clover	*Trifolium sp.*
Triplet lily	*Triteleia sp.*
Broad leaf cattail	*Typha latifolia*
California bay	*Umbellularia californica*
Common nettles	*Urtica dioica*
Moth mullein	*Verbascum blattaria*
Common mullein	*Verbascum thapsus*
Western vervain	*Verbena lasiostachys*
America speedwell	*Veronica peregrina*
American vetch	*Vicia americana*
Spring vetch	*Vicia sativa*
Winter vetch	*Vicia villosa*
Giant chain fern	*Woodwardia fimbriata*
Narrow leaf mule ears	*Wyethia angustifolia*
Smooth mule ears	*Wyethia glabra*

APPENDIX: SITE PHOTOS


Habitats: List at least 5 in each layer, in order of abundance
#1- Pasture
#2- Forest
#3- Clearing
#4- Riparian
#5-
Plants:
Birds:
Insects: