
**BIOLOGICAL SITE ASSESSMENT FOR THE
CANNABIS CULTIVATION OPERATIONS
AT 2050 AND 2122 OGULIN CANYON ROAD,
CLEARLAKE, CALIFORNIA**



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**LAKE COUNTY COMMUNITY
DEVELOPMENT DEPT.**

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1. INTRODUCTION

1.1. PROJECT LOCATION AND DESCRIPTION

Natural Investigations Company conducted a biological site assessment for Cannabis cultivation operations at 2050 and 2122 Ogulin Canyon Road, Clearlake, in Lake County, California. The cultivation operations will occur on a 302.4-acre property comprised of two parcels: APN 010-053-01, 145.8 acres; and APN 010-053-02, 156.6 acres. This property is proposed to be cultivated under lease agreements with various cultivators in discrete cultivation areas. Six potential cultivation areas were identified, labeled for convenience's sake as follows (see exhibits):

- "Northwest Hops Field", in the northwest corner of APN 010-053-01, a 6.0-acre field previously used to grow hops, reduced to 3.4 acres because of 150-foot setbacks from the top of bank of perennial watercourses.
- "Southwest Clearing", in the southwest portion of APN 010-053-01, 6.4 acres
- "Northeast Hops Field", at the top of the parcel boundary between APN 010-053-01 and APN 010-053-02, a 3.4-acre hop field, reduced to 1.3 acres because of 150-foot setbacks from the top of bank of perennial watercourses.
- "Central Hops Field," in the center of APN 010-053-01, 4.2 acres, previously used to grow hops
- "Chaparral Clearing", in the east border of APN 010-053-02, 8.4 acres
- "Orchard", in the center of APN 010-053-01, 5.1 acres

These 6 potential cultivation areas total 28.8 acres. The actual fenced cultivation compounds and Cannabis canopy will be less. The County will currently allow up to 15 acres of Cannabis canopy for this 300-acre property. The current plan is to:

- acquire 14 outdoor cannabis cultivation licenses for 14 outdoor gardens, with each garden producing an average of 1 acre of canopy inside a 1.5 acre cultivation compound
- 1 mixed light cultivation license: the County limits this license to 0.5 acre of canopy, and hoopouses would be employed
- a vegetative nursery, where immature plants can be propagated, using the existing barn and shade structures near the barn (in the Northeast Hops Field area)

For the purposes of this biological assessment, the Project Area is the sum of the six cultivation areas (34.3 acres), and the entire 302.4 acre property was the Study Area.

The cultivation areas are accessed by private unpaved roads off of Ogulin Canyon Road. The cultivation areas were designed to be located on areas previously graded and cleared of vegetation for former agricultural operations, and with sufficient setbacks from watercourses and other sensitive natural resources. The cultivation methods are yet to be determined, and may vary among the cultivators leasing the cultivation compounds. Some existing farm facilities will be used: Conex shipping containers for chemical storage; barns; agricultural wells and irrigation systems; and farm roads. Each cultivation compound will be outfitted with the following: temporary greenhouses (hoopouses); portable toilets; and Conex shipping containers for chemical storage and Cannabis curing.

1.2. PURPOSE AND SCOPE OF ASSESSMENT

This Biological Resources Assessment was prepared to assist the Applicant in obtaining enrollment (a Notice of Applicability) in the State Water Resources Control Board's Order WQ 2017-0023-DWQ General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). The Applicant's Notice of Receipt required technical reports, including a Biological Resources Assessment. The Water Board has not issued specific guidelines for the preparation of these assessments, so the guidelines for preparing assessments for California Environmental Quality Act compliance were used. The General Order does give these general guidelines:

"Prior to commencing any cannabis land development or site expansion activities the cannabis cultivator shall secure a qualified biologist. The cannabis cultivator and the Qualified Biologist shall consult with CDFW and CAL FIRE and designate and mark a no-disturbance buffer to protect identified sensitive plant and wildlife species and communities." (Section 1, Number 8 of the General Order)

"Qualified Biologist – an individual who possesses, at a minimum, a bachelor's or advanced degree, from an accredited university, with a major in biology, zoology, wildlife biology, natural resources science, or a closely related scientific discipline, at least two years of field experience in the biology and natural history of local plant, fish, and wildlife resources present at the Cannabis Cultivation Site, and knowledge of state and federal laws regarding the protection of sensitive and endangered species." (Glossary of the General Order)

In support of this permit enrollment application and general compliance California Environmental Quality Act, Natural Investigations Co. has prepared this assessment to provide 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 Biological Site 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 historic 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 2017-0023-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

For Lake County, no relevant county or municipal tree ordinances were identified that would protect non-commercial tree species such as native oaks (*Quercus* spp.).

In areas outside timberland, pursuant to Public Resource Code section 4526, no tree removal for the purposes of facilitating cannabis production, including solar exposure increases, is allowed within 150 feet of fish bearing water bodies or 100 feet of aquatic habitat for non-fish aquatic species (i.e. aquatic insects). 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.

2. ENVIRONMENTAL SETTING

The Study Area is located within the Inner North Coast Ranges 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 between climate Zones 7, California's Gray Pine Belt, with hot summers and mild but pronounced winters without severe winter cold or high humidity (Brenzel, 2012). The topography of the Study Area is mountainous with several small plateaus, ridges, ravines, and valleys, including Blackeye Canyon, which is located along the northern edge of the parcels. The elevation ranges from approximately 1,425 feet to 1,775 feet above mean sea level. The Study Area drains in various directions, but flows eventually into an unnamed perennial channel, a tributary of Clear Lake.

The property is currently operated as a hops farm (Hops Meister Farms), and the crops were installed in approximately year 2009. There are also remnants of almond orchards, which existed earlier than 1993. The 6 Project Areas were previously graded and cleared of vegetation for non-cannabis agricultural operations. Other land uses on the property were residential estate, timberland, pasture, and open space. The surrounding land uses are residential estates, light industrial, hay production, row crop, open space, and grazing land.

The Natural Resources Conservation Service (NRCS) has identified several soil types within the Study Area. The geology that underlays the site consists of soils derived from alluvium. No soils derived from volcanic materials or serpentine are mapped within or adjacent to this parcel. (NRCS 2019).

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
- United States Geologic Service (USGS) 7.5 degree-minute topographic quadrangles of the Study Area and vicinity
- Aerial photography of the Study Area
- California Natural Diversity Database (CNDDDB), electronically updated monthly by subscription
- USFWS species list (IPaC Trust Resources Report).

3.2. FIELD SURVEY

Consulting biologist Dr. Geo Graening conducted a reconnaissance-level field survey on June 11, 2019. Weather conditions were warm and sunny with a slight breeze. 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 CNDDDB 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. 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 (2019); CDFW (2019b,c); NatureServe 2019; and University of California at Berkeley (2019a,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 recorded on color aerial photographs, and then 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). Wetlands and other aquatic habitats were classified using USFWS National Wetlands Inventory Classification System for Wetland and Deepwater Habitats, or "Cowardin class" (Cowardin et al., 1979; USFWS 2007). 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, 2019c). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2019), Calflora (2019); CDFW (2019a,b,c); and University of California at Berkeley (2019a,b).

4. RESULTS

4.1. INVENTORY OF FLORA AND FAUNA FROM FIELD SURVEY

All plants detected during the field surveys of the Study Area are listed in Appendix 2. Few animals were active during this period, but the following animals were detected within the Study Area during the field survey: grasshopper (Orthoptera); butterfly (Lepidoptera); ant (Formicidae); dragonfly (Odonata); honey bee (*Apis mellifera*); water strider (Gerridae); Cricket (Gryllidae); western fence lizard (*Sceloporus occidentalis*); Pacific chorus frog (*Pseudacris regilla*); Coyote (*Canis latrans*); black tailed deer (*Odocoileus hemionus columbianus*); Botta's pocket gopher (*Thomomys bottae*); New World sparrow (Emberizidae); turkey vulture (*Cathartes aura*); acorn woodpecker (*Melanerpes formicivorus*); American crow (*Corvus brachyrhynchos*); California quail (*Callipepla californica*); California scrub jay (*Aphelocoma californica*); mourning dove (*Zenaida macroura*); cliff swallow (*Petrochelidon pyrrhonota*); red-breasted nuthatch (*Sitta canadensis*); and 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: agricultural; ruderal/developed; mixed oak/conifer woodland; annual grassland; and chaparral. These vegetation communities are discussed here and are delineated in the Exhibits. Aquatic vegetation communities are discussed in the section on jurisdictional waters.

Agricultural/Disturbed. These areas consist of converted natural habitat that is agricultural production as hop fields or abandoned almond orchards. Vegetation within this habitat type consists primarily of agricultural crops lacking a consistent community structure. This habitat is classified as Holland vegetation type – “Urban – 11100”. 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.

Mixed oak/conifer woodland. The mixed oak/pine woodland consists of an open canopy of blue oak (*Quercus douglasii*) and gray pine (*Pinus sabiniana*) with an understory of annual grasses (*Bromus* spp., *Avena*, et al) and herbs and occasional common manzanita (*Arctostaphylos manzanita*). The mixed oak/pine woodland is found on ridges and slopes throughout the Study Area. This vegetation can be classified as “71.020.00 *Quercus douglasii* woodland alliance (Allen et al. 1991)” or as the Holland Type “Blue oak - foothill pine”.

Annual Grassland. The California Annual Grassland Series (Sawyer and Keeler-Wolf, 1995) consists of open fields of non-native annual grasses and forbs. These annual grasslands have replaced native habitats of perennial bunchgrasses or foothill chaparral. Mowing or grazing disturbances, rather than periodic wildfires, typically keep this plant community from undergoing successional changes to woodland or back to perennial grassland. Annual species are dominant in the grassland, including bromes (*Bromus* spp.), wild oats (*Avena* sp.), clover (*Trifolium* spp.), spreading hedgeparsley (*Torilis arvensis*) and other common grasses and forbs. This type of grassland can be classified as “42.026.00 *Bromus* (diandrus, hordeaceous) – *Brachypodium distachyon* Herbaceous Semi-Natural Alliance” or as the Holland Type “Non-native grassland”.

Chaparral. The slopes and ridges of the Study Area are vegetated with a dense cover of shrubs. The warm south-facing slopes are vegetated with chamise (*Adenostoma fasciculatum*) as the dominant shrub with infrequent buckbrush (*Ceanothus cuneatus*) and common manzanita. This type of chaparral

can be classified as "37.101.00 *Adenostoma fasciculatum* shrubland alliance" or as the Holland Type "Chamise chaparral".

Riparian: Riparian habitats are limited to the fringes of the perennial watercourse. Typical plants in riparian zones include white alder (*Alnus rhombifolia*), willows (*Salix* spp.), big-leaf maple (*Acer macrophyllum*), blackberry (*Rubus* spp.), and sedges (*Carex* spp.)

4.2.2. Wildlife Habitat Types

The habitat types found within the Study Area are classified as "Urban", "Vineyard-Orchard", "Blue Oak-Foothill Pine", "Annual Grassland" and "Chamise-Redshank Chaparral" wildlife habitat types by CDFW's Wildlife Habitat Relationship System (WHR).

4.2.3. Critical Habitat and Special-status Habitat

No critical habitat for any federally-listed species occurs within the Study Area. Special-status habitats were detected within the Study Area: wetlands and riparian habitat. The CNDDDB reported no special-status habitats within the Study Area. The CNDDDB reported 5 special-status habitats in a 10-mile radius outside of the Study Area: Clear Lake drainage resident trout stream, northern basalt flow vernal pool, northern volcanic ash vernal pool, coastal and valley freshwater marsh and Great Valley mixed riparian forest.

4.2.4. Habitat Plans and Wildlife Corridors

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human disturbance, but natural barriers such as rugged terrain and abrupt changes in vegetation cover are also possible. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between these separated populations. No specific designated wildlife corridors exist within or near the Study Area, but the large open spaces on the property allow for ample animal movement. The perennial watercourse in Ogulin Canyon may serve as a fishery seasonally. The Study Area is not located within any known adopted Habitat Conservation Plan or Natural Community Conservation Plan.

4.3. 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. Historical Special-status Species' Occurrences

A list of special-status plant and animal species that historically 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 CNDDDB.

The CNDDDB 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 CNDDDB reported no special-status species occurrences within the Study Area. Within a 10-mile buffer of the Study Area boundary, the CNDDDB reported several special-status species occurrences, summarized in Table 1.

A USFWS species list was generated online using the USFWS' IPaC Trust Resource Report System (see Appendix 1). The following listed species should be considered in the impact assessment:

- Birds
 - Northern Spotted Owl (*Strix occidentalis caurina*) Threatened
- Amphibians
 - California Red-legged Frog (*Rana draytonii*) Threatened
- Fishes
 - Delta Smelt (*Hypomesus transpacificus*) Threatened
- Flowering Plants
 - Burke's Goldfields (*Lasthenia burkei*) Endangered
 - Few-flowered Navarretia (*Navarretia leucocephala* ssp. *pauciflora* = *N. pauciflora*) Endangered
 - Slender Orcutt Grass (*Orcuttia tenuis*) Threatened
- Migratory Birds

Table 1. Special-status Species Reported by CNDDDB in the Vicinity of the Study Area

Common Name Scientific Name	Status	General Habitat	Microhabitat
Red-bellied newt <i>Taricha rivularis</i>	CSSC	Found in coastal woodlands and redwood forests along the coast of Northern California	A stream or river dweller. Larvae retreat into vegetation and under stones during the day.
Foothill yellow-legged frog <i>Rana boylei</i>	CCT/CSSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.
Osprey <i>Pandion haliaetus</i>	CWL	Ocean shore, bays, fresh-water lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.
Golden eagle <i>Aquila chrysaetos</i>	CFP/CWL	Rolling foothills, mountain areas, sage-juniper flats, & desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
Prairie falcon <i>Falco mexicanus</i>	CWL	Inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT/CE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.
Clear Lake hitch <i>Lavinia exilicauda chi</i>	CT	Found only in Clear Lake, Lake Co, and associated ponds. Spawns in streams flowing into clear lake.	Adults found in the limnetic zone. Juveniles found in the nearshore shallow-water habitat hiding in the vegetation.
Sacramento perch <i>Archoplites interruptus</i>	CSSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley.	Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of physio-chemical water conditions.
Long-eared myotis <i>Myotis evotis</i>	CSSC	Found in all brush, woodland & forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands & forests.	Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts.
Fringed myotis <i>Myotis thysanodes</i>	CSSC	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer.	Uses caves, mines, buildings or crevices for maternity colonies and roosts.
Hoary bat <i>Lasiurus cinereus</i>	CSSC	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding.	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.
Western red bat <i>Lasiurus blossevillii</i>	CSSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests.	Prefers habitat edges & mosaics with trees that are protected from above & open below with open areas for foraging.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	CSSC	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
Pallid bat <i>Antrozous pallidus</i>	CSSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
North American porcupine <i>Erethizon dorsatum</i>	CSSC	Coast ranges, Klamath Mountains, southern Cascades, Modoc Plateau, Sierra Nevada and Transverse Ranges.	Montane conifer and wet meadow habitats.
Western pond turtle <i>Emys marmorata</i>	CSSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, be	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying
Brownish dubiraphian riffle beetle <i>Dubiraphia brunnescens</i>	CSSC	Aquatic; known only from the NE shore of Clear Lake, Lake County.	Inhabits exposed, wave-washed willow roots.
Wilbur Springs minute moss beetle <i>Ochthebius recticulus</i>	CSSC	Aquatic; known only from Wilbur Hot Springs Area, Colusa County; 1250 ft elev.	Inhabits the shoreline of the creek at Wilbur Hot Springs.
Wilbur Springs shore fly <i>Paracoenia calida</i>	CSSC	Endemic to Wilbur Hot Springs, Colusa County.	Inhabits all but the hottest portion of the hot spring effluent; water temp 20-40 deg c.
Wilbur Springs shorebug <i>Saldula usingeri</i>	CSSC	Requires springs/creeks with high concentrations of Na, Cl, & Li.	Found only on wet substrate of spring outflows.
Borax Lake cuckoo wasp <i>Hedychridium milleri</i>	CSSC	Endemic to Central California. Only collection is from the type locality.	External parasite of wasp and bee larva.
Clear Lake pyrg	CSSC	Restricted to Seigler Creek drainage in the south	Freshwater.

Common Name Scientific Name	Status	General Habitat	Microhabitat
<i>Pyrgulopsis ventricosa</i>		end of the Clear Lake Basin.	
Toren's grimmia <i>Grimmia torenii</i>	1B.3	Cismontane woodland, lower montane coniferous forest, chaparral.	Openings, rocky, boulder and rock walls, carbonate, volcanic. 325-1160 m.
Loch Lomond button-celery <i>Eryngium constancei</i>	FE/CE/1B.1	Vernal pools.	Volcanic ash flow vernal pools. 460-855 m.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	1B.2	Chaparral, valley and foothill grassland, cismontane woodland.	Sometimes on serpentine. 90-1555 m.
Greene's narrow-leaved daisy <i>Erigeron greenei</i>	1B.2	Chaparral.	Serpentine and volcanic substrates, generally in shrubby vegetation. 80-1005 m.
Pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	1B.2	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland.	Vernally mesic, often alkaline sites. 2-420m.
Burke's goldfields <i>Lasthenia burkei</i>	FE/CE/1B.1	Vernal pools, meadows and seeps.	Most often in vernal pools and swales. 15-600 m.
Colusa layia <i>Layia septentrionalis</i>	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Scattered colonies in fields and grassy slopes in sandy or serpentine soil. 145-1095m.
Hall's harmonia <i>Harmonia hallii</i>	1B.2	Chaparral.	Serpentine hills and ridges. Open, rocky areas within chaparral. 500-900 m.
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	1B.2	Cismontane woodland, valley and foothill grassland.	50-500m.
Freed's jewelflower <i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i>	1B.2	Chaparral, cismontane woodland.	Serpentine rock outcrops, primarily in geothermal development areas. 490-1220 m.
Watershield <i>Brasenia schreberi</i>	2B.3	Freshwater marshes and swamps.	Aquatic from water bodies both natural and artificial in California.
Cascade downingia <i>Downingia willamettensis</i>	2B.2	Cismontane woodland, valley and foothill grassland.	Lake margins and vernal pools. 15-1110 m.
Legenere <i>Legenere limosa</i>	1B.1	Vernal pools.	In beds of vernal pools. 1-880 m.
San Joaquin spearscale <i>Extriplex joaquinana</i>	1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland.	In seasonal alkali wetlands or alkali sink scrub with <i>Distichlis spicata</i> , <i>Frankenia</i> , etc. 1-835 m.
Three-fingered morning-glory <i>Calystegia collina</i> ssp. <i>tridactylosa</i>	1B.2	Chaparral, cismontane woodland.	Rocky, gravelly openings in serpentine. 0-600 m.
Oval-leaved viburnum <i>Viburnum ellipticum</i>	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	215-1400 m.
Lake County stonecrop <i>Sedella leiocarpa</i>	FE/CE/1B.1	Valley and foothill grassland, vernal pools, cismontane woodland.	Level areas that are seasonally wet and dry out in late spring; substrate usually of volcanic origin. 365-790 m.
Raiche's manzanita <i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	1B.1	Chaparral, lower montane coniferous forest.	Rocky, serpentine sites. Slopes and ridges. 450-1000 m.
Konocti manzanita <i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	Volcanic soils. 395-1615 m.
Jepson's milk-vetch <i>Astragalus rattanii</i> var. <i>jepsonianus</i>	1B.2	Cismontane woodland, valley and foothill grassland, chaparral.	Commonly on serpentine in grassland or openings in chaparral. 180-1000 m.
Cobb Mountain lupine <i>Lupinus sericatus</i>	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, broadleaved upland forest.	In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine. 275-1525 m.
Woolly meadowfoam <i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	4.2	Chaparral, cismontane woodland, valley and foothill grassland, vernal pools.	Vernally wet areas, ditches, and ponds. 60-1335 m.
Glandular western flax <i>Hesperolin adenophyllum</i>	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils; generally found in serpentine chaparral. 150-1315 m.
Two-carpellate western flax <i>Hesperolin bicarpellatum</i>	1B.2	Serpentine chaparral.	Serpentine barrens at edge of chaparral. 60-1005 m.

Common Name Scientific Name	Status	General Habitat	Microhabitat
Drymaria-like western flax <i>Hesperolinon drymarioides</i>	1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils, mostly within chaparral. 390-1000m.
Sharsmith's western flax <i>Hesperolinon sharsmithiae</i>	1B.2	Chaparral.	Serpentine substrates. 270-300 m.
Marsh checkerbloom <i>Sidalcea oregana ssp. hydrophila</i>	1B.2	Meadows and seeps, riparian forest.	Wet soil of streambanks, meadows. 1100-2300 m.
Snow Mountain buckwheat <i>Eriogonum nervulosum</i>	1B.2	Chaparral.	Dry serpentine outcrops, balds, and barrens. 300-2100 m.
Brandegee's eriastrum <i>Eriastrum brandegeae</i>	1B.1	Chaparral, cismontane woodland.	On barren volcanic soils; often in open areas. 425-840 m.
Tracy's eriastrum <i>Eriastrum tracyi</i>	CR/3.2	Chaparral, cismontane woodland.	Gravelly shale or clay; often in open areas. 315-760 m.
Baker's navarretia <i>Navarretia leucocephala ssp. bakeri</i>	1B.1	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	Vernal pools and swales; adobe or alkaline soils. 5-1740 m.
Few-flowered navarretia <i>Navarretia leucocephala ssp. pauciflora</i>	FE/CT/1B.1	Vernal pools.	Volcanic ash flow, and volcanic substrate vernal pools. 400-855 m.
Many-flowered navarretia <i>Navarretia leucocephala ssp. plieantha</i>	FE/CE/1B.2	Vernal pools.	Volcanic ash flow vernal pools. 30-950 m.
Shining navarretia <i>Navarretia nigelliformis ssp. radians</i>	1B.2	Cismontane woodland, valley and foothill grassland, vernal pools.	Apparently in grassland, and not necessarily in vernal pools. 200-1000m.
Bolander's horkelia <i>Horkelia bolanderi</i>	1B.2	Lower montane coniferous forest, chaparral, meadows, valley and foothill grassland.	Grassy margins of vernal pools and meadows. 450-1100 m.
Pink creamsacs <i>Castilleja rubicundula var. rubicundula</i>	1B.2	Chaparral, meadows and seeps, valley and foothill grassland.	Openings in chaparral or grasslands. On serpentine. 20-900 m.
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	CE/1B.2	Marshes and swamps (freshwater), vernal pools.	Clay soils; usually in vernal pools, sometimes on lake margins. 10-2375 m.
Indian Valley brodiaea <i>Brodiaea rosea</i>	CE/3.1	Closed-cone coniferous forest, chaparral cismontane woodland, valley and foothill grassland	On serpentine. 335-1450 m.
Adobe-lily <i>Fritillaria pluriflora</i>	1B.2	Chaparral, cismontane woodland, foothill grassland.	Usually on clay soils; sometimes serpentine. 60-705 m.
California satintail <i>Imperata brevifolia</i>	2B.1	Coastal scrub, chaparral, riparian scrub, mojavean scrub, meadows and seeps (alkali), riparian scrub.	Mesic sites, alkali seeps, riparian areas. 0-1215 m.
Slender Orcutt grass <i>Orcuttia tenuis</i>	FT/CE/1B.1	Vernal pools.	Often in gravelly pools. 35-1760 m.
California alkali grass <i>Puccinellia simplex</i>	1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland and vernal pools	Alkaline, vernal mesic; sinks, flats, and lake margins.
Eel-grass pondweed <i>Potamogeton zosteriformis</i>	2B.2	Marshes and swamps.	Ponds, lakes, streams. 0-1860 m.

Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CR = California rare species; CFP = California fully protected species; CWL = California Watch List; 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; CNPS Rank 2 = CNPS designated rare or endangered plants in California, but more common elsewhere; CNPS Rank 3 = CNPS designated Plants about which more information is needed; and CNPS Rank 4 = CNPS Watch List: Plants of limited distribution.

4.3.2. Special-status Species Observed During Field Survey

During the field survey, no special-status species were observed within the Study Area.

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

Special-status plant species, especially Konocti manzanita (*Arctostaphylos manzanita elegans*), have a moderate potential to occur in the Study Area in areas of chaparral. The non-native grasslands and ruderal habitat within the Study Area have a low potential for harboring special-status plant species due to the dominance of aggressive non-native grasses and forbs. 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

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 were classified using the California Forest Practice Rules. The California Forest Practice Rules define a Class I watercourse as 1) a watercourse providing habitat for fish always or seasonally, and/or 2) providing a domestic water source; a Class II watercourse is 1) a watercourse capable of supporting non-fish aquatic species, or 2) a watercourse within 1000 feet of a watercourse that seasonally or always has fish present; a Class III watercourse is a watercourse with no aquatic life present and that shows evidence of being capable of transporting sediment to Class I and Class II waters during high water flow conditions.

The USFWS National Wetland Inventory reported various water features within the Study Area (see Exhibits). The following water features were detected within the Study Area during the field survey (see Exhibits):

- an unnamed perennial (Class I) watercourse in Blackeye Canyon. This feature has intermittent riparian habitat along the river corridor
- several unnamed intermittent (Class II) watercourses that are tributary to the Class I channel
- several ephemeral (Class III) watercourses
- wetlands associated with the Class I and Class II watercourses
- a stock pond with a fringe of 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.

Additionally, cultivators who enroll in the State Water Board's Waste Discharge Requirements for Cannabis Cultivation Order WQ 2017-0023-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 biological resources if it would be non-compliant with these requirements. Cannabis cultivators shall comply with the minimum riparian setbacks described below for 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 riparian setbacks shall be measured from the waterbody's bankfull stage (high flow water levels that occur every 1.5 to 2 years) or from the top edge of the waterbody bank in incised channels, whichever is more conservative. Riparian setbacks for springheads shall be measured from the springhead in all directions (circular buffer). Riparian setbacks for wetlands shall be measured from the edge of the bankfull water level. The cannabis cultivator shall increase riparian setbacks as needed or implement additional Requirements to meet the performance Requirement of protecting surface water from discharges that threaten water quality. If the cannabis cultivation Site cannot be managed to protect water quality, the Executive Officer of the applicable Regional Water Board may revoke authorization for cannabis cultivation activities at the cannabis cultivation site.

Minimum Riparian Setbacks

Common Name	Watercourse Class	Distance (Low Risk)	Distance (Mod Risk)	Variance
Perennial watercourses, springs, or seeps	I	150 ft.	200 ft.	Compliance Schedule
Intermittent watercourses	II	100 ft.	150 ft.	Compliance Schedule
Ephemeral watercourses	III	50 ft.	100 ft.	Compliance Schedule
Other waterbodies (lakes, etc.) and wetlands	150 ft.	200 ft.	Compliance Schedule	Other waterbodies (lakes, etc.) and wetlands

Notes:

- Riparian setbacks do not apply to man-made irrigation canals, water supply reservoirs, and hydroelectric canals (Watercourse Class IV) that do not support native aquatic species; however cannabis cultivators shall ensure land disturbance, cannabis cultivation activities, and facilities are not located in or disturb the existing riparian and wetland riparian vegetation associated with these Watercourse Class IV waterbodies.
- Risk is defined in Table 1 of this Policy and is based on the natural (prior to land disturbance activities) surface topography.
- Variance to riparian setbacks is only allowed if consistent with this Policy and a work plan and compliance schedule are approved by the applicable Regional Water Board Executive Officer.

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 natural resources maps using GIS to quantify potential impacts. Preparation of the 6 cultivation areas would require some land use conversion (see exhibits):

- “Northwest Hops Field”: hop crops were installed circa 2009; project implementation requires only repurposing existing row crop to another cultivation technique
- “Southwest Clearing”: this area was cleared circa 2013; project implementation may require the removal of trees, including native oak trees, and some annual grassland habitat
- “Northeast Hops Field”: hop crops were installed circa 2009; project implementation requires only repurposing existing row crop to another cultivation technique
- “Central Hops Field”: hop crops were installed circa 2009; project implementation requires only repurposing existing row crop to another cultivation technique
- “Chaparral clearing”: this area was cleared circa 2003, and again in 2009, would require the removal of dense stands of chamise
- “Orchard”: this area contains a fallow orchard; project implementation will require the removal of abandoned almond trees and some annual grassland habitat

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

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

During the field survey, no listed species or special-status species were observed within the Study Area. State and federal databases do not report any listed species or special-status species. No direct impacts to listed species or special-status species are expected from implementation of the proposed project. Indirect impacts to special-status species could occur from destruction of occupied or suitable habitat. Special-status species that occur in the vicinity could migrate into sensitive habitats between the time that the field survey was completed and the start of construction.

The non-native grasslands within the Study Area have a low potential for harboring special-status plant species due to the dominance of aggressive non-native grasses and forbs. The Study Area contains disturbed and undisturbed chaparral habitat. The disturbed chaparral habitat consists of relatively pure stands of chamise, with no manzanita or other shrubs or trees; this habitat has a low potential to contain special-status plant species. Areas of undisturbed chaparral have a moderate potential to sustain special-status plant species, such as Konocti manzanita. Destruction of undisturbed chaparral is a potentially-significant impact to special-status plant species.

The perennial and intermittent stream corridors (Class I and II watercourses) and associated riparian vegetation can sustain diverse wildlife populations and have a moderate potential to support special-status animal species. Destruction of riparian habitat is a potentially-significant impact to special-status animal species.

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. If ground-clearing or tree-felling construction activities are conducted during the nesting season, nesting birds could be directly impacted by tree removal and indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, Project construction is considered a potentially significant adverse impact to nesting birds.

Recommended Mitigation Measures

The majority of cultivation areas are located on lands currently cleared or in agricultural production, and do not contain sensitive habitats. For these areas, no mitigation is required.

If the establishment of cultivation operations requires the destruction of sensitive habitats, such as riparian habitat or undisturbed chaparral habitat, the following mitigation measure should be implemented:

- 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 or special-status species are detected, construction should be delayed, and the appropriate wildlife agency (CDFW and/or USFWS) should be consulted and project impacts and mitigation reassessed.

With the implementation of this mitigation measure, adverse impacts upon special-status species would be reduced to a less-than-significant level.

If construction activities require the removal of trees or shrubs, or disturbance to riparian habitat, and if these activities occur during the nesting season (usually March to September), 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

- 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 Study Area is not inside any federally-designated critical habitat. The Project Area contains no special-status habitats, but special-status habitats are directly adjacent to some project areas.

If the establishment of cultivation operations requires the destruction of sensitive habitats, such as riparian habitat or undisturbed chaparral habitat, this is a potentially-significant impact.

Recommended Mitigation Measures

If the establishment of cultivation operations requires the destruction of riparian habitat, the following mitigation measures should be implemented:

- Riparian habitat may contain special-status plant or animals species. 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 or special-status 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.

- Riparian habitat is protected under Fish and Game Code Section 1600; a Streambed Alteration Agreement would be needed before this habitat is disturbed. Issuance of this Agreement requires implementation of avoidance and minimization measures and compensation for habitat loss.

If the establishment of cultivation operations requires the destruction of undisturbed chaparral habitat, the following mitigation measure should be implemented:

- Performance of a botanical survey to identify if any special-status plant species are present and to delineate sensitive and non-sensitive plant habitat at a finer scale, which may reduce the overall area needed for protection.

With the implementation of these mitigation measures, impacts to special-status habitats would be reduced to a less than significant level.

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 numerous water resources within the Study Area; following is a summary of their proximity to the cultivation areas:

- “Northwest Hops Field”: this hop field is directly adjacent to the perennial stream in Ogulin Canyon/Blackeye Canyon. The Water Board requires a 150-foot setback from Class I watercourses; this potential cultivation area will be reduced in size to comply with the Cannabis Cultivation Order WQ 2017-0023-DWQ setback requirements.
- “Southwest Clearing”: this area complies with the Cannabis General Order setback requirements; the nearest stream, a Class II watercourse, is at least 120 feet away.
- “Northeast Hops Field”: this hop field is directly adjacent to the perennial stream in Ogulin Canyon/Blackeye Canyon and is also near wetlands associated with the pond. The Water Board requires a 150-foot setback from Class I watercourses and wetlands; this potential cultivation area will be reduced in size to comply with the Cannabis General Order setback requirements.
- “Central Hops Field”: this area complies with the Cannabis General Order setback requirements; the nearest stream, a Class II watercourse, is at least 240 feet away.
- “Chaparral clearing”: this area complies with the Cannabis General Order setback requirements; the nearest streams, a Class II and Class II watercourse, are at least 200 feet away.
- “Orchard”: this area complies with the Cannabis General Order setback requirements; the nearest stream, a Class III watercourse, is at least 70 feet away.

Potential adverse impacts to water resources could occur during construction by modification or destruction of stream banks or riparian vegetation, the filling of wetlands, or by increased erosion and sedimentation in receiving water bodies due to soil disturbance. Project implementation will not directly impact any channels or wetlands. Soil disturbance from project implementation could increase erosion and sedimentation. Regulations at both the County and State levels require creation and implementation of an erosion control plan / stormwater management plan. Furthermore, if the total area of ground disturbance from project implementation is greater than 1 acre, the project proponent will need to enroll for coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ).

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 2017-0023-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.

Implementation of these plans, BMPs, and compliance with Water Board and County regulations will ensure that water quality impacts are less than significant. Therefore, no mitigation is required.

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

Recommended Mitigation Measures

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

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?

No specific wildlife corridors exist within or near the Study Area, but the large open spaces on the property allow for ample animal movement. The perennial watercourse in Ogulin Canyon may serve as a fishery on a seasonal basis.

Implementation of the propose 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 propose 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. Implementation of the project does not conflict with any county or municipal policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

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?

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.

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

Recommended Mitigation Measures

No mitigation is necessary.

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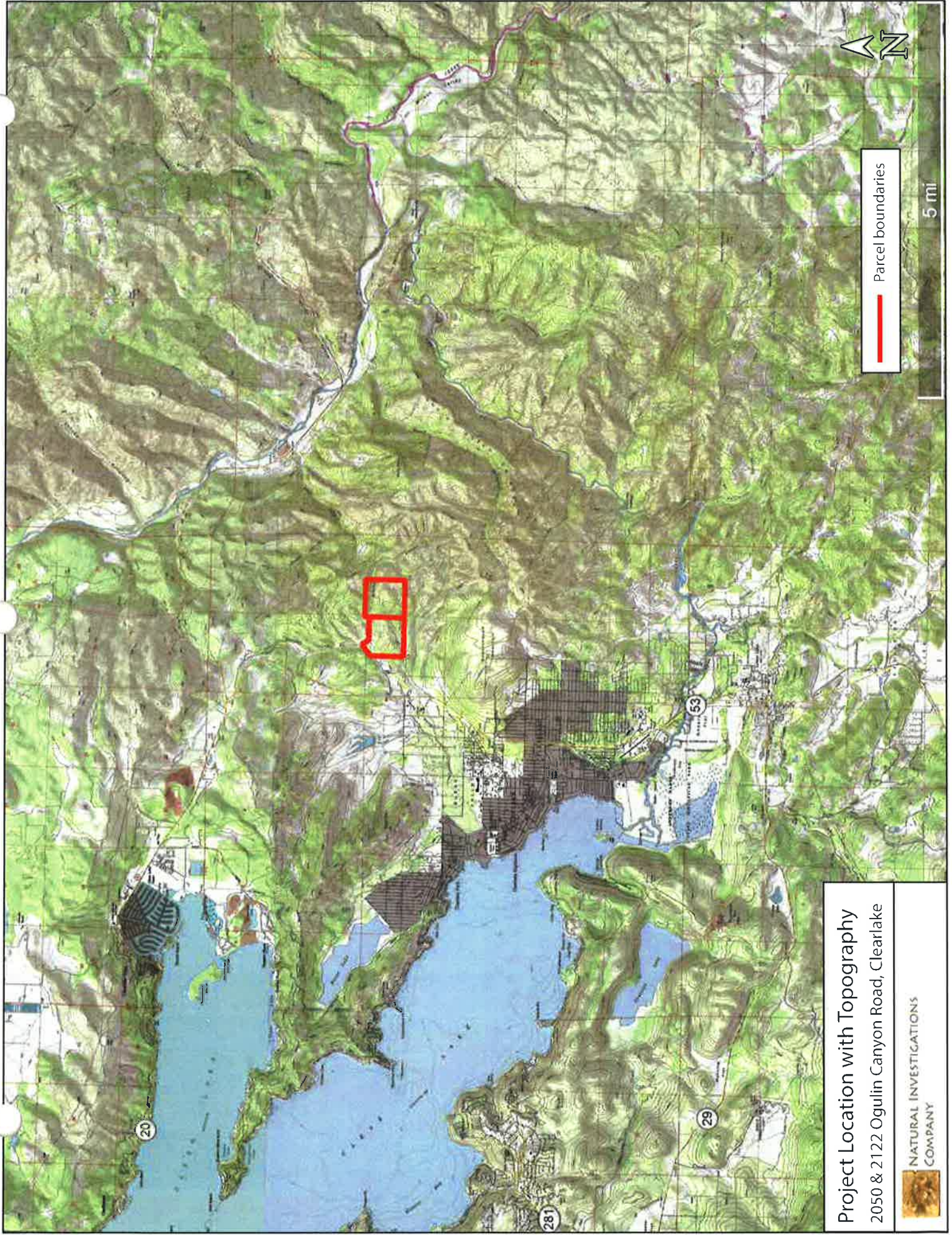
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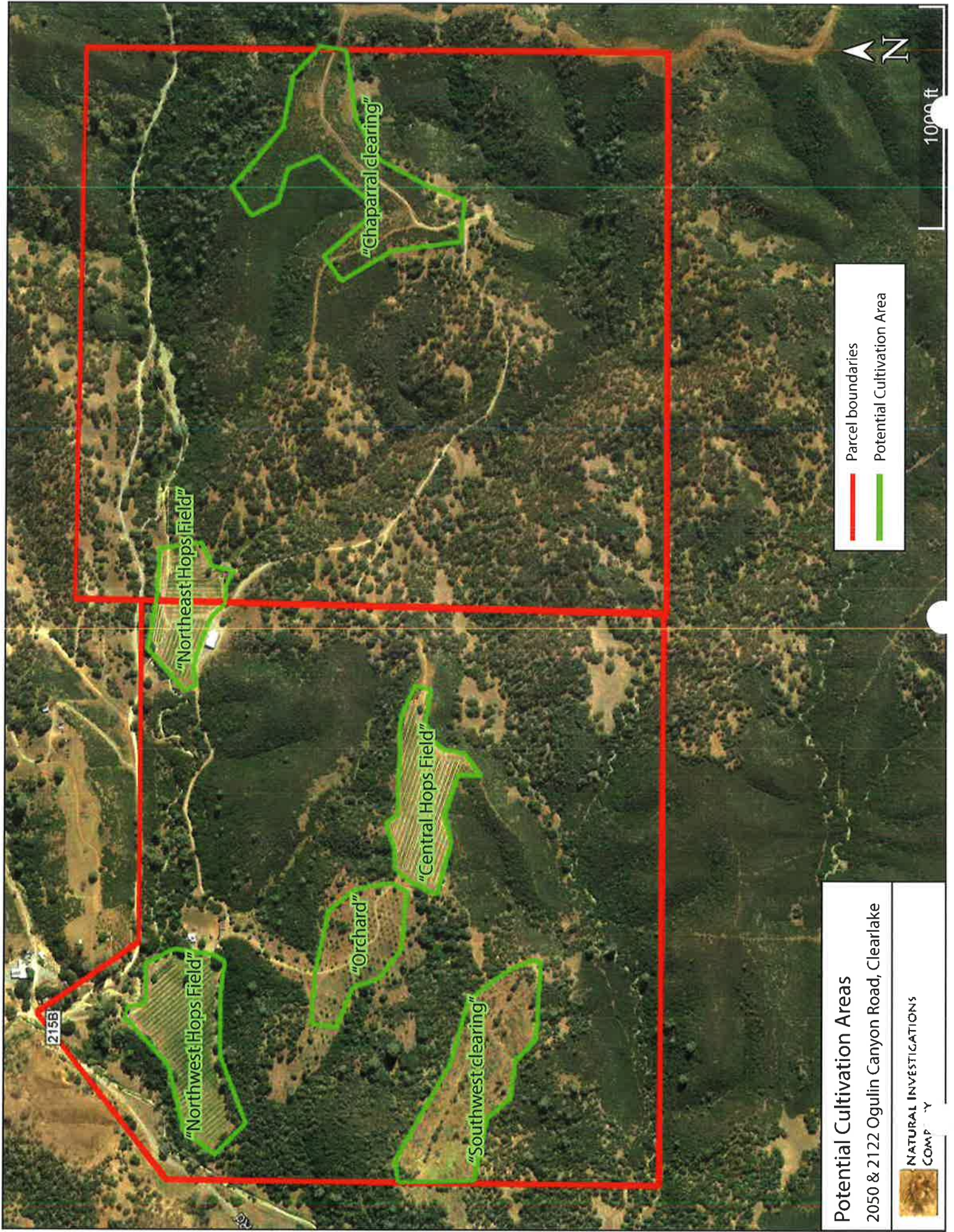
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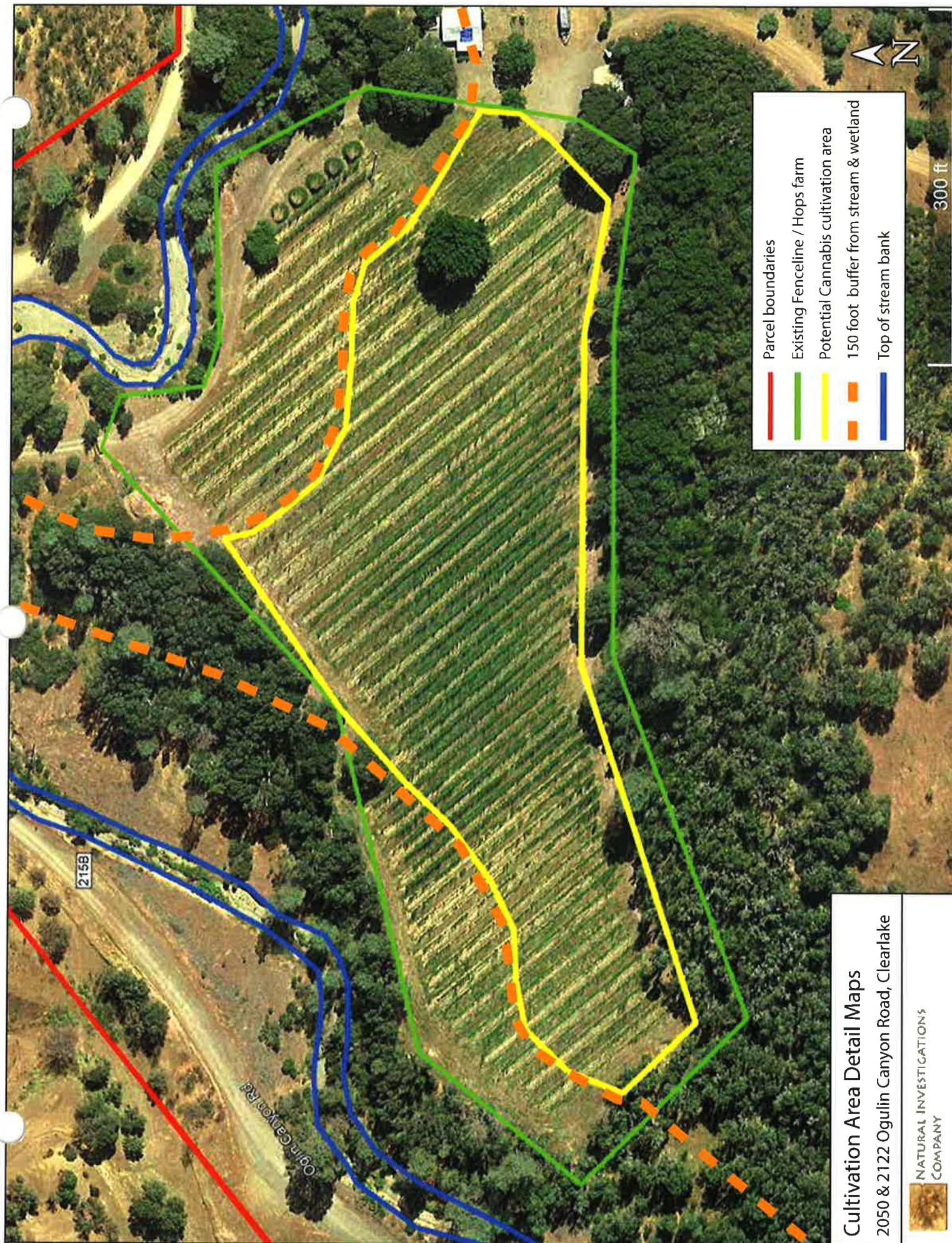
EXHIBITS



Project Location with Topography
2050 & 2122 Ogulin Canyon Road, Clearlake



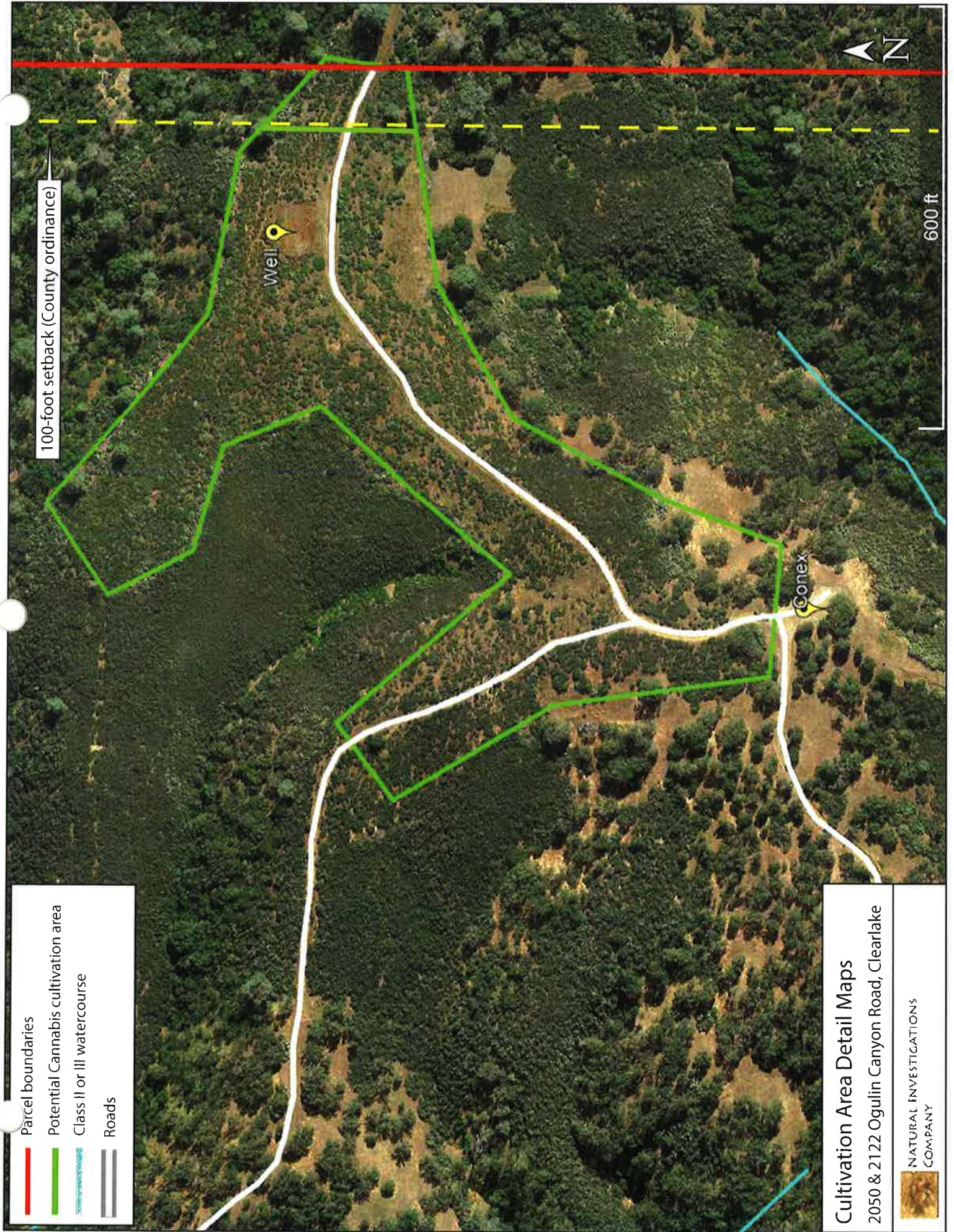
Potential Cultivation Areas
2050 & 2122 Ogulin Canyon Road, Clearlake



Cultivation Area Detail Maps
2050 & 2122 Ogulin Canyon Road, Clearlake

NATURAL INVESTIGATIONS
COMPANY





Parcel boundaries

Potential Cannabis cultivation area

Class II or III watercourse

Roads

100-foot setback (County ordinance)

Well

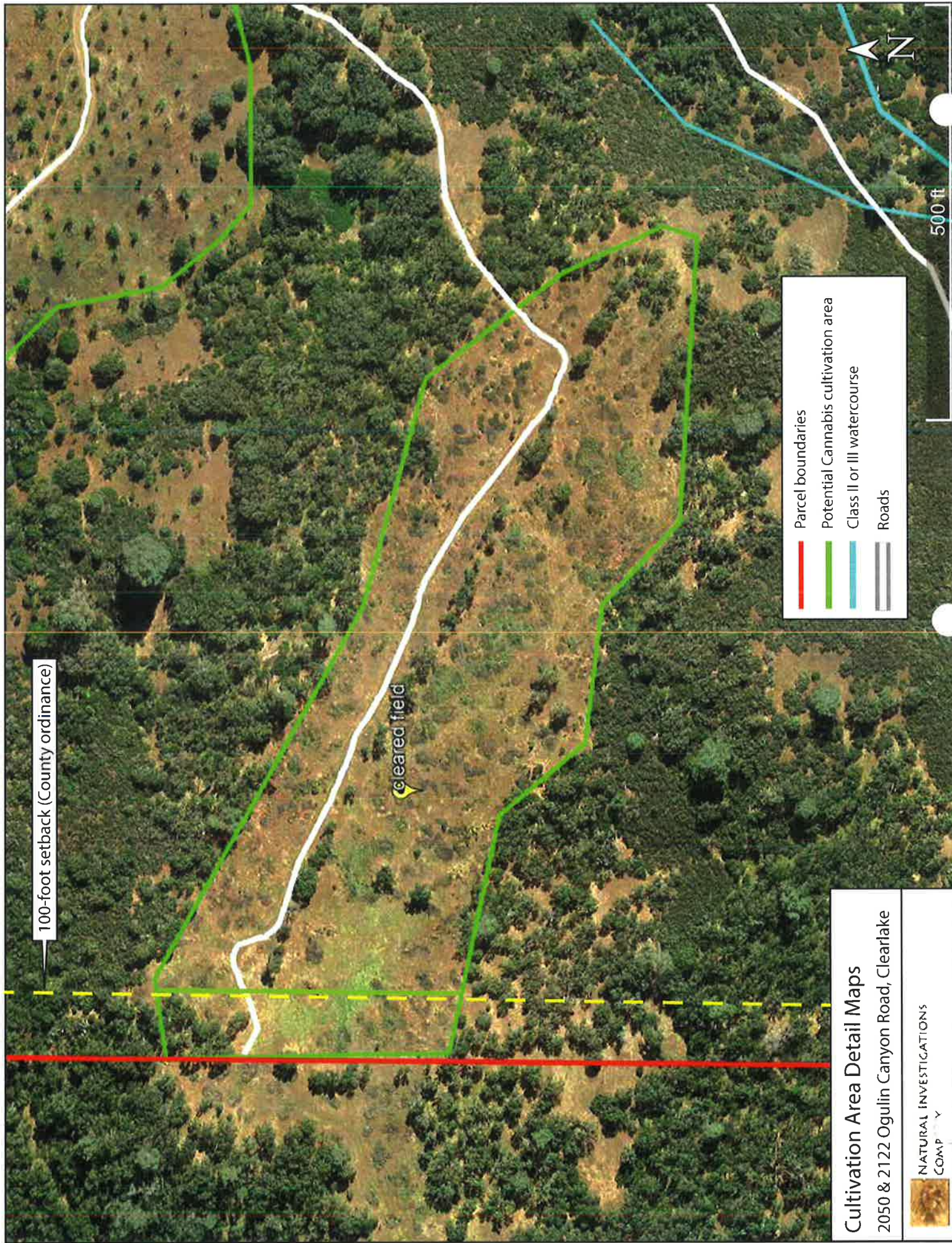
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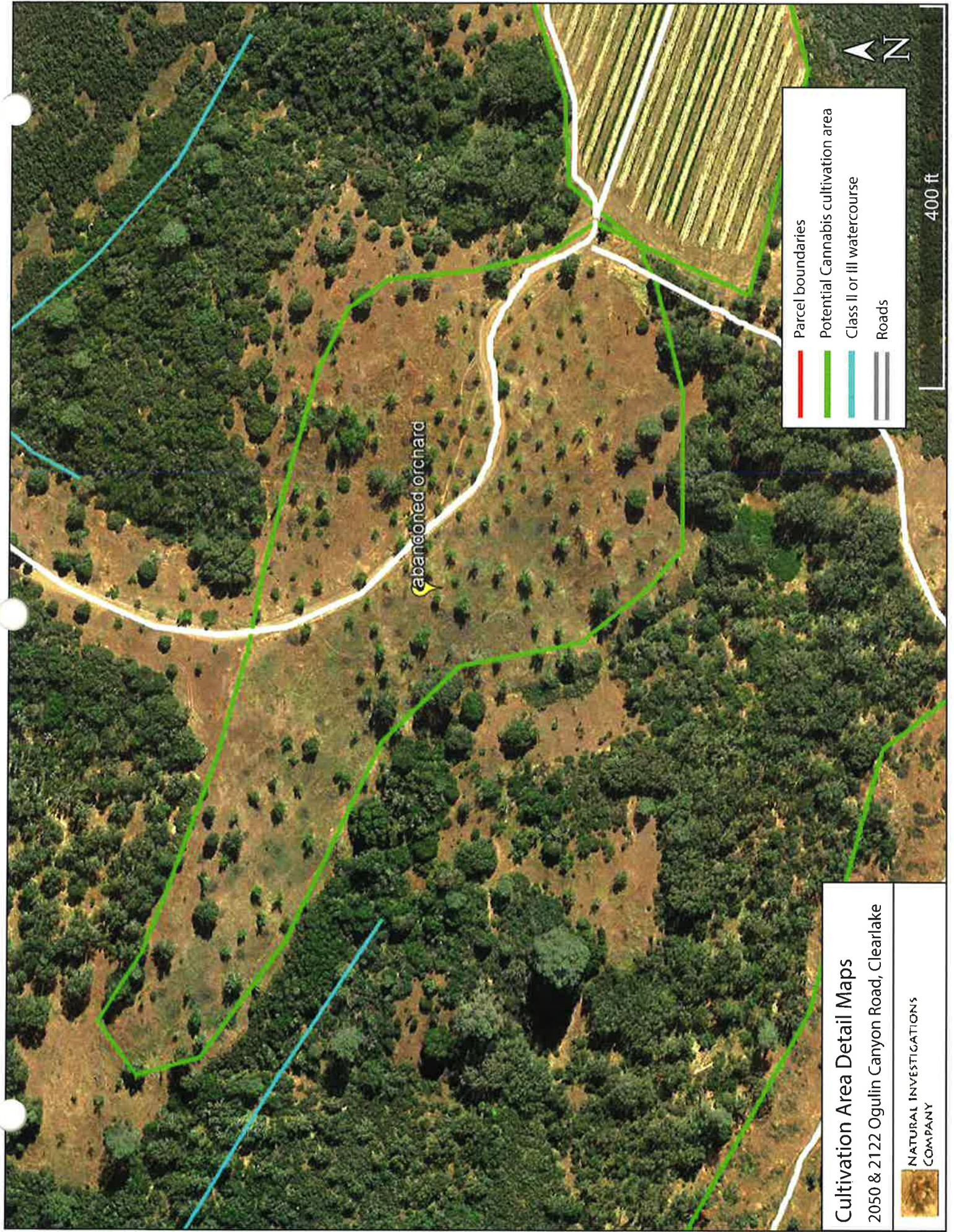
600 ft

Cultivation Area Detail Maps

2050 & 2122 Ogulin Canyon Road, Clearlake

NATURAL INVESTIGATIONS
COMPANY



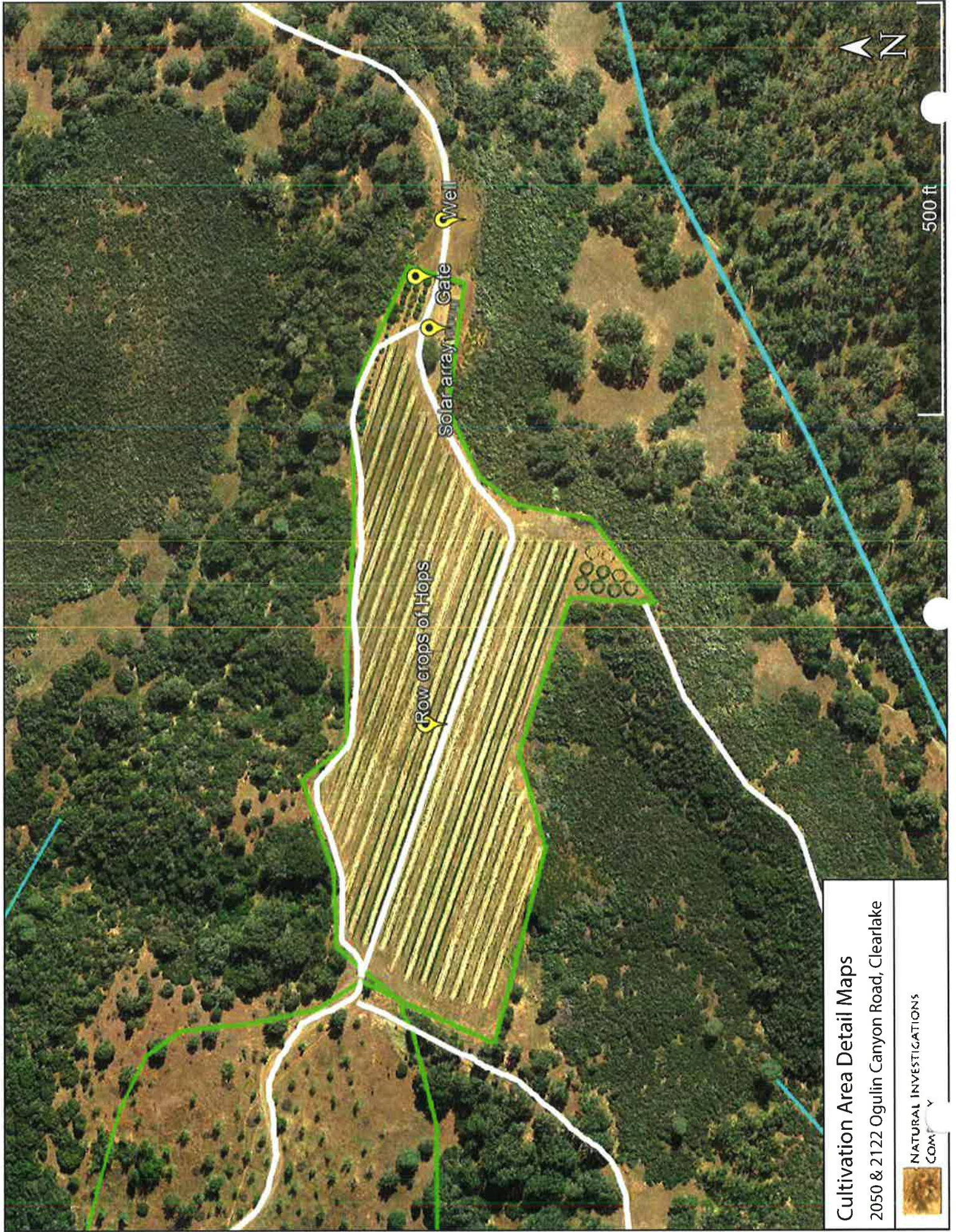


- Parcel boundaries
- Potential Cannabis cultivation area
- Class II or III watercourse
- Roads

abandoned orchard

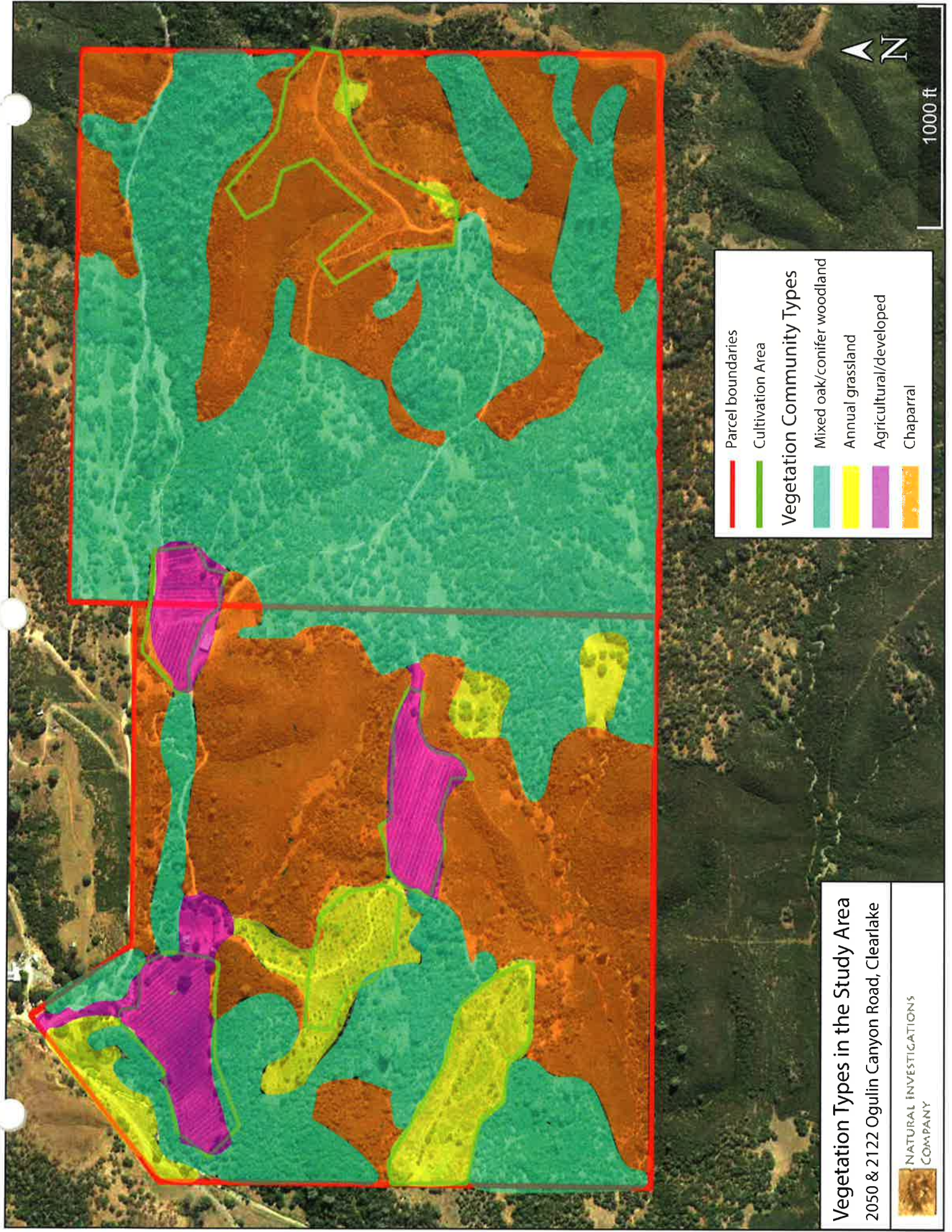
Cultivation Area Detail Maps
2050 & 2122 Ogulin Canyon Road, Clearlake

NATURAL INVESTIGATIONS
COMPANY

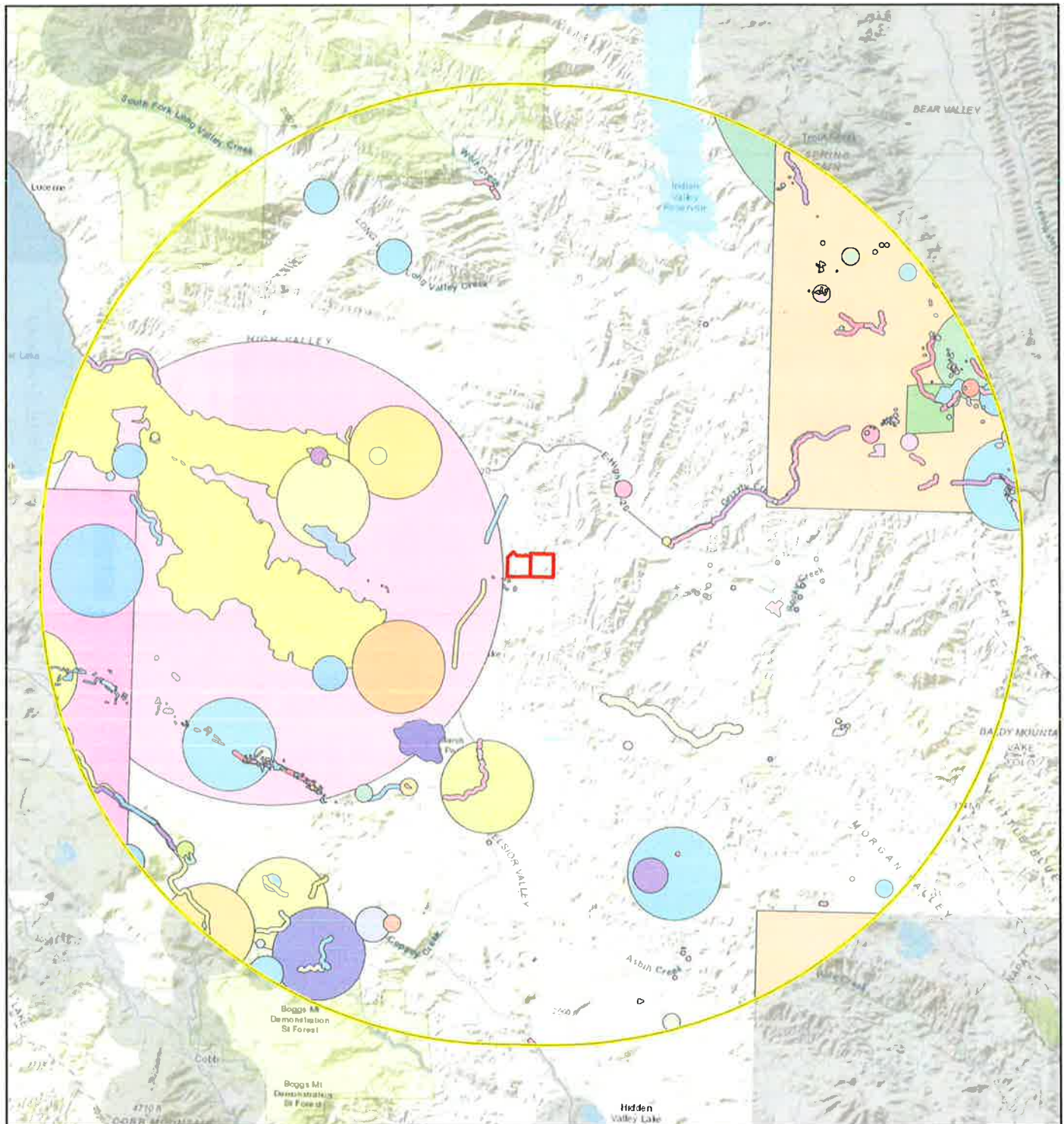


Cultivation Area Detail Maps

2050 & 2122 Ogulin Canyon Road, Clearlake



Vegetation Types in the Study Area
2050 & 2122 Ogulin Canyon Road, Clearlake



Project Location 10 Mile Buffer

1:190,000 1 inch = 3 miles

0 3 6 Miles



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing 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, 2019. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

**Special-Status Species
Occurrences Map**

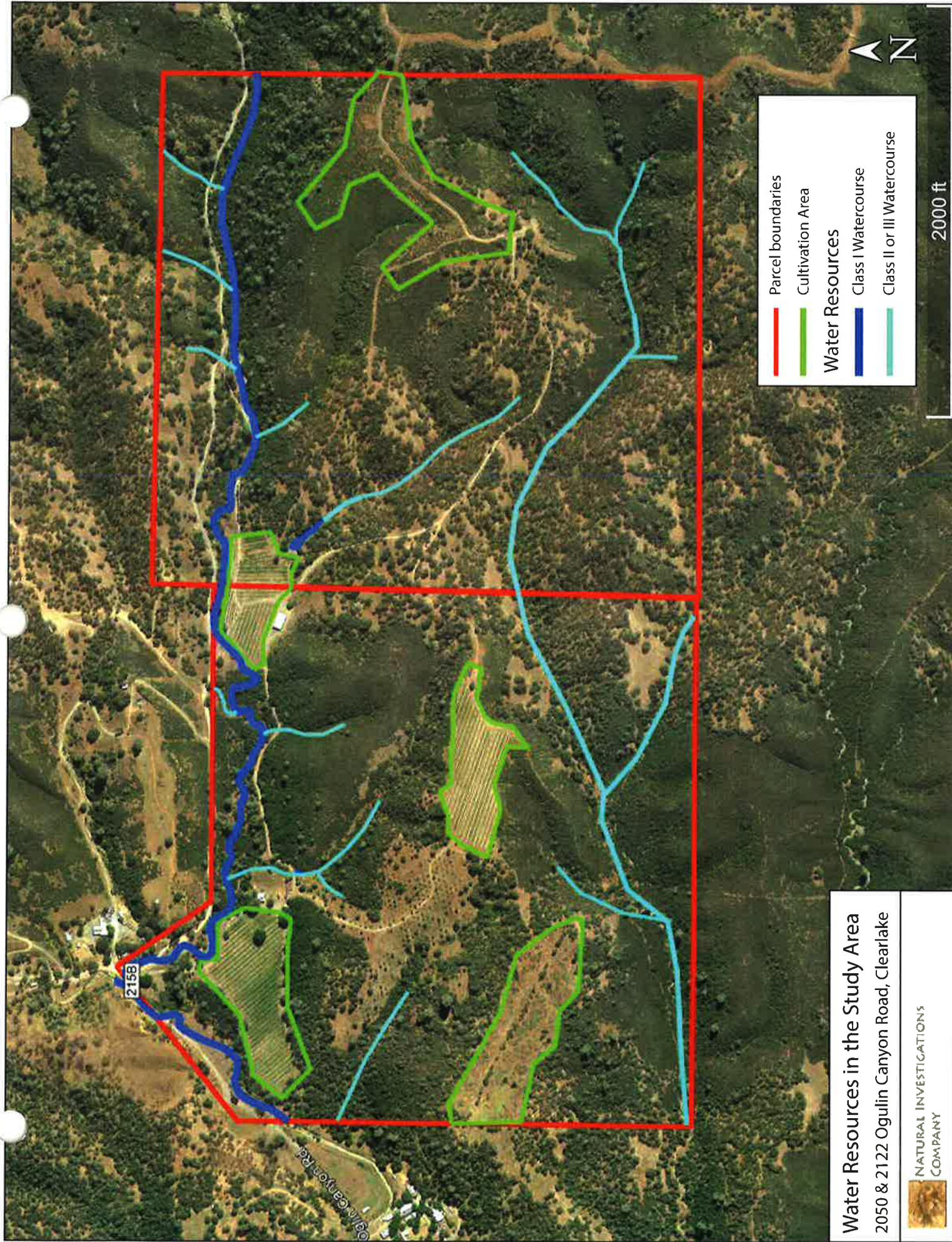
2050/2122 Ogulin Canyon Rd

Lower Lake 1993 Quadrangle:
Township 13N, Range 7W, Section 11, 12, 13, 14



NATURAL INVESTIGATIONS CO.

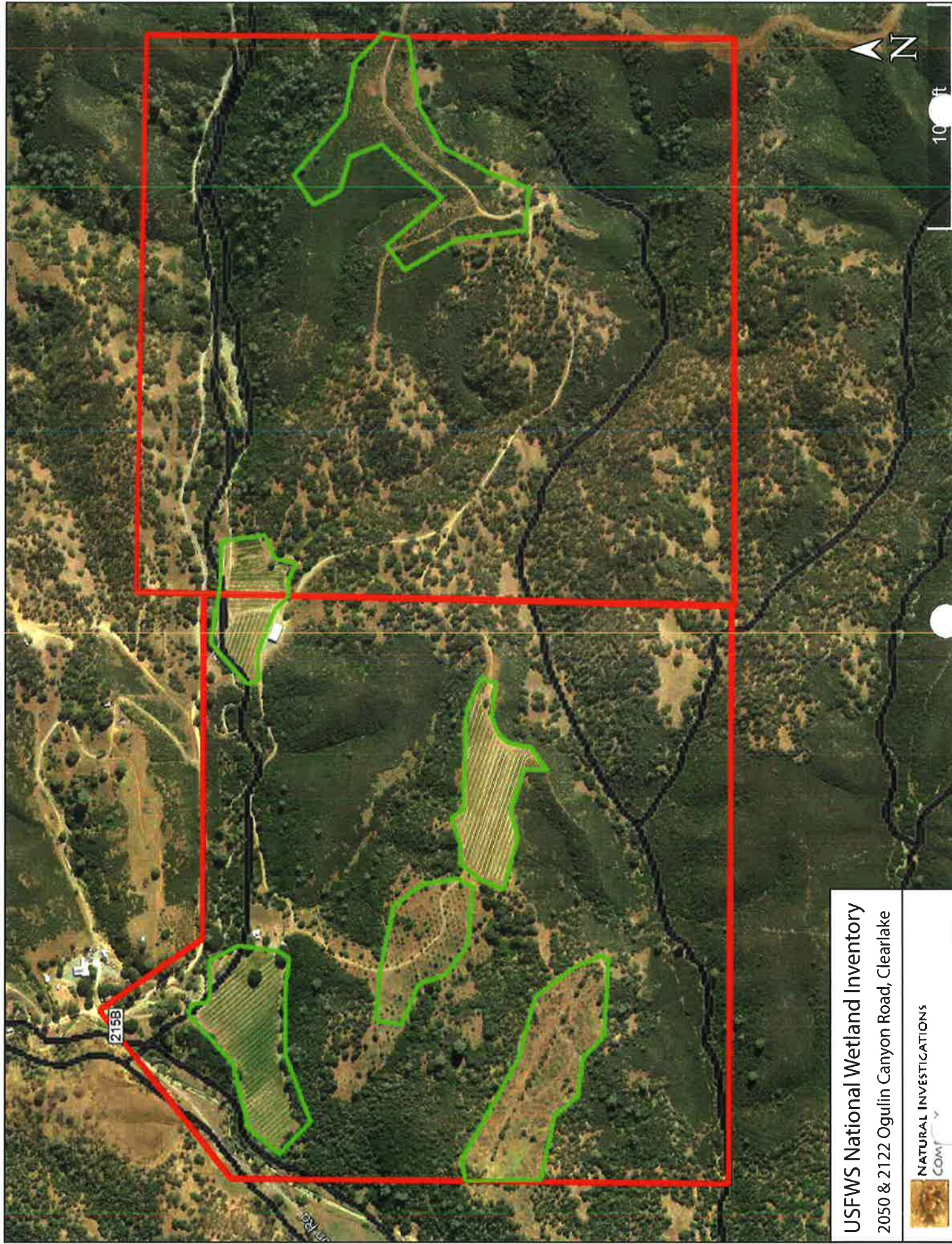
www.NATURALINVESTIGATIONS.COM



Parcel boundaries	—
Cultivation Area	—
Water Resources	
Class I Watercourse	—
Class II or III Watercourse	—

Water Resources in the Study Area
2050 & 2122 Ogulin Canyon Road, Clearlake

	NATURAL INVESTIGATIONS COMPANY
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USFWS National Wetland Inventory
2050 & 2122 Ogulin Canyon Road, Clearlake

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:

July 17, 2019

Consultation Code: 08ESMF00-2019-SLI-2519

Event Code: 08ESMF00-2019-E-08006

Project Name: 2050 and 2122 Ogulin Canyon Road, Clearlake, CA

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-2519

Event Code: 08ESMF00-2019-E-08006

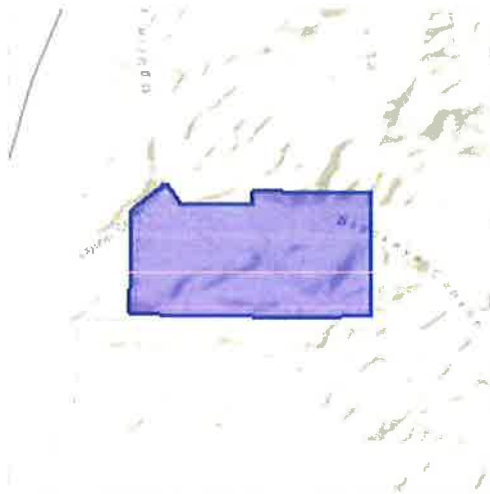
Project Name: 2050 and 2122 Ogulin Canyon Road, Clearlake, CA

Project Type: AGRICULTURE

Project Description: Agriculture

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.98037484063485N122.59433264767694W>



Counties: Lake, CA

Endangered Species Act Species

There is a total of 6 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 Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

-
1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

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

Flowering Plants

NAME	STATUS
Burke's Goldfields <i>Lasthenia burkei</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	Endangered
Few-flowered Navarretia <i>Navarretia leucocephala ssp. pauciflora</i> (=N. <i>pauciflora</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8242	Endangered
Slender Orcutt Grass <i>Orcuttia tenuis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

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

APPENDIX 2: CHECKLIST OF PLANTS DETECTED IN THE STUDY AREA

**Appendix 2: Plants Observed at 2050 and 2122 Ogulin Canyon Road, Clearlake,
June 12, 2019**

Common Name	Scientific Name
Yarrow	<i>Achillea millefolium</i>
Blow wifes	<i>Achyrachaena mollis</i>
Foothill deervetch	<i>Acmispon brachycarpus</i>
Chamise	<i>Adenostoma fasciculatum</i>
California buckeye	<i>Aesculus californica</i>
Mountain dandelion	<i>Agoseris sp.</i>
Silver hairgrass	<i>Aira cayophyllea</i>
Narrowleaf onion	<i>Allium amplexens</i>
Common manzanita	<i>Arctostaphylos manzanita ssp. manzanita</i>
Wildoat	<i>Avena fatua</i>
bromes	<i>Bromus spp.</i>
mustards	<i>Brassica spp.</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Italian thistle	<i>Carduus pycnocephalus</i>
Wedgeleaf ceanothus	<i>Ceanothus cuneatus</i>
Deer brush	<i>Ceanothus integerrimus</i>
Maltese star-thistle	<i>Centaurea melatensis</i>
Western redbud	<i>Cercis occidentalis</i>
Birchleaf mountain mahogany	<i>Cercocarpus betuloides</i>
Wavy-leafed soap root	<i>Chlorogalum pomeridianum</i>
Doveweed	<i>Croton setigerus</i>
Dodder	<i>Cuscuta sp.</i>
American wild carrot	<i>Daucus pusillus</i>
Fork-toothed ookow	<i>Dichelostemma congestum</i>
Yerba santa	<i>Eriodictyon californicum</i>
California buckwheat	<i>Eriogonum fasciculatum</i>
Storksbill	<i>Erodium cicutarium</i>
Small fescue	<i>Festuca microstachys</i>
Fig	<i>Ficus carica</i>
Bedstraw	<i>Galium aparine</i>
Nit grass	<i>Gastroidium ventricosum</i>
Cut-leaf geranium	<i>Geranium dissectum</i>
Toyon	<i>Heteromeles arbutifolia</i>
Hops	<i>Humulus lupulus</i>
Iris	<i>Iris sp.</i>
California walnut	<i>Juglans californica</i>
Prickly lettuce	<i>Lactuca serriola</i>
Henbit	<i>Lamium amplexicaule</i>
Twinberry	<i>Lonicera sp.</i>
Small tarweed	<i>Madia exigua</i>
apple	<i>Malus sp.</i>
Pineapple weed	<i>Matricaria discoidea</i>
Mount Diablo cottonweed	<i>Micropus amphibolus</i>
California sandwort	<i>Minuartia californica</i>
Needleleaf navarretia	<i>Navarretia intertexta</i>
Olive	<i>Olea europaea</i>
Prickly pear	<i>Opuntia sp.</i>
Mistletoe	<i>Phoradendron sp.</i>
Gray pine	<i>Pinus sabiniana</i>

Dot-seed plantago	<i>Plantago erecta</i>
Almond	<i>Prunus dulcis</i>
Peach	<i>Prunus persica</i>
Slender woolyheads	<i>Psilocarphus tenellus</i>
Pomegranate	<i>Punica granatum</i>
Blue oak	<i>Quercus douglasii</i>
Leatheroak	<i>Quercus durata</i>
Interior live oak	<i>Quercus wislizeni</i>
Buttercup	<i>Ranunculus sp.</i>
California gooseberry	<i>Ribes californicum</i>
Hollyleaf redberry	<i>Rhamnus ilicifolia</i>
Curly dock	<i>Rumex crispus</i>
Blue-eyed grass	<i>Sisyrinchium bellum</i>
Dandelion	<i>Taraxacum officinale</i>
Spreading hedgeparsley	<i>Torilis arvensis</i>
Poison oak	<i>Toxicodendron diversilobum</i>
Vinegarweed	<i>Trichostema lanceolatum</i>
Clovers	<i>Trifolium spp.</i>
Spring vetch	<i>Vicia sativa</i>
Grape	<i>Vitis vinifera</i>
Coast Range mule ears	<i>Wyethia glabra</i>
Cocklebur	<i>Xanthium sp.</i>

APPENDIX 3: SITE PHOTOS

