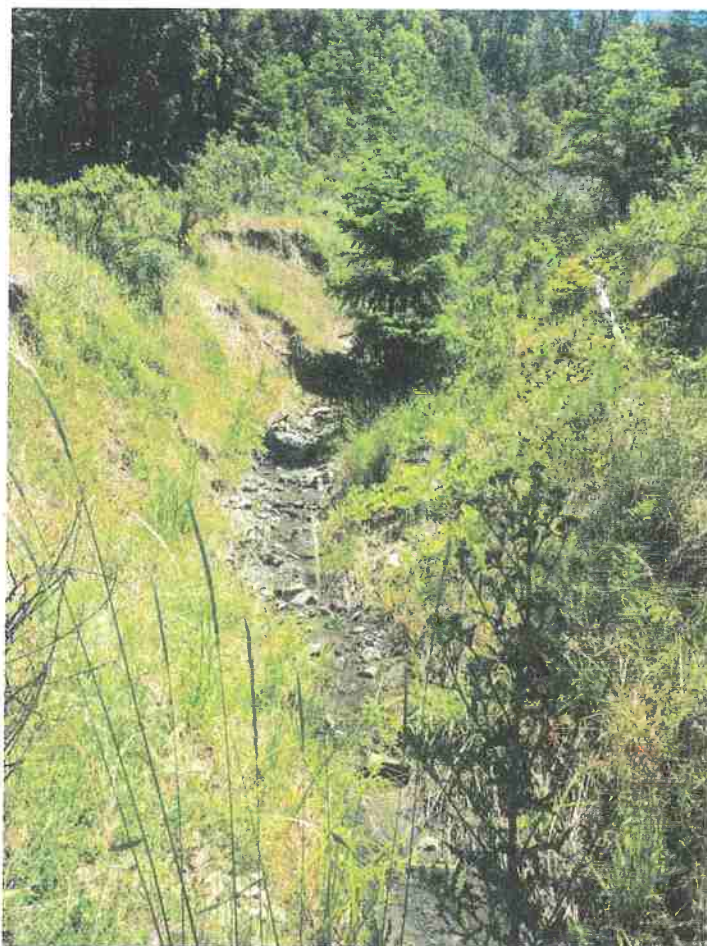


## A Biological Assessment: Commercial Cannabis Cultivation

Bob Howard  
000 Reed Mountain Rd.  
Garberville, Ca 95542  
APN# 223-044-010-000



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## **1.0 Introduction**

### **1.1 Purpose and Need**

This biological assessment has been prepared for Bob Howard, 000 Reed Mountain Rd., Garberville, Ca 95542, APN# 223-044-001-000, as a supplement to a commercial cannabis cultivation permit in Humboldt County, California.

Humboldt County regulates commercial cannabis through the Commercial Medical Marijuana Land Use Ordinance (CMMLUO), which requires permit applicants to assess all potentially significant impacts to biological resources from existing or proposed cannabis cultivation operations.

The purpose of this assessment is to gather information necessary to complete a review of biological resources. This report describes the results of the site visit, which assessed the Study Area and immediately adjacent areas for: (1) the potential to support special-status plant and wildlife species; (2) the potential presence of sensitive biological communities such as wetlands or riparian habitats; and (3) the potential presence of other sensitive biological resources protected by local, state, and federal laws and regulations.

### **1.2 Project Sites and Biological Assessment Area**

The project site is defined as the cultivation area within the 190-acre property under ownership of Bob Howard (APN 223-044-010, figure 1). The biological assessment area (BAA) is defined as the entire 190-acre parcel.

## **2.0 Regulatory Background**

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that informed field investigations and analysis of potential project impacts.

### **2.1 Cannabis Cultivation**

Proposition 64 (Medical Cannabis Regulation and Safety Act) cannabis has been determined to be a commercial agricultural crop and is legalized for recreational use. Cannabis cultivation is regulated by the California Department of Food and Agriculture (CDFA) which cannabis licensing from the state. This permitting process is subject to environmental review under The California Environmental Quality Act (CEQA).

Under CEQA, Humboldt County, as the lead agency, requires that CMMLUO permit applicants have a qualified biologist professional assess the project area for sensitive biological communities and the potential presence of protected plants and animals.

### **2.2 Sensitive Biological Communities**

Habitats that fulfill distinctive functions or values such as wetlands, streams or riparian habitat are termed sensitive biological communities. These communities are protected federally with the Clean Water Act (CWA) regulations. In addition, these habitats are regulated by the state of California via the Porter-Cologne Act, The California Department of Fish and Wildlife (CDFW), and the California Environmental Quality Act (CEQA). They are further governed by local ordinances such as city or county tree ordinances, Special Habitat Management Areas or General Plan Elements.

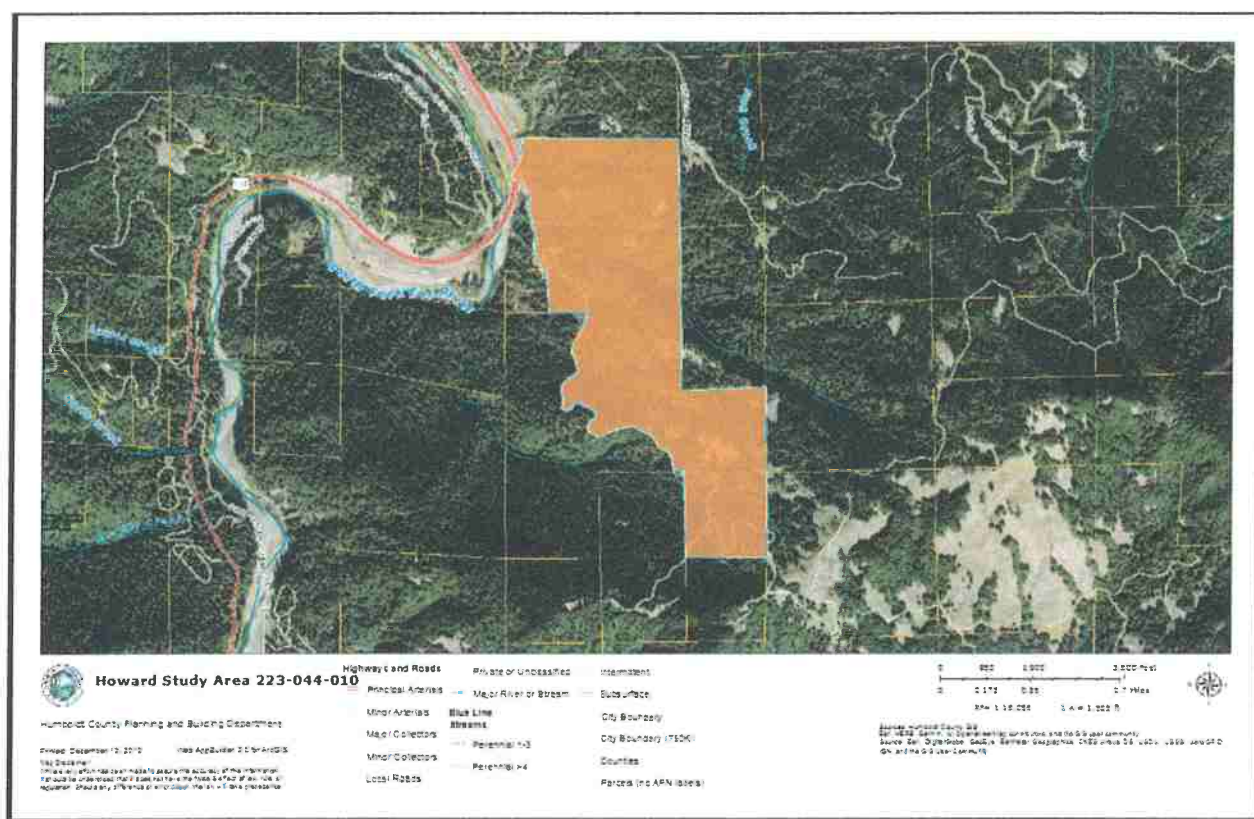


Fig 1. Study Area

### 2.2.1 Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGF). Alterations to or work within or adjacent to streambeds or lakes generally require a Notification of Lake or Streambed Alteration. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream dependent terrestrial wildlife (CDFG 1994). “Riparian” is defined as “on, or pertaining to, the banks of a stream.” Riparian vegetation is defined as “vegetation which occurs in and/or adjacent to a



stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Notification of Lake or Streambed Alteration.

### **2.2.2 Aquatic Habitats**

Federal, State and local regulatory agencies have recognized aquatic habitats such as water bodies, waterways and wetlands as ecologically significant biological communities. The Clean Water Act (CWA) authorizes the U.S. Army Corp of Engineers (ACOE) to regulate the "Waters of the United States" under section 404. These are defined as "waters susceptible to use in commerce, including interstate waters and wetlands, all other waters, and their tributaries (33 CFR 328.3). Non-wetland waters of a sufficient depth and inundated for a sufficient duration, which also exclude hydrophytic vegetation, are considered "other waters" and are usually defined by the high-water mark. These non-wetland waters include lakes, streams and rivers. Waters of the United States, the Corps regulates "Waters of the United States" under Section 404 of the CWA. Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high-water mark (OHWM), and herein referred to as non-wetland waters. Non-wetland waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the U.S generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

### **2.2.3 Sensitive Biological Communities**

Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very

threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB; CDFW 2016). Sensitive plant communities are also identified by CDFW (CDFG 2003, CDFG 2007, CDFG 2009). CNDDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2014) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or United States Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3). Specific habitats may also be identified as sensitive in city or county general plans or ordinances

CDFW and the California Native Plant Society (CNPS) defines Sensitive Natural Communities as vegetation types with a state ranking of S1 to S3 by protocols established by the Nature Serve Heritage methodologies. There are no specific protocols for mitigating impacts to sensitive communities, but they are considered for environmental review under CEQA checklist IVb. The state ranking (S) is as follows:

1. Critically imperiled –At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
2. Imperiled-At risk because of rarity due to very restricted range, very few populations, (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
3. Vulnerable-At moderate risk of extinction due to a restricted range, relatively few populations, (often 80 or fewer), recent widespread declines, or other factors.
4. Apparently Secure –Uncommon but not rare; some cause for long-term concern due to declines or other factors.
5. Secure-Common; widespread and abundant.

#### **2.2.4 Sensitive and Protected Species**

The Federal Endangered Species Act (FESA) of 1973 is intended to protect and recover imperiled animal and plant species and the ecosystems upon which they depend. It is administered by the U.S. Fish and Wildlife Service (Service) and the Commerce Department's National Marine Fisheries Service (NMFS). Under the ESA, species may be listed as either endangered, threatened, or as a candidate for listing. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. Candidate species are currently under review for a proposed listing.

The California Endangered Species Act (CESA) states that all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. CESA prohibits the take of any species of wildlife designated by the California Fish and Game Commission as endangered, threatened, or as a proposed candidate species.

Plant and Wildlife Species Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and species proposed for listing. In addition, CDFW Species of Special Concern, which are species that face extirpation in

California if current population and habitat trends continue, USFWS Birds of Conservation Concern, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the CEQA. In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species included within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory) with California Rare Plant Rank (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Very few Rank 3 or Rank 4 plant species meet the definitions of Section 1901 Chapter 10 of the Native Plant Protection Act or Sections 2062 and 2067 of the CDFW Code that outlines CESA. However, CNPS and CDFW strongly recommend that these species be fully considered during the preparation of environmental documentation relating to CEQA. This may be particularly appropriate for the type locality of a Rank 4 plant, for populations at the periphery of a species range or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology or occurring on unusual substrates. A description of the CNPS Ranks is provided below in section 3.3.

### **3.0 Methods**

#### **3.1 Field Observations**

All field data was recorded by Wildlife Biologist Melissa Moore on July 28<sup>th</sup>, 2019, using a 100' measuring tape for all distance measurements, Garmin GPS Location Device, and binoculars (10 x 42) were used to identify any wildlife sightings. Portions of all aquatic and terrestrial habitats within the project area were assessed. The Study Area was traversed on foot to determine (1) plant communities present within the Study Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present. No protocol-level presence/absence surveys were conducted as part of this assessment. Our determinations regarding the potential of the Study Area to support special-status plant and wildlife species were based primarily on the suitability of habitats within the Study Area, the proximity of known occurrences, and an on-site inspection and survey. This assessment is based on information available at the time of the study and on-site conditions that were observed on July 28<sup>th</sup>, 2019.

#### **3.2 Review of Scientific Literature**

Data was sourced from USFWS, USDA, and CDFW factsheets, CEQA reference material and naturalist field guides.

#### **3.3 Sensitive and Protected Species**

The procedure used to determine the listed plants and animals in this report included a July query of the California Natural Diversity Database (CNDDB) for any sensitive species detections. Description of CNPS Ranks and Threat Codes California Rare Plant Ranks (formerly known as CNPS Lists)



Rank 1A Presumed extirpated in California and either rare or extinct elsewhere  
Rank 1B Rare, threatened, or endangered in California and elsewhere Rank 2A Presumed  
extirpated in California, but more common elsewhere  
Rank 2B Rare, threatened, or endangered in California, but more common elsewhere  
Rank 3 Plants about which more information is needed - A review list  
Rank 4 Plants of limited distribution - A watch list

#### Threat Ranks

- 0.1 Seriously threatened in California
- 0.2 Moderately threatened in California
- 0.3 Not very threatened in California

**Critical Habitat** Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species, but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

## 4.0 Results and Discussion

### 4.1 BAA Description

The BAA consists of the approximately 190 acres under Bob Howard's ownership. Terrestrial habitat on the property is dominated by early successional forest of the Douglas-Fir series, dominated by Douglas Fir (*Pseudotsuga menziesii*) with associated species such as, Black Oak (*Quercus velutina*), White Oak (*Quercus alba*) and Tanoak (*Notholithocarpus densiflorus*). Photos of the site are included (Figure 7). Annual mean rainfall in this region is ~ 62" although some areas may receive more than twice that amount. Elevation ranges from ~ 400' to ~ 1,800 feet above sea level. Measured slopes in the BAA vary from 15% to 25%

Land use on the property is primarily restricted to cannabis cultivation and residential use. The assessment site visit included an inventory of wildlife species observed. No mammals, amphibians, or fish were detected; 2 species of birds were observed or heard. The species detected were American Robin, and black-capped chickadee. None of these species are considered sensitive under CESA or by CDFW.

### 4.2 Site Description

The BAA is located within the northern Coast Ranges Geomorphic Province, southeast of Cape Mendocino. This area is within a transition zone, south of the Mendocino Triple Junction (MTJ), where north-northwest strike-slip faulting of the San Andreas fault system begins to transition to a zone of southwest-northeast contraction associated with the Cascadia Subduction Zone (Csz). The primary drainages and ridges within this area are generally

oriented north-northwest consistent with the structural grain of the underlying bedrock and associated faults.

Soils mapped by the California Cooperative Soil-Vegetation Survey within the BAA area are composed of the 812 Hugo soil series. The Hugo Soil Series is composed of grayish brown loam. The subsoil is comprised of pale brown clay loam originating from a parent material of sandstone and shale. The soil has moderate to rapid permeability with good to excessive drainage. Its suitability for timber production is high to medium.

The property is an assessed 190-acre square parcel located approximately 5 miles South Southeast of the town of Garberville, CA. The parcel is within the Southwest ¼ of section 18, Township 5 south, Range 4 east, HB&M, as made known on the 7.5' USGS Quadrangle Map, Garberville, CA. Existing development on the parcel includes a 900ft<sup>2</sup>. residence, a 20'x25' processing shed, an 18' x 12' shop/generator shed and solar inverter room, a solar array, and an approximate 4.5-acre foot pond.

### **4.3 Commercial Cannabis Cultivation**

The cannabis cultivation will take place in proposed greenhouse facilities located in the southeast portions of the parcel

Water for irrigation is currently supplied from a 4.5-acre foot rainwater catchment pond. All water and fertilizers are applied by drip irrigation at agronomic rates to minimize runoff. The primary road system is in good shape and provides adequate access to the cultivation.

Future cannabis cultivation will require that the roads and crossings be maintained to present standards, which in part, are enforced by the Forest Practice Act (CalFire), Clean Water Act (WQ), and the Endangered Species Act (DFW & USFWS)

## **4.4 Sensitive Biological Communities**

### **4.4.1 Aquatic Habitats**

The BAA includes a Class III seasonal stream, a tributary of an unnamed Class II seasonal stream to Fish Creek, a Class I watercourse. No habitat was observed in the seasonal stream channels. The streams have coarse sediment beds with low to moderate gradients and moderate to high canopy cover over most of the runs.

### **4.4.2 Wetlands**

A review of the USFWS National Wetlands Inventory indicates no potential for a seasonal wetland on the property. No wetland areas were observed in the project area during the July 28<sup>th</sup> visit.

#### 4.4.3 Sensitive Natural Communities

No known Sensitive Natural Communities of state ranking S1 or S2 were reported by CNDDDB within the BAA. The dominant vegetation series is Douglas-Fir and Mixed Oak forest, which is state-ranked S3 series. No associations in this vegetation series are ranked lower than S3.

### 4.5 Sensitive and Protected Species

#### 4.5.1 Bird Species of Special Concern

Golden Eagle (*Aquila chrysaetos*)

Status: CDFW - Fully Protected (FP), Watch list (WL); Federally protected under the Bald and Golden Eagle Act, State Rank - S3:

Habitat: Mature and old-growth forests with more than 60% closed canopy (Harris 2005). Often uses old nests and maintains alternate nest sites. North coast coniferous forest, Sub-alpine coniferous forest, Upper montane coniferous forest. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.

Status within BAA: No occurrences within the BAA. One listed occurrence in the CNDDDB 9 quad report, Miranda.

Bald Eagle (*Haliaeetus leucocephalus*)

Status: CDFW - Fully Protected (FP) Watch list (WL); Federal status - Least Concern; Federally protected under the Bald and Golden Eagle Act; State rank-S3

Habitat: The bald eagle occurs during its breeding season in virtually any kind of American wetland habitat such as seacoasts, rivers, large lakes or marshes or other large bodies of open water with an abundance of fish. requires old-growth and mature stands of coniferous or hardwood trees for perching, roosting, and nesting. Perhaps of paramount importance for this species is an abundance of comparatively large trees surrounding the body of water.

Status within BAA: No occurrences observed within the BAA. One occurrence listed in the CNDDDB 9 quad report, Garberville. Possible suitable nesting habitat within the BAA, some large trees within the BAA and near Eel river to the west of property.

Peregrine Falcon (*Falco peregrinus anatum*)

Status: CDFW – Fully protected; Federal status - least concern; State status – least concern; State rank-S3

Habitat: It can be found nearly everywhere on Earth, except extreme polar regions, very high mountains, and most tropical rainforests; This makes it the world's most widespread raptor, and one of the most widely found bird species. The peregrine falcon lives mostly along mountain ranges, river valleys, coastlines, and increasingly in cities. In mild-winter regions, it is usually a permanent resident, and some individuals, especially adult males, will remain on the breeding territory. The peregrine falcon nests in a scrape, normally on cliff edges.

Status within BAA: No occurrences within the BAA. There are no cliff edges for nesting. One occurrence in the CNDDDB 9 quad report, Miranda.

White Tailed Kite (*Asio otus*)

Status: CDFW –Fully protected; Federal status – least Concern; State status – Least Concern; State rank - SX

Habitat: They can be found in the Central Valley and southern coastal areas, open land around Goleta including the Ellwood Mesa Open Space, marshes in Humboldt County, and also around the San Francisco Bay.

Status within BAA: No occurrences surveyed within the BAA. There is no potential habitat within the BAA. No occurrences in the CNDDDB 9-quad report.

#### 4.5.2 Amphibian Species of Special Concern

Pacific Tailed Frog (*Ascaphus truei*)

Status: CDFW – SSC; Federal and State status - none; State rank - S3, S4

Habitat: Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C (Thomson et al 2016).

Status within BAA: No listed occurrences within the BAA. There was one occurrence within the 9-quad CNDDDB report, Bear Harbor. Potential suitable habitat does not likely exist within the BAA.

Northern Red-Legged Frog (*Rana aurora*)

Status: CDFW – SS; Federal and State status – none; State rank - S3

Habitat: Humid forests, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian cover. Generally near permanent water but can be found far from water, in damp woods and meadows, during non-breeding season (Thomson et al 2016).

Status within BAA: No listed occurrences within the BAA. There were no occurrences within the 9-quad CNDDDB report. Potential suitable habitat does not likely exist within the BAA.

Foothill Yellow-Legged Frog (*Rana boylei*)

Status: CDFW – SSC; Federal status – none; State status -Threatened (candidate); State rank - S3

Habitat: Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis (Thomson et al 2016).

Status within BAA: No observed occurrence within the BAA. There were eight occurrences within the 9-quad CNDDDB report, Piercy, Garberville, Harris, Ettersburg, Miranda, Fort Seward, Briceland and Noble Butte. Potential suitable habitat likely exists within the BAA.

Southern Torrent Salamander (*Rhyacotriton variegatus*)

Status: CDFW - SSC; Federal and State status - none; State rank - S2, S3

Habitat: Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood conifer habitats. Old growth forest. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water (Welsh and Lind, 1996)).

Status within BAA: No listed occurrences within the BAA. There were three occurrences within the 9-quad CNDDDB report, Briceland, Ettersburg, and Bear Harbor. Potential suitable habitat does not likely exist within the BAA.

#### **4.5.3 Mammal Species of Special Concern**

##### **Sonoma Tree Vole (*Arborimus pomo*)**

Status: CDFW – SSC; Federal and State status – none; State rank - S3

Habitat: North coast fog belt from Oregon border to Sonoma County. Found in Douglas-fir, redwood & montane conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce (Polite and Pratt, 1990).

Status within BAA: No observed occurrences within the BAA. Potential suitable habitat may exist within the BAA. There were five listed occurrences within the 9-quad CNDDDB report, Briceland, Bear Harbor, Garberville, Piercy, Harris and Noble Butte.

##### **West Coast Fisher (*Pekania pennanti*)**

Status: CDFW – SSC; Federal status – none; State status – Threatened; State rank - S2, S3

Habitat: Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning (USFWS 2016). Needs large areas of mature, dense forest.

Status within BAA: No observed occurrences within the BAA. Potential suitable habitat may exist within the BAA. There were three listed occurrences in the 9-quad CNDDDB report, Noble Butte, Piercy, and Miranda.

##### **American Badger (*Taxidea taxus*)**

Status: CDFW – SSC; State status – none; Federal status - none

Habitat: Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.

Status within BAA: No listed occurrences within the BAA. Suitable habitat likely does not occur within the BAA. No listed occurrences within the 9-quad CNDDDB report.

##### **Townsend's Big Eared Bat (*Corynorhinus townsendii*)**

Status: CDFW – SSC; Federal and State status – none; State rank - S2

Habitat: Throughout California in a wide variety of habitats. Most common in mesic sites.

Roosts in the open, occasionally on buildings. Roosting sites are limiting factor in disturbance. Extremely sensitive to human disturbance (CDFW 2018).

Status within BAA: No listed occurrences within the BAA. There were no listed occurrences within the 9-quad CNDDDB report. Potential suitable habitat likely does not exist within the BAA.

##### **Western Pond Turtle (*Emys marmorata*)**

Status: CDFW – SSC; Federal and State status – none; State rank - S3

Habitat: Resides in ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying (Thomson et al 2016).

Status within BAA: No observed occurrences within the BAA. There were four occurrences within the 9-quad CNDDB report, Harris, Garberville, Ettersburg and Miranda. Potential suitable habitat may exist within the BAA.

#### **4.5.4 Plant Species of Special Concern**

Databases were reviewed and cross referenced. CNPS, CALFLORA, U.S. Fish and Wildlife service, and Invasive Weeds of California guide. There was one invasive species to be identified near and on the project site, which is Canada Thistle. See Figure 2. Invasive plant species easily colonize new and disturbed sites. Although the property does not currently have any of these problem plant species in abundance, they can spread quickly. Invasive species should be dealt with immediately by manual/mechanical labor such as removing the plant, root ball and remaining vegetation either by hand, brush hog, cutting, sawing. Prevention can be encouraged with mulching. Biological controls are not recommended as this is not usually an effective method and can enter streams and waterways. Hand removal of the plants is encouraged. To control Canada thistle, cut flowering stalks before they go to seed or hoe out the leafy rosettes. Canada thistle is especially problematic because it can reproduce from tiny root fragments. For this reason, cultivation should be minimized in dense infestations which was not found on the project site. Repeated mowing during the growing season can drain the plants' reserves and eventually kill the plant.

### **4.6 Potential Impacts**

#### **4.6.1 Northern Spotted Owl**

The cannabis cultivation process at the Howard property will be restricted to the existing roads and the existing cultivation site. No habitat removal is proposed under the current permit application. Potential impacts to NSO within the BAA are limited to disturbance from noise from traffic accessing the site and the likely intermittent use of small equipment such as generators, ATVs, etc.

The Arcata Fish and Wildlife Office (AFWO) has provided a 2006 guidance document regarding disturbance from noise-generated activities, "Estimating the effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California." The document provides likely disturbance distances to nesting owls and Murrelets, based on ambient sound levels at the site, the use of specific equipment, and visual line-of-sight distance to nests. A review of the document suggests that scenario 4 under appendix B, the Northern Spotted Owl Sound and Visual Harassment Decision Support Tool, best reflects the likely ambient sound conditions at the site and the equipment likely to be used during cultivation. Under this scenario, "the existing environment is characterized by low to very low levels of sound associated with human activities, and is typified by small power tools, light vehicular traffic moving at slow speeds, recreational activities, and many urban and rural residential activities." The typical action-generated sounds from cultivation under this scenario could include "larger gas-powered engines, large generators, amplified music, ATV's, and small trucks at moderate speed on improved trails, and large chainsaws." This scenario 4 closely approximates the likely ambient background noise at the site, and the potential action generated noise from the cultivation activities.



No observed occurrences on the BAA. The BAA may have appropriate habitat to support Spotted Owl nesting/roosting. As there is abundant foraging habitat on nearby public and private properties, cultivation activities will not likely impact foraging Spotted Owls. There were nine listed occurrences in the 9-quad CNDDDB report, Noble Butte, Bear Harbor, Piercy, Harris Garberville, Briceland, Fort Seward, Miranda, and Ettersburg.

#### **4.6.2 Marbled Murrelet**

Nesting marbled Murrelets require mature, late-successional forests with trees that support potential nesting “platforms”, such as large mossy branches or canopy deformities (USFWS 1995). The forested habitat on the Howard property does not have trees of sufficient age or canopy complexity to support breeding marbled Murrelets.

There is no potential Murrelet nesting habitat located on the BAA. No listed occurrences in the 9-quad CNDDDB report.

#### **4.6.3 Sensitive/Nesting Birds**

Cultivation activities at the existing project site are unlikely to disturb nesting or sensitive birds, as impacts would generally be limited to noise disturbance only. The project site has no bird nesting habitat is present. No potential nesting habitat will be affected by typical cultivation activities on the flat.

#### **4.6.4 Sensitive Fish/Amphibians**

The Water Resources Protection Plan outlines the necessary BMPs (Best Management Practices) needed to protect water quality from cultivation practices. These BMP's, implemented properly, should serve to protect water quality on the BAA and to downstream waters. There should be no deleterious effects to fish or other aquatic species from cultivation activities.

#### **4.6.5 Sensitive Forest Carnivores**

Forest carnivores (Fisher, Humboldt Marten) may potentially use the BAA for foraging as part of a larger home territory. Older forests with complex canopies are preferred habitat for denning for these species; the BAA does not likely provide appropriate habitat for natal dens. As no habitat removal is planned for the BAA, there is a low likelihood of impacts to potential carnivore foraging habitats.

#### **4.6.6 Sensitive Plants**

Use of the existing cultivation site will likely not affect sensitive plants, as activities will be limited to previously impacted areas. Conversion of a proposed cultivation site would likely involve some ground disturbance. Spring season floristic (botanical) surveys are effective at identifying sensitive plants for protection.

## 5.0 Recommendations

1. All cultivation activities should be conducted to minimize potential runoff from the project sites.
2. Any fertilizers or pesticides should be used in strict accordance with the manufacturer's directions.
3. All fertilizers, pesticides, and other cultivation-related products should be properly stored to prevent exposure to precipitation events and to prevent access to wildlife.
4. Generators should be housed inside insulated enclosures to muffle noise and adhere to noise thresholds of the CCLUO ( $\leq 50$  decibels of maximum noise exposure at 100 feet from noise source or edge of habitat).
5. Conduct nesting bird surveys if tree or shrub removal or habitat alteration is planned within the nesting bird season (generally March 1 - August 31). Use appropriate distance buffers, if necessary, for any discovered active nests.
6. Conduct seasonally appropriate floristic (botanical) surveys for rare plants if any ground disturbance for further development is proposed.

## 6.0 References

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## 7.0 Appendix

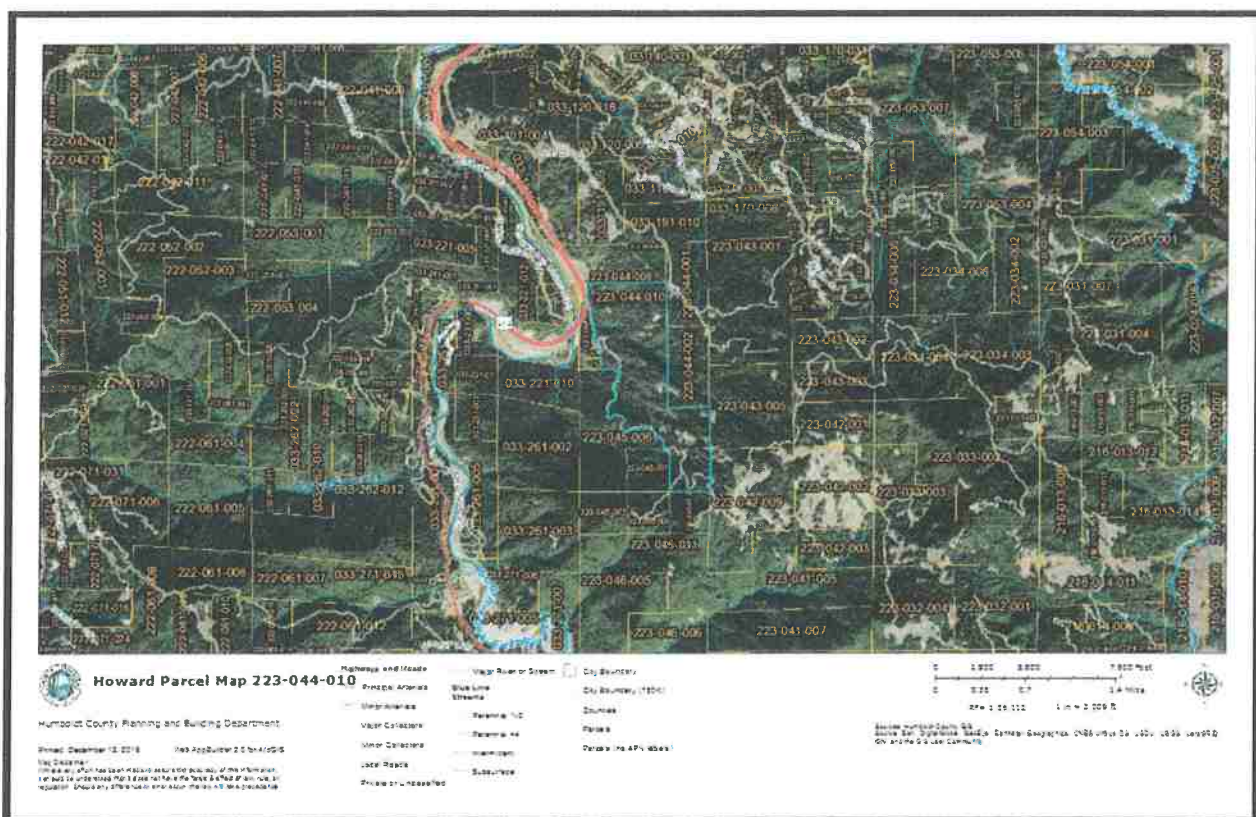


Figure 2: Parcel Map

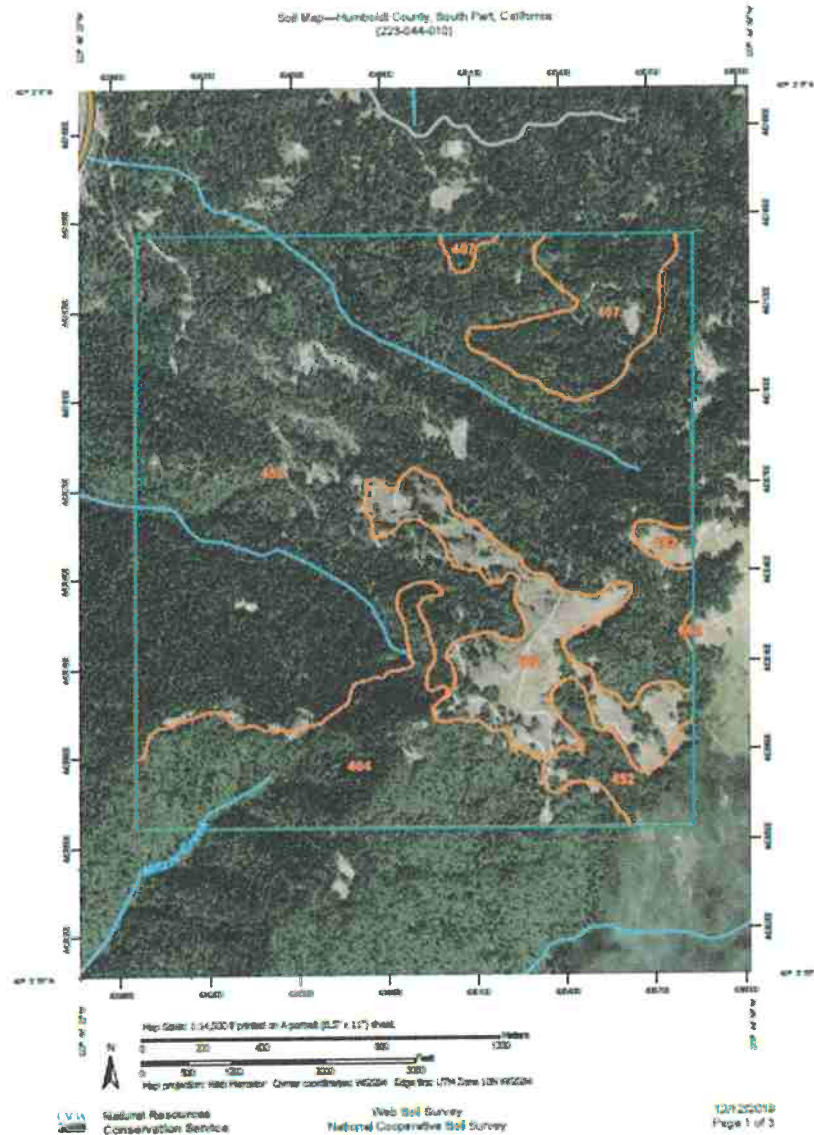
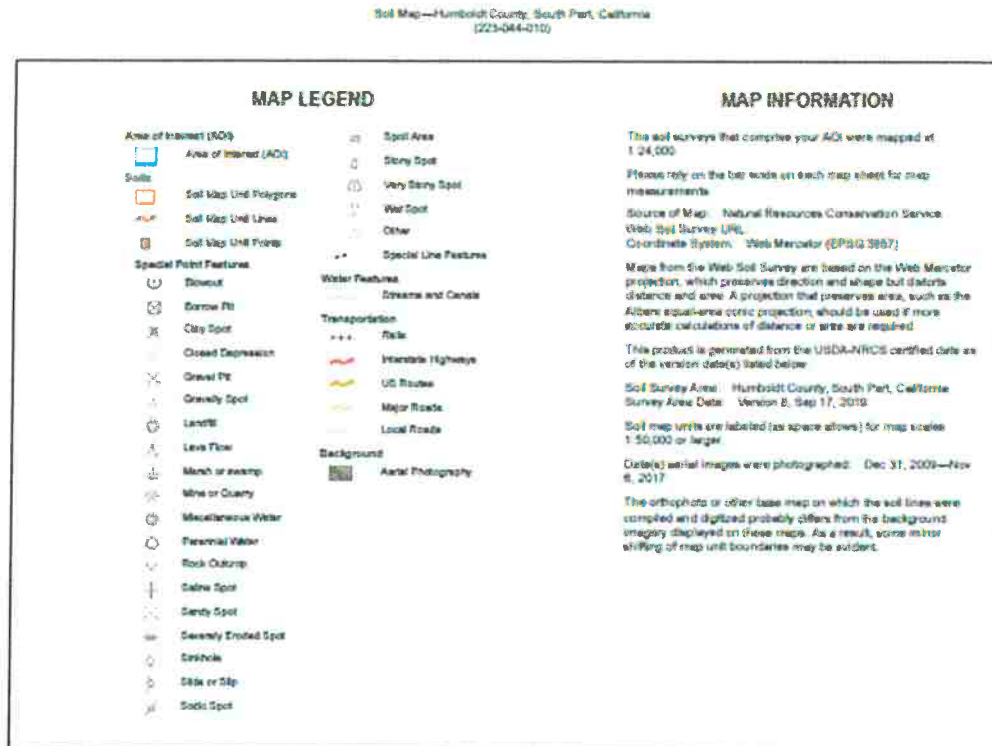


Figure 3: Web Soil Survey



Soil Map—Fresno County, South Part, California

223-044-010

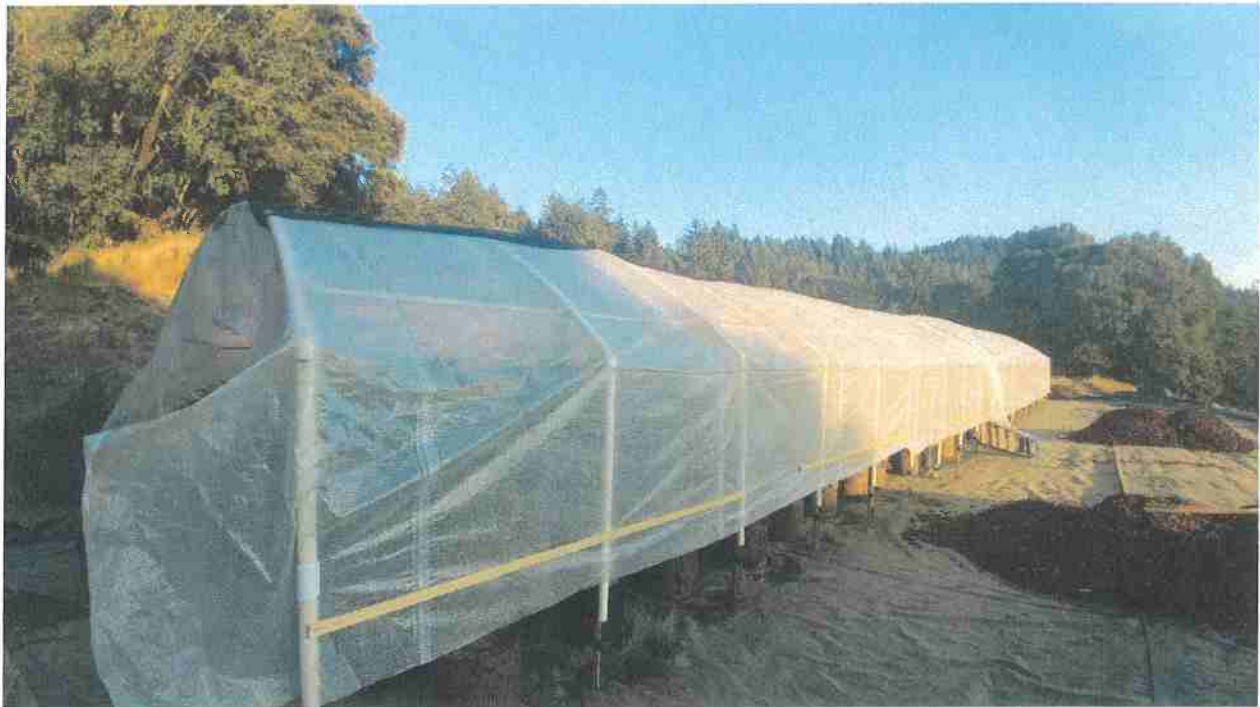
**Map Unit Legend**

Map Unit Symbol	Map Unit Name	Acres in ACI	Percent of ACI
404	Holman-Hickox complex, 50 to 75 percent slopes	142.4	15.4%
407	Farmer-Wichy complex, 9 to 30 percent slopes	59.2	6.4%
452	Burgin-Black-Cockspur-farmer complex, 30 to 50 percent slopes	235.4	25.0%
682	Kernnorth-Witherall complex, 30 to 50 percent slopes	101.4	9.8%
Totals for Area of Interest		527.6	100.0%





Figure 4: Aquatic Habitats



*Figure 5: Cultivation Site A*



*Figure 6: Cultivation Site B*



*Figure 7: Cultivation Site B.1*





*Spring Domestic Use 1*



*Figure 10: 650,000 gal pond- Cannabis*



*Figure 11: Water Tanks*

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221-081-001 Spotted Owl Observations

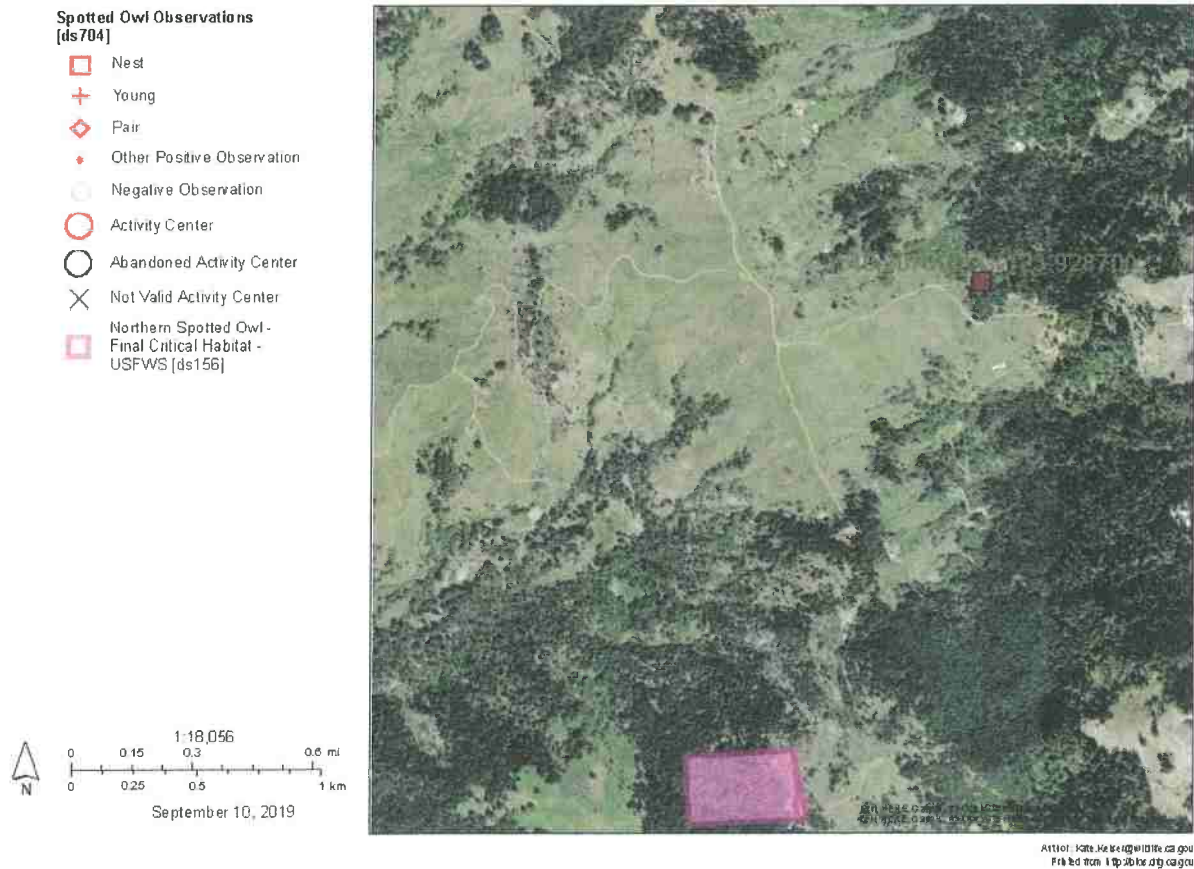


Figure 14: Nearest NSO Critical Habitat

**Photos of BAA**



