

**Biological Assessment  
for  
APN 223-022-002-000**

12/05/2019



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# Table of Contents

List of Appendices .....	2
1.0 Introduction .....	3
1.1 Purpose and Need.....	3
1.2 Project Description.....	3
1.3 Project and Biological Assessment Area .....	3
2.0 Regulatory Background .....	3
2.1 Cannabis Cultivation .....	3
2.2 Sensitive Biological Communities.....	3
2.2.1 Aquatic Habitats .....	3
2.2.2 Wetlands.....	4
2.2.3 Sensitive Natural Communities.....	4
2.2.4 Local Policies, Ordinances, and Regulations.....	5
2.2.5 Sensitive and Protected Species .....	5
3.0 Methods.....	6
3.1 Field Observations .....	6
3.2 Review of Scientific Literature.....	6
3.3 Agency Consultation .....	6
3.4 Sensitive Biological Communities.....	6
3.4.1 Sensitive and Protected Species .....	6
3.5 Potential Impacts Assessment.....	7
3.5.1 Northern Spotted Owl Assessment .....	7
4.0 Results and Discussion.....	8
4.1 Terrestrial Habitat .....	8
4.2 Sensitive Biological Communities.....	9
4.2.1 Aquatic Habitats .....	9
4.2.2 Wetlands.....	9
4.2.3 Sensitive Natural Communities.....	10
4.2.4 Local Policies, Ordinances, and Regulations.....	10
4.3 Sensitive and Protected Species .....	10
4.3.1 Bird Species of Special Concern.....	10
4.3.2 Mammal Species of Special Concern.....	12
4.3.3 Reptiles and Amphibians of Special Concern .....	15
4.3.4 Plant Species of Special Concern .....	17
4.4 Potential Impacts.....	20
4.4.1 Sensitive Natural Communities and Plant Species of Special Concern .....	20
4.4.2 Water Quality and Aquatic Habitats.....	21
4.4.3 Northern Spotted Owl Assessment .....	21
4.4.4 Bird Species of Special Concern.....	21
4.4.5 Mammal Species of Special Concern .....	22
4.4.6 Reptilian/Amphibian Species of Special Concern .....	22
4.4.7 Invasive Species.....	22
5.0 Recommendations.....	22
6.0 References .....	23

## List of Appendices

1) General Location Map.....	28
2) Photographs of Project Area.....	29
3) DOQ Site Map.....	35
4) NRCS Web Soil Survey Report.....	36
5) General Habitat Map.....	40
6) Streamstats Report.....	41
7) CNDDDB Occurrence Map.....	44
8) NSO Habitat Map.....	45
9) Spotted Owl Database Map.....	46

## **1.0 Introduction**

### **1.1 Purpose and Need**

This Biological Assessment has been prepared for Jose Caballero and APN 223-022-002-000. The Humboldt County Planning Department requests the applicant have a qualified professional assess the project for the potential presence of sensitive biological communities as well as sensitive and protected species.

### **1.2 Project Description**

The project proposes permitting pre-existing commercial cannabis cultivation on APN 223-022-002-000. The parcel is zoned Agriculture Exempt (AE) and Timber Production Zone (TPZ). Prior to January 1<sup>st</sup>, 2016 the site operated approximately 21,000 square feet of flowering canopy. The applicant proposes cultivating 10,500 square feet of commercial cannabis (50% reduction from pre-existing). The operation will utilize pre-existing sites and will not disturb any new ground. The project contains seven pre-existing cultivation sites. During the permitting process it is assumed some of these cultivation sites will be decommissioned due to the reduction in canopy size. These details are not known yet and thus all cultivation sites have been identified as Project Areas in this report.

### **1.3 Project and Biological Assessment Area**

This report assesses potential impacts to biological resources within a Biological Assessment Area (BAA). The BAA is defined as the area where as a result of the proposed project potential impacts may occur to sensitive/protected species and/or sensitive biological communities.

Impacts are often characterized as direct or indirect. Project Area is defined as the area where only direct impacts have the potential to occur. The proposed project contains seven individual Project Areas. Disturbance based impacts associated with this project have the potential to indirectly impact sensitive species outside of the project area. The BAA reflects the largest area that impacts can be reasonably expected per the proposed project. Thus, the BAA reflects the largest disturbance buffer for potential protected species in this area, 0.5 miles for potential nesting golden eagles.

The BAA is buffered 0.5 miles around the project area. The BAA encompasses the project parcel and portions of surrounding private parcels. The BAA overlaps with Sections 01 & 12, T5S, T4E, and Sections 06 & 07, T5S, R5E, Humboldt County within the Harris 7.5' USGS quad. Current land uses within the BAA consists of rural residential, domestic livestock grazing, commercial cannabis cultivation, and non-industrial timber production.

## **2.0 Regulatory Background**

### **2.1 Cannabis Cultivation**

Commercial cannabis was recognized as an agricultural crop under the Medical Cannabis Regulation and Safety Act and further legalized for recreational uses under Proposition 64. The California Department of Food and Agriculture (CDFA) implements the CalCannabis division which regulates commercial cannabis licensing from a state level. Humboldt County also regulates commercial cultivation licensing from a local level through the Commercial Cannabis Land Use Ordinance. A cultivator must have both a state and county license to operator commercial cannabis cultivation in the state.

### **2.2 Sensitive Biological Communities**

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act (CWA); state regulations such as the Porter-Cologne Act, the CDFW Fish and Game Code and the California Environmental Quality Act (CEQA); or local ordinances or policies such as city or county tree ordinances, Special Habitat Management Areas, and General Plan Elements.

#### **2.2.1 Aquatic Habitats**

Watercourses, waterbodies, and critical hydrologic features have been recognized by federal, state, and local regulatory agencies/bodies as ecologically important biological communities. Under Section 404 of

the CWA the U.S. Army Corps of Engineers regulate “Waters of the United States” as defined in the Code of Federal Regulations 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). 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, and herein referred to as non-wetland waters. Non-wetland waters, for example, generally include lakes, rivers, and streams.

Although very similar, 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 State Water Resources Control Board (SWRCB) 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. SWRCB jurisdiction includes wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the state are further protected from cannabis cultivation impacts through the Order WQ 2019-0001-DWQ General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities. Streams, lakes, and riparian habitat are also subject to jurisdiction by CDFW under Sections 1600-1616 of CDFGC and Humboldt County per §BR-P5 of the Humboldt County General Plan.

### **2.2.2 Wetlands**

Section 404 of the CWA protects wetlands federally. In 1989 George H.W. Bush implemented the national “No-net Loss of Wetlands” policy which either avoids the filling of wetlands or mitigates the destruction and/or degradation of wetlands. U.S. Army Corps of Engineers defines wetlands as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” There is no single accepted definition of wetlands at the state level although CDFW exerts jurisdiction over them through their importance as wildlife habitat. Wetlands are locally protected through setbacks built within the most recent version of the Humboldt County General Plan (2017) and Order WQ 2019-0001-DWQ.

### **2.2.3 Sensitive Natural Communities**

Sensitive Natural Communities have been defined by CDFW and the California Native Plant Society (CNPS) as vegetation types with a state rank of S1-S3 per standards set forth in the NatureServe Heritage Methodology. This system uses the best and most recent scientific information to assess rarity per a community’s range, distribution, and the proportion of occurrences that are of good ecological integrity. Threats and trends are also considered in the overall ranking of a community’s rarity. The use of marsh and/or wetlands in the names of vegetation alliances does not imply or assert regulatory jurisdiction. Although there are no specific protocols for avoiding and/or mitigating impacts to these communities they are afforded consideration during environmental review per CEQA Guidelines checklist IVb.

Sensitive species and communities are ranked per standards set forth in the NatureServe Heritage Methodology. All species are given two ranks that consist of a letter and a number. The letter represents whether the rank is a global rank (G) or a state rank (S). The number corresponds to the subject’s rarity.

- 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 the 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

Subspecies receive a T-rank attached to the G-rank and an additional S-rank for state ranking. With subspecies, the initial rank reflects the entire species' risk while the second rank represents just the subspecies' status.

#### **2.2.4 Local Policies, Ordinances, and Regulations**

The Humboldt County General Plan and Humboldt County General Code affords considerations to a host of biological communities and resources in relation to existing and proposed developments. These local ordinances contain setback protections for species specific old growth timber stands, coastal oak woodlands, and environmental sensitive habitat areas (ESHAs).

This application will follow specifications detailed in Humboldt County Ordinance No. 2559, amending sections 314-55.4, 314-55.3.11.7, 314-55.3.7, and 314-55.3.15 of Chapter 4 Division 1 of Title III of the County Code (Ordinance 2.0). This ordinance requires a biological assessment as part of the initial application process.

#### **2.2.5 Sensitive and Protected Species**

Sensitive and protected species include those plants and wildlife species that have been formally listed or are candidates for either listings under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford legal protection to both listed species and species that are candidates for listing. Additionally, CEQA affords special consideration to species ranked as sensitive (S1-2 are considered sensitive), as a CDFW Species of Special Concern, or CDFW Fully Protected. 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.

Wildlife species are ranked using the same system NatureServe Heritage methodology.

Plant species have an additional ranking system designed by the CNPS. The following alphanumeric codes are the CNPS List, California Rare Plant Ranks (CRPR):

- 1A – Presumed extirpated in California and either rare or extinct elsewhere
- 1B – Rare or Endangered in California and elsewhere
- 2A – Presumed extirpated in California, but more common elsewhere
- 2B – Rare or endangered in California, but more common elsewhere
- 3 – Plants for which more information is needed – Review List
- 4 – Plants of limited distribution – Watch List

The CRPR use a decimal-style threat rank. The threat rank is an extension added onto the CRPR and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. Most CRPRs read as 1B.1, 1B.2, 1B.3, etc. Note that some Rank 3 plants do not have a threat code extension due to difficulty in ascertaining threats. Rank 1A and 2A plants also do not have threat code extensions since there are no known extant populations in California. Threat Code extensions and their meanings are as follows:

- 1) Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 2) Moderately threatened in California (20-80% of occurrences threatened / moderate degree and of threat)

3) Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

## **3.0 Methods**

### **3.1 Field Observations**

All field data was collected by wildlife biologist, Jack Henry, using direct observations, measurements, and ocular estimations during site reviews conducted on November 21, 2019. A 200' Lufkin FE200 HI-VIZ measuring tape and Forestry Pro (Nikon Laser Range Finder) was used for recording distances to the nearest tenth of a foot. The reach of direct field observations covered terrestrial and aquatic habitat present within the project parcel.

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

Scientific literature and data have been sourced from multiple locations. The majority of reference material has been sourced from online journal archives and databases. If hardcopies or pdfs could not be acquired the web url and date of reference is present within the bibliography. Some species data is sourced from agency factsheets such as the U.S. Department of Agriculture (USDA), U.S. Geological Survey (USGS), and U.S. Fish and Wildlife Service (USFWS).

Additional information is sourced whenever possible from agency and non-governmental organization databases. These include the NRCS Web Soil Survey, CALTREES, California Natural Diversity Database, National Wetland Inventory GIS, NOAA Regional Climate Center, CalFlora, California Native Plant Society, Calscape, iNaturalist, eBird, and Streamstats.

### **3.3 Agency Consultation**

No agency personal were consulted for this report.

### **3.4 Sensitive Biological Communities**

Prior to performing the site visit, the Natural Resources Conservation Service Web Soil Survey (WSS) was reviewed to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present within the BAA. Satellite imagery from the National Agriculture Imagery Project (NAIP), USGS topographic maps, Humboldt County Biological Resources Map, and the National Wetlands Inventory were used to scope for the potential presence of sensitive communities.

Field data collected during the site visit was compared to existing literature and published data in order to classify and identify sensitive biological communities per federal, state, and local jurisdictions. Plant communities are classified using both the California Wildlife Habitat Relationship System published by CDFW and the Natural Communities list published by both CDFW and CNPS. These communities are described below in Section 4.0.

#### **3.4.1 Sensitive and Protected Species**

The scoping procedure to generate the plants and animals list noted in this report is as follows: First, the California Natural Diversity Database (CNDDDB) was queried (December 2018) for any species detections within the nine 7.5' USGS quadrangles around the project area. Next, a general habitat assessment was made for the BAA from observations made on property and the surrounding areas. Lastly, given the habitat types present within the BAA, a species list was developed for animals using the Endangered and Threatened Animals List (August 2018) and Special Animals List (August 2018). The plant list uses information from the Special Vascular Plants Bryophytes and Lichens List (August 2018) and Endangered Threatened and Rare Plants (August 2018). The above lists were obtained from

<https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

Each species status within the BAA is evaluated and summarized. A conclusion is made for each species per the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDDB, other reports) on the site recently.

The plant list is generated much the same way but analyzed differently. It recognizes all 7.5' USGS quads the species has been found in either Humboldt or Trinity County and whether potential habitat for the species is present within the BAA. It does not use the above criteria to assess potential presence in further detail because plant species habitat selection. Plant species are included in the list if they meet the following conditions:

1. Documented in one of the 9 quads searched as part of the CNDDDB query
2. Have potential habitat within the BAA

The Interactive Distribution Map v2.02 available through Calflora was utilized as a litmus test to check for potential occurrences within the BAA. This data was matched with the Jepson eflora interactive GIS which utilizes specimen records from the Consortium of California Herbaria (CCH). These two GIS databases coupled with personal experience and knowledge was used to generate the Sensitive Plant Species list. Web urls for these resources are included below:

<http://www.calflora.org/entry/dgrid.html?crn=931> (the final three digits represent the species search)

&

<http://ucjeps.berkeley.edu/eflora/> (CCH specimen record GIS data can be found in the bottom right hand corner of each web page for individual species)

### **3.5 Potential Impacts Assessment**

This section contains discussion on potential impacts that may occur when natural conditions, pre-existing project conditions, and proposed activities culminate. It also lists potential methods to reduce risks, mitigate, and/or remediate these potential impacts. Potential impacts listed are based off documented impacts in similar conditions or activities as well as the author's professional experience in rural land management and best management practices. Whenever possible these potential impact assessments and their recommended mitigations are based on the best available science in similar settings.

#### **3.5.1 Northern Spotted Owl Assessment**

The Northern Spotted Owl Assessment within this report is based on management recommendations presented within published literature. Owl status determinations, data assessment, and habitat mapping are based on: "*Protocol for Surveying Proposed Management Activities that May Impact Northern Spotted Owls*" (USFWS 2012). Disturbance impacts and recommended disturbance buffers were made based on:

“Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California.” (USFWS 2006).

## 4.0 Results and Discussion

### 4.1 Terrestrial Habitat

The climate can be characterized by high-intensity rainfall over winter and warm arid summers. Annual mean rainfall is approximately 57.3 inches (streamstats.usgs.gov). Elevations within the BAA range from 320’ to 906’ above mean sea level. Slopes in the BAA vary from gradual to steep. The project parcel is located along a ridgetop between Rays Creek and an unnamed tributary to Tom Long Creek. Slopes within the BAA drain both to the northwest and southeast. The BAA contains ten different soil types, they are mapped and listed in the attached Web Soil Survey Report. Terrestrial habitats present within the BAA consists of montane hardwood conifer (MHC), perennial grassland (PGS), and montane chaparral (MC) habitats.

Montane hardwood conifer (MHC) is the most prominent terrestrial habitat type within the BAA. The overstory of MHC habitat consist of a multitude of tree species. In Humboldt County this habitat type occurs naturally and has also increased in prevalence due to human caused fire suppression. The two most predominant tree species present within MHC habitat in the BAA are tanoak (*notholithocarpus densiflorus*) and Douglas-fir (*pseudotsuga menziesii*). Additional tree species present as co-dominants and intermediates include canyon live oak (*quercus chrysolepis*), California black oak (*quercus kelloggii*), Oregon white oak (*quercus garryana*), pacific madrone (*arbutus menziesii*), big leaf maple (*acer macrophyllum*), and white alder (*alnus rhombifolia*). Given the variation in overstory species dominance, canopy openness and understory species composition can vary considerably. Soils with greater water storage capacity support vigorous tree growth and often display closed canopies with greater percentages as conifer species or tanoak. These areas with closed canopies support less dense understories with more shade tolerant species such as evergreen huckleberry (*vaccinium ovatum*), snowbrush (*ceanothus velutinus*), poison oak (*toxicodendron diversilobum*), sword fern (*polystichum munitem*), and pacific dewberry (*rubus ursinus*). MHC habitat with drier soils contain greater concentrations of hardwood species with variable canopy closure. Understory vegetation in these areas often contain nonnative grasses such as sweet vernal grass (*anthoxanthum odoratum*), Harding grass (*phalaris aquatica*), and orchard grass (*dactylis glomerata*). This habitat also includes native species including coyote brush (*baccharis pillularis*), wood rose (*rosa gymnocarpa*), pacific hound’s tongue (*adelinia grande*), and firecracker flower (*dichelostemma ida-maia*).

Perennial grassland (PGS) habitat is present within the BAA in the form of expansive grasslands dispersed among the timbered habitats. This habitat is dominated by nonnative perennial grass species with small areas containing nonnative annual grasses, woody shrubs, and/or young emergent tree stands. The most common tree species found within PGS habitat include California black oak, Oregon white oak, and Douglas-fir. Historic grazing practices in Humboldt County have resulted in the dominance of nonnative species. The most dominant grass species observed within the BAA are sweet vernal grass and Harding grass. Additional species observed within PGS habitat include wood rose, coyote brush, deer brush (*ceanothus integerrimus*), bracken fern (*pteridium aquilinum*), silver hairgrass (*aira caryophyllea*), and Yorkshire fog (*holcus lanatus*).

There are small portions of terrestrial habitat within MHC habitat that lack trees and are dominated by shrub vegetation. These areas of montane chaparral (MC) habitat are dominated by manzanita and other shrub forms of vegetation with minor tree and herbaceous components. Common species observed in this habitat type include common manzanita (*arctostaphylos manzanita*), ironwood (*holodiscus discolor*), chamise (*adenostoma fasciculatum*), and California yerba santa (*eriodictyon californicum*). This habitat type is uncommon in the wetter portions of the county west of the BAA.

California Natural Community alliances observed within the BAA include but are not limited to:

- California bay forest (*umbellularia californica*)

- California bay forest – California buckeye / ironwood (*umbellularia californica* – *aesculus californica* / *holodiscus discolor*)
- Canyon live oak forest – California black oak / poison oak (*quercus chrysolepis* – *quercus kelloggii* / *toxicodendron diversilobum*)
- Douglas-fir - tanoak forest (*pseudotsuga menziesii* - *notholithocarpus densiflorus*)
- Douglas-fir - tanoak forest – (big leaf maple) / sword fern (*pseudotsuga menziesii* - *notholithocarpus densiflorus* – (*acer macrophyllum*) / *polystichum munitum*)
- Oregon white oak woodland – California black oak / firecracker flower (*quercus garryana* – *quercus kelloggii* / *dichelostemma ida-maia*)
- Oregon white oak woodland – California black oak / poison oak (*quercus garryana* – *quercus kelloggii* / *toxicodendron diversilobum*)
- Oregon white oak woodland – orchard grass (*quercus garryana* – *dactylis glomerata*)
- Tanoak forest (*notholithocarpus densiflorus*)
- Tanoak forest – canyon live oak (*notholithocarpus densiflorus* – *quercus chrysolepis*)
- Tanoak forest – black oak (*notholithocarpus densiflorus* – *quercus kelloggii*)
- Tanoak forest / coffeeberry (*notholithocarpus densiflorus* – *frangula californica*)
- Tanoak forest / poison oak – pink honey suckle (*notholithocarpus densiflorus* / *toxicodendron diversilobum* / *lonicera hispidula* var. *vacillans*)
- Tanoak forest / evergreen huckleberry (*notholithocarpus densiflorus* / *vaccinium ovatum*)

## 4.2 Sensitive Biological Communities

### 4.2.1 Aquatic Habitats

The BAA is located within the Ohman Creek – South Fork Eel River HUC12 watershed (HUC12#:180101060403). Aquatic habitat in the BAA consists solely of riverine habitat.

Riverine habitats located within the BAA include intermittent (Class II), and ephemeral (Class III) watercourses. Intermittent tributaries present in the BAA can be characterized by well-defined stream morphology, moderate to steep gradients, strong canopy cover, and coarse sediment substrates. Cascade and step-pool morphology are the two aquatic habitats most prominent within intermittent watercourses present in the BAA. There are microsites with gradual topography that display riffle/run habitat. Intermittent watercourses provide potential aquatic habitat for northern red-legged frog (*rana aurora*), yellow-legged foothill frog, Oregon ensatina (*ensatina eschscholtzii oregonensis*), wandering salamander (*aneides vagrans*), speckled black salamander (*aneides flavipunctatus flavipunctatus*), California slender salamander (*batrachoseps attenuatus*), southern torrent salamander (*rhyacotriton variegatus*), coastal tailed frog (*ascaphus truei*), and northwestern salamander (*ambystoma gracile*). Ephemeral watercourses often lack well defined channels or riparian vegetation given their episodic hydrology and they provide no aquatic habitat value. These ephemeral tributaries provide ecological value by transporting cold water and sediment to higher order streams.

### 4.2.2 Wetlands

This project is located within the U.S. Army Corps of Engineers Land Resource Region A (LRR:A) within the Western Mountains, Valleys, and Coast Region. LRR:A or the Northwest Forests and Coast sub region often experiences frequent and heavy rainfall events that create ample opportunities for wetland vegetation to propagate. Although these sites may show a diverse range of wetland vegetation they often lack proper hydrology and/or hydric soils to meet the definition of a wetland (U.S. Army Corps of Engineers 2010).

Watercourses present within the property boundary were assessed for wetland indicators as well as any topographic benches where ponding could occur. Generally, slopes within the BAA are too steep to promote the formation of wetland features. There were areas observed within the PGS habitat where relatively flat microsites, likely the result of natural mass wasting, contained individual or small communities of rushes (*juncus spp.*). No communities of rushes were observed within 200' of the nearest Project Area. This proposed project will not impact potential wetlands within the county.

### 4.2.3 Sensitive Natural Communities

California Department of Fish and Wildlife and the California Native Plant Society identify these natural communities within the BAA as sensitive.

- California bay forest (*umbellularia californica*)
- California bay forest – California buckeye / ironwood (*umbellularia californica* – *aesculus californica* / *holodiscus discolor*)
- Douglas-fir - tanoak forest (*pseudotsuga menziesii* - *notholithocarpus densiflorus*)
- Douglas-fir - tanoak forest – (big leaf maple) / sword fern (*pseudotsuga menziesii* - *notholithocarpus densiflorus* – (*acer macrophyllum*) / *polystichum munitum*)
- Oregon white oak woodland – California black oak / firecracker flower (*quercus garryana* – *quercus kelloggii* / *dichelostemma ida-maia*)
- Oregon white oak woodland – California black oak / poison oak (*quercus garryana* – *quercus kelloggii* / *toxicodendron diversilobum*)
- Oregon white oak woodland – orchard grass (*quercus garryana* – *dactylis glomerata*)
- Tanoak forest (*notholithocarpus densiflorus*)
- Tanoak forest – canyon live oak (*notholithocarpus densiflorus* – *quercus chrysolepis*)
- Tanoak forest – black oak (*notholithocarpus densiflorus* – *quercus kelloggii*)
- Tanoak forest / coffeeberry (*notholithocarpus densiflorus* – *frangula californica*)
- Tanoak forest / poison oak – pink honey suckle (*notholithocarpus densiflorus* / *toxicodendron diversilobum* / *lonicera hispidula* var. *vacillans*)
- Tanoak forest / evergreen huckleberry (*notholithocarpus densiflorus* / *vaccinium ovatum*)

The proposed permitting of the cannabis cultivation expansion will not result in any loss of these communities.

### 4.2.4 Local Policies, Ordinances, and Regulations

The project is located on the Southern Humboldt Biological Resources map. There are no biological resources mapped in the approximate location of the BAA. Humboldt County Ordinance 2.0 contains protections for Environmentally Sensitive Habitat Areas (ESHA) none of which will be altered given that this project proposes utilizing existing cultivation sites.

## 4.3 Sensitive and Protected Species

### 4.3.1 Bird Species of Special Concern

- **American Peregrine Falcon** (*falco peregrinus anatum*)

**Status:** CESA de-listed (November 4, 2009), ESA de-listed (August 25, 1999), G4T4, S3S4, USFWS Bird of Conservation Concern, CDFW Fully Protected and CDF Sensitive Species

**Key Habitat:** Peregrine falcons breed near wetlands, lakes, riparian areas, or other water, mostly on high cliffs, ledges and rock outcroppings in woodland, forest, and coastal habitats (Polite and Pratt 1990). There has been recent documentation of peregrine falcon nests in old growth redwood (Buchanan et al. 2014). Buchanan et al (2014) found through their review of literature that all documented tree nests are located within 7.6 km of abundant prey resources such as bays, estuaries, and coastal beaches. The smallest redwood tree observed with nesting behavior had a 168” DBH. Although they are more abundant in coastal riparian areas, peregrine falcon nests have been documented in Douglas-fir/tanoak forests and oak woodlands in Humboldt County (Hunter et al 2005). In multiple locations across their global range, peregrine falcons have become accustomed to anthropogenic disturbances. In Alaska and Ireland, peregrine falcons have been found nesting along cliffs in quarries, some operating during active nesting attempts (Moore et al 1997, Ritchie et al 1998). High reproductive success has been documented at urban nest sites often located on man-made structures (Kettel et al 2019). These behaviors are likely related to high prey densities near estuarine and large palustrine habitats.

**Status within BAA:** The CNDDDB does not document any peregrine falcon observations within the

BAA. The BAA does not contain potential nesting habitat or foraging habitat for this species. There is no potential for this species to be found within the BAA.

- **Bald Eagle** (*haliaeetus leucocephalus leucocephalus*)

**Status:** Federally protected under Bald and Golden Eagle Act, De-listed from ESA in 2007, CESA Endangered, G5, S3, BLM Sensitive Species, CDF Sensitive Species, USFS Sensitive Species, CDFW Fully Protected, USFWS Birds of Conservation Concern

**Key Habitat:** Bald eagles are rare to uncommon residents and locally rare breeders in Humboldt County (Harris 2005). Bald Eagles require large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. Nesting/roosting habitat consists of tall trees with either broken tops or stout branches denude of vegetation. Bald Eagles nest most frequently in stands with less than 40% canopy cover (Polite C and Pratt J. 1990).

**Status within BAA:** The BAA does not contain potential nesting habitat or foraging habitat for this species. There is no potential for bald eagles to be found within the BAA.

- **Golden Eagle** (*aquila chrysaetos canadensis*)

**Status:** Federally protected under the Bald and Golden Eagle Act, G5, S3, CDFW Fully Protected, BLM Sensitive Species, CDF Sensitive Species, International Union for Conservation of Nature (IUCN) Least Concern, USFWS Birds of Conservation Concern

**Key Habitat:** Golden Eagles are a rare to uncommon resident and a locally rare breeder in interior Humboldt County (Harris 2005). When present, they are often located near open grasslands for hunting and within dense forest for nesting (Hunter et al. 2005). Rolling terrain with good thermal lift, and nest sites that are secluded from disturbances are favored by golden eagle. Recent habitat analysis done by Humboldt Redwood Company found their golden eagle nests occur in Douglas-fir trees with 59-98 inch DBH within 1.8 miles of foraging habitat (Chinnicci et al 2012).

**Status within BAA:** The CNDDDB does not identify any known golden eagle sites within the BAA. The BAA contains high quality foraging habitat in the form of expansive grasslands. The BAA contains potential nesting/roosting habitat in the form of mixed species timberlands that contain Douglas-fir. The quality of this habitat is low due to the lack of large diameter conifer trees given the relatively young age-cohort of timber stands within the BAA. The potential for golden eagles to be nesting within the BAA is moderate.

- **Little Willow Flycatcher** (*empidonax trailii brewsteri*)

**Status:** CESA Endangered, G5, S1S2, USFWS Birds of Conservation Concern, USFS Sensitive Species

**Key Habitat:** Willow flycatcher can be fairly common spring and fall migrants on the northwestern coast. Willow flycatcher prefers dense willow or similar riparian shrub along persistent water (Gaines 1990). Recent bird surveys have found increased evidence that flycatchers have been utilizing young (5-15 years) clearcuts with dense regeneration and a strong hardwood component (Hunter et al 2005). Potentially prefer sights with less brown-headed cowbird (*molothrus ater*) presence. Bombay et al (2003) found that percent riparian shrub cover within meadow habitats showed the strongest relation to willow flycatcher nest selection.

**Status within BAA:** The CNDDDB does not document any willow flycatcher observations within the BAA. Willow flycatchers are only known from three recorded breeding attempts in Humboldt County, all of which are outside the BAA (Hunter et al. 2005). The BAA contains very little riparian vegetation. The majority of shrub vegetation within the BAA is upland and is not located near perennial surface water. Given the lack of high-quality habitat within the BAA and the historic

breeding record in Humboldt County, the potential for willow flycatcher to be found within the BAA unlikely.

- **Marbled Murrelet** (*brachyramphus marmoratus*)

**Status:** ESA Threatened, CESA Endangered, G3G4, S1, CDF Sensitive Species, IUCN Endangered, North American Bird Conservation Initiative Red Watch List

**Key Habitat:** Marbled Murrelet occurs year-round in marine subtidal and pelagic habitats from the Oregon border to Point Sal, Santa Barbara Co. (Sowls et al. 1980 cited in Sanders 1990). Roosts/Nests up to 50 miles inland within stands of mature redwood or dense mature conifer forests (USFWS 1997). Murrelets choose timber stand of varying sizes but almost always select stands dominated by coastal redwood. There is only one record of a marbled murrelet nesting in a non-redwood site (Hunter et al 2005).

**Status within BAA:** There is no suitable old-growth habitat present within the BAA. Murrelet populations are known from isolated patches of old-growth forest within Humboldt County. There is no potential marbled murrelet habitat within the BAA. There is no potential for this species to be found within the BAA.

- **Northern Spotted Owl** (*strix occidentalis caurina*)

**Status:** ESA and CESA Threatened, G3G4, S1, CDF Sensitive Species, IUCN Endangered, North American Birds of Conservation Initiative Red Watch List

**Key Habitat:** Humboldt County supports a substantial number of breeding pairs of Northern Spotted Owl (Hunter et al. 2005). Northern spotted owls reside in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 2300m (0 – 7,600'). They usually nest in tree or snag cavities, or in broken tops of large trees (Polite C. 1990). In northwestern California, northern spotted owls also occur in second growth redwood-tanoak stands that retain suitable trees for nests and support high densities of their preferred prey, dusky-footed woodrats (Hunter et al. 2005).

**Status within BAA:** The NSO database shows no spotted owl observational data within the BAA. Although the Cal Fire Forest Practice Watershed Mapper (v2) shows no timber harvest plans have occurred within the BAA. This means the BAA lacks historic survey coverage and the database is unlikely to contain documented detections. The BAA contains both potential forage and nest/roost habitat. There is a high potential for northern spotted owls to be found within the BAA. Further assessment is given to this species in Section 4.4.3 Northern Spotted Owl Impact Assessment.

#### 4.3.2 Mammal Species of Special Concern

- **American Badger** (*taxidea taxus*)

**Status:** G5, S3, CDFW Species of Special Concern, IUCN: Least Concern

**Key Habitat:** Badgers are generalist species often found in drier open stages of most shrub, forest, and herbaceous habitats with sandy soils (Ahlborn 1990). They have historically been found throughout the state except for the northern north coast (Grinnell et al 1937 in Ahlborn 1990). Apps et al (2002) found positive habitat correlations with specific soil parent materials, sandy-loam soil textures, canopy openness, agricultural habitats, and linear disturbances (roads). Badger habitat selection negatively correlated with canopy cover, wet vegetation, and terrain ruggedness (Apps et al. 2002).

**Status within BAA:** The CNDDDB does not document any observations of American badger within the BAA. The BAA contains both positive and negative correlates of the Apps et al (2002) study. The BAA contains wet vegetation, rugged terrain, and closed canopies. The BAA also contains linear disturbances, agricultural habitat, and sandy loam soils. There is a high potential for finding American badger within the BAA.

- **Fringed Myotis (*myotis thysanodes*)**

**Status:** G4, S3, BLM Sensitive Species, IUCN Least Concern, USFS Sensitive, Western bat Working Group (WBWG) High Priority

**Key Habitat:** Fringed myotis are a gleaning bat that usually roost in caves, rock crevices, or anthropogenic structures. Unlike other parts of their range, these bats are known to be an active tree-roosting species in Humboldt County. Weller and Zabel (2001) found that in Pilot Creek (Humboldt County) fringed myotis used snag structures at least 11" DBH as day roosts (not maternal) and displayed low site fidelity which is common in tree-roosting species. They found the greatest predictor of fringed myotis day-use roost was snag density given the low site fidelity and roost size variability (Weller and Zabel 2001). Lacki and Baker (2007) found maternal roosts were always located in rock crevices in the state of Washington with Hayes (2011) concluding similar results in Colorado. There is no literature available on maternal colonies in coastal conifer forests in California.

**Status within BAA:** There are no documented occurrences of fringed myotis within the BAA. Due to the natural history of the site, the BAA lacks any significant snag densities. Individual mature tanoak trees were observed with crevices and hollows that could provide potential roosting habitat. Fringed myotis have a high potential of being found within the BAA.

- **Humboldt Marten (*martes caurina humboldtensis*)**

**Status:** State Candidate for Threatened, G5T1, S1, CSSC, USFS: Sensitive Species

**Key Habitat:** Humboldt marten were once thought to be extinct but are now known from three remnant populations in the Pacific Northwest. One population is known from California in the northeastern portion of Humboldt County. Additional survey efforts occurred in 2009 in Mendocino but failed to detect any martens, further strengthening evidence that the Klamath population is the last (Slauson et al. 2009). Slauson et al. (2002) found that Humboldt Martens selected forest stands located in the most mesic aspects with dense shrub cover in close proximity to large diameter mature conifer species.

**Status within BAA:** There have been no documented observations of Humboldt marten within the BAA. The BAA does contain potential habitat characteristics preferred by martens including a dense shrub layer. However, the BAA lacks large diameter conifers (> 32" DBH) and overall is relatively xeric. The potential for Humboldt marten to be found within the BAA is unlikely.

- **Long-eared Myotis (*myotis evotis*)**

**Status:** G5, S3, BLM Sensitive Species, IUCN Least Concern

**Key Habitat:** Long-eared myotis are relatively widespread across California. They are known to roost individually or in small groups of less than 10 individuals (Harris 1990, Kunz and Lumsden 2003). Kunz and Lumsden (2003) described them as tree-roosting bats as well as previous written descriptions in literature (Rancourt et al 2005). Rancourt et al (2005) found in their study that rock crevices were chosen as maternity roosts more often than stump or snag structures. This species also has a low roost fidelity meaning they often move roost locations with an acute area, <400m (Kunz and Lumsden 2003). It is hypothesized this species would select rock crevices over snag/stump structures because of their potential benefits to reproductive fitness (Rancourt et al 2005). Kalcounis-Rüppel et al (2005) found that tree dwelling bats relative to random trees select trees that are larger diameter, taller, closer to open surface water, and are located in more open canopies.

**Status within BAA:** There are no documented occurrences of long-eared myotis within the BAA. Due to the natural history of the site, the BAA lacks any significant snag densities or large diameter snags. Individual mature tanoak trees were observed with crevices and hollows that could provide

potential roosting habitat. Long-eared myotis have a moderate potential of being found within the BAA.

- **North American Porcupine** (*erethizon dorsatum*)

**Status:** G5, S3, IUCN Least Concern

**Key Habitat:** Most common in montane conifer, Douglas-fir, alpine dwarf-shrub, and wet meadow habitats. Porcupines are less common in hardwood, hardwood-conifer, montane and valley-foothill riparian, aspen, pinyon-juniper, low sage, sagebrush, and bitterbrush. Dens in caves, crevices in rocks, cliffs, hollow logs, snags, burrows of other animals; will use dense foliage in trees if other sites are unavailable. In spring and summer, feeds on aquatic and terrestrial herbs, shrubs, fruits, leaves, and buds. Winter diet consists of twigs, bark, and cambium of trees, particularly conifers, and evergreen leaves (Johnson and Harris 1990).

**Status within BAA:** There are no documented observations of porcupines within the BAA. The BAA contains both potential wintering and summering habitat for this species. There is a high potential for porcupine presence within the BAA.

- **Pacific Fisher – West Coast DPS/Northern California ESU** (*pekania pennanti*)

**Status:** G5T2T3Q, S2S3, CDFW Species of Special Concern Priority 2, BLM Sensitive Species, USFS Sensitive Species

**Key Habitat:** Fisher occurrence is regularly associated with low- to mid-elevation coniferous and mixed conifer/hardwood forests with mature or late-successional characteristics. Regardless of age class, abundant physical structure is the driving characteristic for habitat selection by Fishers (USFWS 2016). Other studies have found Fishers prefer a strong hardwood component possibly related to prey densities (Lofroth et al 2011). Fishers have also been observed using second growth and regenerative conifer stands in areas where significant residual structure was left from historic timber management (Mathew et al 2008). Fishers are highly territorial defending 10 square mile territories from one another; as a result, they are inherently rare (Ingles 1965).

**Status within BAA:** The CNDDDB does not document any observations of fisher in the BAA. The BAA does contain potential fisher habitat in the form of mixed hardwood/conifer timberlands with hardwood structures and canopy closure. There is a high potential for Pacific fisher to be found within the BAA.

- **Pallid Bat** (*antrozous pallidus*)

**Status:** G5, S3, CDFW Species of Special Concern, Working Bat Group High Priority, BLM and USFS Sensitive Species, IUCN Least Concern

**Key Habitat:** Pallid bats are found in semi-arid and arid climates across western North America. They have been found in deserts, shrub-steppe, grasslands, canyon lands, ponderosa woodlands, mixed conifer forest, oak woodland, and riparian forest (Hayes and Wiles 2013). Pierson and Rainey (2007) conclude that in northern California this species has a strong association with oak woodlands/savannah where it forages and roosts. It is also often found under bridge structures in northern California (Pierson and Rainey 2007). This species roosts in moderate size groups ranging from 20 – 200 individuals and often with other bat species (Vaughan and O’Shea 1976).

**Status within BAA:** The CNDDDB does not contain any documented observations of this species in the BAA. The 9 quad search revealed one documented observation of this species in Richardson’s Grove State Park. This observation consists of a museum specimen collected in 1936. At this time Humboldt County likely had greater concentrations of oak woodlands as evidenced by the residual oak woodland observed on site. The BAA does contain potential pallid bat roosting habitat in the form of hardwood tree species, especially black oak. Pallid bats have a high potential of being found within the BAA.

- **Sonoma Tree Vole** (*arborimus pomo*)

**Status:** G3, S3, CDFW Species of Special Concern, IUCN Near Threatened

**Key Habitat:** These small arboreal mammals are mainly associated with mature conifer forests. They construct nests of conifer needles often located in trees but seldom found at the base (Brylski and Harris 1990). Chinnici et al. (2011) found that nests were more prominent in mature stands with higher densities of Douglas-fir.

**Status within BAA:** The CNDDDB contains no documented observations of Sonoma tree vole in the BAA. The BAA lacks any mature Douglas-fir. The majority of Douglas-fir stands within the BAA are less than 40 years old due to conifer encroachment. The potential for Sonoma tree vole to be found within the BAA is unlikely.

- **Townsend's Big-Eared Bat** (*corynorhinus townsendii*)

**Status:** G3G4, S2, CDFW Species of Special Concern Priority 2, BLM Sensitive Species, USFS: Sensitive Species, IUCN Least Concern, Western Bat Working Group: High Priority

**Key Habitat:** Townsend's big-eared bat is unequivocally associated with areas containing caves and cave-analogs for roosting habitat. Beyond the constraint for cavernous roosts, habitat associations become less well defined. Generally, Townsend's big-eared bats are found in the dry uplands throughout the West, but they also occur in mesic coniferous and deciduous forest habitats along the Pacific coast (Kunz and Martin 1982). Townsend's big-eared bat requires spacious cavern-like structures for roosting (Pierson 1998) during all stages of its life cycle. Typically, they use caves and mines, but Townsend's big-eared bat have been noted roosting in large hollows of redwood trees, in attics and abandoned buildings (Dalquest 1947), and under bridges (Fellers and Pierson 2002). In coastal California, five of six known maternity colonies were in old buildings; the sixth was in a cave-like feature of a bridge (Fellers and Pierson 2002).

Throughout its western range, Townsend's big-eared bat roosts in a variety of vegetative communities, and at a range of elevations and there appears to be little or no association between local surface vegetative characteristics and selection of particular roosts in either eastern or western populations (Wethington et al. 1997, Sherwin et al. 2000). This suggests that the bats select roosts based on internal characteristics of the structure rather than the surrounding vegetative community. The Critical period for maternity roosts is May 15 - August 15 (Gruver and Keinath 2006).

**Status within BAA:** The CNDDDB shows no documented observations of Townsend's big-eared bat in the BAA. Due to the natural history of the site, the BAA lacks any significant snag densities. Individual mature tanoak trees were observed with crevices and hollows that could provide potential roosting habitat. Townsend's big-eared bat have a moderate potential of being found within the BAA.

#### 4.3.3 Reptiles and Amphibians of Special Concern

- **Coastal Tailed Frog** (*ascaphus truei*)

**Status:** G4, S3S4, CDFW Species of Special Concern Priority 2 and IUCN Least Concern

**Key Habitat:** Coastal tailed frog is regarded to be an uncommon inhabitant of Humboldt County but has been shown to be quite common in the correct habitat characteristics. Coastal tailed frogs occur in permanent streams and are highly dependent on water temperature (Morey 1990). Welsh and Hodgson (2011) found that canopy cover is the best predictor of this species' presence. Pacific tailed frogs were never observed within streams with less than 83% canopy cover (Welsh and Hodgson 2011). Aside from cold water temperature tailed frogs select habitat with coarse substrate (cobbles and boulders) and steep gradients (Thomson et al. 2016).

**Status within BAA:** The CNDDDB shows no documented occurrences of coastal tailed frog within the BAA. Intermittent watercourses within the BAA are morphologically well suited for this species

with high gradients, strong canopy cover, and coarse sediments. Hydrology within these watercourses is likely the limiting factor, this species requires perennial surface water. The potential for coastal tailed frog to be found within the BAA is moderate.

- **Foothill Yellow-legged Frog (*rana boylei*)**

**Status:** Candidate for CESA Threatened, G3, S3, CDFW Species of Special Concern Priority 1, USFS Sensitive Species, BLM Sensitive Species, IUCN Near Threatened

**Key Habitat:** Foothill yellow-legged frog's habitat selection as many frogs, depends on their life stage. This species is primarily found in and around streams with shallow, flowing water with some cobble-sized substrate (Hayes and Jennings 1988). Egg masses require low flowing stream locations with some form of anchor and protection such as behind or under a rock (Thomson et al. 2016). Not much is known about foothill yellow-legged frog terrestrial habitat selection. Bourque (2008) found adult foothill yellow-legged frog an average distance from water of 3 m but also found select individuals up to 40 m from any surface water. This studied evaluated an inland population in Tehama County and coastal populations in more mesic timberlands may disperse farther distances more regularly. The best indicator for adult foothill yellow-legged frog presence is canopy openness (Welsh and Hodgson 2011).

**Status within BAA:** The CNDDDB shows no documented observations of foothill yellow-legged frogs in the BAA. Unnamed intermittent watercourses do provide potential habitat for this species within the BAA. Foothill yellow-legged frogs have been documented in other unnamed intermittent watercourses near the BAA at similar elevations. The potential for foothill yellow-legged frog to be found within the BAA is high.

- **Northern Red-Legged Frog (*rana aurora aurora*)**

**Status:** CDFW Species of Special Concern Priority 2, USFS Sensitive Species, IUCN Least Concern

**Key Habitat:** Northern red-legged frog (northern red-legged frog) is relatively terrestrial for a ranid frog (Thomson et al. 2016). Adult individuals are common in terrestrial habitats especially over winter or wet periods but they commonly prefer shorelines or stream banks with vegetative cover. Individuals have been observed up to 80 m away from surface water in rainy conditions (Haggard 2000). Reproductive sites require persistent water at least 6" deep with emergent vegetation required to anchor egg masses (Morey and Basey 1990). Jennings et al. (1993) found that intermittent streams chosen by northern red-legged frog for breeding retained surface water year-round.

**Status within BAA:** The CNDDDB does not identify any northern red-legged frog observations with the BAA. Potential habitat is present in the form of intermittent slow flowing watercourses with pool features throughout the BAA. Northern red-legged frogs have a high potential of being found within the BAA.

- **Northwestern Pond Turtle (*emys marmorata*)**

**Status:** G3G4, S3, CDFW Species of Special Concern Priority 1, BLM Sensitive Species, USFS Sensitive Species, IUCN Vulnerable

**Key Habitat:** Northwestern pond turtles are aquatic habitat generalist and can be found in a variety of waterbodies including rivers, streams, lakes, ponds, and marshes. Northwestern pond turtle have even been observed using ephemeral water features such as vernal pools or settling ponds. These turtles require upland habitat with adequate soil conditions for excavating nests that also lack disturbance. Studies have shown females prefer nesting sites within 100 m of a waterbody. Northwestern pond turtle prefer quiet and undisturbed water features with adequate basking substrate such as emergent woody debris or relatively unshaded shorelines (Thomson et al. 2016). They can persist in unfavorable conditions for some period of time (Spinks et al. 2003).

**Status within BAA:** The CNDDDB does not document any known northwestern pond turtle observations within the BAA. The BAA does not contain any lacustrine habitat. Intermittent watercourses present within the BAA may potentially contain pool features that hold perennial surface water. The BAA does not contain any friable soils within 100' of potential western pond turtle habitat. The potential for this species to be found in the BAA is unlikely.

- **Southern Torrent Salamander** (*rhyacotriton variegatus*)

**Status:** G3G4, S2S3, CDFW Species of Special Concern Priority 1, USFS Sensitive Species, IUCN Least Concern

**Key Habitat:** Southern torrent salamander prefers habitat characteristics that correlate with late-seral forests. Coastal coniferous forests that may not be mature enough may be productive enough to create these conditions which include clear, cold waters with loose, coarse substrates that lack overall sediment loads (Welsh and Lind 1996). Interstitial spacing between gravels and cobbles is very important for low flow periods within intermittent low-order streams occupied by southern torrent salamander. This may be why southern torrent salamanders also prefer high gradient streams capable of flushing out sediment loads and maintaining coarse substrates. Torrent salamander presence is also highly associated with canopy cover due to its strong correlation with temperature control and hydrologic period (Thomson et al 2016).

**Status within BAA:** The CNDDDB shows no documented occurrences of southern torrent salamander within the BAA. Intermittent watercourses within the BAA are morphologically well suited for this species with high gradients, strong canopy cover, and coarse sediments. The potential for southern torrent salamander to be found within the BAA is moderate.

**4.3.4 Plant Species of Special Concern**

<i>Arabis mcdonaldiana</i>		McDonald's rockcress	
<b>Fed List:</b> Endangered	<b>State List:</b> Endangered	<b>CNPS List:</b> 1B.1	<b>State Rank:</b> S3
<b>USGS 7.5' Quad (CNDDDB):</b> Broken Rib Mtn., Devil's Punchbowl, Gasquet, High Divide, High Plateau Mtn., Noble Butte, Polar Beat Mtn., Preston Peak, Shelly Creek Ridge			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> No	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Lower montane coniferous forest, upper montane coniferous forest. Rocky outcrops, ridges, slopes and flats on serpentine (CNDDDB). Deep red soils, steep slopes, dry ridges, serpentine areas (Jepson eflora). Chaparral, foothill woodland (Calflora).			
<i>Arctostaphylos manzanita ssp. raichei</i>		Raiche's manzanita	
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS List:</b> 1B.1	<b>State Rank:</b> S2
<b>USGS 7.5' Quad (CNDDDB):</b> Clearlake Highlands, Cloverdale, Cow Mountain, Elledge Peak, Highland Springs, Hopland, Kelseyville, Legget, Noble Butte, Orrs Spring, Purdy Gardens, Ukiah, Whispering Pines, Yorkville			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> No	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Chaparral, lower montane coniferous forest. Rocky, serpentine sites, slopes and ridges (CNDDDB). Chaparral (Jepson eflora). Chaparral, yellow pine forest. Openings. Serpentine affinity: 2.6; strong indicator (Calflora).			
<i>Astragalus agnicidus</i>		Humboldt County Milk-vetch	
<b>Fed List:</b> None	<b>State List:</b> Endangered	<b>CNPS List:</b> 1B.1	<b>State Rank:</b> S2
<b>USGS 7.5' Quad (CNDDDB):</b> Bridgeville, Miranda, Myers Flat			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Broadleaved upland forests, north coast coniferous forest (CNDDDB). Open soil in woodland (Jepson eflora). Openings and disturbances in mixed evergreen forests (Calflora).			

<i>Calystegia atriplicifolia ssp. buttensis</i>	<b>Butte County morning-glory</b>		
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS List:</b> 4.2	<b>State Rank:</b> S3
<b>USGS 7.5' Quad (CNDDDB):</b> Bell Springs			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> Yes	
<b>Habitat:</b> Chaparral, lower montane coniferous forest, valley and foothill grassland. Dry, mostly open slopes with rocky substrates (CNDDDB). Dry, rocky places in open forest, chaparral (Jepson eflora). Yellow pine forest (Calflora).			
<i>Carex arcta</i>	<b>Northern clustered sedge</b>		
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS List:</b> 2B.2	<b>State Rank:</b> S2
<b>USGS 7.5' Quad (CNDDDB):</b> Board Camp Mountain, Hayfork Bally			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> No	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Bog & fen, North coast coniferous forest, Wetland (CNDDDB). Wet places, especially sphagnum bogs (Jepson eflora). North Coastal Coniferous Forest, Douglas-Fir Forest, wetland-riparian (Calflora).			
<i>Ceanothus foliosus var. vineatus</i>	<b>Vine hill ceanothus</b>		
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS Rank:</b> 1B.1	<b>State Rank:</b> S1
<b>USGS 7.5' Quad (CNDDDB):</b> Camp Meeker, Legget, Noble Butte, Sebastopol, Tan Oak Park			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Sandy, acidic soil in chaparral (CNDDDB). Rocky slopes, flats, chaparral, woodland, mixed-evergreen forest (Jepson eflora). Chaparral (Calflora).			
<i>Eriogonum kelloggii</i>	<b>Kellogg's buckwheat</b>		
<b>Fed List:</b> None	<b>State List:</b> Endangered	<b>CNPS Rank:</b> 1B.2	<b>State Rank:</b> S2
<b>USGS 7.5' Quad (CNDDDB):</b> Noble Butte, Legget			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> No	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Lower montane coniferous forest. Rocky, serpentine sites (CNDDDB). Serpentine (Jepson eflora). Yellow pine forest. Serpentine affinity: 6.1; strict endemic (Calflora).			
<i>Erythronium revolutum</i>	<b>Coast fawn lily</b>		
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS Rank:</b> 2B.2	<b>State Rank:</b> S3
<b>USGS 7.5' Quad (CNDDDB):</b> Bald Hills, Blue Lake, Board Camp Mtn., Bridgeville, Buckeye Mtn., Dinsmore, Ettersburg, Eureka, French Camp Ridge, Garberville, Grouse Mtn., Holter Ridge, Hupa Mountain, Iaqua Buttes, Johnsons, Korbel, Lord-ellis Summit, Mad River Buttes, Maple Creek, Miranda, Myers Flat, Owl Creek, Piercy, Scotia, Taylor Peak, Weitchpec, Yager Junction			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Bogs and fens, broadleafed upland forest, north coast coniferous forest. Mesic sites, streambanks (CNDDDB). Streambanks, wet places in woodlands (Jepson eflora). Redwood forest, mixed evergreen forest, wetland-riparian (Calflora).			
<i>Gentiana setigera</i>	<b>Mendocino gentian</b>		
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS Rank:</b> 1B.2	<b>State Rank:</b> S2
<b>USGSS 7.5' Quad (CNDDDB):</b> Broken Rib Mtn., Gasquet, High Divide, High Plateau Mtn., Noble Butte			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> No	

**Habitat:** Lower montane coniferous forest, meadows and seeps. Meadows, seeps, and bogs with serpentine substrates (CNDDDB). Streambanks, wet places in woodlands (Jepson eflora). Yellow pine forest, red fir forest, wetland-riparian. Serpentine affinity: 5.8; strict endemic (California).

***Gilia capitata ssp. pacifica***

**Pacific gilia**

**Fed List:** None                      **State List:** None                      **CNPS List:** 1B.2                      **State Rank:** S2

**USGS 7.5' Quads (CNDDDB):** Bridgeville, Larabee Valley, Board Camp Mountain, and Mad River Buttes

**Documented in BAA:** No                      **Potential Habitat in BAA:** Yes                      **Potential Habitat in Project Area:** No

**Habitat:** Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grasslands (CNDDDB). Steep slopes, ravines, open flats, or coastal bluffs, grassland, dunes (Jepson eflora).

***Howellia aquatilis***

**Water howellia**

**Fed List:** None                      **State List:** None                      **CNPS List:** 2B.2                      **State Rank:** S2

**USGS 7.5" Quad (CNDDDB):** Alderpoint, Fort Seward

**Documented in BAA:** No                      **Potential Habitat in BAA:** No                      **Documented in BAA:** No

**Habitat:** Aquatic, freshwater marsh, marsh & swamp, wetland (CNDDDB). Seasonal ponds (Jepson eflora). Freshwater wetlands (California).

***Kopsiopsis hookeri***

**Small groundcone**

**Fed List:** None                      **State List:** None                      **CNPS List:** 2B.3                      **State Rank:** S1S2

**USGS 7.5" Quad (CNDDDB):** Bald Hills, Fish Lake, French Camp Ridge, Holter Ridge, Johnsons, Miranda, Salyer, Weitchpec

**Documented in BAA:** No                      **Potential Habitat in BAA:** Yes                      **Potential Habitat in Project Area:** No

**Habitat:** North coast coniferous forest (CNDDDB). Open woodland, mixed conifer forest, generally on *Gaultheria shallon*, occasionally on *Arbutus menziesii*, *Arctostaphylos* (Jepson eflora).

***Montia howellii***

**Howell's montia**

**Fed List:** None                      **State List:** None                      **CNPS List:** 2B.2                      **State Rank:** S2

**USGS 7.5' Quad (CNDDDB):** Arcata North, Bald Hills, Blocksburg, Briceland, Bridgeville, Buckeye Mountain, Bull Creek, Capetown, Eureka, Ferndale, Fields Landing, Fort Seward, Fortuna, Hupa Mountain, Hydesville, Iaqua Buttes, Korbel, Larabee Valley, Lord-ellis Summit, Mad River Buttes, Maple Creek, McWhinney Creek, Miranda, Myers Flat, Orick, Owl Creek, Panther Creek, Redcrest, Salyer, Scotia, Taylor Peak, Weitchipec, Willow Creek, Yager Junction

**Documented in BAA:** No                      **Potential Habitat in BAA:** Yes                      **Potential Habitat in Project Area:** No

**Habitat:** Meadow & seep, North coast coniferous forest, vernal pool, wetland (CNDDDB). Vernal wet sites, often compacted soils (Jepson eflora). Redwood forest, Freshwater wetlands, Wetland-riparian (California).

***Piperia candida***

**White-flowered rein orchid**

**Fed List:** None                      **State List:** None                      **CNPS Rank:** 1B.2                      **State Rank:** S3

**USGS 7.5' Quad (CNDDDB):** Bald Hills, Blake Mountain, Board Camp Mtn., Briceland, Bridgeville, Buckeye Mtn., Bull Creek, Crannell, Fish Lake, French Camp Ridge, Holter Ridge, Honeydew, Hoopa, Hupa Mountain, Iaqua Buttes, Johnsons, Larabee Valley, Lord-ellis Summit, Mad River Buttes, Maple Creek, Miranda, Myers Flat, Scotia, Showers Mtn., Sims Mountain, Weitchpec, Weott, Willow Creek

**Documented in BAA:** No                      **Potential Habitat in BAA:** Yes                      **Potential Habitat in Project Area:** No

**Habitat:** North coast coniferous forest, lower montane coniferous forest, broadleaved upland forest. Sometimes on serpentine, forest duff, mossy banks, rocky outcrops, and muskeg. (CNDDDB). Open to shady spots, conifer and mixed-evergreen forest (Jepson eflora). Yellow Pine Forest, north coast coniferous forest (California).

<i>Sedum laxum ssp. eastwoodiae</i>		<b>Red Mountain stonecrop</b>	
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS Rank:</b> 1B.2	<b>State Rank:</b> S2
<b>USGS 7.5' Quad (CNDDDB):</b> Noble Butte			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> No	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Lower montane coniferous forest. Serpentine soils among rocks (CNDDDB). Serpentine soils among rocks (Jepson eflora). Yellow Pine Forest. Serpentine affinity: 6.1; strict endemic (California).			
<i>Sidalcea malviflora ssp. patula</i>		<b>Siskiyou checkerbloom</b>	
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS List:</b> 1B.2	<b>State Rank:</b> S1
<b>USGS 7.5' Quad (CNDDDB):</b> Arcata North, Bald Hills, Board Camp Mountain, Bridgeville, Capetown, Denny, Eureka, Ferndale, Fields Landing, Fortuna, Grouse Mountain, Hydesville, Iaqua Buttes, Korb, Maple Creek, Myers Flat, Orick, Owl Creek, Petrolia, Salyer, Scotia, Taylor Peak, Weitchipee, Yager Junction			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Coastal bluff scrub, coastal prairie, north coast coniferous forest (CNDDDB). Open coastal forests, bluffs (Jepson eflora). Occurs usually in wetlands (California).			
<i>Silene campanulata ssp. campanulata</i>		<b>Red Mountain catchfly</b>	
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS Rank:</b> 1B.2	<b>State Rank:</b> S2
<b>USGS 7.5' Quad (CNDDDB):</b> Noble Butte, Leggett, Gilmore Peak			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> No	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Lower montane coniferous forest, chaparral. Rocky dry shallow serpentine soil (CNDDDB). Serpentine, chaparral, conifer forest (Jepson eflora). Yellow pine forest, chaparral. Serpentine affinity: 5.3; broad endemic (California).			
<i>Tracyina rostrata</i>		<b>Beaked Tracyina</b>	
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS List:</b> 1B.2	<b>State Rank:</b> S2
<b>USGS 7.5' Quad (CNDDDB):</b> Alderpoint, Fort Seward, Jewett Rock			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Broadleaved upland forest, North coast coniferous forest, Ultramafic (CNDDDB) Shale, serpentine, open sites, forest (Jepson eflora). North Coastal Coniferous Forests (California).			
<i>Viburnum ellipticum</i>		<b>Oval-leaved viburnum</b>	
<b>Fed List:</b> None	<b>State List:</b> None	<b>CNPS List:</b> 2B.3	<b>State Rank:</b> S3?
<b>USGS 7.5' Quad (CNDDDB):</b> Bell Springs, Cahto Peak, Harris, Hopland, Iron Peak, Laytonville, Leggett, Purdy Gardens, Tan Oak Park			
<b>Documented in BAA:</b> No	<b>Potential Habitat in BAA:</b> Yes	<b>Potential Habitat in Project Area:</b> No	
<b>Habitat:</b> Chaparral, cismontane woodland, lower montane coniferous forest (CNDDDB). Chaparral, yellow pine forest, generally on north facing slopes (Jepson eflora). Yellow pine forest, chaparral (California).			

#### 4.4 Potential Impacts

##### 4.4.1 Sensitive Natural Communities and Plant Species of Special Concern

The proposed project consists of pre-existing cultivation sites and existing road surfaces. The project does not propose any new ground disturbance. The project does not pose a risk of impacting sensitive natural communities or plant species of special concern potentially present within the BAA.

#### **4.4.2 Water Quality and Aquatic Habitats**

The use and maintenance of the native surfaced road network, the upkeep of other unvegetated surfaces (landings, terraces, cut banks, etc.), and general operations in steep rugged terrain increases the risk of erosion and sediment transportation. Additionally, the storage and use of agricultural nutrients, pesticides, herbicides, and fuels in steep rugged terrain also presents risks of pollutant discharge to surface waters. With pre-existing sites these impacts generally are indirect. Potential water quality impacts associated with this project are managed through enrollment in the state waste discharge program (Order WQ 2019-0001 DWQ). Enrollment in this program will assure the site is actively managed to mitigate potential water quality impacts through implementation of the Site Management Plan.

#### **4.4.3 Northern Spotted Owl Assessment**

The BAA contains both potential nesting/roosting habitat and foraging habitat for NSO. The proposed project does not risk the removal of any potential northern spotted owl (NSO) habitat. Potential threats to NSO associated with this project are solely disturbance-based.

Daily activities associated with this project are expected to produce Very Low [51-60 dB(A)] sound levels. These activities include watering, pulling of tarps, maintenance of plants, amplified music, and light vehicle traffic below 30 mph. These activities will not impact potentially present NSO (USFWS 2006). The only activities associated with this project that may impact potentially present NSO within the BAA are supplemental light use and increased noise levels associated with the use of heavy equipment. Both of these impacts are mitigatable. Potential light pollution impacts may be mitigated by covering lit greenhouses prior to sunset and after sunrise, if lighting is ceased during the evening hours covers may be removed prior to sunrise. Conditions that may potential generate sounds exceeding 70 dB(A) include the use of a fuel powered generator or the use of heavy equipment.

Fuel powered generators are the most common for projects in rural settings with no power connection. The Commercial Cannabis Cultivation Land Use Ordinance states in Section 55.4.6.3.1 Energy Source: "Electricity must be exclusively provided by a Renewable Energy Source, meeting the Performance Standard for Energy Use." To comply with this condition, the applicant has proposed sourcing the majority of electricity from a solar panel and battery bank power system. This energy source is not expected to impact NSO.

The use of heavy equipment during construction or potential road improvements poses the risk of exceeding the 70 dB(A) noise threshold within potential NSO nesting/roosting habitat. Heavy equipment includes but is not limited to road graders, dump trucks, excavator, dozers, and back-hoes. The USFWS (2006) noise assessment contains a general list of heavy equipment and their dB(A) output. If construction will utilize heavy equipment that may exceed the sound level threshold for NSO disturbance, two options are recommended:

- 1) Restrict the use of heavy equipment within the mapped northern spotted owl nesting/roosting habitat to outside of the critical period for this species (February 1<sup>st</sup> through July 31<sup>st</sup>). Heavy equipment is defined as road graders, dozers, dump trucks, excavators, back-hoes, or any mechanical equipment that generates greater than 70 dB(A) at 23' or 7 meters.
- 2) Survey for northern spotted owls per the Protocol for Surveying Proposed Management Activities that May Impact Northern Spotted Owls, USFWS 2012. Surveys should be conducted per Section 9.0 Surveys for Disturbance Only Projects.

If these recommendations are adhered to. The proposed project is unlikely to impact potentially present NSO within the BAA.

#### **4.4.4 Bird Species of Special Concern**

The proposed project has no potential to impact any Bird Species of Special Concern. The project does not propose to remove any potential nesting or foraging habitat. Golden eagles are the only Bird Species of Special Concern that have potential to be found within the BAA. This potential is associated with the high-

quality foraging habitat present within the BAA. No potential nesting habitat was observed in property. The operation of the existing cultivation sites is unlikely to impact foraging golden eagles within the BAA.

#### **4.4.5 Mammal Species of Special Concern**

The proposed development of the Project Area is unlikely to impact any mammals of special concern. The Project Area does not contain key habitat for any Mammal Species of Special Concern. Although the BAA does contain potential habitat for multiple species of special concern, proposed expansion will not remove habitat from these potential species' ranges. Additionally, the applicant states no chemical rodenticides will be used in association with the cannabis cultivation.

#### **4.4.6 Reptilian/Amphibian Species of Special Concern**

Implementation of best practicable treatment controls (BPTC) as outlined in the Site Management Plan (SMP) will reduce all risks to amphibian species of special concern. Additional conformance with CDFW 1600 code and Humboldt County Stream Management Ordinance will prevent potential impacts to these species. The Project Area does not contain any potential habitat for Reptilian/Amphibian Species of Special Concern. This project does not pose any risk of impacting these species.

#### **4.4.7 Invasive Species**

No invasive plant or wildlife species were observed during the site visit. Perennial grassland habitat throughout the BAA is dominated by nonnative species but no invasive species per the Humboldt County Weed Management Area were identified. Section 55.4.12.16 of the CCLUO states: "*It is the responsibility of a certificate or permit holder to work to eradicate invasive species. As part of any application, the existences of invasive species on the project parcel need to be identified, including the type(s) of invasive plant species, where they are located, and a plan to control their spread.*" It is recommended the site operator familiarize themselves with the Invasive Weeds of Humboldt County 2<sup>nd</sup> Edition and continue to maintain an invasive weed free project. If identified any invasive species should be documented and eradicated. Additionally, the site operator should utilize weed-free straw mulch, straw wattles, and other erosion control that may contain seed or plant matter from other areas.

### **5.0 Recommendations**

- Comply with SWQCB Order No. 2019-0001-WQ. This includes but is not limited to complying with standard conditions, performing corrective actions identified in the SMP, implementing BPTCs, and participating in monitoring/reporting requirements.
- Remove any identified invasive plant species if they are found on-site during the life of the project.
- Do not use any form of chemical rodenticide. Manual rodent traps are recommended.
- Any significant changes to the project scope from the proposal outlined within this report should re-assess the potential for significant impacts to biological resources.

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# Appendixes

**Appendix 1 - General Location Map**  
**USGS Topographic**

 Property Boundary

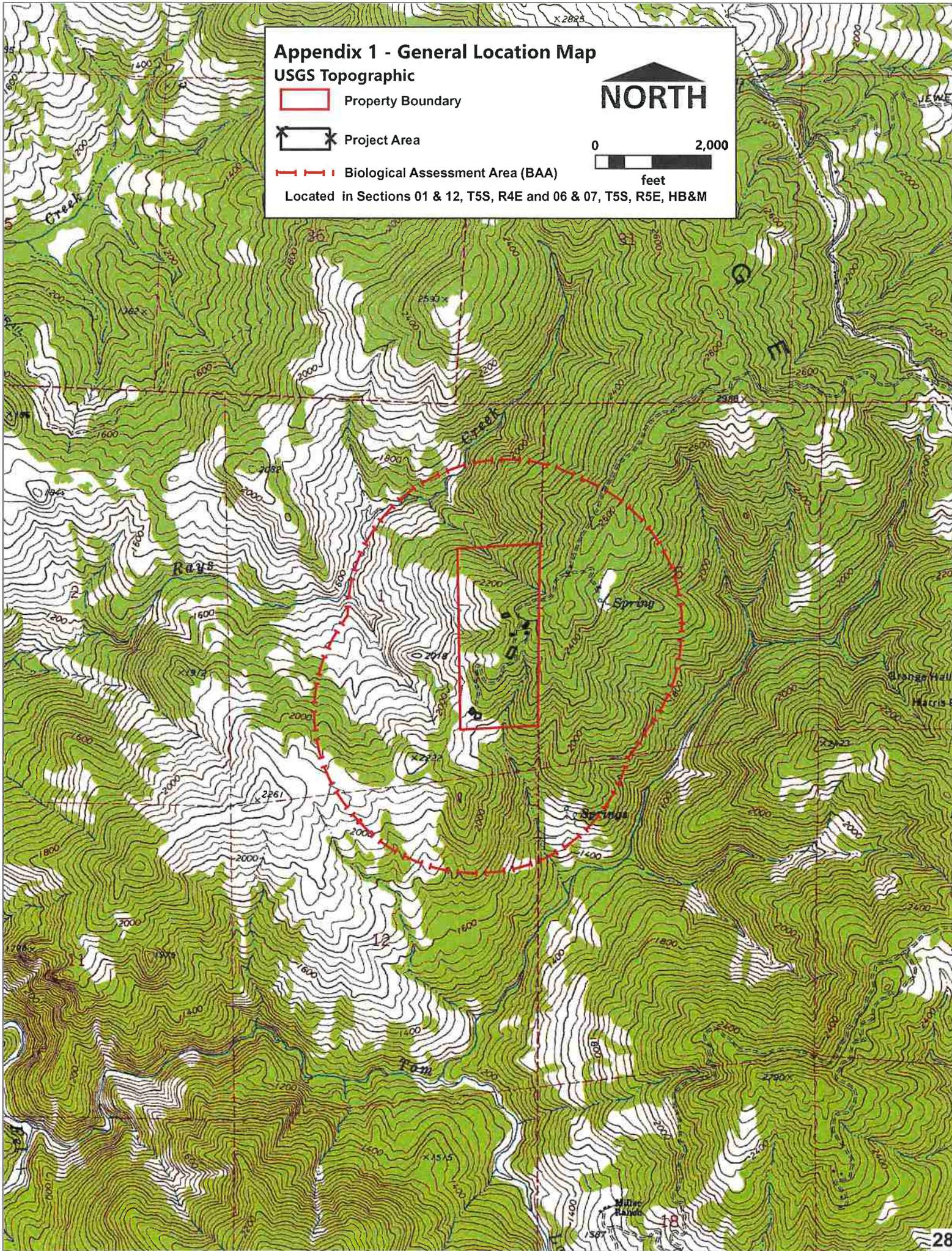
 Project Area

 Biological Assessment Area (BAA)

0  2,000  
feet

**NORTH**

Located in Sections 01 & 12, T5S, R4E and 06 & 07, T5S, R5E, HB&M



## Appendix 2 – Project Area Photographs



Photo 1: Aerial photograph of the lower Project Area taken. Photo was taken by TRC staff on 10/22/2019.

## Appendix 2 – Project Area Photographs



Photo 2: Aerial photograph of the middle (largest) Project Area. Photo was taken by TRC staff on 10/22/2019.

## Appendix 2 – Project Area Photographs



Photo 3: Aerial photograph of the two smaller Project Areas east of the access road. Photo was taken by TRC staff on 10/22/2019.

## Appendix 2 – Project Area Photographs



Photo 4: Aerial photograph of the northern smaller Project Area west of the access road. Photo was taken by TRC staff on 10/22/2019.

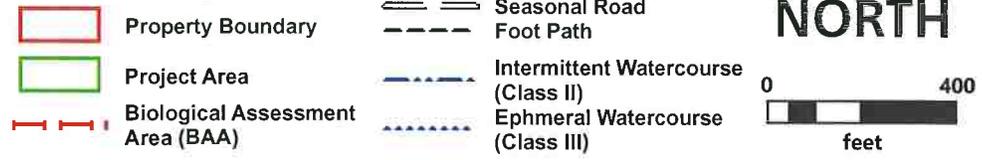
## Appendix 2 – Project Area Photographs



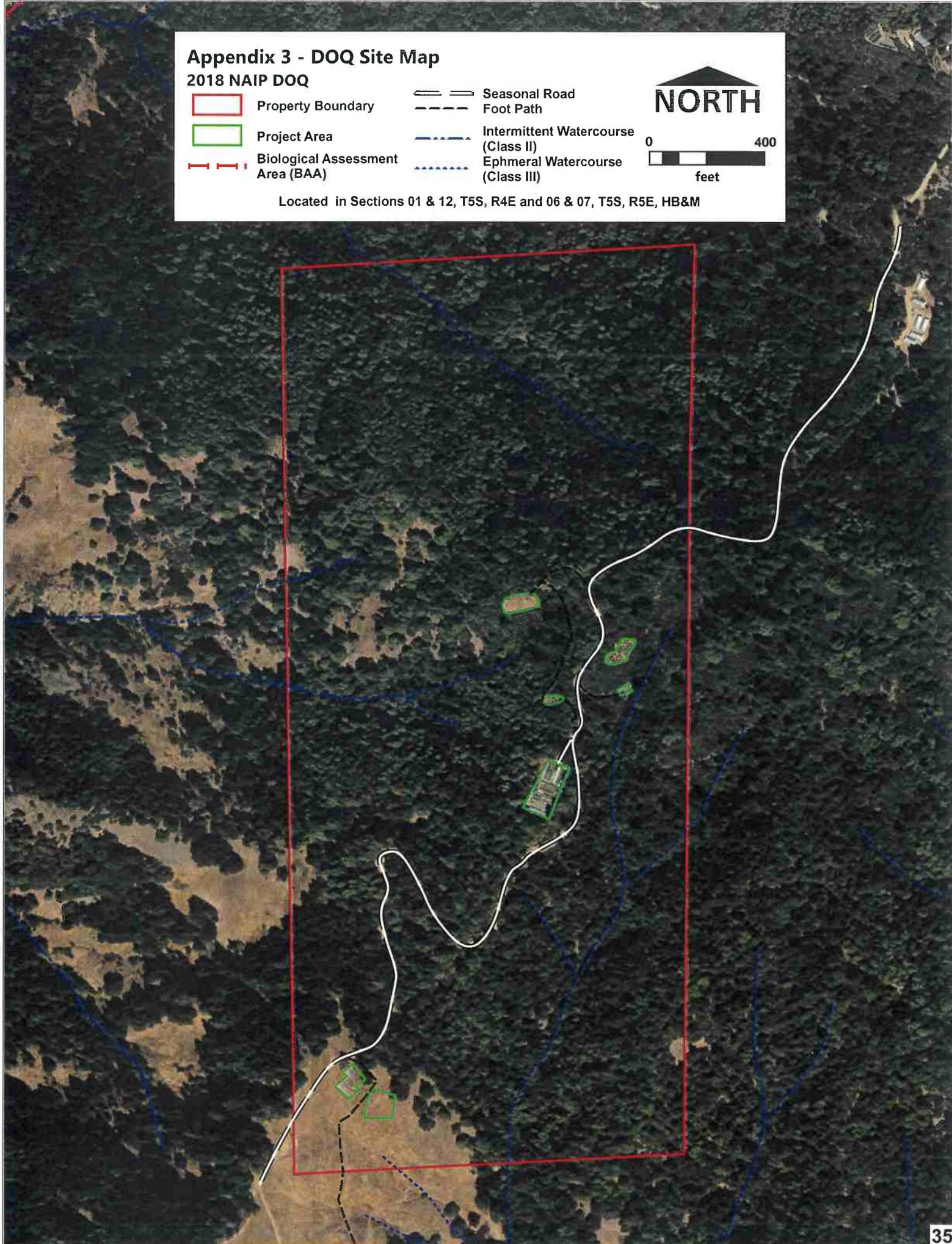
Photo 5: Aerial photograph of the southern smaller Project Area west of the access road. Photo was taken by TRC staff on 10/22/2019.

# Appendix 3 - DOQ Site Map

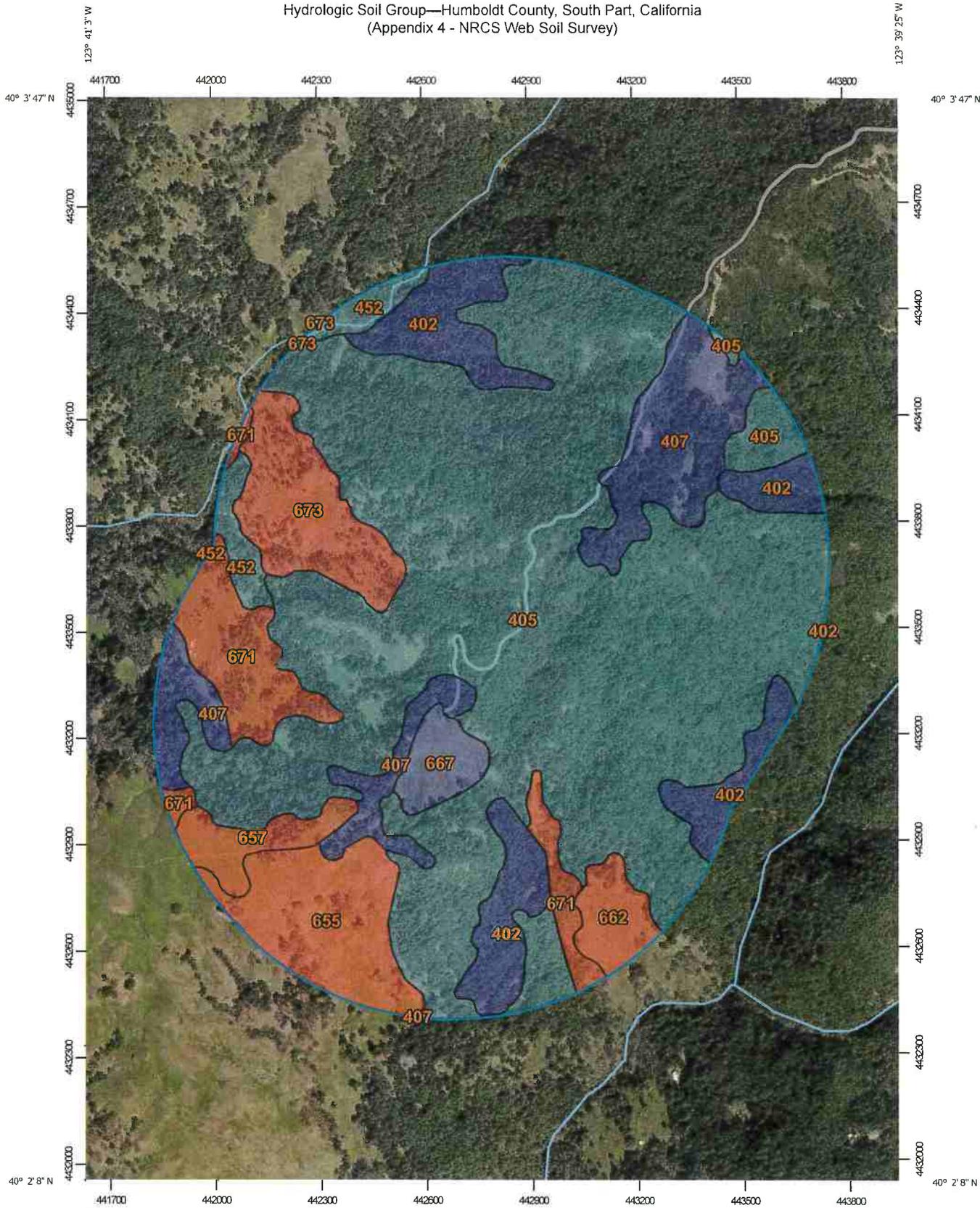
2018 NAIP DOQ



Located in Sections 01 & 12, T5S, R4E and 06 & 07, T5S, R5E, HB&M



Hydrologic Soil Group—Humboldt County, South Part, California  
(Appendix 4 - NRCS Web Soil Survey)



Map Scale: 1:14,900 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

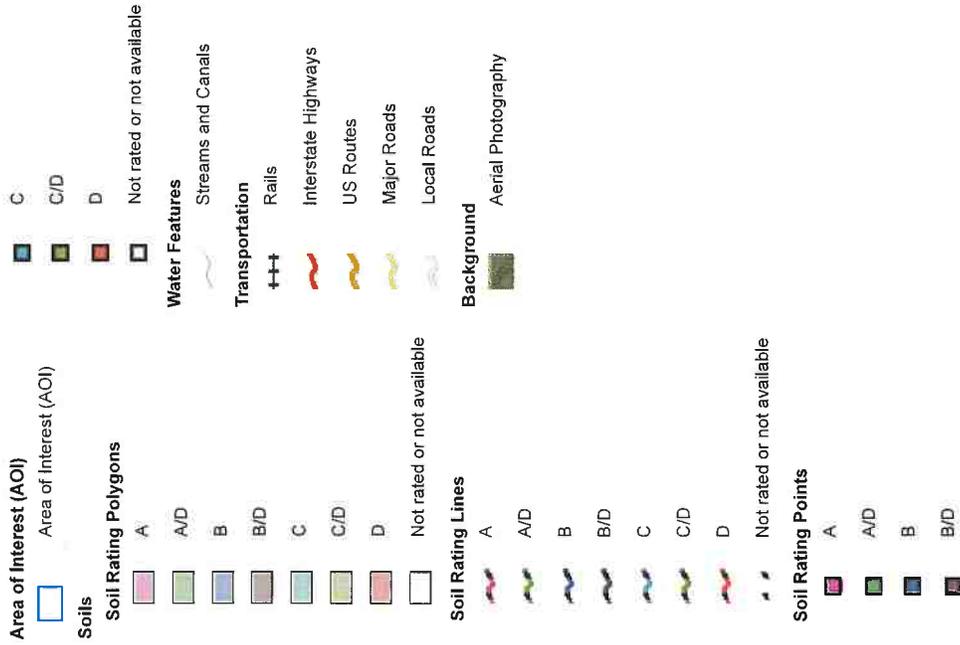


Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

12/5/2019  
Page 1 of 4

## MAP LEGEND



## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, South Part, California  
Survey Area Data: Version 8, Sep 17, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 30, 2014—Nov 6, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
402	Tannin-Wohly-Rockyglen complex, 50 to 75 percent slopes	B	64.4	8.3%
405	Tannin-Wohly-Rockyglen complex, 30 to 50 percent slopes	C	472.3	60.6%
407	Tannin-Wohly complex, 9 to 30 percent slopes	B	68.1	8.7%
452	Burgsblock-Coolyork-Tannin complex, 30 to 50 percent slopes	C	14.5	1.9%
655	Yorknorth-Witherell complex, 15 to 30 percent slopes	D	43.6	5.6%
657	Yorknorth-Witherell complex, 2 to 15 percent slopes	D	14.1	1.8%
662	Yorknorth-Witherell complex, 30 to 50 percent slopes	D	13.0	1.7%
667	Dryfield-Yorknorth-Witherell complex, 5 to 30 percent slopes	B	12.5	1.6%
671	Coolyork-Yorknorth complex, 5 to 30 percent slopes	D	40.0	5.1%
673	Coolyork-Yorknorth complex, 30 to 50 percent slopes	D	37.2	4.8%
<b>Totals for Area of Interest</b>			<b>779.7</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

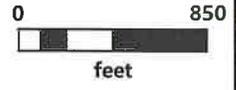
# Appendix 5 - General Habitat Map

2018 NAIP DOQ

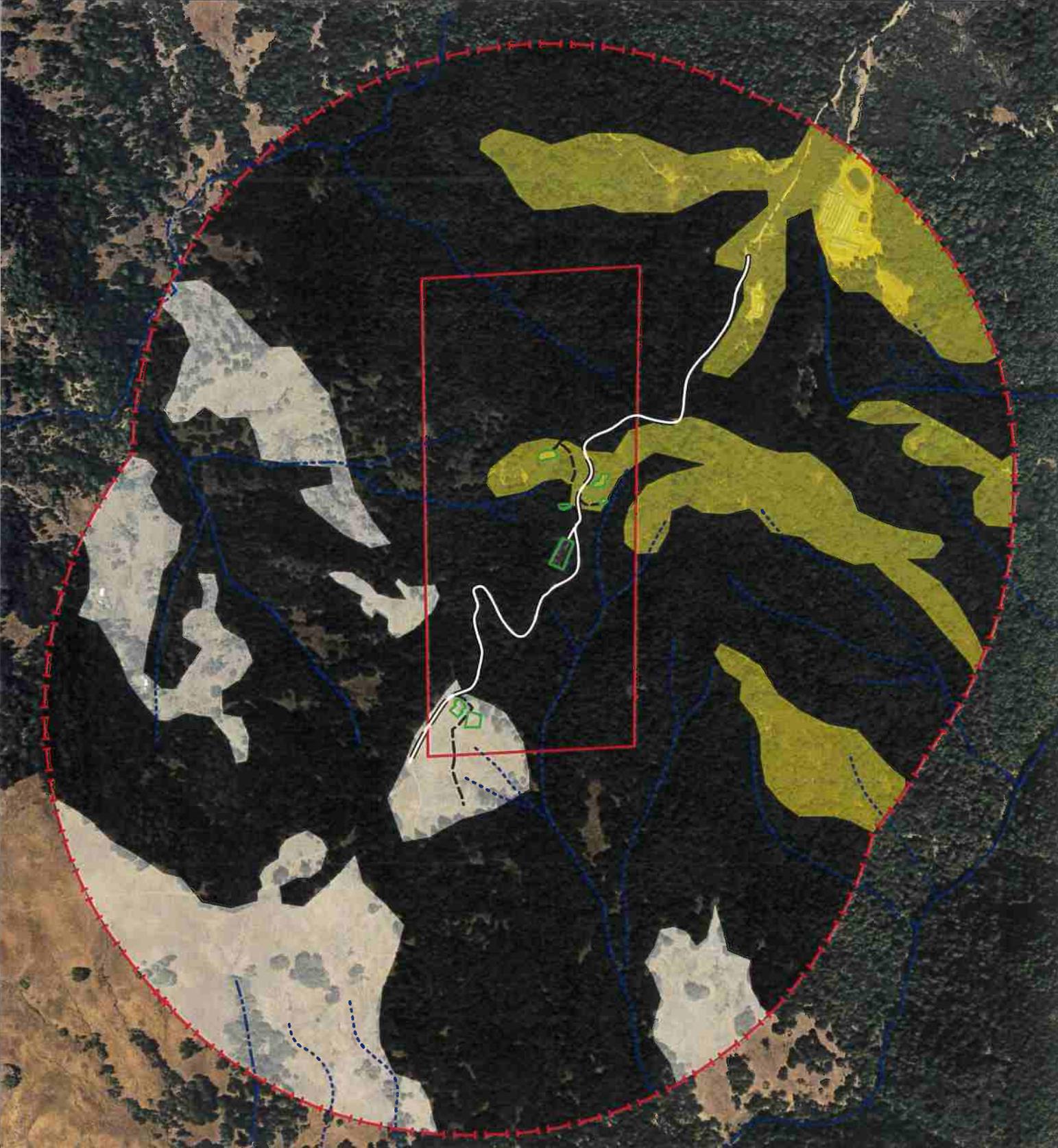
-  Property Boundary
-  Project Area
-  Biological Assessment Area (BAA)

-  Seasonal Road
-  Foot Path
-  Intermittent Watercourse (Class II)
-  Ephemeral Watercourse (Class III)

- Terrestrial Habitats
-  Montane Hardwood Conifer
  -  Montane Chaparral
  -  Perennial Grassland

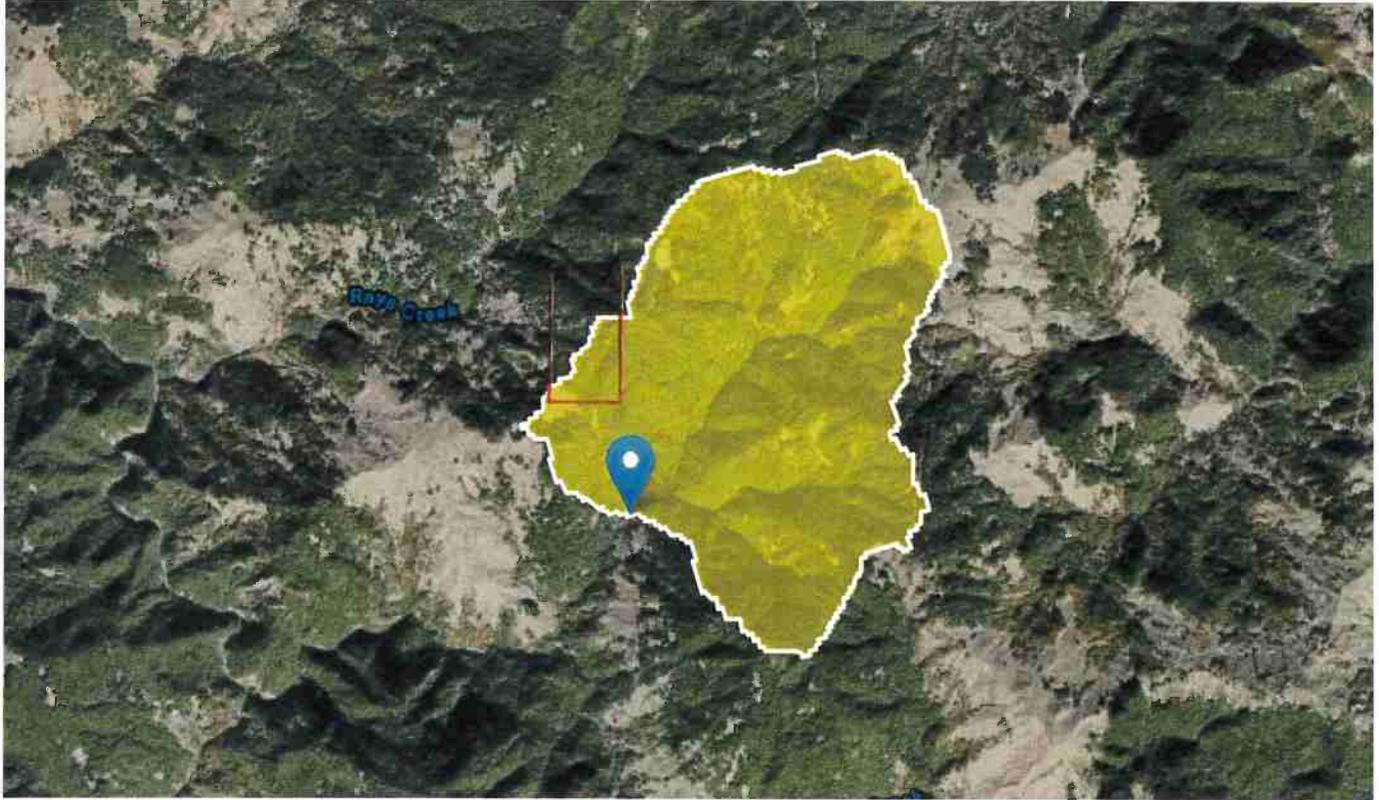


Located in Sections 01 & 12, T5S, R4E and 06 & 07, T5S, R5E, HB&M



# Appendix 6 - StreamStats Report

Region ID: CA  
 Workspace ID: CA20191205191900805000  
 Clicked Point (Latitude, Longitude): 40.03923, -123.66623  
 Time: 2019-12-05 11:19:17 -0800



Watershed data from unnamed intermittent tributary to Tom Long Creek. The majority of the BAA and project parcel are located within this watershed.

## Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.7	square miles
PRECIP	Mean Annual Precipitation	81.1	inches
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	9.13	miles
BSLDEM30M	Mean basin slope computed from 30 m DEM	40.9	percent

Parameter Code	Parameter Description	Value	Unit
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	-2305789.7	meters
CENTROIDY	Basin centroid vertical (y) location in state plane units	2230197.6	meters
EL6000	Percent of area above 6000 ft	0	percent
ELEV	Mean Basin Elevation	2105	feet
ELEVMAX	Maximum basin elevation	2932	feet
FOREST	Percentage of area covered by forest	54.8	percent
JANMAXTMP	Mean Maximum January Temperature	53.05	degrees F
JANMINTMP	Mean Minimum January Temperature	36.97	degrees F
LAKEAREA	Percentage of Lakes and Ponds	0	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	1.8	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0	percent
LFPLENGTH	Length of longest flow path	3	miles
MINBELEV	Minimum basin elevation	1275	feet
OUTLETELEV	Elevation of the stream outlet in thousands of feet above NAVD88.	1275	feet
RELIEF	Maximum - minimum elevation	1656	feet
RELRELF	Basin relief divided by basin perimeter	181	feet per mi

Peak-Flow Statistics Parameters [2012 5113 Region 1 North Coast]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.7	square miles	0.04	3200
PRECIP	Mean Annual Precipitation	81.1	inches	20	125

Peak-Flow Statistics Flow Report [2012 5113 Region 1 North Coast]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	SEp
2 Year Peak Flood	336	ft <sup>3</sup> /s	137	824	58.6
5 Year Peak Flood	583	ft <sup>3</sup> /s	277	1220	47.4
10 Year Peak Flood	756	ft <sup>3</sup> /s	373	1530	44.2
25 Year Peak Flood	979	ft <sup>3</sup> /s	500	1920	42.7
50 Year Peak Flood	1150	ft <sup>3</sup> /s	584	2250	42.7
100 Year Peak Flood	1320	ft <sup>3</sup> /s	656	2660	44.3
200 Year Peak Flood	1480	ft <sup>3</sup> /s	735	2990	44.4
500 Year Peak Flood	1700	ft <sup>3</sup> /s	822	3520	46

*Peak-Flow Statistics Citations*

**Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles, 2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012-5113, 38 p., 1 pl. (<http://pubs.usgs.gov/sir/2012/5113/>)**

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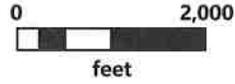
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Application Version: 4.3.11

**Appendix 7 - CNDDDB Occurrence Map**  
2018 NAIP DOQ

-  Property Boundary
-  Project Area
-  Biological Assessment Area (BAA)
-  Element Occurrence



Located in Sections 01 & 12, T5S, R4E and 06 & 07, T5S, R5E, HB&M

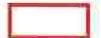
*Viburnum ellipticum*

*Erethizon dorsatum*

*Usnea longissima*

# Appendix 8 - NSO Habitat Map

2018 NAIP DOQ

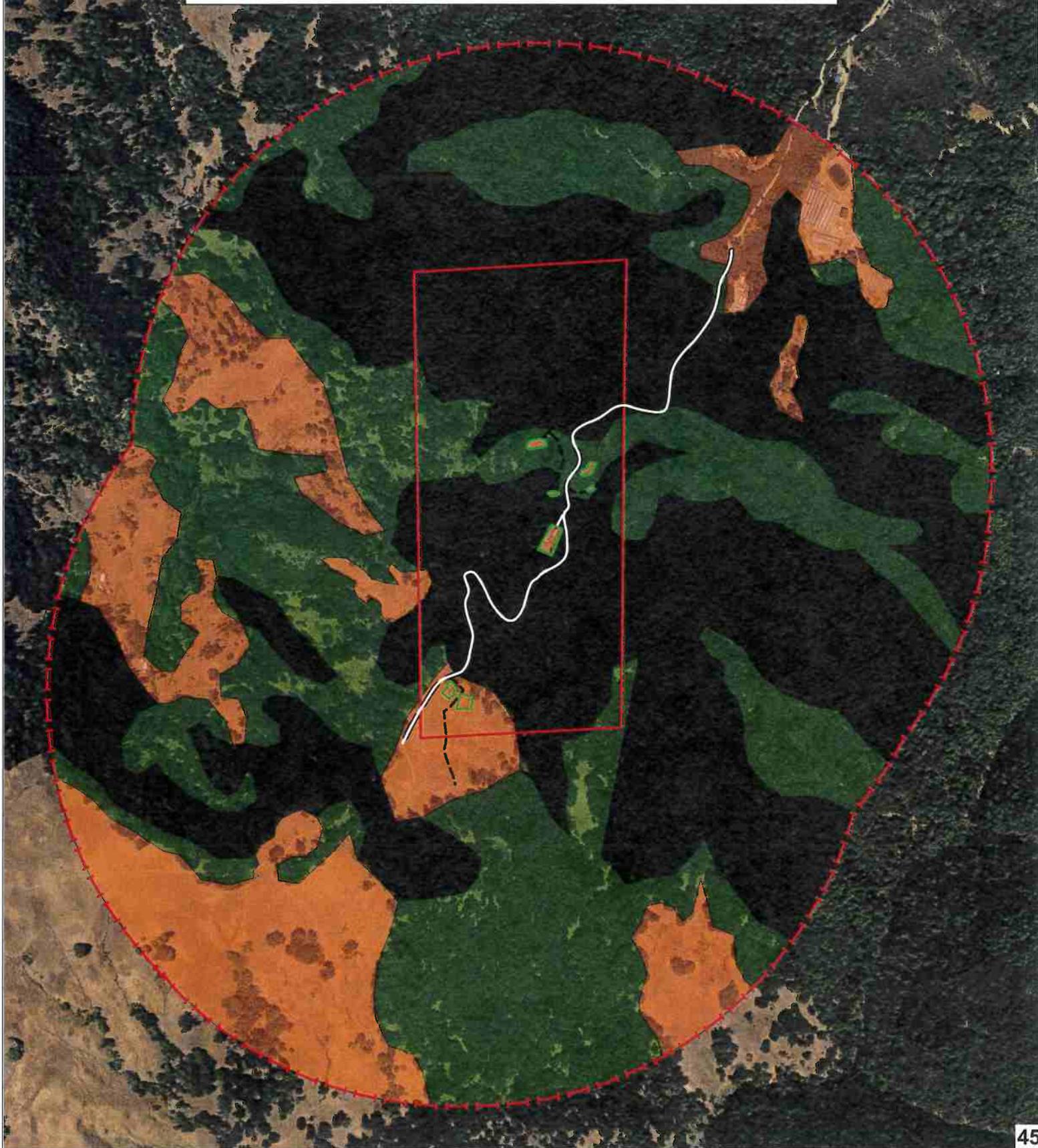
-  Property Boundary
-  Project Area
-  Biological Assessment Area (BAA)

-  Seasonal Road
-  Foot Path
-  Nesting/Roosting Habitat
-  Foraging Habitat
-  Non-habitat

  
**NORTH**

0  850  
feet

Located in Sections 01 & 12, T5S, R4E and 06 & 07, T5S, R5E, HB&M



# Appendix 9 - Spotted Owl Database Map

## Spotted Owl Observations [ds704]

- Nest
- Young
- Pair
- Other Positive Observation
- Negative Observation
- Activity Center
- Abandoned Activity Center
- Not Valid Activity Center
- Spotted Owl Observations Spider Diagram [ds705]

