BIOLOGICAL RESOURCES ASSESSMENT FOR THE CANNABIS CULTIVATION OPERATION AT 19955 GRANGE ROAD, MIDDLETOWN, CALIFORNIA

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1. INTRODUCTION

1.1. PROJECT LOCATION AND DESCRIPTION

Rancho Lake, LLC (Rancho Lake) is seeking a Major Use Permit and an Early Activation of Use Permit from the County of Lake, for a proposed commercial cannabis cultivation operation at 19955 Grange Road near Middletown, California on Lake County APN 014-290-08 (Project Parcel). Rancho Lake's proposed commercial cannabis cultivation operation will be composed of fifty-six (56) A-Type 3 "Medium Outdoor" cultivation areas, with a combined cultivation/canopy area of 2,700,720 square feet (62 acres). Additionally, Rancho Lake is applying for an Early Activation of Use Permit for 871,200 square feet (20 acres) of the total proposed 2,700,720 square foot cultivation/canopy area. The total cultivation area of the proposed cannabis cultivation operation (as defined in Chapter 21, Article 27 of the Lake County Code), including the combined cultivation/canopy area(s), a 120 square foot Security Center/Shed, and a 160 square foot Pesticides & Agricultural Chemicals Storage Area, is 2,440,000 square feet.

The Project Property is composed of five parcels totaling approximately 1,246 acres (Lake County APNs 014-290-08 & 12 and 014-300-02, 03, & 04), all of which are owned by the Comstock Family Trust. James Comstock (Managing Member of the Comstock Family Trust) has given Rancho Lake 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 was enrolled for coverage under the State Water Resources Control Board's Cannabis General Order as a Tier 2 Low Risk Discharger on October 30th, 2020. The proposed cultivation operation will be established in areas of the Project Property that have been used for cattle grazing, continuously since at least the early 1900s.

6-foot tall wire fences will be erected around the proposed outdoor cultivation/canopy area(s), with privacy mesh where necessary to screen the cultivation/canopy area(s) from public view. The growing medium of the proposed outdoor cultivation/canopy area(s) will be an amended native soil mixture at or below grade, with drip irrigation systems covered in white plastic mulch (to conserve water resources). All water for the proposed cultivation operation will come from two existing onsite groundwater wells located at: Latitude 38.77631°; Longitude -122.52444° and Latitude 38.77697°; Longitude -122.52711°. Water from these two groundwater wells will be stored within thirty (30) proposed 5,000-gallon water storage tanks located directly adjacent to the proposed cultivation/canopy area(s).

Only outdoor cannabis cultivation, harvesting, and preservation activities will be conducted onsite. Cannabis cultivated on and harvested from the Project Parcel, will be dried within temporary drying facilities, then transported to State of California-licensed processing and manufacturing facilities for processing and/or extraction.

For this assessment, the Project Area was defined as the cultivation area plus the ancillary facilities, and this 63-acre area was the subject of the impact analysis. The entire 1847-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. SCOPE OF ASSESSMENT

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 2019-0001-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 7 - California's Gray Pine Belt, defined by hot summers and mild but pronounced winters without severe winter cold or high humidity (Sunset, 2020).

The topography of the Study Area is mountainous, with flat valleys at the base of the slopes. The elevation ranges from approximately 930 feet to 1,710 feet above mean sea level. Drainage runs north, and eventually flows into Putah Creek. The Project Property is located in the eastern half of the Coyote Valley, within the Crazy Creek - Putah Creek Watershed. Putah Creek, a perennial Class I watercourse, flows from west to east through the northernmost portion of the Project Property. Crazy Creek, an intermittent Class II watercourse, flows from west to east through the northwest portion of the Project Property and into Putah Creek. Multiple unnamed intermittent Class III watercourses flow generally from south to north, through the Project Property, and into Putah Creek. A large complex wetland occupies floor of a valley in the southern half of the Project Property (over 1000 feet from the proposed cultivation operation). There are four culverted Class III watercourse crossings of Grange Road and Comstock Ranch Road, used to access the Project Parcel. No cannabis cultivation activities nor agricultural chemicals storage will occur within 150 feet of any surface waterbody, and no ground disturbance is proposed within 100 feet of any wetland or channel.

Current and past land uses of the Property are rural residential with intensive and extensive agriculture. The Property has been improved with three groundwater wells, a residence, and three accessory ag structures/buildings (used to store hay, tools, and equipment, and to house livestock). The proposed cultivation operation will be established in areas of the Property that have been used for cattle grazing, continuously since at least the early 1900s. The surrounding land uses are private estates, vineyards, open space, and grazing land.

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 February 8 and 9, 2021. Weather conditions were warm and cloudy. 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 (2021); CDFW (2021b,c); NatureServe 2021; and University of California at Berkeley (2021a,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, 2021c). 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).

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:

black-tailed jackrabbit (*Lepus californicus*); Botta's pocket gopher (*Thomomys bottae*); California ground squirrel (*Otospermophilus beecheyi*); cattle (*Bos taurus*); Columbian black-tailed deer (*Odocoileus hemionus columbianus*); coyote (*Canis latrans*); dog (*Canis lupis familiaris*); gray fox (*Urocyon cinereoargenteus*); horse (*Equus caballus*); pig (*Sus scrofa*); raccoon (*Procyon lotor*); western gray squirrel (*Sciurus griseus*); acorn woodpecker (*Melanerpes formicivorus*); American crow (*Corvus brachyrhynchos*); American kestrel (*Falco sparverious*); American robin (*Turdus migratorius*); Anna's hummingbird (*Calypte anna*); black phoebe (*Sayornis nigricans*); Brewer's blackbird (*Euphagus cyanocephalus*); bushtit (*Psaltriparius minimus*); California quail (*Callipepla californica*); California scrub jay (*Aphelocoma californica*); Canada goose (*Branta canadensis*); common raven (*Corvus corax*); dark-eyed junco (*Junco hyemalis*); downy woodpecker (*Picoides pubescens*); Eurasian collared-dove (*Streptopelia decaocto*); great blue heron (*Ardea herodias*); hooded merganser (L*ophodytes cucullatus*); house wren (*Troglodytes aedon*); killdeer (*Charadrius vociferus*); mallard (*Anas platyrhynchos*); mourning dove (*Zenaida macroura*); northern flicker (*Colaptes auratus*); Nuttall's woodpecker (*Picoides nuttallii*); oak titmouse (*Baeolophus inornatus*); pileated woodpecker (*Dryocopus pileatus*); red-tailed hawk (*Buteo jamaicensis*); sparrow (Emberizidae); spotted towhee (*Pipilo maculatus*); turkey vulture (*Cathartes aura*); western bluebird (*Sialia mexicanus*); western meadowlark (*Sturnella neglecta*); white crowned sparrow (*Zonotrichia leucophrys*); white-breasted nuthatch (*Sitta carolinensis*); yellow-rumped warbler (*Setophaga coronata*); 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: Disturbed/Developed, Annual Grassland, Chaparral, Oak Woodland, Riparian, and Freshwater Marsh. These vegetation communities are discussed here and are delineated in the Exhibits.

Ruderal/Developed. These areas consist of disturbed or converted natural habitat that is now either in ruderal state, graded, or urbanized with gravel roads. Vegetation within this habitat type consists primarily of nonnative weedy or invasive species lacking a consistent community structure. This habitat type provides limited resources for wildlife and is utilized primarily by species tolerant of human activities. The disturbed and altered condition of these lands greatly reduces their habitat value and ability to sustain rare plants or diverse wildlife assemblages.

Annual Grassland: The annual grassland habitat is comprised largely of non-native annual grasses and native herbs with some native perennial grasses also important. Plants common in this habitat type include Medusa-head (*Elymus caput-medusae*), yellow star thistle (*Centaurea solstitialis*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), fillaree (*Erodium* spp.), chicory (*Cichorium intybus*), vetch (*Vicia* spp.), dove weed (*Croton setiger*) and various other species. This vegetation can be classified as the Holland Type "Non-native Grassland" or as "42.020.03 *Elymus caput-medusae*" (CDFW 2021e).

Chaparral: The slopes and ridges of the southern portion of the Study Area are underlain by serpentine soil and are vegetated with a dense cover of shrubs. The rocky slopes are dominated by leather oak (*Quercus durata*) with occasional gray pine (*Pinus sabiniana*) and chaparral silktassel

(*Garrya congdonii*). This vegetation can be classified as the Holland Type "Leather Oak Chaparral" or as "37.405.00 Leather Oak Chaparral" (CDFW 2021e).

Mixed Oak Woodland: Tree dominated habitats throughout the Study Area are dominated by various species of oak. The composition of the oak forest varies depending upon the aspect, soil type and site history. Dominant canopy species include blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*) and California black oak (*Quercus kelloggii*) with occasional gray pine. The shrub and herb layers are highly variable and include deer brush (*Ceanothus integerrimus*), common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), coyote brush (*Baccharis pilularis*), yerba santa (*Eriodictyon californicum*) and poison oak (*Toxicodendron diversilobum*) as well as grasses and herbs. This vegetation can be classified as the Holland Type "Oak Forest" or as "*Quercus* (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni*) Mixed Oak Forest" (CDFW 2021e).

Riparian: Riparian habitat can be found along the channel of Putah Creek, in the northern portion of the Study Area. The riparian vegetation consists of a discontinuous band of vegetation along the banks and floodplain of the creek. The species composition is highly variable, and consists of a canopy of red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), mule fat (*Baccharis salicifolia),* Himalayan blackberry (*Rubus armeniacus*) and elmleaf blackberry (*Rubus ulmifolius*) with an understory of grasses and other herbs. The riparian forest can be classified as the Holland Type "Great Valley Mixed Riparian Forest" or as "61.216.00 Red Willow Riparian Woodland" (CDFW 2021e).

Freshwater Marsh: The flat portions of the Study Area are poorly drained and show signs of extensive seasonal wetlands. Some of the poorly drained areas, such as depressions, swales, and ditches, are vegetated with coyote thistle (*Eryngium aristulatum*), death camas (*Toxicoscordion sp.*), navarretia (*Navarretia* sp.), Douglas' mesamint (*Pogogyne douglasii*) and other herbs and grasses. This vegetation can be classified as the Holland Type "Coastal and Valley Freshwater Marsh".

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: Urban; Barren; Annual Grassland; Mixed Chaparral; Montane Chaparral; Valley Oak Woodland; Blue Oak Woodland; Blue Oak – Foothill Pine; Valley Foothill Riparian; Fresh Emergent Wetland; and Riverine.

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 or surrounding 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; Serpentine Bunchgrass; Wildflower Field; Northern Vernal Pool; Northern Basalt Flow Vernal Pool and Northern Interior Cypress Forest. No special-status habitats were detected within the Project Area. However, the surrounding Study Area contains the following special-status habitats: watercourses, riverine wetlands, freshwater marsh, freshwater pond, and riparian habitat.

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.

The nearest fishery resources are in Putah Creek, which borders the northern portion of the Study Area. The CDFW has identified a designated wildlife corridor within the Study Area: Natural Landscape Blocks– as identified in the California Essential Habitat Connectivity Project (CDFW 2021d). In addition, 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 the following special-status species occurrences within the Study Area:

- Foothill yellow-legged frog *(Rana boylii)*
- Western pond turtle *(Emys marmorata)*
- Prairie falcon *(Falco mexicanus)*
- American peregrine falcon *(Falco peregrinus anatum)*
- Mt. Saint Helena morning glory *(Calystegia collina ssp. oxyphylla)*

Occurrences for foothill yellow-legged frog and western pond turtle are documented for segments of Putah Creek within the Study Area. Occurrences of prairie falcon and American peregrine falcon are artifacts of the mapping process at CNDDB. The location of the nesting sites is deliberately obscured by the CNDDB in order to protect the occurrences. Suitable nesting habitat for these species is not found within the Study Area. The precise location of the Mt. Saint Helena morning glory is not known, however suitable serpentine soils are found in the southern portion of 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
- Green Sea Turtle (*Chelonia mydas*) Threatened
- California Red-legged Frog (*Rana draytonii*) Threatened
- Delta Smelt (*Hypomesus transpacificus*) Threatened
- California Freshwater Shrimp (*Syncaris pacifica*) Endangered
- Conservancy Fairy Shrimp (*Branchinecta conservation*) Endangered
- Burke's Goldfields (*Lasthenia burkei*) Endangered
- Lake County Stonecrop (*Parvisedum leiocarpum*) 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	Broadleaved upland forest; North coast coniferous forest; Redwood; Riparian forest; Riparian woodland	Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.
California giant salamander *Dicamptodon ensatus*	CSSC	Aquatic; Meadow & seep; North coast coniferous forest; Riparian forest	Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.
California red-legged frog *Rana draytonii*	FT/CSSC	Aquatic; Artificial flowing waters; Artificial standing waters; Freshwater marsh; Marsh & swamp; Riparian forest; Riparian scrub; Riparian woodland; South coast flowing waters; South coast standing waters; Sacramento/San Joaquin flowing waters; Sacrament	Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.
Foothill yellow-legged frog *Rana boylii*	CE/CSSC	Aquatic; Chaparral; Cismontane woodland; Coastal scrub; Klamath/North coast flowing waters; Lower montane coniferous forest; Meadow & seep; Riparian forest; Riparian woodland; Sacramento/San Joaquin flowing waters	Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.
Bald eagle *Haliaeetus leucocephalus*	FD/CE/CFP	Lower montane coniferous forest; Oldgrowth	Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.
Golden eagle *Aquila chrysaetos*	CFP; CWL	Broadleaved upland forest; Cismontane woodland; Coastal prairie; Great Basin grassland; Great Basin scrub; Lower montane coniferous forest; Pinon & juniper woodlands; Upper montane coniferous forest; Valley & foothill grassland	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
American peregrine falcon *Falco peregrinus anatum*	FD/CD/CFP		Nest consists of a scrape or a depression or ledge in an open site.
Prairie falcon *Falco mexicanus*	CWL	Great Basin grassland; Great Basin scrub; Mojavean desert scrub; Sonoran desert scrub; Valley & foothill grassland	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
Purple martin *Progne subis*	CSSC	Broadleaved upland forest; Lower montane coniferous forest	Nests in old woodpecker cavities mostly; also in human-made structures. Nest often located in tall, isolated tree/snag.
Tricolored blackbird *Agelaius tricolor*	CT/CSSC	Freshwater marsh; Marsh & swamp; Swamp; Wetland	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.
Long-eared myotis *Myotis evotis*	CSSC		Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.
Fringed myotis *Myotis thysanodes*	CSSC		Uses caves, mines, buildings or crevices for maternity colonies and roosts.
Silver-haired bat	CSSC	Lower montane coniferous forest; Oldgrowth; Riparian forest	Roosts in hollow trees, beneath exfoliating bark, abandoned

Lasionycteris noctivagans			woodpecker holes, and rarely under rocks. Needs drinking water.
Hoary bat *Lasiurus cinereus*	CSSC	Broadleaved upland forest; Cismontane woodland; Lower montane coniferous forest; North coast coniferous forest	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.
Western red bat *Lasiurus blossevillii*	CSSC	Cismontane woodland; Lower montane coniferous forest; Riparian forest; Riparian woodland	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.
Townsend's big-eared bat *Corynorhinus townsendii*	CSSC	Broadleaved upland forest; Chaparral; Chenopod scrub; Great Basin grassland; Great Basin scrub; Joshua tree woodland; Lower montane coniferous forest; Mojavean desert scrub; Meadow & seep; Riparian forest; Riparian woodland; Sonoran desert scrub; Sonoran	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
Pallid bat *Antrozous pallidus*	CSSC	Chaparral; Coastal scrub; Desert wash; Great Basin grassland; Great Basin scrub; Mojavean desert scrub; Riparian woodland; Sonoran desert scrub; Upper montane coniferous forest; Valley & foothill grassland	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
Fisher *Pekania pennanti*	CSSC	North coast coniferous forest; Oldgrowth; Riparian forest	Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.
Western pond turtle *Emys marmorata*	CSSC	Aquatic; Artificial flowing waters; Klamath/North coast flowing waters; Klamath/North coast standing waters; Marsh & swamp; South coast flowing waters; South coast standing waters; Sacramento/San Joaquin flowing waters; Sacramento/San Joaquin standing wa	Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	CSSC	Aquatic; Sacramento/San Joaquin flowing waters; Sacramento/San Joaquin standing waters	
Serpentine cypress wood-boring beetle *Trachykele hartmani*	CSSC		
Serpentine cypress long-horned beetle *Vandykea tuberculata*	CSSC		
Wilbur Springs shorebug *Saldula usingeri*	CSSC	Aquatic; Sacramento/San Joaquin flowing waters; Sacramento/San Joaquin standing waters	Found only on wet substrate of spring outflows.
Western bumble bee *Bombus occidentalis*	CCE		
Obscure bumble bee *Bombus caliginosus*	CSSC		Food plant genera include baccharis, cirsium, lupinus, lotus, grindelia and phacelia.
Clear Lake pyrg *Pyrgulopsis ventricosa*	CSSC		
Toren's grimmia *Grimmia torenii*	1B.3	Chaparral; Cismontane woodland; Lower montane coniferous forest; Limestone	Openings, rocky, boulder and rock walls, serpentine, volcanic. 325-1160 m.
Elongate copper moss *Mielichhoferia elongata*	4.3	Cismontane woodland	Moss growing on very acidic, metamorphic rock or substrate; usually in higher portions in fens. Often on substrates naturally enriched with heavy metals (e.g. copper) such as mine tailings. 5-1085 m.
Loch Lomond button-celery *Eryngium constancei*	FE/CE/1B.1	Vernal pool; Wetland	Volcanic ash flow vernal pools. 460-855 m.

Jepson's coyote-thistle *Eryngium jepsonii*	1B.2	Valley & foothill grassland; Vernal pool	Clay. 3-305 m.
Big-scale balsamroot *Balsamorhiza macrolepis*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Sometimes on serpentine. 35-1465 m.
Greene's narrow-leaved daisy *Erigeron greenei*	1B.2	Chaparral; Ultramafic	Serpentine and volcanic substrates, generally in shrubby vegetation. 90-835 m.
Congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	1B.2	Valley & foothill grassland	Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 5-520 m.
Pappose tarplant *Centromadia parryi ssp. parryi*	1B.2	Chaparral; Coastal prairie; Meadow & seep; Marsh & swamp; Valley & foothill grassland	Vernally mesic, often alkaline sites. 1-500 m.
Burke's goldfields *Lasthenia burkei*	FE/CE/1B.1	Meadow & seep; Vernal pool; Wetland	Most often in vernal pools and swales. 15-580 m.
Colusa layia *Layia septentrionalis*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Scattered colonies in fields and grassy slopes in sandy or serpentine soil. 15-1100 m.
Hall's harmonia *Harmonia hallii*	1B.2	Chaparral; Ultramafic	Serpentine hills and ridges. Open, rocky areas within chaparral. 335-945 m.
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Coastal bluff scrub; Cismontane woodland; Valley & foothill grassland	3-795 m.
Serpentine cryptantha *Cryptantha dissita*	1B.2	Chaparral; Ultramafic	Serpentine outcrops. 135-735 m.
Calistoga popcornflower *Plagiobothrys strictus*	FE/CT/1B.1	Meadow & seep; Valley & foothill grassland; Vernal pool; Wetland	Alkaline sites near thermal springs and on margins of vernal pools in heavy, dark, adobe-like clay. 90-125 m.
Freed's jewelflower *Streptanthus brachiatus ssp. hoffmanii*	1B.2	Chaparral; Cismontane woodland; Ultramafic	Serpentine rock outcrops, primarily in geothermal development areas. 485-1040 m.
Socrates Mine jewelflower *Streptanthus brachiatus ssp. brachiatus*	1B.2	Closed-cone coniferous forest; Chaparral; Ultramafic	Serpentine areas and serpentine chaparral. 605-1950 m.
Three Peaks jewelflower *Streptanthus morrisonii ssp. elatus*	1B.2	Chaparral; Ultramafic	Serpentine barrens, outcrops, and talus; 240-735 m.
Kruckeberg's jewelflower *Streptanthus morrisonii ssp. kruckebergii*	1B.2	Cismontane woodland; Ultramafic	Scattered serpentine outcrops near the lake/napa county line. 240-665 m.
Early jewelflower *Streptanthus vernalis*	1B.2	Closed-cone coniferous forest; Chaparral; Ultramafic	On serpentine.
Green jewelflower *Streptanthus hesperidis*	1B.2	Chaparral; Cismontane woodland; Ultramafic	Openings in chaparral or woodland; serpentine, rocky sites. 240-765 m.
Cascade downingia *Downingia willamettensis*	2B.2	Cismontane woodland; Valley & foothill grassland; Vernal pool	Lake margins. 15-1110 m.
Legenere *Legenere limosa*	1B.1	Vernal pool; Wetland	In beds of vernal pools. 1-1005 m.
Mt. Saint Helena morning-glory	4.2	Chaparral; Lower montane coniferous forest; Ultramafic; Valley & foothill grassland	On serpentine barrens, slopes, and hillsides. 280-1010 m.

Calystegia collina ssp. oxyphylla			
Lake County stonecrop *Sedella leiocarpa*	FE/CE/1B.1	Cismontane woodland; Valley & foothill grassland; Vernal pool; Wetland	Level areas that are seasonally wet and dry out in late spring; substrate usually of volcanic origin. 515-640 m.
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	1B.3	Chaparral; Cismontane woodland; Lower montane coniferous forest	Volcanic soils. 225-1830 m.
Napa false indigo *Amorpha californica var. napensis*	1B.2	Broadleaved upland forest; Chaparral; Cismontane woodland	Openings in forest or woodland or in chaparral. 30-735 m
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	1B.2	Cismontane woodland; Ultramafic; Valley & foothill grassland	Commonly on serpentine in grassland or openings in chaparral. 175-1005 m.
Cobb Mountain lupine *Lupinus sericatus*	1B.2	Broadleaved upland forest; Chaparral; Cismontane woodland; Lower montane coniferous forest; Ultramafic	In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine. 120-1390 m.
Saline clover *Trifolium hydrophilum*	1B.2	Marsh & swamp; Valley & foothill grassland; Vernal pool; Wetland	Mesic, alkaline sites. 1-335 m.
Napa bluecurls *Trichostema ruygtii*	1B.2	Chaparral; Cismontane woodland; Lower montane coniferous forest; Valley & foothill grassland; Vernal pool; Wetland	Often in open, sunny areas. Also has been found in vernal pools. 30-680 m.
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	4.2	Chaparral; Cismontane woodland; Valley & foothill grassland; Vernal pool; Wetland	Vernally wet areas, ditches, and ponds. 60-1335 m.
Two-carpellate western flax *Hesperolinon bicarpellatum*	1B.2	Chaparral; Ultramafic	Serpentine barrens at edge of chaparral. 175-825 m.
Lake County western flax *Hesperolinon didymocarpum*	CE/1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Serpentine soil in open grassland and near chaparral. 325-400 m.
Drymaria-like western flax *Hesperolinon drymarioides*	1B.2	Closed-cone coniferous forest; Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Serpentine soils, mostly within chaparral. 400-1100 m.
Sharsmith's western flax *Hesperolinon sharsmithiae*	1B.2	Chaparral; Ultramafic	Serpentine substrates. 180-670 m.
Keck's checkerbloom *Sidalcea keckii*	FE/1B.1	Cismontane woodland; Ultramafic; Valley & foothill grassland	Grassy slopes in blue oak woodland. On serpentine-derived, clay soils, at least sometimes. 85-505 m.
Snow Mountain buckwheat *Eriogonum nervulosum*	1B.2	Chaparral; Ultramafic	Dry serpentine outcrops, balds, and barrens. 445-2105 m.
Jepson's leptosiphon *Leptosiphon jepsonii*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Open to partially shaded grassy slopes. On volcanics or the periphery of serpentine substrates. 55-855 m.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	1B.1	Cismontane woodland; Lower montane coniferous forest; Meadow & seep; Valley & foothill grassland; Vernal pool; Wetland	Vernal pools and swales; adobe or alkaline soils. 3-1680 m.
Few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE/CT/1B.1	Vernal pool; Wetland	Volcanic ash flow, and volcanic substrate vernal pools. 425-855 m.
Many-flowered navarretia	FE/CE/1B.2	Vernal pool; Wetland	Volcanic ash flow vernal pools. 30-915 m.

Navarretia leucocephala ssp. plieantha			
Small pincushion navarretia *Navarretia myersii ssp. deminuta*	1B.1	Vernal pool; Wetland	Known from only one site in lake county in vernal pool habitat on clay-loam soil; also in roadside depressions. 355 m.
Marin County navarretia *Navarretia rosulata*	1B.2	Closed-cone coniferous forest; Chaparral; Ultramafic	Dry, open rocky places; can occur on serpentine. 185-640 m.
Porter's navarretia *Navarretia paradoxinota*	1B.3	Meadow & seep; Ultramafic	Serpentinite, openings, vernally mesic, often drainages. 175-875 m.
Holly-leaved ceanothus *Ceanothus purpureus*	1B.2	Chaparral; Cismontane woodland	Rocky, volcanic slopes. 140-720 m.
Rincon Ridge ceanothus *Ceanothus confusus*	1B.1	Closed-cone coniferous forest; Chaparral; Cismontane woodland; Ultramafic	Known from volcanic or serpentine soils, dry shrubby slopes. 150-1280 m.
Calistoga ceanothus *Ceanothus divergens*	1B.2	Chaparral; Cismontane woodland; Ultramafic	Rocky, serpentine or volcanic sites. 100-950 m.
Sonoma ceanothus *Ceanothus sonomensis*	1B.2	Chaparral; Ultramafic	Sandy, serpentine or volcanic soils. 140-795 m.
Bolander's horkelia *Horkelia bolanderi*	1B.2	Cismontane woodland; Lower montane coniferous forest; Meadow & seep; Valley & foothill grassland	Grassy margins of vernal pools and meadows. 455-855 m.
Pink creamsacs *Castilleja rubicundula var. rubicundula*	1B.2	Chaparral; Cismontane woodland; Meadow & seep; Ultramafic; Valley & foothill grassland	Openings in chaparral or grasslands. On serpentine. 20-915 m.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	CE/1B.2	Freshwater marsh; Marsh & swamp; Vernal pool; Wetland	Clay soils; usually in vernal pools, sometimes on lake margins. 4-2410 m.
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	1B.3	Chaparral	Crevices in rock outcrops and talus slopes. 425-1405 m.
Dimorphic snapdragon *Antirrhinum subcordatum*	4.3	Chaparral; Lower montane coniferous forest; Ultramafic	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	Meadow & seep; Wetland	Moist to wet meadows. 15-3200 m.
Santa Lucia dwarf rush *Juncus luciensis*	1B.2	Chaparral; Great Basin scrub; Lower montane coniferous forest; Meadow & seep; Vernal pool; Wetland	Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. 280-2035 m.
Narrow-anthered brodiaea *Brodiaea leptandra*	1B.2	Broadleaved upland forest; Chaparral; Cismontane woodland; Lower montane coniferous forest; Valley & foothill grassland	Volcanic substrates. 30-590 m.
Dwarf soaproot *Chlorogalum pomeridianum var. minus*	1B.2	Chaparral; Ultramafic	Serpentine. 120-1220 m.
Adobe-lily *Fritillaria pluriflora*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Usually on clay soils; sometimes serpentine. 45-945 m.
Geysers panicum *Panicum acuminatum var. thermale*	CE/1B.2	Closed-cone coniferous forest; Riparian forest; Valley & foothill grassland; Wetland	Usually around moist, warm soil in the vicinity of hot springs. 455-2470 m.
California satintail *Imperata brevifolia*	2B.1	Chaparral; Coastal scrub; Mojavean desert scrub; Meadow & seep; Riparian scrub; Wetland	Mesic sites, alkali seeps, riparian areas. 3-1495 m.
Slender Orcutt grass *Orcuttia tenuis*	FT/CE/1B.1	Vernal pool; Wetland	Often in gravelly substrate. 25-1755 m.

California alkali grass *Puccinellia simplex*	1B.2	Chenopod scrub; Meadow & seep; Valley & foothill grassland; Vernal pool	Alkaline, vernally mesic. Sinks, flats, and lake margins. 1-915 m.
Slender-leaved pondweed *Stuckenia filiformis ssp. alpina*	2B.2	Marsh & swamp; Wetland	Shallow, clear water of lakes and drainage channels. 5-2325 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

No special status plants or animals were observed within the Study Area. The CNDDB has reported an occurrence of Mt. Saint Helena morning glory *(Calystegia collina ssp. oxyphylla)*, a serpentine endemic, within the Study Area. Volcanic and serpentine soils are present within the oak woodland and chaparral habitats of the Study Area. Special status plants reported by CNDDB to occur in the region, including Mt. Saint Helena morning glory, are known to occur on these substrates and therefore have a moderate to high potential for occurrence within the Study Area. Wetlands are also present within the Study Area. Special status plants may occur in wetlands. No wetlands, volcanic soils or serpentine soils are found within the Project Area. The Project Area is located within annual grasslands found on upland alluvial soils. Due to the dominance of aggressive non-native grasses and forbs, the Project Area has a low probability for special status plant occurrence.

Special-status animals have a low potential to occur in the grassland, chaparral and oak woodland habitats. However, special-status animals have a moderate to high potential to occur in Putah Creek (Class I watercourse). The CNDDB has mapped an occurrence of western pond turtle (*Emys marmorata*) and foothill yellow-legged frog (*Rana boylii*) in sections of Putah Creek along the northern edge of the Study Area. Streams, riparian corridors, and riverine wetlands within the Study Area can sustain aquatic special-status species and diverse wildlife species.

4.4. POTENTIALLY-JURISDICTIONAL WATER RESOURCES

The USFWS National Wetland Inventory reported no water features within the Project Area, but the Inventory did report the following water features within the Study Area (see Exhibits): 9 Riverine Features, 1 Freshwater Forested/Shrub Wetland and 1 Freshwater Pond.

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 1,000 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. The following water features were detected within the larger Study Area during the field survey (see Exhibits):

- 1 perennial stream (Class I watercourse; Putah Creek)
- 32 ephemeral channels (Class III watercourses)
- 2 freshwater wetlands
- 1 freshwater pond
- 2 springs
- 1 riparian feature

There are 2 swales, 1 of which was mapped as a riverine feature in the NWI. These appeared to be man-made linear depressions that do not carry flow or have wetland vegetation. 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?*

No special-status species were detected within the Study Area. Special status plants also have a moderate to high potential to occur within the wetlands of the Study Area. However, the cannabis cultivation / operation areas are at least 150 feet away from Putah Creek (Class I watercourse) and 100 feet away from other watercourses and wetlands. Special status plants have a moderate to high potential to occur on the serpentine and volcanic soils of the chaparral and oak woodland habitats of the Study Area. The Project Areas are located in annual grassland habitat, which will be impacted by project implementation. The annual grasslands have a low potential for harboring special-status plant species due to the dominance of aggressive non-native grasses and forbs. No serpentine or volcanic soils are found within the Project Area. No impacts to special-status plant species were identified from project implementation. If land clearing is performed in the future, a pre-construction special-status species survey is recommended.

No special-status animal species have a moderate or high potential to occur in Project Areas. No special-status animals were observed within the Project Area. However, the CNDDB has mapped an occurrence of western pond turtle and foothill yellow-legged frog in sections of Putah Creek along the northern edge of the Study Area. The cannabis cultivation / operation areas are at least 300 feet away from Putah Creek. No direct impacts to special-status animals 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.

The Study Area contains suitable nesting habitat for various bird species because of the presence of trees and poles. However, no nests or nesting activity was observed in the Project Area during the field survey. Trees must be inspected for the presence of active bird nests before tree felling or ground clearing. If active nests are present in the Project Area during construction of the project, CDFW 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.

Recommended Mitigation Measures

Because special-status animal 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. Additionally, animal exclusion fencing should be erected at the cultivation compound boundaries to ensure that animals do not migrate into operational areas. With the implementation of these mitigation measures, 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 1 Class I watercourse, 32 Class III watercourses, two wetlands, 1 freshwater pond, two springs and riparian habitat

along Putah Creek which are special-status habitats due to their potential to attract wildlife or harbor rare plants and because these resources are protected by multiple laws. Sufficient setbacks from these habitats have been designed into the project design such that project implementation will impact any special-status habitats.

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: 1 Class I watercourse, 32 Class III watercourses, two wetlands, 1 freshwater pond, two springs and riparian habitat along Putah Creek. 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 with a minimum 300-foot setback from the Class I watercourse and 100-foot setbacks from Class III watercourses and wetlands. Furthermore, the project is situated on flat grasslands. 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. The Study Area does not have a significant erosion potential, because slopes are not steep, areas of ground disturbance are small, and vegetated buffers are present. 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 2019-0001-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 2019-0001-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 2019-0001-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 channel.

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?*

The CDFW has mapped the following wildlife corridor within the Study Area: Natural Landscape Blocks, which is identified in the California Essential Habitat Connectivity Project (CDFW 2021d).

The open space and the stream corridors 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?*

Project implementation does not require the removal of trees. 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

No mitigation is necessary.

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. 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. 2021a. RareFind, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

California Department of Fish and Wildlife, 2021b. 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. 2021c. 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 Department of Fish and Wildlife. 2021d. California Essential Connectivity Project., Habitat Conservation Planning Branch, California Department of Fish and Wildlife. Internet database available at https://wildlife.ca.gov/Data/BIOS.

California Department of Fish and Wildlife. 2021e. 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.

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.

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.

NatureServe. 2021. 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.

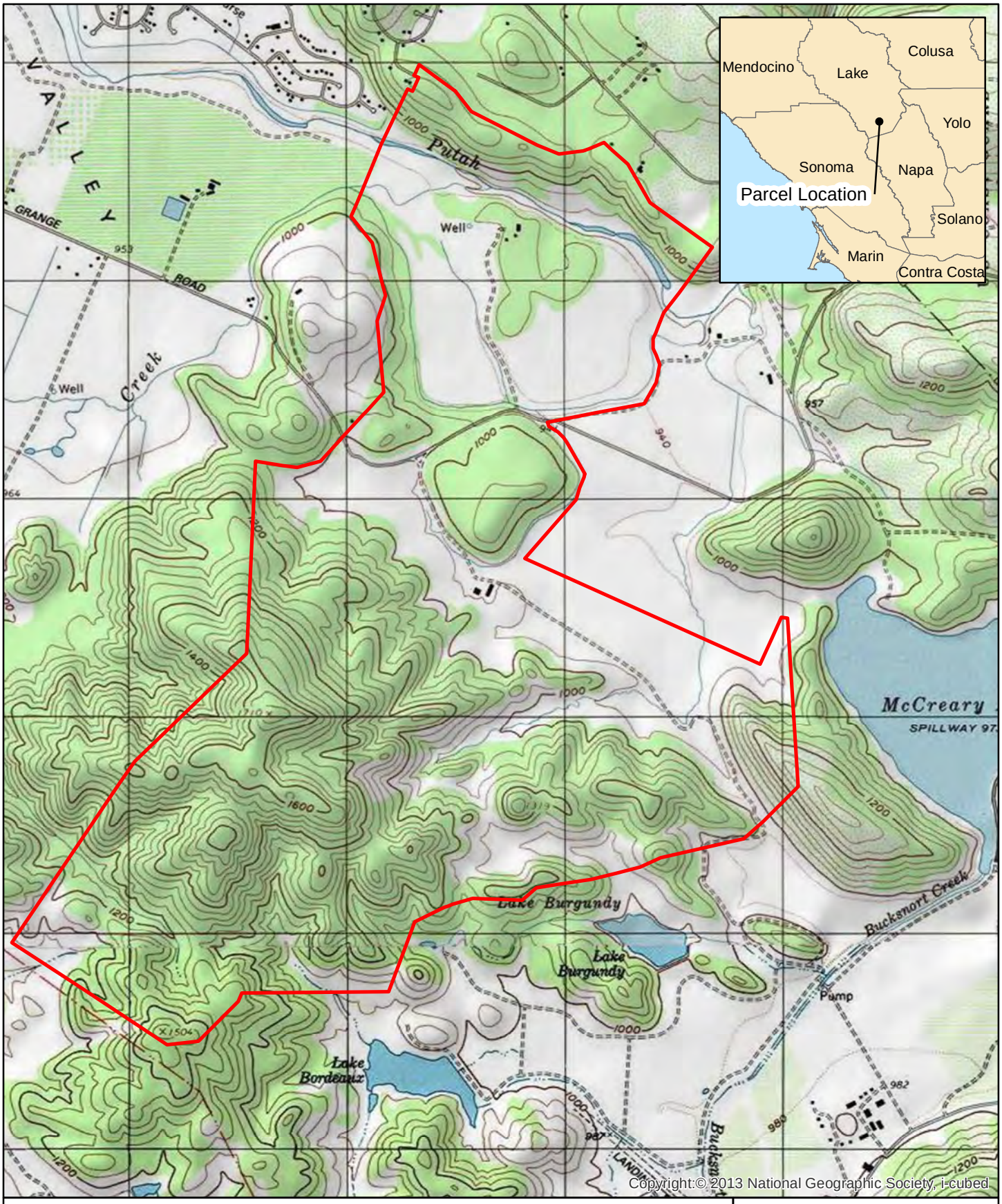
Sunset Western Garden Collection. 2020. Sunset Climate Zones. Sunset Publishing Corporation. Available on the Internet at: https://www.sunsetwesterngardencollection.com/climate-zones.

University of California at Berkeley. 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/

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

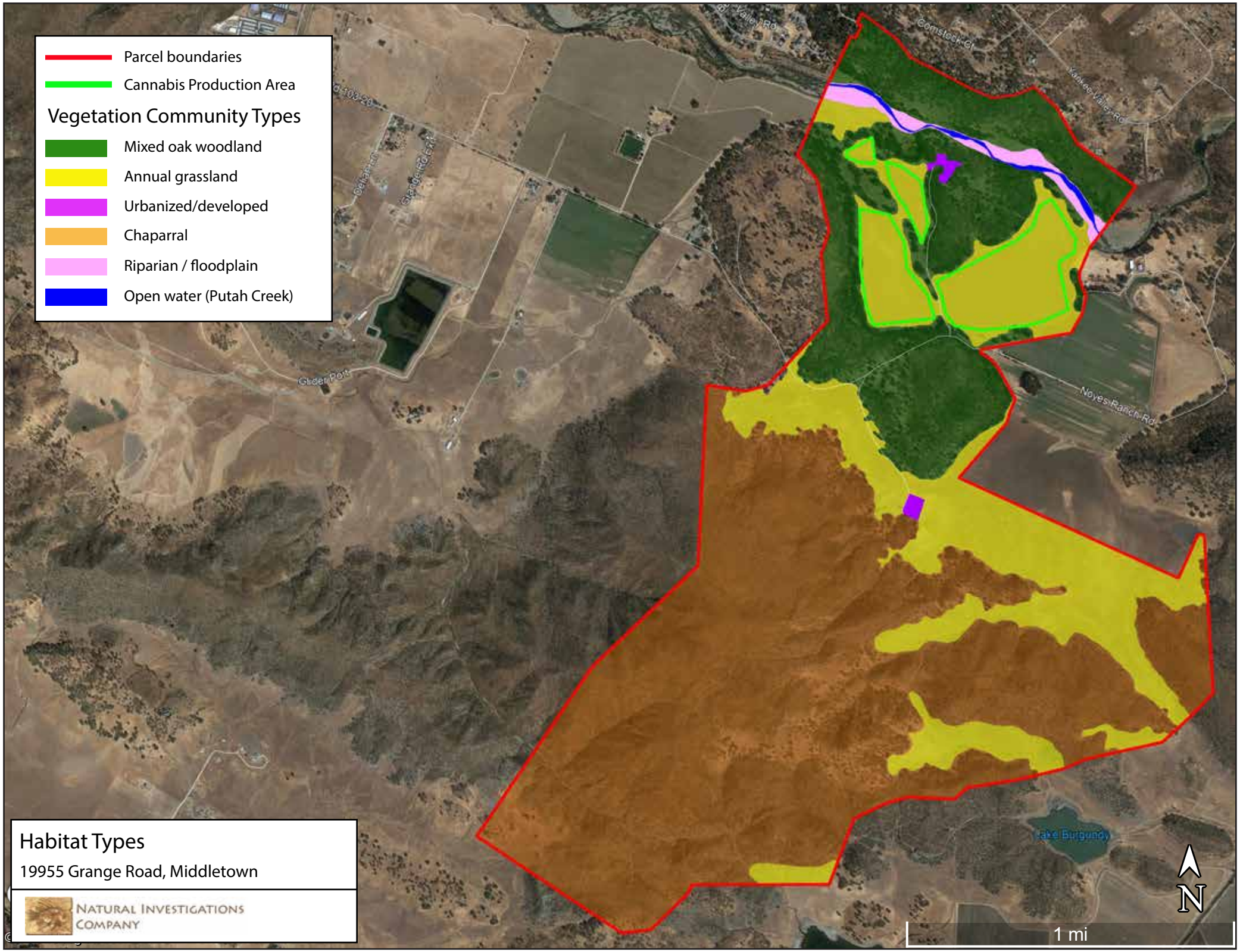
1:24,000

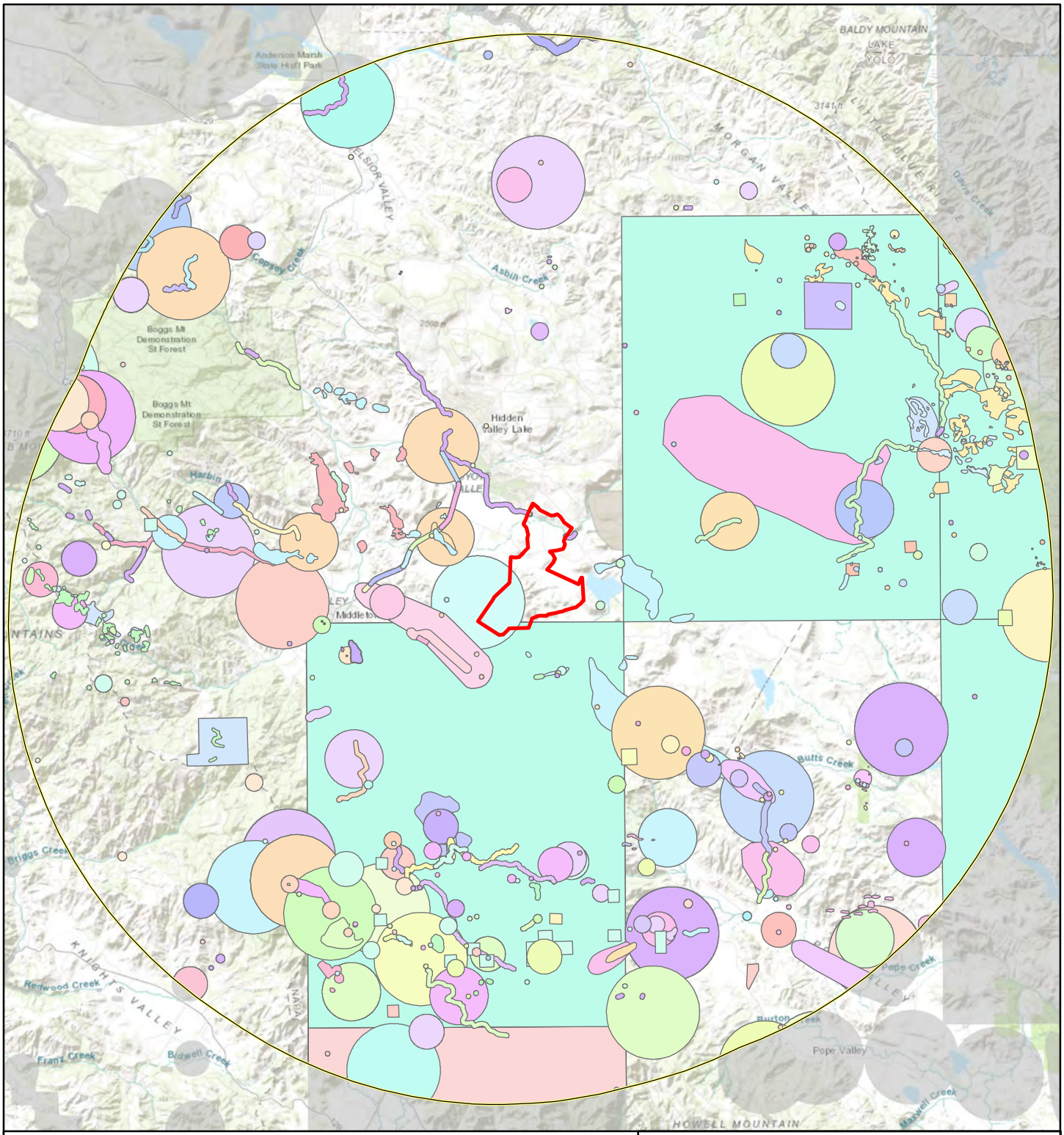
19955 Grange Road
Parcel Location Map

Natural Investigations Company

Map Date 2/3/2021

Middletown 1998 Quadrangle:Township 11N and 10N, Range 6W, Unsectioned Guenoc
Detert Reservoir 1997 Quadrangle:Township 10N, Range 6W, Unsectioned Guenoc


Parcel boundaries
Cannabis Production Area
Vegetation Community Types
Mixed oak woodland
Annual grassland
Urbanized/developed
Chaparral
Riparian / floodplain
Open water (Putah Creek)
Habitat Types
19955 Grange Road, Middletown
Natural Investigations Company
Comstock Cir
Knoxville Valley Rd
Glider Port
Noyes Ranch Rd
Lake Burgundy
N
1 mi



Parcel Location 10 Mile Buffer

1:190,000 1 inch = 3 miles

0 3 6 Miles

N

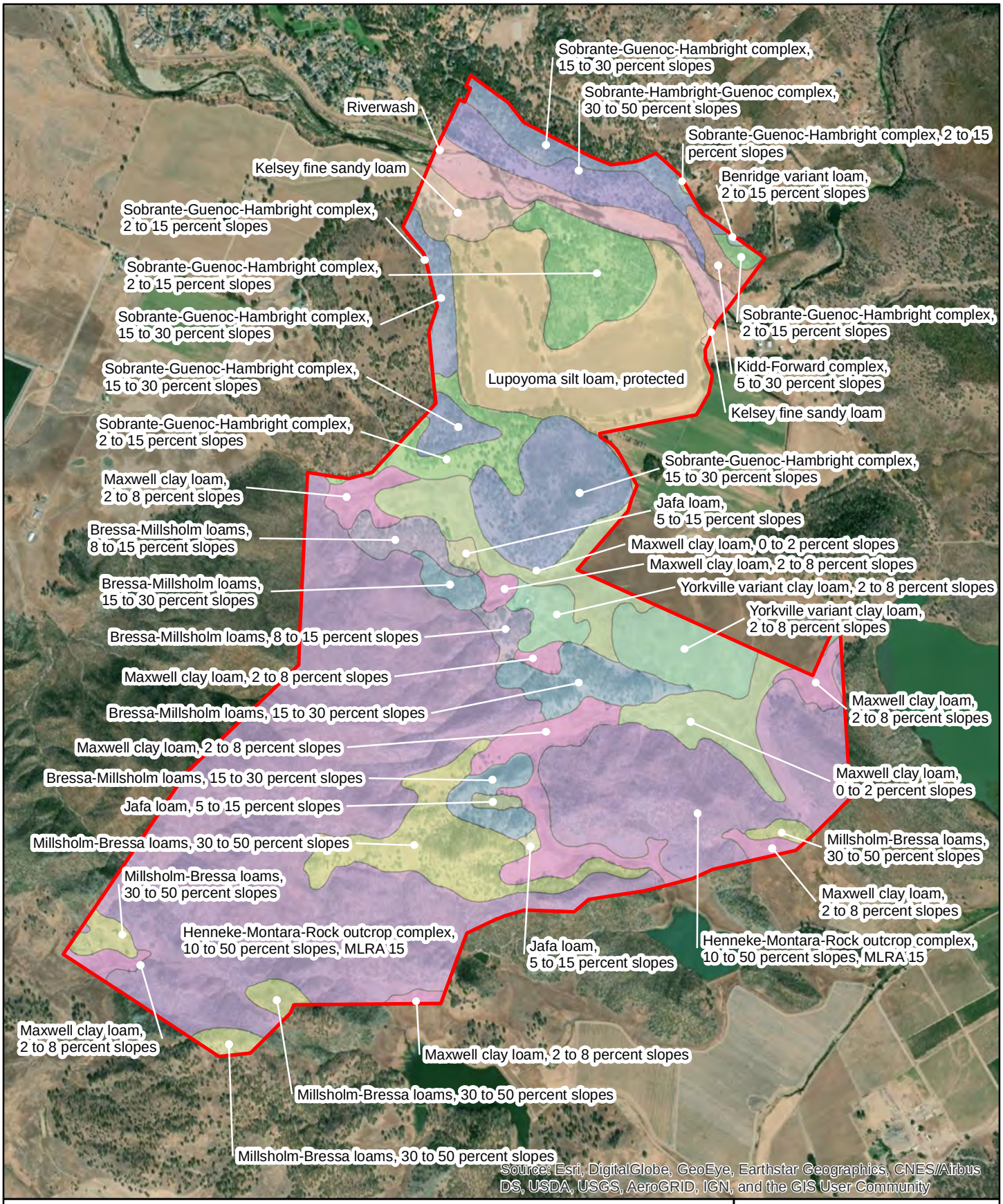
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist inshowing features discussed in an attached document. Natural Investigations Company can not guarantee the accuracy and content of electronic files.The master file is stored 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. 2021. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

Special-Status Species Occurrences Map

19955 Grange Road

Middletown 1998 Quadrangle:Township 11N and 10N, Range 6W, Unsectioned Guenoc
Detert Reservoir 1997 Quadrangle:Township 10N, Range 6W, Unsectioned Guenoc

NATURAL INVESTIGATIONS CO.
www.NaturalInvestigations.com



Parcel Location

0 0.5 1 Kilometers

0 0.5 1 Miles

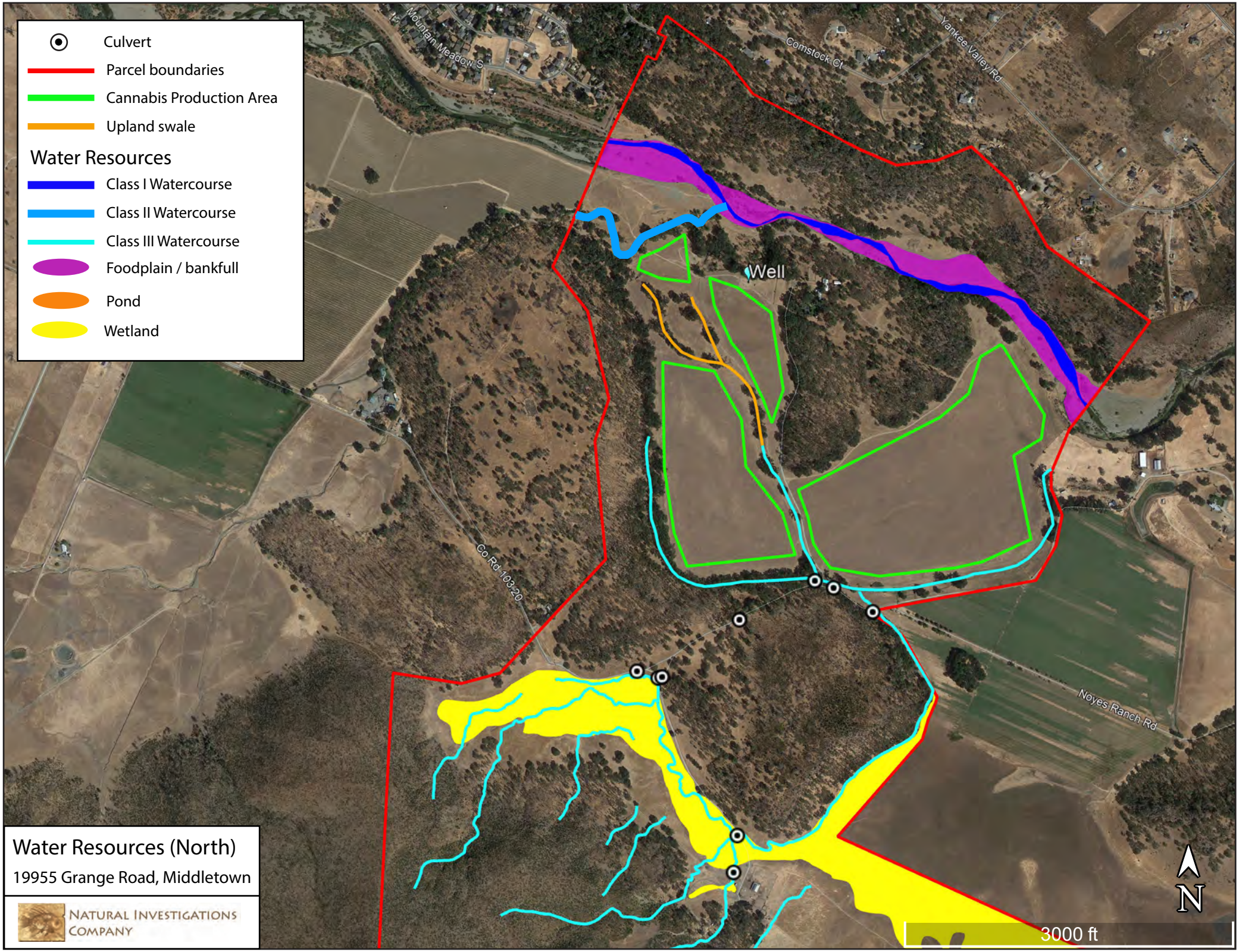
1:24,000

19955 Grange Road
USDA Soils Map

Natural Investigations Company

Map Date 2/3/2021

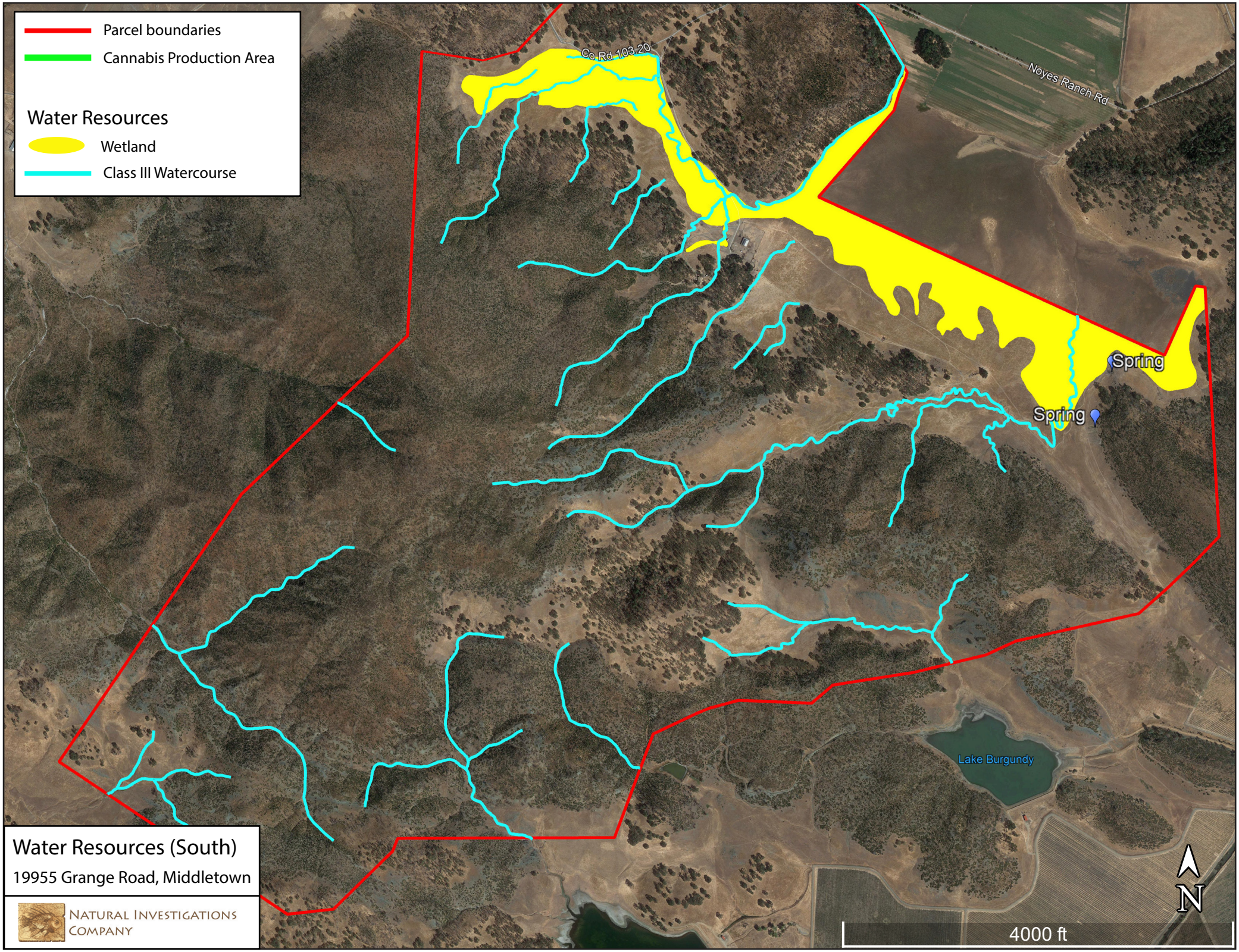
Middletown 1998 Quadrangle:Township 11N and 10N, Range 6W, Unsectioned Guenoc
Detert Reservoir 1997 Quadrangle:Township 10N, Range 6W, Unsectioned Guenoc



Water Resources (North)

19955 Grange Road, Middletown

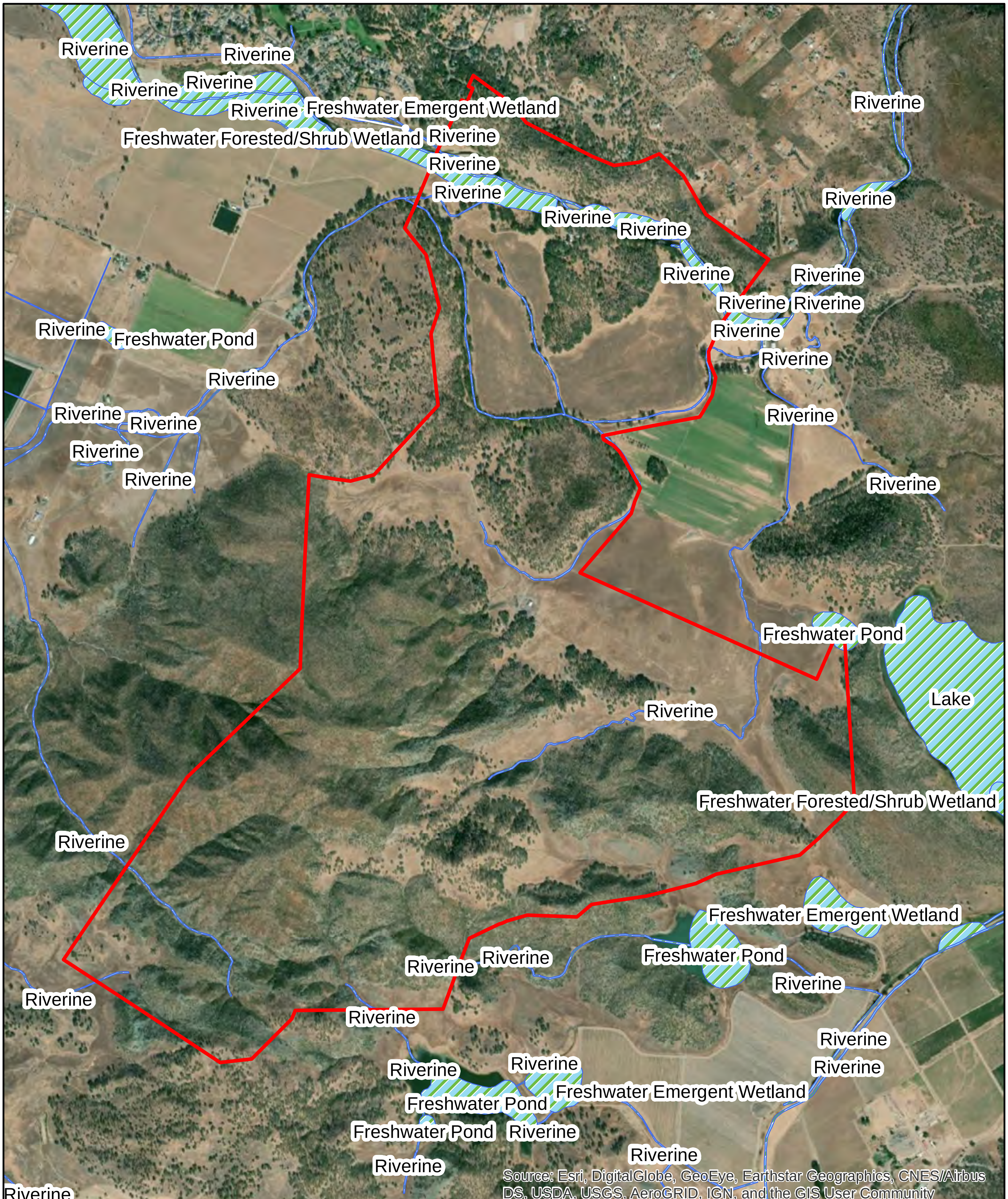
Natural Investigations Company



Water Resources (South)

19955 Grange Road, Middletown

Natural Investigations Company



Parcel Location

Wetlands and Channels

0 0.5 1 Kilometers

0 0.5 1 Miles

N W E S

1:24,000

19955 Grange Road
National Wetlands Inventory
Features Map

Natural Investigations Company

Map Date 2/3/2021

Middletown 1998 Quadrangle:Township 11N and 10N, Range 6W, Unsectioned Guenoc
Detert Reservoir 1997 Quadrangle:Township 10N, Range 6W, Unsectioned Guenoc

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: 08ESMF00-2021-SLI-0918
Event Code: 08ESMF00-2021-E-02592
Project Name: 19955 Grange Road

February 03, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location 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

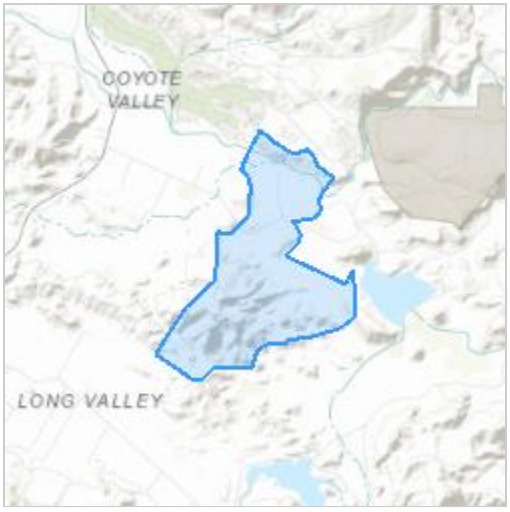
This project's location is within the jurisdiction of offices which do not participate in IPaC's automated species list delivery. Please contact the following offices directly for more information:

Red Bluff Fish And Wildlife Office
10950 Tyler Road
Red Bluff, CA 96080-7762
(530) 527-3043

Project Summary

Consultation Code: 08ESMF00-2021-SLI-0918
Event Code: 08ESMF00-2021-E-02592
Project Name: 19955 Grange Road
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/@38.7661955,-122.53836948138223,14z



Counties: Lake County, California

Endangered Species Act Species

There is a total of 10 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.

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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*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/1123

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas*	Threatened

Population: East Pacific DPS
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6199

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
California Freshwater Shrimp *Syncaris pacifica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7903	Endangered
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. The location of the critical habitat is not available. 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
Lake County Stonecrop *Parvisedum leiocarpum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2263	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. The location of the critical habitat is not available. 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 at 19955 Grange Road, Middletown on February 8-9, 2021

Common Name	**Scientific Name**
Deerweed	*Acmispon glaber*
Chamise	*Adenostoma fasciculatum*
White alder	*Alnus rhombifolia*
Red root pigweed	*Amaranthus retroflexus*
Common fiddleneck	*Amsinckia menziesii*
Common manzanita	*Arctostaphylos manzanita ssp. manzanita*
California mugwort	*Artemisia douglasiana*
Narrowleaf milkweed	*Asclepias fascicularis*
Milkweed	*Asclepias sp.*
California lace fern	*Aspidotis californica*
Slender wild oat	*Avena barbata*
Wild oat	*Avena fatua*
Coyote brush	*Baccharis pilularis*
Mule fat	*Baccharis salicifolia*
Brodiaea	*Brodiaea sp.*
California brome	*Bromus carinatus*
Ripgut brome	*Bromus diandrus*
Soft chess	*Bromus hordeaceus*
Western morning glory	*Calystegia occidentalis*
Western bittercress	*Cardamine oligosperma*
Italian thistle	*Carduus pycnocephalus*
Santa Barbara sedge	*Carex barbarae*
Torrent sedge	*Carex nudata*
Wedge leaf ceanothus	*Ceanothus cuneatus*
Deerbrush	*Ceanothus integerrimus var. macrothyrsus*
Yellow star thistle	*Centaurea solstitialis*
Birchleaf mountain mahogany	*Cercocarpus betuloides*
Wavy leaf soap plant	*Chlorogalum pomeridianum*
Chicory	*Cichorium intybus*
Bull thistle	*Cirsium vulgare*
Clarkia	*Clarkia sp.*
Miner’s lettuce	*Claytonia perfoliata*
Pipestems	*Clematis lasiantha*
Dove weed	*Croton setiger*
Swamp grass	*Crypsis schoenoides*
Bermuda grass	*Cynodon dactylon*
Dogtail grass	*Cynosurus echinoides*
Tall flatsedge	*Cyperus eragrostis*
Wild hyacinth	*Dichelostemma sp.*
Bush monkeyflower	*Diplacus aurantiacus*
Pale spikerush	*Eleocharis macrostachya*

Common Name	Scientific Name
Spikerush	*Eleocharis sp.*
Medusa-head grass	*Elymus caput-medusae*
Blue wildrye	*Elymus glaucus*
Ryegrass	*Elymus sp.*
Creeping ryegrass	*Elymus triticoides*
Tall willowherb	*Epilobium brachycarpum*
Torrey's willowherb	*Epilobium torreyi*
Canada horseweed	*Erigeron canadensis*
Yerba santa	*Eriodictyon californicum*
Buckwheat	*Eriogonum sp.*
Wooly sunflower	*Eriophyllum lanatum*
Filaree	*Erodium botrys*
Red-stemmed filaree	*Erodium cicutarium*
Jepson's button celery	*Eryngium aristulatum var. aristulatum*
California poppy	*Eschscholzia californica*
Poppy	*Eschscholzia sp.*
Thyme-leaved spurge	*Euphorbia serpyllifolia*
Pacific fescue	*Festuca microstachys*
Italian ryegrass	*Festuca perennis*
California coffeeberry	*Frangula californica*
Bedstraw	*Galium aparine*
Bedstraw	*Galium sp.*
Chaparral silktassel	*Garrya congdonii*
Hairy gumplant	*Grindelia hirsutula*
Toyon	*Heteromeles arbutifolia*
Oregon false goldenaster	*Heterotheca oregona*
Shortpod mustard	*Hirschfeldia incana*
Wand tarplant	*Holocarpha virgata*
Meadow barley	*Hordeum brachyantherum*
Mediterranean barley	*Hordeum marinum ssp. gussoneanum*
Wall barley	*Hordeum murinum*
Iris	*Iris sp.*
Northern California black walnut	*Juglans hindsii*
Mexican rush	*Juncus mexicanus*
Rush	*Juncus sp.*
Bush beardtongue	*Keckiella breviflora*
Sharp-leaved fluellin	*Kickxia elatine*
Prickly lettuce	*Lactuca serriola*
Lomatium	*Lomatium spp.*
Pink honeysuckle	*Lonicera hispidula*
Chaparral honeysuckle	*Lonicera interrupta*
Bird's-foot trefoil	*Lotus corniculatus*
Miniature lupine	*Lupinus bicolor*
Lupine	*Lupinus sp.*

Common Name	Scientific Name
California loosestrife	*Lythrum californicum*
Tarplant	*Madia sp.*
California man-root	*Marah fabacea*
Horehound	*Marrubium vulgare*
Sweetclover	*Melilotus sp.*
Giant blazingstar	*Mentzelia laevicaulis*
Coyote mint	*Monardella villosa*
Navarretia	*Navarretia sp.*
Bird's-foot cliff brake	*Pellaea mucronata*
Goldback fern	*Pentagramma triangularis*
Phacelia	*Phacelia sp.*
Gray pine	*Pinus sabiniana*
Popcornflower	*Plagiobothrys sp.*
English plantain	*Plantago lanceolata*
Douglas' mesamint	*Pogogyne douglasii*
Rabbit's-foot grass	*Polypogon monspeliensis*
California scrub oak	*Quercus berberidifolia*
Blue oak	*Quercus douglasii*
Leather oak	*Quercus durata*
California black oak	*Quercus kelloggii*
Valley oak	*Quercus lobata*
Interior live oak	*Quercus wislizeni var. wislizeni*
Prickleseed buttercup	*Ranunculus muricatus*
Western buttercup	*Ranunculus occidentalis*
Buttercup	*Ranunculus sp.*
Himalayan blackberry	*Rubus armeniacus*
Elmleaf blackberry	*Rubus ulmifolius*
Curly dock	*Rumex crispus*
Fiddleleaf dock	*Rumex pulcher*
Sandbar willow	*Salix exigua*
Red willow	*Salix laevigata*
Arroyo willow	*Salix lasiolepis*
Blue elderberry	*Sambucus nigra ssp. caerulea*
Purple sanicle	*Sanicula bipinnatifida*
Pacific sanicle	*Sanicula crassicaulis*
Milk thistle	*Silybum marinum*
Blue-eyed grass	*Sisyrinchium bellum*
Sow thistle	*Sonchus oleraceus*
Red sandspurry	*Spergularia rubra*
Hedge nettle	*Stachys sp.*
Chickweed	*Stellaria media*
Common snowberry	*Symphoricarpos albus*
Tall sock-destroyer	*Torilis arvensis*
Poison-oak	*Toxicodendron diversilobum*

Common Name	Scientific Name
Death camas	*Toxicoscordion sp.*
Clover	*Trifolium sp.*
Triplet lily	*Triteleia sp.*
California bay	*Umbellularia californica*
Moth mullein	*Verbascum blattaria*
Common mullein	*Verbascum thapsus*
Spring vetch	*Vicia sativa*
Winter vetch	*Vicia villosa*
California grape	*Vitis californicus*
Smooth mule ears	*Wyethia glabra*
Cocklebur	*Xanthium strumarium*
Nemophila	*Nemophila sp.*

	Fiddleleaf dock	*Rumex pulcher*

APPENDIX 3: SITE PHOTOS

































BOTANICAL SURVEY REPORT
FOR THE
CANNABIS CULTIVATION OPERATION AT
19955 GRANGE ROAD, MIDDLETOWN, CALIFORNIA

June 7, 2021

Prepared by:

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Natural Investigations Company, Inc.
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NATURAL INVESTIGATIONS CO.
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1. PROJECT LOCATION AND DESCRIPTION

Rancho Lake, LLC (Rancho Lake) is seeking a Major Use Permit and an Early Activation of Use Permit from the County of Lake, for a proposed commercial cannabis cultivation operation at 19955 Grange Road near Middletown, California on Lake County APN 014-290-08 (Project Parcel). Rancho Lake's proposed commercial cannabis cultivation operation will be composed of fifty-six (56) A-Type 3 "Medium Outdoor" cultivation areas, with a combined cultivation/canopy area of 2,700,720 square feet (62 acres). Additionally, Rancho Lake is applying for an Early Activation of Use Permit for 871,200 square feet (20 acres) of the total proposed 2,700,720 square foot cultivation/canopy area. The total cultivation area of the proposed cannabis cultivation operation (as defined in Chapter 21, Article 27 of the Lake County Code), including the combined cultivation/canopy area(s), a 120 square foot Security Center/Shed, and a 160 square foot Pesticides & Agricultural Chemicals Storage Area, is 2,440,000 square feet.

The Project Property is composed of five parcels totaling approximately 1,246 acres (Lake County APNs 014-290-08 & 12 and 014-300-02, 03, & 04), all of which are owned by the Comstock Family Trust. James Comstock (Managing Member of the Comstock Family Trust) has given Rancho Lake 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 was enrolled for coverage under the State Water Resources Control Board's Cannabis General Order as a Tier 2 Low Risk Discharger on October 30th, 2020. The proposed cultivation operation will be established in areas of the Project Property that have been used for cattle grazing, continuously since at least the early 1900s.

6-foot tall wire fences will be erected around the proposed outdoor cultivation/canopy area(s), with privacy mesh where necessary to screen the cultivation/canopy area(s) from public view. The growing medium of the proposed outdoor cultivation/canopy area(s) will be an amended native soil mixture at or below grade, with drip irrigation systems covered in white plastic mulch (to conserve water resources). All water for the proposed cultivation operation will come from two existing onsite groundwater wells located at: Latitude 38.77631°; Longitude -122.52444° and Latitude 38.77697°; Longitude -122.52711°. Water from these two groundwater wells will be stored within thirty (30) proposed 5,000-gallon water storage tanks located directly adjacent to the proposed cultivation/canopy area(s).

Only outdoor cannabis cultivation, harvesting, and preservation activities will be conducted onsite. Cannabis cultivated on and harvested from the Project Parcel, will be dried within temporary drying facilities, then transported to State of California-licensed processing and manufacturing facilities for processing and/or extraction.

For this assessment, the Project Area was defined as the cultivation area plus the ancillary facilities, and this 63-acre area was the subject of the impact analysis.

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 7 - California's Gray Pine Belt, defined by hot summers and mild but pronounced winters without severe winter cold or high humidity (Sunset, 2020).

The topography of the Property is mountainous, with flat valleys at the base of the slopes. The elevation ranges from approximately 930 feet to 1,710 feet above mean sea level. Drainage runs north, and eventually flows into Putah Creek. The Project Property is located in the eastern half of the Coyote Valley, within the Crazy Creek - Putah Creek Watershed. Putah Creek, a perennial Class I watercourse, flows from west to east through the northernmost portion of the Project Property. Crazy Creek, an

intermittent Class II watercourse, flows from west to east through the northwest portion of the Project Property and into Putah Creek. Multiple unnamed intermittent Class III watercourses flow generally from south to north, through the Project Property, and into Putah Creek. A large complex wetland occupies floor of a valley in the southern half of the Project Property (over 1000 feet from the proposed cultivation operation). There are four culverted Class III watercourse crossings of Grange Road and Comstock Ranch Road, used to access the Project Parcel. No cannabis cultivation activities nor agricultural chemicals storage will occur within 150 feet of any surface waterbody, and no ground disturbance is proposed within 100 feet of any wetland or channel.

Current and past land uses of the Property are rural residential with intensive and extensive agriculture. The Property has been improved with three groundwater wells, a residence, and three accessory ag structures/buildings (used to store hay, tools, and equipment, and to house livestock). The proposed cultivation operation will be established in areas of the Property that have been used for cattle grazing, continuously since at least the early 1900s. The surrounding land uses are private estates, vineyards, open space, and grazing land.

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., February 8 and 9, 2021, full days; Kevin Downing; April 21, 2021, half day, and June 3, 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 Project Area 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. 2021. Biological Resources Assessment for the Cannabis Cultivation Operation at 19955 Grange Road, Middletown, 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

No critical habitat for any federally-listed species occurs within the Project Area or the surrounding Property. According to the results of a spatial query of the CNDDB, there are no reported no special-status habitats within the Project Area or surrounding Property boundary. Within the surrounding region (County-level), the CNDDB has mapped the following special-status habitats: Serpentine Bunchgrass; Northern Volcanic Ash Vernal Pool; Coastal and Valley Freshwater Marsh; Northern Basalt Flow Vernal Pool; Northern Volcanic Ash Vernal Pool; Northern Interior Cypress Forest; and Northern Vernal Pool.

Within the surrounding region, the following California Sensitive Natural Communities occur (listed in higher-order primary life forms: CDFG 2003; CDFW 2019):

- 32.000.00 Coast Scrub
  - 32.xxx.xx scrub with dominant *Artemisia*, Baccharis, *Eriogonum*, etc.
- 37.000.00 Chaparral
  - 37.1xx.xx Chamise Chaparral [*Adenostoma fasciculatum*]
  - 37.2xx.xx Chaparral with *Ceanothus* as principal indicator
  - 37.3xx.xx Chaparral with Manzanita [*Arctostaphylos* spp.] as principal indicator
  - 37.4xx.xx Chaparral with Oak [*Quercus* spp.] as principal indicator
- 40.000.00 Grass & Herb Dominated Communities
  - 41.xxx.xx Native Grassland
- 42.000.00 Non-native Grassland
  - certain rare associations
- 44.000.00 Vernal pools
  - all associations
- 45.000.00 Meadow and seeps not dominated by grasses
  - 45.11x.xx *Carex* marsh, meadow
  - 45.2xx.xx *Eleocharis* marsh, meadow
- 52.000.00 Marsh
  - all associations
- 60.000.00 Riparian and bottomland habitat
  - all associations
- 71.000.00 Oak Woodlands and Forests
  - 71.100.15 *Quercus agrifolia – Quercus garryana – Quercus kelloggii*
  - 71.060.xx Coast live oak woodland and forest
  - 71.050.xx Canyon live oak forest and woodland
  - 71.020.xx Blue oak woodland and forest
  - 71.070.xx Engelmann oak woodland and forest
  - 71.040.xx Valley oak woodland and forest
  - 71.080.xx Interior live oak woodland and forest
- 72.000.00 Upland Walnut Woodlands and Forests [*Juglans* spp.]
- 73.000.00 Tanoak Forest and Woodland
- 73.200.00 Pacific Madrone [*Arbutus menziesii*]
- 74.000.00 California bay forest and woodland
- 75.000.00 California Buckeye Woodland [*Aesculus* californica]
- 80.000.00 Coniferous Upland Forest and Woodland
  - various associations of *Calocedrus*, *Pinus*, or *Abies*

Some of these sensitive natural communities could occur in the Project Area, and specifically, the following:

- 71.000.00 Oak Woodlands and Forests
- 41.xxx.xx Native Grassland

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 using a 10-mile buffer around the Property boundary.
- A 9-quadrangle 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 reported the following special-status species occurrences within the Property: Mt. Saint Helena morning glory (*Calystegia collina* ssp. *oxyphylla*). The precise location of the Mt. Saint Helena morning glory is not known; however, suitable serpentine soils are found in the southern portion of the Study Area.

Within a 10-mile buffer of the Property boundary, the CNDDB reported several special-status species occurrences, summarized in the Appendix.

No special status plants or animals were observed within the Study Area. The CNDDB has reported an occurrence of Mt. Saint Helena morning glory *(Calystegia collina ssp. oxyphylla)*, a serpentine endemic, within the Study Area. Volcanic and serpentine soils are present within the oak woodland and chaparral habitats of the Study Area. Special status plants reported by CNDDB to occur in the region, including Mt. Saint Helena morning glory, are known to occur on these substrates and therefore have a moderate to high potential for occurrence within the Study Area. Wetlands are also present within the Study Area. Special status plants may occur in wetlands. No wetlands, volcanic soils or serpentine soils are found within the Project Area. The Project Area is located within annual grasslands found on upland alluvial soils. Due to the dominance of aggressive non-native grasses and forbs, the Project Area has a low probability for special status plant occurrence.

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 the Appendix.

During the botanical field survey, no special-status plant taxa were detected within the Project Area.

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). More specifically, the following terrestrial natural communities occur in the Project Area (as categorized by CDFW 2019):

- 42.040.000 California Annual Grassland
    - 42.026.09 California Annual Grassland *Bromus hordeaceus-Erodium botrys*
    - 42.026.19 California Annual Grassland *Bromus hordeaceus-Vicia villosa-Trifolium hirtum*
- 11300 Disturbed Habitat
- 12000 Urban/Developed

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: A false negative is highly unlikely since early, mid, and late-season botanical field surveys were performed.

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?

The botanical survey effort was very comprehensive; early, mid, and late-season botanical field surveys were performed.

5. POTENTIAL PROJECT IMPACTS

5.1. Special-status Plant Populations

No special-status species were detected within the survey area. Special-status species are more likely to occur in sensitive and rare habitats, which are lacking in the Project Area. Special status plants also have a moderate to high potential to occur within the wetlands of the Property. However, the cannabis cultivation / operation areas are at least 150 feet away from Putah Creek (Class I watercourse) and 100 feet away from other watercourses and wetlands. Special status plants have a moderate to high potential to occur on the serpentine and volcanic soils of the chaparral and oak woodland habitats of the Property. The Project Areas are located in non-native annual grassland habitat, which will be impacted by project

implementation. The annual grasslands have a low potential for harboring special-status plant species due to the dominance of aggressive non-native grasses and forbs. No serpentine or volcanic soils are found within the Project Area. No impacts to special-status plant species were identified from project implementation. Nevertheless, another botanical field survey is planned later in the blooming season to ensure that no special-status plant populations are present. Thus, implementation of the proposed project will not directly impact any known special status plant population.

Indirect impacts could occur from the loss of suitable habitat for regionally-occurring special-status species. The Project Area contains the following general habitat types: non-native annual grassland; and urbanized. Agricultural activities have degraded the habitat quality in the Project Area. The Project Area contains no sensitive habitats or aquatic habitats such as wetlands or channels. The majority of regionally-occurring special-status species occur in these sensitive habitat types, which were avoided in project design of cultivation compound locations.

Some regionally-occurring special-status species can utilize the habitat types in the Project Area. However, project implementation will have a less-than significant impact upon habitat loss for regionally-occurring special-status species for numerous reasons. The ground disturbance will occur on only 10 to 5 percent of the Property. This leaves the vast majority of the natural habitats undisturbed on the Property. Cattle grazing and other agricultural activities have degraded the habitat quality in the Project Area, making it less suitable for special-status species. Finally, the majority of regionally-occurring special-status species require habitat types that will not be disturbed, such as riparian, wetland, chaparral, and serpentine soil. For these reasons, project implementation will have a less than significant indirect or cumulative impact upon special-status species.

5.2. Sensitive Natural Communities

The Project Area does not contain any sensitive natural community type. Project implementation will have a less-than significant impact upon sensitive natural communities for numerous reasons. The majority of sensitive natural communities of the Property (riparian, open water, chaparral, serpentine soils, channels and wetlands) were avoided in project design of cultivation compound locations, including aquatic buffers of at least 100 feet. Although project implementation will disturb some annual grassland communities, the majority of grassland communities on the Property will not be disturbed or involved in the project. For these reasons, project implementation will have a less than significant impact (direct, indirect, and cumulative) upon sensitive natural communities.

6. MITIGATION MEASURES / RECOMMENDATIONS

The project proponents and cultivators implemented mitigation by design. Mitigation has been employed in the design phase by inventorying sensitive habitats and water resources on the Property and then avoiding all sensitive habitats in selection of cultivation compound locations and sizes. The cultivation compounds were designed with minimum of 100-foot setbacks from all aquatic habitats (ponds, channels and wetlands). The project design also includes vegetative buffers between cultivation compounds and sensitive habitats, and an erosion control plan and pollution prevention plan will be implemented. For these reasons, no additional mitigation measures are deemed necessary.

No additional botanical surveys are deemed necessary.

7. QUALIFICATIONS OF BOTANICAL FIELD SURVEYORS AND REPORT AUTHORS

G.O. GRAENING, Ph.D., M.S.E. (Report writing only)
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.

MARGRIET WETHERWAX DOWNING, M.S. (Plant ID Only)
Ms. Wetherwax Downing holds a Master's Degree in Advanced Plant Systematics and a Bachelor of Science in Botany. From 1995 to the present, Ms. Wetherwax has been employed at the Jepson Herbarium (University of California at Berkeley) as a plant taxonomist and museum scientist. Ms. Wetherwax Downing is managing editor and illustration editor of the *Jepson Flora Project* and *The Jepson Desert Manual*, as well as a contributing author to *The Jepson Manual: Higher Plants of California and the Flora of North America North of Mexico Project*.

KEVIN DOWNING, B.A.
Mr. Downing earned his Bachelors at Whitman College, Walla Walla, Washington, and has been botanizing since 1993. He has participated in the revision and update of the Jepson Manual since 1994. Mr. Downing was employed by the U.C. Berkeley Jepson Herbarium from 2001-2002 where he helped prepare and execute taxonomic workshops as well as assisted in plant inventory and data processing. He continues to volunteer for the UC Berkeley Jepson Herbarium on various taxonomic projects. Employed by Jones and Stokes from 2004 to 2007 as a botanist, he worked on large-scale projects such as Fort Tejon Ranch, the Williams pipeline in Oregon, and the California High Speed Rail, and on numerous short-term projects in a consulting capacity. Mr. Downing was employed by the California Department of Food and Agriculture from 2007-2009, where he worked at the CDFA Herbarium doing database processing and plant curation. Mr. Downing continues to work in a consulting capacity as botanist on various projects.

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.

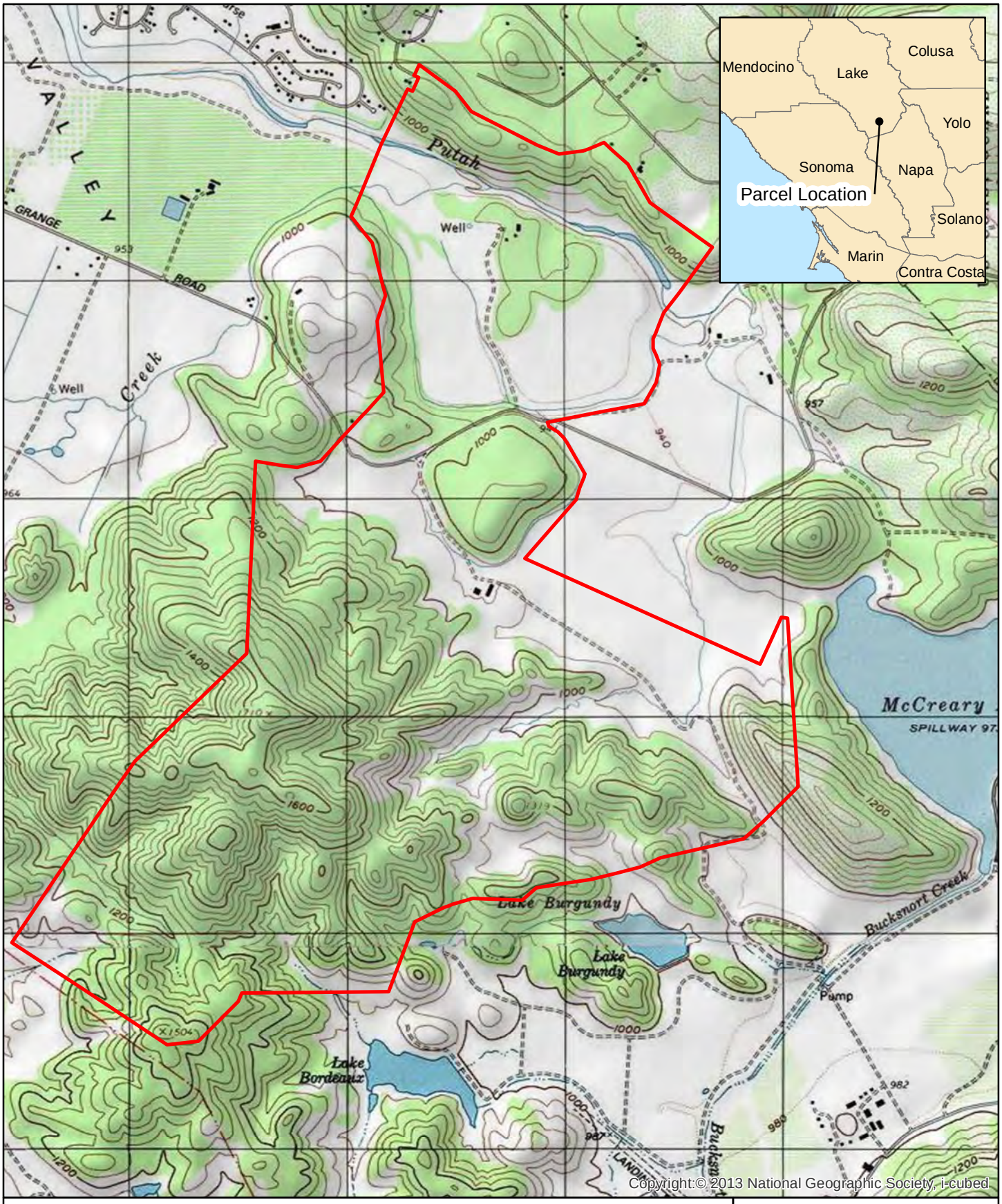
University of California at Berkeley. 2021a. Jepson Online Interchange for California Floristics. Jepson Flora Project, University Herbarium and Jepson Herbarium, University of California at Berkeley. Internet database available at http://ucjeps.berkeley.edu/interchange.html.

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

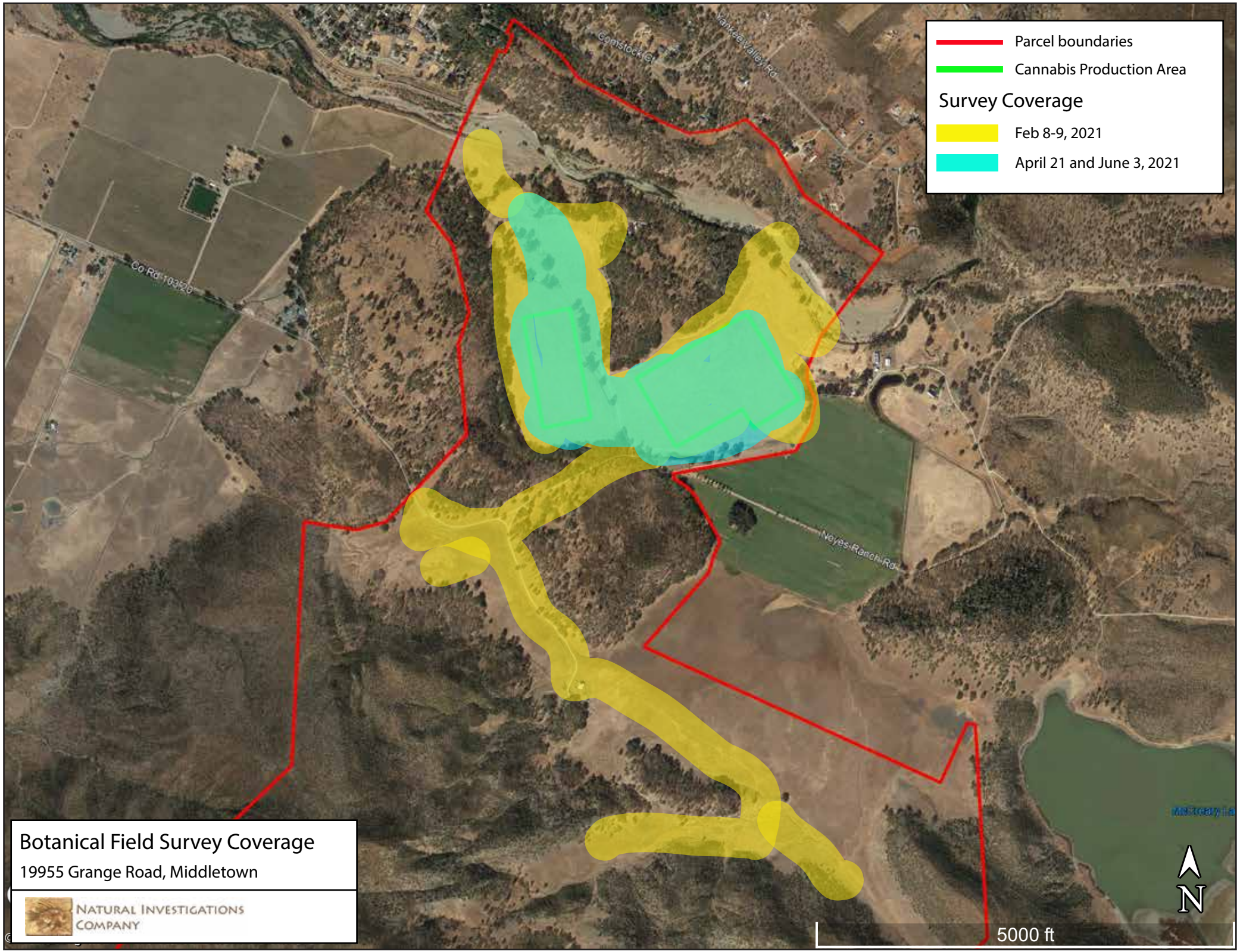
1:24,000

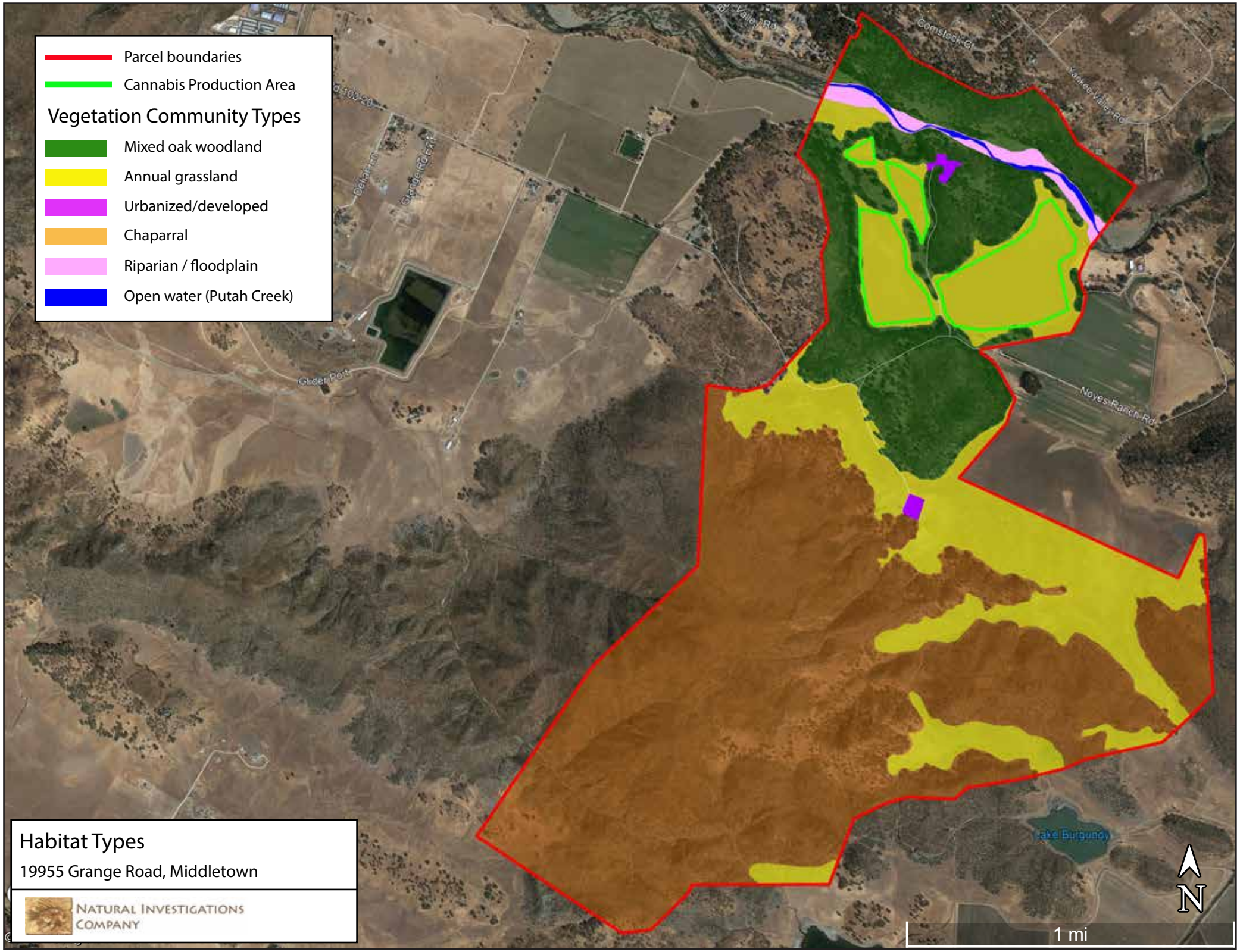
19955 Grange Road
Parcel Location Map

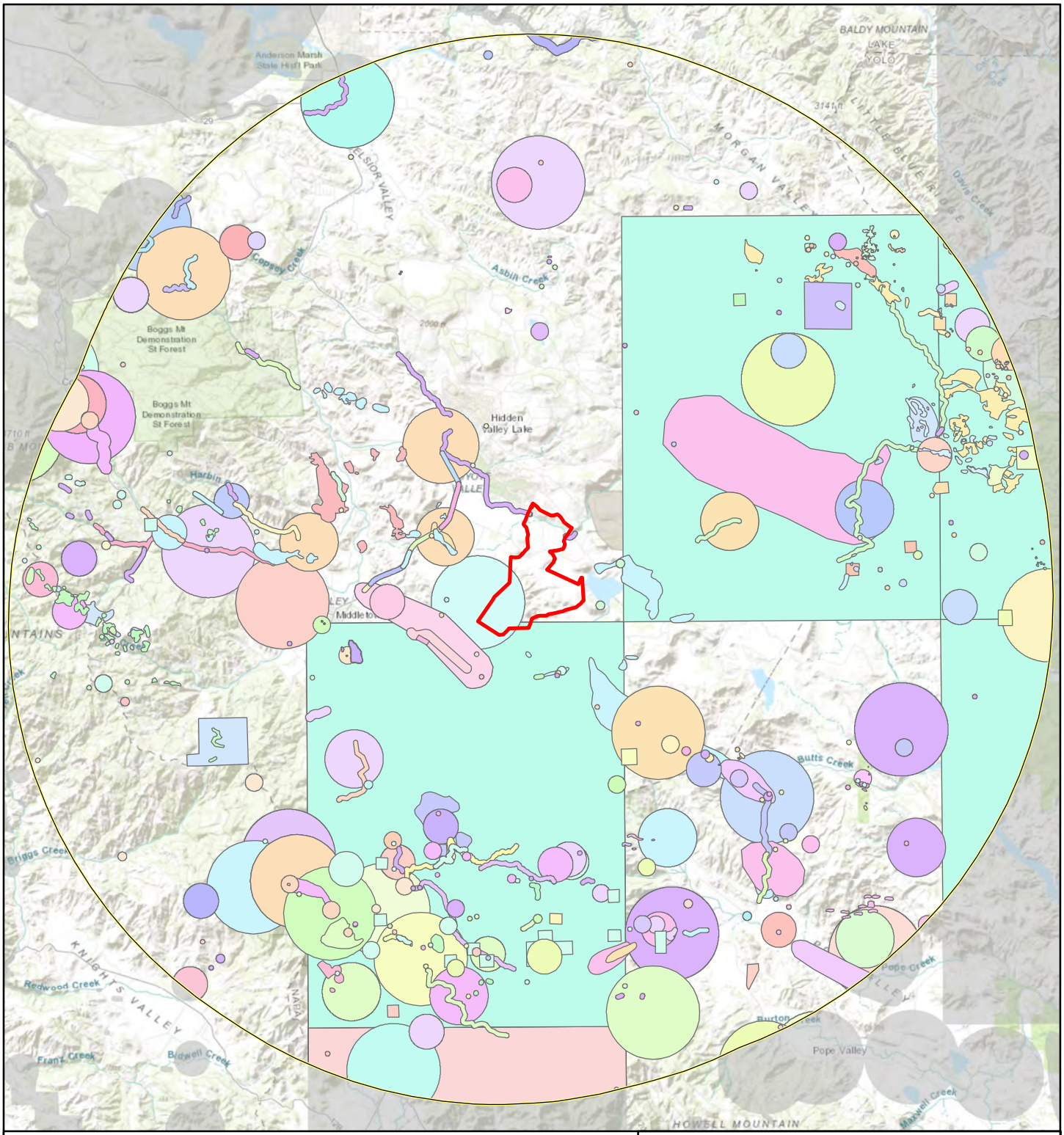
Natural Investigations Company

Map Date 2/3/2021

Middletown 1998 Quadrangle:Township 11N and 10N, Range 6W, Unsectioned Guenoc
Detert Reservoir 1997 Quadrangle:Township 10N, Range 6W, Unsectioned Guenoc


Parcel boundaries
Cannabis Production Area
Survey Coverage
Feb 8-9, 2021
April 21 and June 3, 2021
Comstock Ct
Yankee Valley Rd
Co Rd 103420
Noyes Ranch Rd
Botanical Field Survey Coverage
19955 Grange Road, Middletown
Natural Investigations Company
N
5000 ft


Parcel boundaries
Cannabis Production Area
Vegetation Community Types
Mixed oak woodland
Annual grassland
Urbanized/developed
Chaparral
Riparian / floodplain
Open water (Putah Creek)
Habitat Types
19955 Grange Road, Middletown
Natural Investigations Company
Comstock Cir
Knoxville Valley Rd
Glider Port
Noyes Ranch Rd
Lake Burgundy
N
1 mi



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. 2021. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

Special-Status Species Occurrences Map

19955 Grange Road

Middletown 1998 Quadrangle:Township 11N and 10N, Range 6W, Unsectioned Guenoc
Detert Reservoir 1997 Quadrangle:Township 10N, Range 6W, Unsectioned Guenoc

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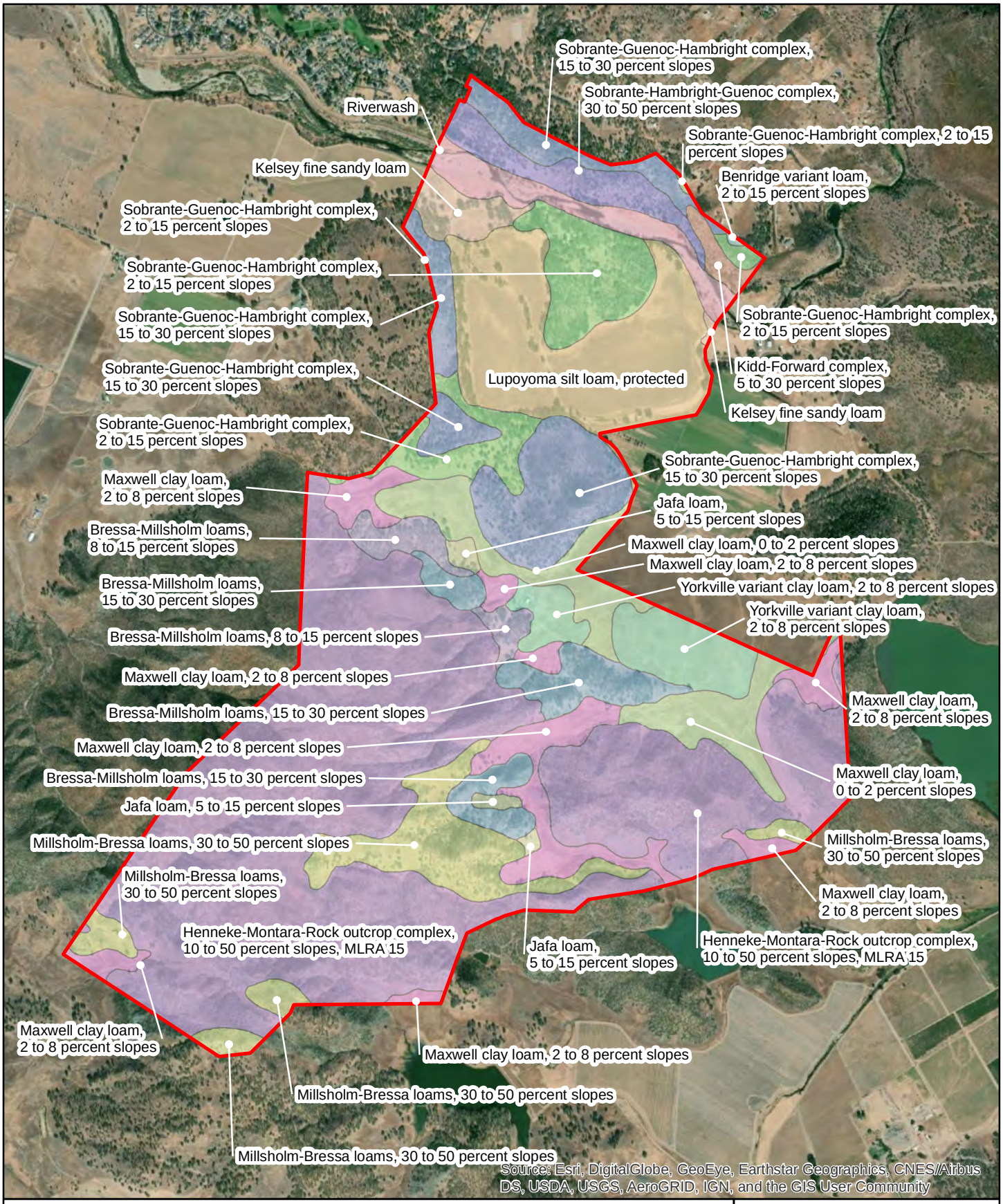


Parcel Location

0 0.5 1 Kilometers

0 0.5 1 Miles

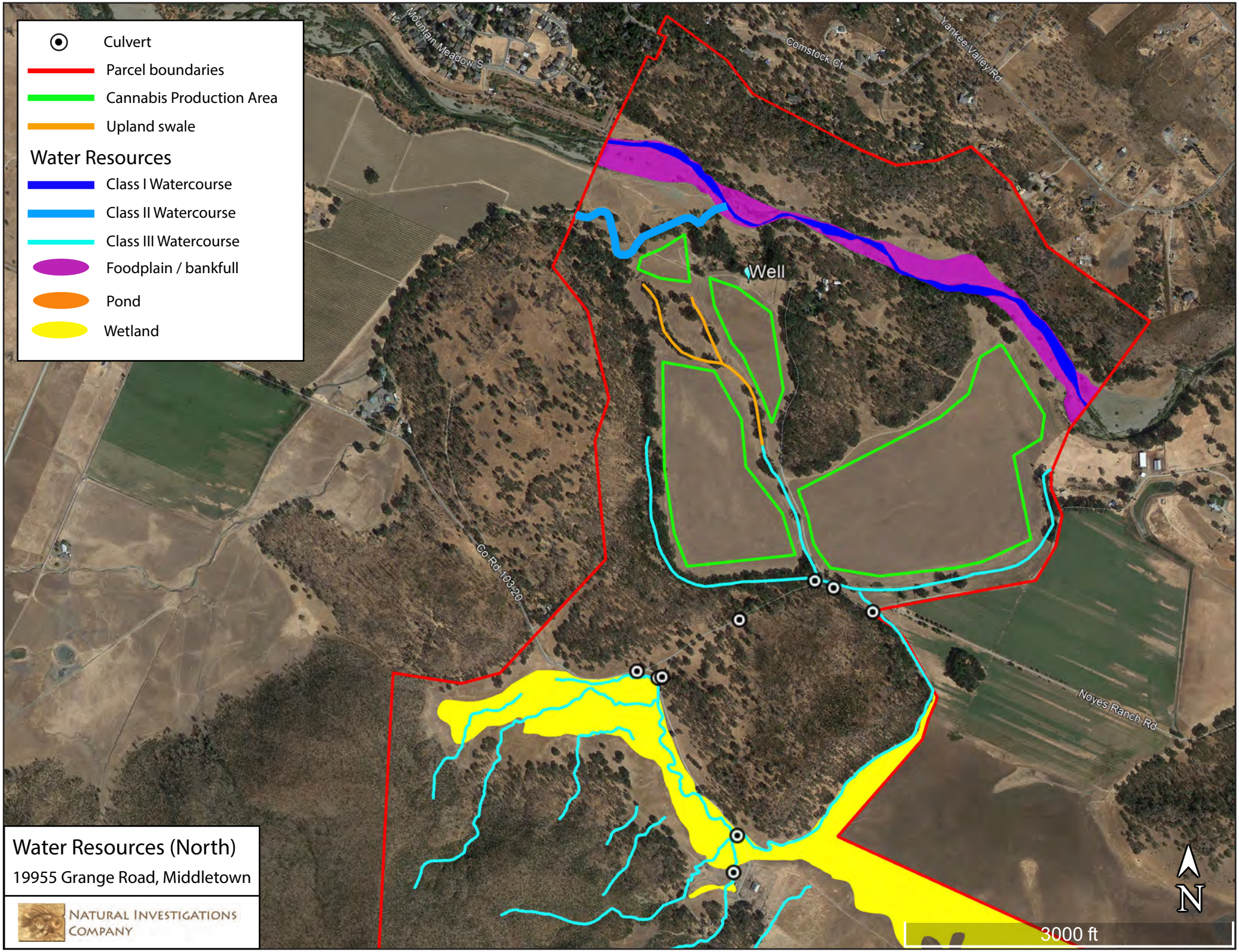
1:24,000

19955 Grange Road
USDA Soils Map

Natural Investigations Company

Map Date 2/3/2021

Middletown 1998 Quadrangle:Township 11N and 10N, Range 6W, Unsectioned Guenoc
Detert Reservoir 1997 Quadrangle:Township 10N, Range 6W, Unsectioned Guenoc



Water Resources (North)

19955 Grange Road, Middletown

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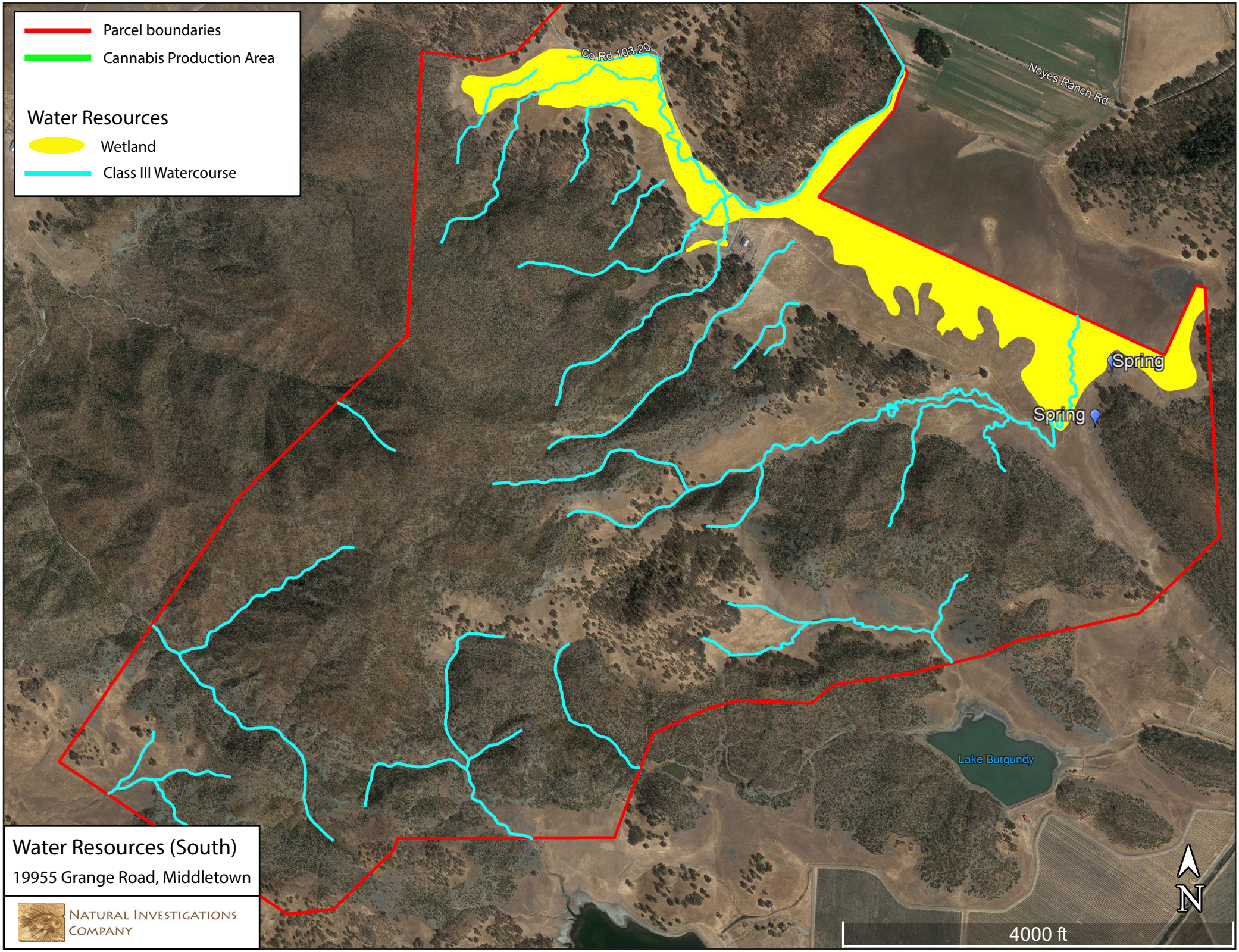

Water Resources (South)

19955 Grange Road, Middletown

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APPENDIX: CNDDB AND CNPS SPECIES LISTS

Special-status Species Reported by CNDDB or CNPS in the Vicinity of the Project Area

Common Name Scientific Name	Status*	General Habitat**	Microhabitat**
Toren's grimmia *Grimmia torenii*	1B.3	Chaparral; Cismontane woodland; Lower montane coniferous forest; Limestone	Openings, rocky, boulder and rock walls, serpentine, volcanic. 325-1160 m.
Elongate copper moss *Mielichhoferia elongata*	4.3	Cismontane woodland	Moss growing on very acidic, metamorphic rock or substrate; usually in higher portions in fens. Often on substrates naturally enriched with heavy metals (e.g. copper) such as mine tailings. 5-1085 m.
Loch Lomond button-celery *Eryngium constancei*	FE/CE/1B.1	Vernal pool; Wetland	Volcanic ash flow vernal pools. 460-855 m.
Jepson's coyote-thistle *Eryngium jepsonii*	1B.2	Valley & foothill grassland; Vernal pool	Clay. 3-305 m.
Big-scale balsamroot *Balsamorhiza macrolepis*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Sometimes on serpentine. 35-1465 m.
Greene's narrow-leaved daisy *Erigeron greenei*	1B.2	Chaparral; Ultramafic	Serpentine and volcanic substrates, generally in shrubby vegetation. 90-835 m.
Congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	1B.2	Valley & foothill grassland	Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 5-520 m.
Pappose tarplant *Centromadia parryi ssp. parryi*	1B.2	Chaparral; Coastal prairie; Meadow & seep; Marsh & swamp; Valley & foothill grassland	Vernally mesic, often alkaline sites. 1-500 m.
Burke's goldfields *Lasthenia burkei*	FE/CE/1B.1	Meadow & seep; Vernal pool; Wetland	Most often in vernal pools and swales. 15-580 m.
Colusa layia *Layia septentrionalis*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Scattered colonies in fields and grassy slopes in sandy or serpentine soil. 15-1100 m.
Hall's harmonia *Harmonia hallii*	1B.2	Chaparral; Ultramafic	Serpentine hills and ridges. Open, rocky areas within chaparral. 335-945 m.
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Coastal bluff scrub; Cismontane woodland; Valley & foothill grassland	3-795 m.
Serpentine cryptantha *Cryptantha dissita*	1B.2	Chaparral; Ultramafic	Serpentine outcrops. 135-735 m.
Calistoga popcornflower *Plagiobothrys strictus*	FE/CT/1B.1	Meadow & seep; Valley & foothill grassland; Vernal pool; Wetland	Alkaline sites near thermal springs and on margins of vernal pools in heavy, dark, adobe-like clay. 90-125 m.
Freed's jewelflower *Streptanthus brachiatus ssp. hoffmanii*	1B.2	Chaparral; Cismontane woodland; Ultramafic	Serpentine rock outcrops, primarily in geothermal development areas. 485-1040 m.
Socrates Mine jewelflower *Streptanthus brachiatus ssp. brachiatus*	1B.2	Closed-cone coniferous forest; Chaparral; Ultramafic	Serpentine areas and serpentine chaparral. 605-1950 m.
Three Peaks jewelflower	1B.2	Chaparral; Ultramafic	Serpentine barrens, outcrops, and talus; 240-735 m.

Streptanthus morrisonii ssp. elatus			
Kruckeberg's jewelflower *Streptanthus morrisonii ssp. kruckebergii*	1B.2	Cismontane woodland; Ultramafic	Scattered serpentine outcrops near the lake/napa county line. 240-665 m.
Early jewelflower *Streptanthus vernalis*	1B.2	Closed-cone coniferous forest; Chaparral; Ultramafic	On serpentine.
Green jewelflower *Streptanthus hesperidis*	1B.2	Chaparral; Cismontane woodland; Ultramafic	Openings in chaparral or woodland; serpentine, rocky sites. 240-765 m.
Cascade downingia *Downingia willamettensis*	2B.2	Cismontane woodland; Valley & foothill grassland; Vernal pool	Lake margins. 15-1110 m.
Legenere *Legenere limosa*	1B.1	Vernal pool; Wetland	In beds of vernal pools. 1-1005 m.
Mt. Saint Helena morning-glory *Calystegia collina ssp. oxyphylla*	4.2	Chaparral; Lower montane coniferous forest; Ultramafic; Valley & foothill grassland	On serpentine barrens, slopes, and hillsides. 280-1010 m.
Lake County stonecrop *Sedella leiocarpa*	FE/CE/1B.1	Cismontane woodland; Valley & foothill grassland; Vernal pool; Wetland	Level areas that are seasonally wet and dry out in late spring; substrate usually of volcanic origin. 515-640 m.
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	1B.3	Chaparral; Cismontane woodland; Lower montane coniferous forest	Volcanic soils. 225-1830 m.
Napa false indigo *Amorpha californica var. napensis*	1B.2	Broadleaved upland forest; Chaparral; Cismontane woodland	Openings in forest or woodland or in chaparral. 30-735 m
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	1B.2	Cismontane woodland; Ultramafic; Valley & foothill grassland	Commonly on serpentine in grassland or openings in chaparral. 175-1005 m.
Cobb Mountain lupine *Lupinus sericatus*	1B.2	Broadleaved upland forest; Chaparral; Cismontane woodland; Lower montane coniferous forest; Ultramafic	In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine. 120-1390 m.
Saline clover *Trifolium hydrophilum*	1B.2	Marsh & swamp; Valley & foothill grassland; Vernal pool; Wetland	Mesic, alkaline sites. 1-335 m.
Napa bluecurls *Trichostema ruygtii*	1B.2	Chaparral; Cismontane woodland; Lower montane coniferous forest; Valley & foothill grassland; Vernal pool; Wetland	Often in open, sunny areas. Also has been found in vernal pools. 30-680 m.
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	4.2	Chaparral; Cismontane woodland; Valley & foothill grassland; Vernal pool; Wetland	Vernally wet areas, ditches, and ponds. 60-1335 m.
Two-carpellate western flax *Hesperolinon bicarpellatum*	1B.2	Chaparral; Ultramafic	Serpentine barrens at edge of chaparral. 175-825 m.
Lake County western flax *Hesperolinon didymocarpum*	CE/1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Serpentine soil in open grassland and near chaparral. 325-400 m.
Drymaria-like western flax *Hesperolinon drymarioides*	1B.2	Closed-cone coniferous forest; Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Serpentine soils, mostly within chaparral. 400-1100 m.
Sharsmith's western flax *Hesperolinon sharsmithiae*	1B.2	Chaparral; Ultramafic	Serpentine substrates. 180-670 m.

Keck's checkerbloom *Sidalcea keckii*	FE/1B.1	Cismontane woodland; Ultramafic; Valley & foothill grassland	Grassy slopes in blue oak woodland. On serpentine-derived, clay soils, at least sometimes. 85-505 m.
Snow Mountain buckwheat *Eriogonum nervulosum*	1B.2	Chaparral; Ultramafic	Dry serpentine outcrops, balds, and barrens. 445-2105 m.
Jepson's leptosiphon *Leptosiphon jepsonii*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Open to partially shaded grassy slopes. On volcanics or the periphery of serpentine substrates. 55-855 m.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	1B.1	Cismontane woodland; Lower montane coniferous forest; Meadow & seep; Valley & foothill grassland; Vernal pool; Wetland	Vernal pools and swales; adobe or alkaline soils. 3-1680 m.
Few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE/CT/1B.1	Vernal pool; Wetland	Volcanic ash flow, and volcanic substrate vernal pools. 425-855 m.
Many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE/CE/1B.2	Vernal pool; Wetland	Volcanic ash flow vernal pools. 30-915 m.
Small pincushion navarretia *Navarretia myersii ssp. deminuta*	1B.1	Vernal pool; Wetland	Known from only one site in lake county in vernal pool habitat on clay-loam soil; also in roadside depressions. 355 m.
Marin County navarretia *Navarretia rosulata*	1B.2	Closed-cone coniferous forest; Chaparral; Ultramafic	Dry, open rocky places; can occur on serpentine. 185-640 m.
Porter's navarretia *Navarretia paradoxinota*	1B.3	Meadow & seep; Ultramafic	Serpentinite, openings, vernally mesic, often drainages. 175-875 m.
Holly-leaved ceanothus *Ceanothus purpureus*	1B.2	Chaparral; Cismontane woodland	Rocky, volcanic slopes. 140-720 m.
Rincon Ridge ceanothus *Ceanothus confusus*	1B.1	Closed-cone coniferous forest; Chaparral; Cismontane woodland; Ultramafic	Known from volcanic or serpentine soils, dry shrubby slopes. 150-1280 m.
Calistoga ceanothus *Ceanothus divergens*	1B.2	Chaparral; Cismontane woodland; Ultramafic	Rocky, serpentine or volcanic sites. 100-950 m.
Sonoma ceanothus *Ceanothus sonomensis*	1B.2	Chaparral; Ultramafic	Sandy, serpentine or volcanic soils. 140-795 m.
Bolander's horkelia *Horkelia bolanderi*	1B.2	Cismontane woodland; Lower montane coniferous forest; Meadow & seep; Valley & foothill grassland	Grassy margins of vernal pools and meadows. 455-855 m.
Pink creamsacs *Castilleja rubicundula var. rubicundula*	1B.2	Chaparral; Cismontane woodland; Meadow & seep; Ultramafic; Valley & foothill grassland	Openings in chaparral or grasslands. On serpentine. 20-915 m.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	CE/1B.2	Freshwater marsh; Marsh & swamp; Vernal pool; Wetland	Clay soils; usually in vernal pools, sometimes on lake margins. 4-2410 m.
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	1B.3	Chaparral	Crevices in rock outcrops and talus slopes. 425-1405 m.
Dimorphic snapdragon *Antirrhinum subcordatum*	4.3	Chaparral; Lower montane coniferous forest; Ultramafic	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	Meadow & seep; Wetland	Moist to wet meadows. 15-3200 m.

Santa Lucia dwarf rush *Juncus luciensis*	1B.2	Chaparral; Great Basin scrub; Lower montane coniferous forest; Meadow & seep; Vernal pool; Wetland	Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. 280-2035 m.
Narrow-anthered brodiaea *Brodiaea leptandra*	1B.2	Broadleaved upland forest; Chaparral; Cismontane woodland; Lower montane coniferous forest; Valley & foothill grassland	Volcanic substrates. 30-590 m.
Dwarf soaproot *Chlorogalum pomeridianum var. minus*	1B.2	Chaparral; Ultramafic	Serpentine. 120-1220 m.
Adobe-lily *Fritillaria pluriflora*	1B.2	Chaparral; Cismontane woodland; Ultramafic; Valley & foothill grassland	Usually on clay soils; sometimes serpentine. 45-945 m.
Geysers panicum *Panicum acuminatum var. thermale*	CE/1B.2	Closed-cone coniferous forest; Riparian forest; Valley & foothill grassland; Wetland	Usually around moist, warm soil in the vicinity of hot springs. 455-2470 m.
California satintail *Imperata brevifolia*	2B.1	Chaparral; Coastal scrub; Mojavean desert scrub; Meadow & seep; Riparian scrub; Wetland	Mesic sites, alkali seeps, riparian areas. 3-1495 m.
Slender Orcutt grass *Orcuttia tenuis*	FT/CE/1B.1	Vernal pool; Wetland	Often in gravelly substrate. 25-1755 m.
California alkali grass *Puccinellia simplex*	1B.2	Chenopod scrub; Meadow & seep; Valley & foothill grassland; Vernal pool	Alkaline, vernally mesic. Sinks, flats, and lake margins. 1-915 m.
Slender-leaved pondweed *Stuckenia filiformis ssp. alpina*	2B.2	Marsh & swamp; Wetland	Shallow, clear water of lakes and drainage channels. 5-2325 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 19955 Grange Road, Middletown
on February 8-9, April 21, and June 3, 2021

Common Name	Scientific Name
	Achaerachyna mollis
Deerweed	*Acmispon glaber*
Chamise	*Adenostoma fasciculatum*
	Agoseris grandiflora
White alder	*Alnus rhombifolia*
Red root pigweed	*Amaranthus retroflexus*
Common fiddleneck	*Amsinckia menziesii*
	Amsinckia intermedia
Common manzanita	*Arctostaphylos manzanita ssp. manzanita*
California mugwort	*Artemisia douglasiana*
Narrowleaf milkweed	*Asclepias fascicularis*
Milkweed	*Asclepias sp.*
California lace fern	*Aspidotis californica*
Slender wild oat	*Avena barbata*
Wild oat	*Avena fatua*
Coyote brush	*Baccharis pilularis*
Mule fat	*Baccharis salicifolia*
Brodiaea	*Brodiaea sp.*
California brome	*Bromus carinatus*
Ripgut brome	*Bromus diandrus*
Soft chess	*Bromus hordeaceus*
	Bromus madritensis
	Calandrinia ciliata
Western morning glory	*Calystegia occidentalis*
Western bittercress	*Cardamine oligosperma*
Italian thistle	*Carduus pycnocephalus*
Santa Barbara sedge	*Carex barbarae*
Torrent sedge	*Carex nudata*
	Castilleja attenuata
Wedge leaf ceanothus	*Ceanothus cuneatus*
Deerbrush	*Ceanothus integerrimus var. macrothyrsus*
	Centaurea melitensis
Yellow star thistle	*Centaurea solstitialis*
Birchleaf mountain mahogany	*Cercocarpus betuloides*
Wavy leaf soap plant	*Chlorogalum pomeridianum*
Chicory	*Cichorium intybus*
Bull thistle	*Cirsium vulgare*
Clarkia	*Clarkia sp.*
Miner’s lettuce	*Claytonia perfoliata*
Pipestems	*Clematis lasiantha*
	Convolvulus arvensis

Common Name	Scientific Name
	Achaerachyna mollis
Dove weed	*Croton setiger*
Swamp grass	*Crypsis schoenoides*
Bermuda grass	*Cynodon dactylon*
Dogtail grass	*Cynosurus echinoides*
Tall flatsedge	*Cyperus eragrostis*
Wild hyacinth	*Dichelostemma sp.*
Bush monkeyflower	*Diplacus aurantiacus*
Pale spikerush	*Eleocharis macrostachya*
Spikerush	*Eleocharis sp.*
Medusa-head grass	*Elymus caput-medusae*
Blue wildrye	*Elymus glaucus*
Ryegrass	*Elymus elymoides*
Creeping ryegrass	*Elymus triticoides*
Tall willowherb	*Epilobium brachycarpum*
Torrey's willowherb	*Epilobium torreyi*
Canada horseweed	*Erigeron canadensis*
Yerba santa	*Eriodictyon californicum*
Buckwheat	*Eriogonum sp.*
Wooly sunflower	*Eriophyllum lanatum*
Filaree	*Erodium botrys*
Red-stemmed filaree	*Erodium cicutarium*
Jepson's button celery	*Eryngium aristulatum var. aristulatum*
California poppy	*Eschscholzia californica*
Poppy	*Eschscholzia sp.*
Thyme-leaved spurge	*Euphorbia serpyllifolia*
Pacific fescue	*Festuca microstachys*
Italian ryegrass	*Festuca perennis*
California coffeeberry	*Frangula californica*
Bedstraw	*Galium aparine*
Bedstraw	*Galium sp.*
Chaparral silktassel	*Garrya congdonii*
	Grindelia camporum
Hairy gumplant	*Grindelia hirsutula*
Toyon	*Heteromeles arbutifolia*
Oregon false goldenaster	*Heterotheca oregona*
Shortpod mustard	*Hirschfeldia incana*
Wand tarplant	*Holocarpha virgata*
Meadow barley	*Hordeum brachyantherum*
Mediterranean barley	*Hordeum marinum ssp. gussoneanum*
Wall barley	*Hordeum murinum*
Iris	*Iris sp.*
Northern California black walnut	*Juglans hindsii*
Mexican rush	*Juncus mexicanus*

Common Name	Scientific Name
	Achaerachyna mollis
Rush	*Juncus sp.*
Bush beardtongue	*Keckiella breviflora*
Sharp-leaved fluellin	*Kickxia elatine*
Prickly lettuce	*Lactuca serriola*
	Lasthenia californica
	Layia platyglossa
Lomatium	*Lomatium spp.*
Pink honeysuckle	*Lonicera hispidula*
Chaparral honeysuckle	*Lonicera interrupta*
Bird's-foot trefoil	*Lotus corniculatus*
Miniature lupine	*Lupinus bicolor*
Lupine	*Lupinus nanus*
California loosestrife	*Lythrum californicum*
Tarplant	*Madia elegans*
California man-root	*Marah fabacea*
Horehound	*Marrubium vulgare*
Sweetclover	*Melilotus sp.*
Giant blazingstar	*Mentzelia laevicaulis*
	Microseris douglasii
Coyote mint	*Monardella villosa*
Navarretia	*Navarretia sp.*
Bird's-foot cliff brake	*Pellaea mucronata*
Goldback fern	*Pentagramma triangularis*
Phacelia	*Phacelia sp.*
Gray pine	*Pinus sabiniana*
Popcornflower	*Plagiobothrys sp.*
English plantain	*Plantago lanceolata*
Douglas' mesamint	*Pogogyne douglasii*
Rabbit's-foot grass	*Polypogon monspeliensis*
California scrub oak	*Quercus berberidifolia*
Blue oak	*Quercus douglasii*
Leather oak	*Quercus durata*
California black oak	*Quercus kelloggii*
Valley oak	*Quercus lobata*
Interior live oak	*Quercus wislizeni var. wislizeni*
Prickleseed buttercup	*Ranunculus muricatus*
Western buttercup	*Ranunculus occidentalis*
Buttercup	*Ranunculus sp.*
Himalayan blackberry	*Rubus armeniacus*
Elmleaf blackberry	*Rubus ulmifolius*
Curly dock	*Rumex crispus*
Fiddleleaf dock	*Rumex pulcher*
Sandbar willow	*Salix exigua*

Common Name	Scientific Name
	Achaerachyna mollis
Red willow	*Salix laevigata*
Arroyo willow	*Salix lasiolepis*
Blue elderberry	*Sambucus nigra ssp. caerulea*
Purple sanicle	*Sanicula bipinnatifida*
Pacific sanicle	*Sanicula crassicaulis*
Milk thistle	*Silybum marinum*
Blue-eyed grass	*Sisyrinchium bellum*
Sow thistle	*Sonchus oleraceus*
Red sandspurry	*Spergularia rubra*
Hedge nettle	*Stachys sp.*
Chickweed	*Stellaria media*
Common snowberry	*Symphoricarpos albus*
Tall sock-destroyer	*Torilis arvensis*
Poison-oak	*Toxicodendron diversilobum*
Death camas	*Toxicoscordion sp.*
	Tragopogon porrifolius
Clover	*Trifolium hirtum*
	Triphysaria versicolor subsp. faucibarbata
Triplet lily	*Triteleia sp.*
California bay	*Umbellularia californica*
Moth mullein	*Verbascum blattaria*
Common mullein	*Verbascum thapsus*
Spring vetch	*Vicia sativa*
Winter vetch	*Vicia villosa*
California grape	*Vitis californicus*
Smooth mule ears	*Wyethia glabra*
Cocklebur	*Xanthium strumarium*
Nemophila	*Nemophila sp.*

APPENDIX: SITE PHOTOS