

**Biological Assessment
for
APN 107-272-007-000
08/12/2021**



Prepared for:
Xotic Flavorz, LLC.

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1.0 Summary of Recommendations

This assessment found minimal risks to biological resources as a result of the proposed project prior to recommended mitigations. Potential risks to biological resources are generally associated with vegetation removal, while wildlife resources are less at risk. Although risks to wildlife resources from the project are minimal, this report contains additional mitigations to further reduce potential. A table of recommendations that will mitigate risks to biological resources has been included below.

CCLUO Mitigation	Activity	Mitigation Type	Method	Season
3.4-3b	Commercial cannabis cultivation	Invasive Plant Species	Educate and remain vigilant for encroachment of invasive species	Life of project

2.0 Introduction

2.1 Purpose and Need

This Biological Assessment has been prepared for Xotic Flavorz, LLC. The following report is being submitted to fulfill Humboldt County Commercial Cannabis Land Use Ordinance (CCLUO) 2.0 requirement 55.4.12.1.10 Mitigation Measure #3.4-1a Biological Reconnaissance Surveys. This report contains descriptions of existing site conditions with additional analysis on their relationship to animal species of special concern, plant species of special concern, sensitive natural communities, and potential environmental impacts prepared by a qualified biologist.

2.2 Project Description

The project proposes expansion of cannabis cultivation directly adjacent to existing licensed cultivation on the Project Parcel, APN 107-272-007-000. The Project Parcel is located in Honeydew, California, 95545 and is located in the Northwest ¼ of Section 6, T3S, R1E, HB&M.

Current existing cultivation is being operated under county license numbers PLN-13027-ZCC and PLN-12336-ZCC. Current cultivation under these licenses consists of 18,330 sq. ft. of light deprivation cultivation and 25,000 sq. ft. of mixed light cultivation. Additional existing development includes a dirt road network, a single-family residence, a rain catchment pond and a processing facility.

For the purposes of this report, a Project Area is defined as a location where activities directly related to cultivation will occur such as break room/housing, cultivation areas, and structures storing cultivation materials. This is the only location where direct impacts have the potential to occur. All proposed new development will occur within the Project Area. The Project Area is proposed within disturbed ground directly adjacent to the existing active cultivation area associated with the existing licensed cultivation. Proposed development will not result in any tree or shrub removal. Proposed new cultivation includes 33,560 sq. ft. of full-sun cultivation. This report focuses on the proposed development and existing licensed cultivation is considered baseline conditions.

2.3 Biological Assessment Area

Cultivation activities have the potential to indirectly impact species outside of the Project Area. These indirect impacts most often take the form of disturbance. As a result, this report assesses potential presence of protected and/or rare species and potential biological resources within a biological assessment area (BAA). The BAA represents the largest territory for federally or state protected wildlife species that

have potential to occur within the BAA. The BAA consists of a 1.3-mile buffer that reflects the largest territory for inland northern spotted owls (*Strix occidentalis caurina*). The BAA encompasses the Project Parcel and portions of surrounding private parcels. Current land uses within the BAA consist of rural residences, cattle ranching, commercial cannabis cultivation, and other agricultural practices.

3.0 Regulatory Background

3.1 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.

3.2 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.

3.2.1 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.

3.2.2 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.

3.2.3 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.

3.2.4 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, and coastal oak woodlands.

3.2.5 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)

4.0 Methods

4.1 Field Observations

All field data was collected by wildlife biologists, Jack Henry and Nicole Bogle, using direct observations, measurements, and ocular estimations during site visits conducted on August 10, 2021. 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. Slope percent was measured using a Suunto PM-5/360 PC Clinometer to the nearest degree. The reach of direct field observations covered terrestrial and aquatic habitat present within the Project Parcel.

4.2 Statement of Qualifications

This report has been prepared by Wildlife Biologist Jack Henry and Associate Wildlife Biologist Nicole Bogle. Jack and Nicole both possess a Bachelor of Science from Humboldt State University in Wildlife Conservation and Management. Jack Henry has nine years of experience performing assessments for threatened and endangered species as well as their associated habitat, largely focused on avian species. Jack has been conducting watershed assessments as well as drafting and implementing associated permits for mitigation/remediation for six years. Jack has also completed basic and advanced training courses from Wetland Training Institute with four years of experience in wetland delineations. Nicole Bogle has seven years of experience performing wildlife management in California with five of those years focused on northern spotted owls in Humboldt County.

4.3 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.

4.4 Sensitive Biological Resources

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 5.0.

4.4.1 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 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 Special Animals List (Sept. 2021). The plant list uses information from the Special Vascular Plants Bryophytes and Lichens List (Sept. 2021) and Endangered Threatened and Rare Plants (Sept. 2021). 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?cm=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).

4.5 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.

4.5.1 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 2020). This report assesses NSO presence within 1.3 miles of the Project Area, although this may exceed the territory size for NSO within the coastal redwood ecotype (USFWS 2011). Impact assessments related to project activities and NSO are based on USFWS guidance.

5.0 Results and Discussion

5.1 Terrestrial Habitats

The climate can be characterized by high-intensity rainfall over winter and warm arid summers. Annual mean rainfall is approximately 76.4 inches (Appendix 6). Elevations within the BAA range from 310’-3100’ above mean sea level. Slopes in the BAA vary from gravel river flats to steep montane drainages. The BAA drains into the Mattole River. The Project Parcel overlaps with three different soil types. They are delineated and mapped within the attached NRCS Web Soil Survey Report (Appendix 4). None of these soil types are known to contain edaphic characteristics. Terrestrial habitat present within the Project Parcel consists of Annual Grassland. Additional habitats within the BAA include: Montane Hardwood, Montane Hardwood-Conifer, Cropland, Douglas-fir, and Montane Riparian. A map of terrestrial habitats is attached in Appendix 5.

Annual grassland (AGS) is the most prominent terrestrial habitat type within the BAA and the Project Parcel. This habitat is characterized by dominance of annual grasses with variable shrub component and sporadic small groups of trees. Historic grazing practices in California resulted in the dominance of non-native annual grass species (HilleRisLambers et al 2010, Kie 1988). AGS within the BAA is likely mowed and/or grazed. Dominant species within the Project Parcel include wild oat (*Avena spp.*) and Yorkshire fog (*Holcus lanatus*). English plantain (*Plantago sp.*), Italian thistle (*Carduus pycnocephalus*), and field mustard (*Brassica rapa*) occur as incidental species within the Project Parcel. The Project Parcel also includes semi-natural areas of human development with sporadic ornamental and fruit trees. AGS habitat is most often utilized as foraging for the majority of wildlife and often requires special habitat features to provide shelter or reproductive habitat (Kie 1988).

Montane Hardwood-Conifer (MHC) habitat is present in the BAA where conifer and hardwood forest habitats intergrade. This terrestrial habitat type has overall been increasing across the BAA, and in Humboldt County. This increase is a result of long-term fire suppression across habitats that historically experienced more frequent burnings (Cocking et al 2015, Schriver et al 2018). Species composition is highly variable and generally displays conifer/hardwood co-dominance with acute areas showing single species dominance. Dominant tree species observed within MHC habitat consists of Douglas-fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus*), Oregon white oak (*Quercus garryana*), and California bay laurel (*Umbellularia californica*). California black oak (*Quercus kelloggii*), pacific madrone (*Arbutus menziesii*), California buckeye (*Aesculus californica*), and canyon live oak (*Quercus chrysolepis*) are present as intermediates. Natural communities observed in the BAA include: *Pseudotsuga menziesii* – *Umbellularia californica* Forest Alliance, *Pseudotsuga menziesii* – *Quercus garryana* Forest Alliance, and *Pseudotsuga menziesii* – *Notholithocarpus densiflorus* Forest Alliance. Understory vegetation varies due to canopy closure and species variation. Closed canopy areas are often dominated by bare ground and thick layers of leaf litter. Some areas that intergrade with Douglas-fir

(DFR) habitat contain dense evergreen huckleberry (*Vaccinium ovatum*) understory vegetation. MHC habitat with canopy closure <50% displays more herbaceous plants often with some annual grasses, similar to AGS habitats. Forest openings in MHC habitat are often dominated by shrub species such as blue blossom (*Ceanothus thyrsiflorus*), ironwood (*Holodiscus discolor*), and coyote brush (*Baccharis pilularis*).

Montane hardwood (MHW) habitat is present in the BAA in the form of residual oak woodlands and broadleaf evergreen forests. Inverse to MHC habitat, fire suppression has resulted in the reduction of this habitat type as conifer species encroach and shade out hardwoods (Cocking et al 2015, Schriver et al 2018). MHW habitat within the BAA may be subdivided by dominant natural plant community. These subdivisions are *Quercus garryana* Woodland Alliance, *Umbellularia californica* Forest Alliance, and *Notholithocarpus densiflorus* Forest Alliance. Canyon live oak, California buckeye, pacific madrone, big leaf maple (*Acer macrophyllum*), and Douglas-fir occur as intermediates. The understory vegetation varies in composition. Areas with closed canopies support less dense understories with more shade tolerant species such as evergreen huckleberry, poison oak (*Toxicodendron diversilobum*), pink honeysuckle (*Lonicera hispidula*), sword fern (*Polystichum munitum*), and pacific dewberry (*Rubus ursinus*). MHW habitat with more open canopy display understories containing nonnative grasses such as sweet vernal grass (*Anthoxanthum odoratum*) and orchard grass (*Dactylis glomerata*) intermixed with native species including coyote brush, wood rose (*Rosa gymnocarpa*), bracken fern (*Pteridium aquilinum*), western columbine (*Aquilegia formosa*), pale flax (*Linum bienne*), and firecracker flower (*Dichelostemma ida-maia*).

Montane Riparian habitat (MRI) is present in acute areas within the BAA along the Mattole River and residual communities within margins of croplands. This terrestrial habitat has been historically reduced in the state as a result of conversion to other land uses. This habitat type is often characterized by an overstory of deciduous riparian hardwood trees with a dense shrub layer beneath. Tree dominance can be variable but black cottonwood (*Populus trichocarpa*), alder (*Alnus spp.*) and willow (*Salix spp.*) species are the most commonly encountered trees. Shrub layer is dominated by California blackberry, nettle (*Urtica dioica*) and black twinberry (*Lonicera involucrate* var. *ledebourii*). In areas where the shrub layer is lacking, often due to hydrology, riparian herbaceous plants can be found. These include common horsetail (*Equisetum arvense*), rushes (*Juncus spp.*), and watercress (*Nasturtium officinale*).

Douglas-fir (DFR) habitat is present concentrated in the northeast section within the BAA. This habitat is generally dominated by Douglas-fir but may contain small stands dominated by either tanoak or redwood (*Sequoiadendron sempervirens*). Other trees present as intermediates include canyon live oak, California black oak, tanoak, and pacific madrone. Stands dominated by Douglas-fir with canopy closure often display dense evergreen huckleberry understory with bare ground, beaked hazel (*Corylus cornuta*), and sword fern. Areas with less canopy cover or forest openings contain annual grasses with dense shrub layer consisting of coyote brush, blue blossom, California coffeeberry (*Frangula californica*), poison oak, and willow. DFR intergrades with AGS habitat where the forest edge meets grasslands, resulting in more herbaceous understory vegetation including nonnative annual grasses and dense communities of bracken fern.

Cropland habitat (CRP) is also present in the BAA in acute areas. This habitat type consists of agricultural fields where crops are cultivated without structures. This habitat type has the potential to function analogous to AGS habitat and likely only provides potential forage habitat for wildlife.

The final terrestrial habitat type present in the BAA is Barren (BAR). This habitat consists of seasonally exposed gravel bars within the Mattole River channel migration zone. This habitat type is most often devoid of any vegetation. There are some locations where vegetation has persisted through annual high flow events, this vegetation most often consists of willow species.

No California Natural Community alliances were observed within the Project Parcel during initial site visit. The Project Parcel was mowed due to fire risk, making identification of natural communities problematic. Based on observations of neighboring habitat and species present, the Project Parcel is dominated by nonnative annual grasses such as sweet vernal grass.

5.2 Sensitive Biological Communities

5.2.1 Aquatic Habitats

The BAA overlaps with the Honeydew Creek watershed (HUC12#180101070204), Lower Mattole River watershed (HUC12#180101070209), Middle Mattole River watershed (HUC12#180101070205), and Upper North Fork Mattole River (HUC12#180101070206). Aquatic habitat in the BAA consists of riverine habitats. Riverine habitats display multiple hydrologic types including perennial (Class I), intermittent (Class II), and ephemeral (Class III) watercourses. The Mattole River flows through the center portion of the BAA. No watercourses are present within the Project Parcel. The Project Parcel contains one lined pond feature, which does not provide aquatic habitat.

The BAA overlaps with approximately 4.2 miles of the Mattole River. This perennial watercourse drains approximately 184 square miles before entering the BAA. The reach of the Mattole within the BAA contains riffle/glide habitat that varies as a result of seasonal flow changes. Summer steelhead (*Oncorhynchus mykiss irideus pop. 36*) have been documented within the reach of the Mattole River overlapped by the BAA. The Mattole offers cool temperature, cobble substrates, and perennial riffle/glide habitat which is critical potential salmonid habitat. The Project Area is approximately 900 feet from the Mattole River.

The "California Native Fish Species by Watershed" CNDDDB GIS layer documents these species as native to the Lower Mattole River watershed: Humboldt sucker (*Catostomus occidentalis humboldtianus*), coastrange sculpin (*Cottus aleuticus*), prickly sculpin (*Cottus asper*), inland three-spine stickleback (*Gasterosteus aculeatus microcephalus*), pacific lamprey (*Entosphenus tridentata*), western brook lamprey (*Lampetra richardsoni*), coastal rainbow trout (*Oncorhynchus mykiss irideus*), Northern California coast winter steelhead (*Oncorhynchus mykiss irideus pop.16*), Northern California coast summer steelhead (*Oncorhynchus mykiss irideus pop. 36*), Southern Oregon/Northern California coast ESU coho salmon (*Oncorhynchus kisutch pop. 2*), and California coast fall chinook salmon (*Oncorhynchus tshawytscha pop. 17*). This perennial watercourse also provides potential habitat for amphibian species including: red-bellied newt (*Taricha rivularis*), foothill yellow-legged frog (*Rana boylei*), coastal giant salamander (*Dicamptodon tenebrosus*), and western pond turtle (*Emys marmorata*).

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 in the BAA. Intermittent watercourses provide potential aquatic habitat for northern red-legged frog (*Rana aurora aurora*), yellow-legged foothill frog, southern torrent salamander (*Rhyacotriton variegatus*), red-bellied newt, rough-skinned newt (*Taricha granulosa*), and coastal giant salamander. 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.

5.2.2 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). No potential wetland indicators were observed within 100' of the Project Parcel.

5.2.3 Sensitive Natural Communities

No Sensitive Natural Communities were identified within the Project Parcel during the initial site visit. The Project Parcel was mowed due to fire risk, making identification of Sensitive Natural Communities problematic. There was strong evidence of nonnative annual grass dominance within the Project Area.

5.2.4 Local Policies, Ordinances, and Regulations

The project is located in the Southern Humboldt Biological Resources map. New development will not result in any tree removal and will occur within a nonnative herbaceous plant community.

5.3 Sensitive and Protected Species

5.3.1 Special Status Birds

- 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 and Pratt 1990a).

Status within BAA: There are no documented bald eagle observations within the BAA. The Mattole River provides potential foraging habitat for this species within the BAA. Conifer trees provide potential nesting structure in the BAA; however, large diameter trees are uncommon given the harvest history of the area. There is no potential nest habitat for bald eagles within the Project Parcel. There is a high potential for bald eagles to be found nesting 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" DBH within 1.8 miles of foraging habitat (Chinicci et al 2012).

Status within BAA: There are no documented golden eagle observations within the BAA. AGS habitat present within the BAA provides potential foraging habitat for this species. Conifer trees provide potential nesting structure in the BAA; however, large diameter trees are uncommon given the harvest history of the area. There is no potential golden eagle nesting habitat within the Project Parcel. The potential for golden eagles to be nesting within the BAA is moderate.

- **Grasshopper Sparrow (*Ammodramus savannarum*)**

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

Key Habitat: Grasshopper sparrows have shown variability in specific habitat characteristic but always select grasslands with light shrub density (Unitt 2008, Hunter et al 2005). Hunter et al (2005) often encountered grasshopper sparrows on southern slopes that are fully exposed to sunlight. They are thought to prefer sites undisturbed by human activities (Hunter et al 2005).

Status within BAA: There have been no documented observations of grasshopper sparrows within the BAA. AGS habitat within the BAA provides potential foraging and nesting habitat for this species; however, anthropogenic activities and the dominance of nonnative annuals degrades potential habitat quality. There is an unlikely potential for grasshopper sparrows to be nesting in the Project Parcel. There is a moderate potential for this species to be nesting within the BAA.

- **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) clear-cuts 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: There are no documented 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). Acute areas of riparian habitat within the BAA along the Mattole River provide potential habitat for this species. There is no potential for willow flycatchers to be nesting within the Project Parcel. There is a moderate potential for little willow fly catchers to be nesting along the Mattole River within the BAA.

- **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 are no documented observations of marbled murrelet within the BAA. Conifer timberlands within the BAA provide potential habitat, but small average diameter limbs and lack of moss significantly reduces habitat quality. There is no potential marbled murrelet nesting habitat within the Project Parcel. The potential for marbled murrelet to be nesting within the BAA is moderate.

- **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 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 documented spotted owl activity centers or nighttime detections within the 1.3-mile BAA. The nearest NSO Activity Center is approximately 3 miles southwest from the Project Area. There is no potential NSO habitat within the Project Parcel. There are no documented NSO detections within the BAA. Northern spotted owls have a high potential of being observed within the BAA.

- **Olive-Sided Flycatcher (*Contopus cooperi*)**

Status: G4, S3, CDFW: Species of Special Concern, ICUN: Near Threatened

Key Habitat: Olive-sided flycatcher have been found to prefer late-successional conifer stands with open canopies (>40%) (Verner 1980). They are found significantly less or not at all within areas dominated by oaks or other hardwoods (Hunter et al 2005). Understanding this species is difficult in the lush north coast where mature conifer forests are common but canopy openness is not. It appears a combination of edge proportion and size class ratios are characteristics preferred by olive-sided flycatchers in this region (Hunter et al 2005).

Status within BAA: There is an eBird observation of this species from 2021 west of the BAA. The BAA contains potential habitat in the form of DFR and MHC habitat. The lack of late successional characteristics may reduce potential habitat quality. There is no potential habitat within the Project Parcel. There is a high potential for this species to be observed within the BAA.

- **Peregrine Falcon (*Falco peregrinus anatum*)**

Status: CESA de-listed (November 4, 2009), ESA de-listed (August 25, 1999), G4T4, S3S4, 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 1990b). There has been recent documentation of peregrine falcon nests in old growth redwood snags (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 coastal bays, sloughs, and/or marshes. 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).

Status within BAA: There are no documented observations of peregrine falcon within the BAA. The Mattole River provides foraging habitat for this species. There are no suitable rock outcroppings or steep rocky features that could provide potential nesting structure within the BAA. There is no potential peregrine falcon nesting habitat within the Project Parcel. The potential for peregrine falcons to be found nesting within the BAA is unlikely.

- **Yellow-breasted Chat (*Icteria virens*)**

Status: G5, S3, CDFW: Species of Special Concern, ICUN: Least Concern

Key Habitat: Yellow-breasted chats have declined in California, although Northwestern California is a stronghold for this species. The Klamath and Trinity Rivers contain the highest densities of breeding chats in the state (Comrack 2008). This species has a strong association with riparian vegetation (Hunter et al 2005). Eckerle and Thompson (2001) found vegetation structure is more important than stand maturity in site selection. Chats prefer shrubs species (native and nonnative) for nesting with riparian trees required for singing (Comrack 2008, Hunter et al 2005).

Status within BAA: There is a single eBird observation of this species from 2012 within the BAA. The Mattole River corridor within the BAA offers acute areas of riparian habitat for this species. There is no potential habitat for this species within the Project Parcel. This species is present within the BAA.

- **Yellow Warbler (*Setophaga petechia*)**

Status: G5, S3S4, CDFW: Species of Special Concern, USFWS: Bird of Conservation Concern

Key Habitat: Yellow warblers are generally associated with riparian vegetation (Hunter et al 2005). Willow (*Salix spp.*), alder (*Alnus spp.*), and Oregon ash (*Fraxinus latifolia*) appear to be preferred vegetation for this species in Northern California (Heath 2008, Hunter et al 2005). Due to their widespread distribution, finer scale details that influence nest selection have been difficult to test for this species. Generally regional preferences have been discovered (Heath 2008). At Clear Creek, Shasta County, yellow warblers were found to be most successful when occurring in a dense mature stand of white alder (*Alnus rhombifolia*).

Status within BAA: There are no documented observations of yellow warblers within the BAA. There is an eBird observation of this species approximately 2 miles west of the BAA from 2020. The Mattole River corridor provides acute areas of riparian habitat for this species. There is no potential nesting habitat within the Project Parcel. There is a high potential of observing this species along the Mattole River corridor within the BAA.

5.3.2 Special Status Mammals

- **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: There are no documented observations of badgers within the BAA. One of the few documented Humboldt County CNDDDB observations occurs approximately 2.4 miles west of the BAA (CNDDDB). AGS, MHW, and CRP habitats within the BAA provide potential badger habitat, including sandy soils, canopy openness, agricultural habitats, and roads. No evidence of badger presence was observed within Project Parcel during the site visit. Due to current human activity within the Project Parcel, the potential for American badgers to be found denning in the Project Area is unlikely. There is a high potential for badger to be observed 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 and is thought to be the last population in California (Slauson and Zielinski 2004). 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 are no documented observations of Humboldt marten within the BAA. The BAA does contain potential habitat characteristics preferred by martens including a dense shrub layer and mesic sites. However, mature conifer timberlands do not occur within the BAA. Given what is known about the current range of Humboldt Marten and the lack of mature forest, there is no potential for them to occur within the BAA.

- **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 observations of Long-eared myotis within the BAA. The BAA lacks any rock outcroppings that could be utilized as maternal roost sites. Conifer and hardwood trees within the BAA may provide potential individual or small group roost sites. The Project Area

consists of AGS habitat which is unsuitable for this species roosting or breeding requirements. There is no potential roosting habitat within the Project Parcel. There is a moderate potential for long-eared myotis to be observed within the BAA.

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

Status: G5, S3, IUCN Least Concern

Key Habitat: Current and historic distributions of this species are currently subject of debate (Appel et al 2017). 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 but contains a strong hardwood component. The Project Parcel consists of AGS habitat and lacks pre-existing burrows which may be utilized by porcupine for denning. There is no potential for this species to den within the Project Parcel. There is a moderate potential for porcupine to be present 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: There are no documented observations of fisher in the BAA. MHW, MHC and DFR provide denning and foraging habitat for fisher. There is no potential denning habitat within the Project Parcel. There is a high potential for this species to be observed 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). Gervais (2016) found that oak woodland habitat conservation and preservation of large snag structures (especially hardwoods) were critical management goals for this species in Oregon.

Status within BAA: There are no documented observations of Pallid bats within the BAA. The BAA provides potential foraging habitat in the form of oak dominated woodlands and potential roosting habitat under the Honeydew Bridge. The wet winter climate may potentially limit this species range in Humboldt County. The Project Area consists of AGS habitat which is unsuitable for this species. There is no potential for this species to be found roosting or breeding within the Project Area. There is a high potential for Pallid bats to be observed within the BAA.

- **Sonoma Tree Vole (*Arborimus pomus*)**

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: There are no documented observations of Sonoma tree vole in the BAA. The BAA provides marginal habitat for this species given the dominance of hardwoods and the younger age class of DFR habitat. There is no potential habitat for this species within the Project Parcel. The potential for Sonoma tree vole to be observed within the BAA is moderate.

- **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, 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). This species is highly associated with cavern-like structures and does not use bridges that lack some form of cavern/cavity (Sherwin et al 2000a). 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. 2000b). 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: There are no documented observations of Townsend's big-eared bat within the BAA. The BAA does not contain any rocky outcroppings which could provide roosting habitat for this

species. However, potential man-made habitat may be present underneath the Honeydew Bridge. The Project Area consists of AGS habitat which is unsuitable for this species. There is no potential for this species to be found roosting or breeding in the Project Parcel. The potential for Townsend's big-eared bat to be found roosting within the BAA is unlikely.

- **Western Red Bat (*Lasiurus blossevillii*)**

Status: G5, S3, CDFW Species of Special Concern, IUCN Least Concern, Western Bat Working Group: High Priority

Key Habitat: Western red bats in California are associated with mature riparian forests at low elevations (<200 m). They were most often found in association with mature stands of cottonwood/sycamore. This bat is one of the only foliage roosting species of bat in California, thus they rely on riparian habitats for roost and forage habitat (Pierson et al 2006).

Status within BAA: There are no documented observations of western red bat within the BAA. Potential habitat within the BAA is present within the riparian corridors of the Mattole River and areas of riparian vegetation located along stream corridors within the BAA. The Project Area consists of AGS habitat which is not utilized for roosting or breeding by this species. There is no potential for western red bat to be roosting within the Project Parcel. The potential for western red bat to be observed within the BAA is moderate.

5.3.3 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: There are no documented occurrences of coastal tailed frog within the BAA. There is no potential for this species to be observed within the Project Parcel. Spring features and acute sections of perennial watercourses may provide habitat within the greater BAA. 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 study 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: There are no observations of yellow-legged frog in the BAA, however there are multiple observations to the west of the BAA. The Mattole River and intermittent tributaries provide potential habitat for this species. There is no potential habitat for this species within the Project Parcel. Foothill yellow-legged frogs have a high potential to be observed within the BAA.

- **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 BAA does not contain any documented observations of northern red-legged frogs. Perennial and intermittent watercourses provide potential habitat for this species. Seasonal backwater and flooding along the Mattole River may potentially increase habitat availability in wet years. Northern red-legged frogs have a high potential of being found within the BAA.

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

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

Key Habitat: Western 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 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 BAA does not contain any documented observations of western pond turtle. The reach of the Mattole River within the BAA provides potential habitat in the form of perennial hydrology, with nearby basking and breeding habitat. Potential western pond turtle burrowing habitat exists within the Project Parcel, but is degraded due to human activity and distance to aquatic habitat. There is no potential for western pond turtles to be observed within the Project Parcel. The potential for western pond turtle to be observed within the BAA is high.

- **Red-bellied Newt (*Taricha rivularis*)**

Status: G4, S2, CDFW Species of Special Concern, IUCN Least Concern

Key Habitat: Red-bellied newts have the smallest range of their genus. The Mattole River marks the approximate northern boundary of their range. Very little is known about their terrestrial habitat use either as adults or juveniles. Juveniles are believed to use subterranean burrows for the first five years of their life or until sexual maturity, although this is only based off low juvenile capture rates in the few studies that exist (Marks and Doyle 2005). Mature adults have been found in a multitude of vegetation compositions including redwood (*Sequoia sempervirens*), California bay laurel (*Umbellularia californica*), tanoak (*Notholithocarpus densiflorus*), pacific madrone (*Arbutus menziesii*), and Douglas-fir (*Pseudotsuga menziesii*). Twitty et al. (1966) as well as Licht and Brown (1967) found adult red-bellied newts on heavily wooded slopes that rise from the south bank (north facing slope) of their breeding stream. These slopes often have high densities of large woody debris and leaf litter (Packer 1960). Red-bellied newts only select water features with swift flowing water and coarse substrates. They do not utilize ponds or other standing water habitats. Red-bellied newts display a unique homing instinct that returns individuals to the same reach of stream channel every breeding migration (Twitty et al. 1966, Packer 1960). Breeding occurs from March through May with March and April being the peak months. Eggs are deposited on the bottom side of flat rocks often located in the center of the stream (Twitty et al. 1966).

Status within BAA: The CNDDDB contains one documented observation of a red-bellied newt within the BAA. There is no potential red-bellied newt habitat within the Project Parcel. The Mattole River is a known breeding corridor for this species, and the northern limit of their range. Red-bellied newts are present within the BAA.

- **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 sediments 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: There are no documented observations of southern torrent salamander within the BAA. Intermittent streams that are morphologically well suited for this species with high gradients, strong canopy cover, and coarse sediments may exist within the BAA. There is no potential habitat for this species within the Project Parcel. The potential for southern torrent salamander to be found within the BAA is high.

5.3.4 Special Status Fish Species

- **Chinook Salmon – California Coast ESU (*Oncorhynchus tshawytscha pop.17*)**

Status: G5, S1S2, CDFW Species of Special Concern

Key Habitat: Chinook salmon spawning adults migrate into rivers in the late fall during increased stream flows. High quality spawning habitat is characterized by coarse substrates of frequently large diameters

(cobbles) with adequate stream flow to regularly supply fresh oxygen to the developing embryos. Chinook often choose middle and high order streams for spawning habitat but have been recorded in low order streams that display adequate substrate conditions and hydrology. Ideal water depth for egg laying is 25-100 cm. Once eggs hatch Chinook emerge as alevin and spend 4-6 weeks within gravels close to the nest site (Moyle et al. 2015). After this period Chinook develop into juvenile frye and spend the summer months in cool (<20°C), shallow, slow flowing streams (Gale et al. 1998). Rearing habitat often contains overhanging riparian vegetation to provide cover, food, and habitat variation (Moyle et al. 2015).

Status within BAA: Chinook Salmon are known to occur within the Mattole River (Berg and Halligan 2011).

- **Coho Salmon – Southern Oregon/Northern California ESU (*Oncorhynchus kisutch* pop. 2)**

Status: ESA and CESA Threatened, AFS Threatened

Key Habitat: Coho Salmon utilize a variety of habitat types throughout their life history. Their most important habitat characteristic is water temperature. Juvenile Coho present within stream habitats prefer deep pools with overhead shading during the summer months. As temperatures cool and stream flows increase, they can be found throughout the stream in riffles, runs, and pools. During winter juvenile Coho seek refugia from high velocity peak flows, wintering refuge is one of the most important and least appreciated factors influencing survival. Spawning sites are usually located in fine to coarse gravels and usually in between riffles and pools where oxygen is well circulated through the water column (Moyle 2002).

Status within BAA: Coho salmon are known to occur within the Mattole River (Berg and Halligan 2011).

- **Pacific Lamprey (*Entosphenus tridentatus*)**

Status: G4, S4, CDFW Species of Special Concern, BLM Sensitive Species, USFS Sensitive Species, American Fisheries Society: Vulnerable

Key Habitat: Pacific lampreys are distributed in fresh water streams throughout coastal California during their breeding season. They spawn in substrates similar to that of salmonid species (Streif 2008). They prefer gravel substrates consisting of both fines and cobbles usually at the head of riffles. Young ammocoetes require sand substrate where they spend 3-7 years maturing into the next life stages. Once matured to the next stage, macrophthalmia, they drift downstream and into the ocean where they feed and grow into adults (Stillwater Sciences et al. 2016).

Status within BAA: Although there are no documented observations of Pacific lamprey within the BAA, this species is identified as a native fish of the Lower Mattole watershed. There is a high potential for this species to be present within the BAA.

- **Winter-run Steelhead Trout – Northern California DPS (*Oncorhynchus mykiss irideus* pop. 16)**

Status: ESA Threatened, G5T2Q, S2S3, American Fisheries Society: Threatened

Key Habitat: As many salmonid species, steelhead trout utilize a variety of habitats depending on their life stage. Population 16 consists of northern California steelhead that mature in the ocean and return to freshwater rivers during the winter run. Adult steelhead require swift moving water with depths of at least 18 cm (Bjornn and Reiser 1991). Spawning sites are often located at the tail-out of pools with fine gravel

substrates (Moyle et al 2015). NCST frye require clear, cool, quick moving water usually located at seeps and stream confluences (Moyle 2002).

Status within the BAA: Winter-run steelhead are known to occur within the Mattole River. (Berg and Halligan 2011).

- **Summer-run Steelhead Trout – Northern California DPS (*Oncorhynchus mykiss irideus* pop. 36)**

Status: ESA Threatened, G5T2Q, S2S3, American Fisheries Society: Threatened

Key Habitat: As many salmonid species, steelhead trout utilize a variety of habitats depending on their life stage. Population 36 consists of steelhead that mature inland and are often landlocked behind fish passage barriers. Summer-run steelhead can jump higher than any other steelhead subspecies and are currently at greater risk than their winter-run cousins (Moyle et al. 2017). Adult steelhead require swift moving water with depths of at least 18 cm (Bjornn and Reiser 1991). Spawning sites are often located at the tail-out of pools with fine gravel substrates (Moyle et al 2015). NCST frye require clear, cool, quick moving water usually located at seeps and stream confluences (Moyle 2002).

Status within the BAA: Summer-run steelhead have been documented in the Mattole River within the BAA (Berg and Halligan 2011).

- **Western Brook Lamprey (*Lampetra richardsoni*)**

Status: CDFW Fish Species of Special Concern

Key Habitat: Western brook lamprey are less studied in California and most information is known from Washington and Oregon studies. Young ammocoetes prefer sand/silt substrates in low velocity areas of the stream (pool or backwater). Adults make nest in gravel substrates located in riffles (Moyle 2002). Reproductive behavior is similar to pacific lamprey (Moyle et al 2015).

Status within the BAA: Although there are no documented observations of western brook lamprey within the BAA, this species is identified as a native fish of the Mattole River watershed. Potential lamprey breeding habitat is present within the BAA in Mattole River. There is a high potential for Western brook lamprey to be encountered within the BAA.

5.3.5 Special Status Invertebrates

- **Mountain Shoulderband (*Helminthoglypta arrosa monticola*)**

Status: S1

Key Habitat: This species is only known from observations in the King Range of Humboldt County (Roth 1982) discovered the snail in two locations both consisting of shaded talus slopes.

Status within BAA: The BAA does not overlap with the King Range of Humboldt County. Additionally, the BAA does not contain shaded talus slope. There is no potential for this species to be found within the BAA.

- **Obscure Bumble Bee (*Bombus caliginosus*)**

Status: S1S2, IUCN: Vulnerable

Key Habitat: Obscure bumble bees are known to occur within coastal areas ranging from Santa Barbara, California up to Washington state. They are known to forage on these genera: Baccharis, Cirsium,

Lupinus, Lotus, Grindelia, and Phacelia (CNDDDB). “The number of rodent holes represents the available nest resources available to ground nesting bumble bees. Parks with fewer rodent holes had fewer bumble bees, which suggests that bumble bees are nest site limited” (McFredrick and LeBuhn, 2006). Some studies have shown that obscure bumblebees are less abundant in agricultural areas, urban parks and gardens, this may be due to competition with other *Bombus* species or food preference (McFredrick and LeBuhn, 2006).

Status within BAA: There are no documented observations of this species within the BAA. The BAA occurs within this species known range. The BAA also contains food genera known to be associated with this species. There is a moderate potential for obscure bumblebee to be observed within the Project Parcel. There is a high potential for obscure bumble bee to be observed within the BAA.

- **Ten Mile Shoulderband (*Noyo intersessa*)**

Status: S2

Key Habitat: Ten-mile shoulderband is known from two disjunct populations. These consists of a population present in coastal dunes of Mendocino County and a second population within redwood forest habitat in Humboldt County. Specimens found in Humboldt County were collected from riparian habitat within an old-growth redwood stand (Stephens Grove) where it was observed to have an association with wild radish (*Raphanus sativus*) and salal (*Gaultheria shallon*) (Roth 1987).

Status within BAA: The BAA does not overlap with any documented observations of ten-mile shoulderband. The BAA does not contain any old-growth redwood stands. There is no potential for this species to be observed within the BAA.

- **Wawona Riffle Beetle (*Atractelmis wawona*)**

Status: S1S2

Key Habitat: Wawona riffle beetle prefers cool, clear mountain streams with rapids and aquatic mosses (CNDDDB). This species was poorly understood until in 1988 morphological similarities with another genus of Nearctic riffle beetle led to the discovery of its preferred microhabitat, submerged aquatic mosses (Shepard and Barr 1991). This species is only known in Humboldt County from specimens collected in the Van Duzen River near Dinsmore, California (CNDDDB).

Status within the BAA: There are no documented observations of this species within the BAA. The Mattole River contains clear, cool, perennial surface water with rapids present. It is unknown at what densities, if any, aquatic submerged mosses occur within this watercourse. There is a moderate potential for Wawona riffle beetle to be found within the BAA.

- **Western Bumble Bee (*Bombus occidentalis*)**

Status: Candidate for CESA Endangered, S1, USFS: Sensitive, XERCES: Imperiled

Key Habitat: This species was once known to be widespread throughout the western United States from central California up to British Columbia (Evans et al 2008). This species was one of the most common bumble bees on the west coast prior to the mid 1990’s (Rao and Stephen 2007). This species relies on year-round flower availability for pollen production. Fragmented or isolated patches of habitat are not sufficient enough to support bumble bee populations (Hatfield and LeBuhn 2006). The western bumble

was once the most abundant *Bombus* species in the greater San Francisco area, however, a two-year study conducted in 2003 & 2004 detected zero western bumblebees (McFredrick and LeBuhn, 2006).

Status within BAA: There are no documented observations of western bumble bee in the BAA. AGS habitat and herbaceous flowering plants present in the BAA provide potential habitat for this species. There is a moderate potential for this species to be found within the Project Area. There is a high potential for this species to be found within the BAA.

5.3.6 Special Status Plants

Scientific Name	Common Name	ESA	CESA	SR	CRPR	Blm Per.	Habitat	Elev (ft)	Potential in Project Parcel
<i>Antennaria suffrutescens</i>	Evergreen everlasting	N	N	S3	4.3	Jan-Jul	Lower montane coniferous forest, serpentinite	1640 - 5250	No potential, no serpentinite soils exist on Project Parcel
<i>Calamagrostis foliosa</i>	Leafy reed grass	N	N	S3	4.2	May-Sep	Coastal bluff scrub, North coast coniferous forest, rocky cliffs and ocean facing bluffs, coastal scrub, forest outcrops, crevices, cliffs	15-4290	No potential, Project Parcel lacks bluffs, cliffs or rocky habitat required for this species
<i>Castilleja litoralis</i>	Oregon Paintbrush	N	N	S3	2B.2	Jun-Jul	Coastal bluff scrub, coastal dunes, coastal scrub, sandy sites, generally dry sea bluffs	45-300	No potential, Project Parcel is not within species elevation range
<i>Clarkia amoena</i> ssp. <i>whitneyi</i>	Whitney's farewell-to-spring	N	N	S1	1B.1	Jun-Aug	Coastal bluff scrub, coastal scrub, open coastal scrub	30-300	No potential, Project Parcel is not within species elevation range
<i>Coptis laciniata</i>	Oregon Goldenthread	N	N	S3	4.2	(Feb) Mar-May (Sep-Nov)	North Coast coniferous forest, meadows, seeps, wet sites, streambanks, redwood forest, Douglas-fir Forest, wetland-riparian	0-3280	Unlikely potential, Project Parcel lacks forested habitat. Acute areas of AGS habitat within the Project Parcel may be analogous to coastal prairie habitat

<i>Erythronium oregonum</i>	Giant fawn lily	N	N	S2	2B.2	Mar-Jun (Jul)	Cismontane woodland, meadows and seeps, Ultramafic, mixed evergreen forest	325-3775	Unlikely potential, acute areas of AGS within the Project Parcel may be analogous to meadow habitat, which provides potential marginal habitat for this species.
<i>Erythronium revolutum</i>	coast fawn lily	N	N	S2	2B.2	Mar-Jul (Aug)	Bogs and fens, broadleaved upland forest, North Coast coniferous forest – mesic, streambanks	0-5250	No potential Project Parcel lacks bogs, fens, and coniferous habitat required for this species
<i>Gilia capitata ssp. pacifica</i>	Pacific gilia	N	N	S2	1B.2	Apr.-Aug.	Coastal bluff scrub, chaparral (openings) coastal prairie, valley and foothill grassland	15 - 5465	Unlikely potential, acute areas of AGS within the Project Parcel may be analogous to meadow habitat, which may provide potential marginal habitat for this species.
<i>Lasthenia californica ssp. macrantha</i>	Perennial Goldfields	N	N	S2	1B.2	Jan-Nov	Coastal bluff scrub	390-3935	No potential, Project Parcel lacks coastal bluff scrub habitat
<i>Lathyrus glandulosus</i>	Sticky pea	N	N	S3	4.3	Apr-Jun	Cismontane woodland, Coast redwood forest	985-2525	No potential, Project Parcel lacks redwood and cismontane habitat
<i>Lathyrus palustris</i>	Marsh pea	N	N	S2	1B.2	Mar-Aug	Bogs and fens, lower montane coniferous forest, marshes and swamps, coastal prairie, coastal scrub, moist coastal areas, freshwater marsh	3-330	Unlikely potential, Project Parcel not within species elevation range.

<i>Lilium rubescens</i>	Redwood Lily	N	N	S3	4.2	Apr-Aug (Sep)	Sometimes serpentinite, sometimes roadsides, broadleaved upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest	95-6270	No potential, Project Parcel lacks serpentinite soils, chaparral, and forested habitat
<i>Lycopodium clavatum</i>	Running-pine	N	N	S3	4.1	Jun-Aug (Sep)	Lower montane coniferous forest, North coast coniferous forest, marshes and swamps, forest understory, edges, openings, roadsides, mesic sites with partial shade and light, freshwater marsh	150-4020	No potential, Project Parcel lacks mesic coniferous stands, marshes and swamps.
<i>Montia howellii</i>	Howell's montia	N	N	S2	2B.2	(Jan-Feb) Mar-May	Meadow and seep, North coast coniferous forest, vernal pool, wetland, vernal wet sites, often compacted soils, wetland-riparian	3-2740	No potential, Project Parcel lacks coniferous forest, vernal pools and wetland habitat
<i>Packera bolanderi</i> var. <i>bolanderi</i>	Seacoast ragwort	N	N	S2 S3	2B.2	(Jan-Apr) May-Jul (Aug)	Coastal scrub, North coast coniferous forest, wet cliffs, coastal strand	95-2135	No potential, Project Parcel lacks coniferous stands, wet cliffs and coastal strand habitat
<i>Piperia candida</i>	White-flowered rein orchid	N	N	S3	1B.2	(Mar) May-Sep	North coast coniferous forest, lower montane coniferous forest, broadleaved upland forest. Sometimes on serpentine, forest duff, mossy banks, rocky outcrops, and muskeg. Open to shady spots, conifer and mixed-evergreen forest Yellow Pine Forest, north coast coniferous forest	95-4300	No potential, Project Parcel lacks broadleaved Douglas-fir, tan-oak habitat and rocky outcroppings

<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	N	N	S3	4.2	(Mar) Apr-Aug	Broadleaved upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, riparian woodland – often in disturbed areas	0-2395	Unlikely potential, Project Parcel lacks forested habitat. Acute areas of AGS habitat within the Project Parcel may be analogous to coastal prairie habitat
<i>Sidalcea malviflora ssp. patula</i>	Siskiyou checkerbloom	N	N	S3	4.2	May-Jul.	Usually in wetlands, coastal prairie, coastal scrub, north coast coniferous forest, riparian woodland, bluffs	50 - 4035	Unlikely potential, Project Parcel lacks forested habitat, acute areas of AGS habitat within the Project Parcel may be analogous to coastal prairie habitat
<i>Clarkia amoena ssp. whitneyi</i>	Whitney's farewell-to-spring	N	N	S1	1B.1	Jun-Aug	Coastal bluff scrub, coastal scrub, open coastal scrub	30-300	No potential, Project Parcel is not within species elevation range

5.4 Potential Impacts

5.4.1 Sensitive Natural Communities and Special Status Plant Species

No Sensitive Natural Communities were identified within Project Parcel during the initial site visit. The Project Parcel was mowed due to fire risk, making identification of Sensitive Natural Communities problematic. There was strong evidence of nonnative annual grass dominance within the Project Parcel. The Project Area is directly adjacent to existing, licensed cultivation and experiences daily disturbance. At the time of the site visit, the Project Area contained a debris pile, a parked vehicle, and was generally void of vegetation (<10% vegetation cover). As a result of existing permitted cultivation activities, the Project Area does not contain any natural plant communities, or potential for special status plant occurrence. Given these conditions, floristic surveys are not necessary to protect botanical resources. The Project as proposed does not pose any risks to sensitive natural communities and special status plant species.

5.4.2 Water Quality, Aquatic Habitats & Special Status Fish Species

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 cannabis 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. This includes implementation of erosion control, watercourse setbacks, nutrient management, and other practices that will reduce or remediate potential risks to water quality. The Project Parcel lacks natural watercourses, thus the risk to water quality and aquatic habitat is minimal. The project as proposed will not impact Waters of the United States, Waters of the State, or aquatic wildlife habitat. As such, this project poses no potential of impacting special status fish.

5.4.3 Special Status Bird Species

The project proposes new ground disturbance within the Project Area. These activities will not remove any potential nesting habitat from migratory bird species or any special status species. The project as proposed does not risk impacting bird species of special concern. Raptor surveys are unnecessary due to the current baseline anthropogenic activities and the lack of available nesting habitat within 500' of the Project Area. The project as proposed does not pose a risk of impacting any special status bird species.

5.4.4 Northern Spotted Owl Assessment

The proposed project does not occur in northern spotted owl habitat, although potential nest/roost habitat does exist within the BAA. The assessment area for potential NSO presence is 1.3 miles (Appendix 9). The project will not remove or alter any potential habitat within the BAA. As such, any potential impacts are disturbance-only. The 2011 USFWS protocol states that disturbance-based impacts have the potential to impact NSO present within 0.25 miles of the Project Area.

The BAA does not contain any documented Activity Centers (AC) or any positive detections as determined by a review of the Spotted Owl Database. The BAA lacks a strong survey history with the majority of existing data occurring along the peripheries of the BAA, south of the Mattole River. The nearest positive NSO detection is approximately 1.66 miles south of the Project Area. The nearest documented NSO AC is approximately 3 miles west-southwest of the Project Area, HUM1012. The last documented NSO detection at this AC was in 2004.

The BAA contains potential nesting/roosting and foraging habitat that experiences low baseline noise levels from existing roads, rural residences, and agricultural operations. Potential nesting/roosting habitat is concentrated along the peripheries of the BAA and south of the Mattole River. There is no potential nesting/roosting habitat present within 0.25 miles of the Project Area. Although some potential nesting/roosting habitat metrics may occur within 0.25 miles, these areas do not contain enough contiguous nesting/roosting habitat to provide a potential core area for nesting/roosting NSOs. As such, potential habitat within 0.25 miles functions solely as foraging habitat. Thus, there is no potential for NSO to be found nesting/roosting within 0.25 miles of the Project Area. The project as proposed does not pose a risk of directly or indirectly impacting this species.

5.4.5 Special Status Mammal Species

The BAA contains potential habitat for multiple mammal species of special concern. These species have been identified to have moderate or high potential of occurring within the BAA: American badger (*Taxidea taxus*), long-eared myotis (*Myotis evotis*), pallid bat (*Antrozous pallidus*), North American porcupine (*Erethizon dorsatum*), pacific fisher (*Pekania pennanti*), Sonoma tree vole (*Arborimus pomo*), and western red bat (*Lasiurus blossevillii*). The proposed project will not result in the removal of potential

habitat for Pacific fisher, North American Porcupine, or Sonoma tree vole, as all of these species are associated with timbered habitat, which does not occur within the Project Parcel. The Project Area contains potential habitat for American Badger. No potential badger den sites, latrines, or other signs were found during the site visit. Due to current anthropogenic activity, the potential for badgers to be denning within the Project Parcel is unlikely. The project as proposed will not impact any terrestrial special status mammals.

The BAA contains potential roosting habitat for three bat species of special concern; long-eared myotis, pallid bat, and western red bat. The Project Parcel does not provide any features capable of providing roosting habitat. Disturbance impacts are unlikely to significantly impact any special status bat species due to roosting groups exhibiting low site fidelity, the availability of high-quality habitat outside the Project Parcel, and baseline anthropogenic activities. The project as proposed poses no risk to special status bat species within the BAA.

5.4.6 Special Status Reptiles & Amphibians

Red-legged frog (*Rana aurora aurora*), yellow-legged frog (*Rana boylei*), southern torrent salamander (*Rhyacotriton variegatus*), red-bellied newt (*Taricha rivularis*) and coastal tailed-frog (*Ascaphus truei*) all have potential to be present within the BAA. The Project Area does not contain any potential habitat for any Reptilian or Amphibian Species of Special Concern. Implementation of best practicable treatment controls (BPTC) as outlined in the Site Management Plan (SMP) will reduce all risks of indirect impacts 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. This project does not pose any risk of impacting any special status reptile or amphibian species.

5.4.7 Special Status Invertebrates

AGS, MHW, Cropland, and forest openings within timbered habitats in the BAA provide potential habitat for western bumble bee (*Bombus occidentalis*) and obscure bumble bee (*Bombus caliginosus*). The prevalence of nonnative graminoid species reduces the habitat quality present within the BAA. Hatfield and Lebuhn (2007) found that meadow connectivity and variability/complexity was important in promoting bee abundance and richness. The Project Area is dominated by nonnative grass species with very little herb or forb presence. The Project Parcel contains ornamental and companion flowering plants that provide a potential food source. The project will not remove any potential bee habitat.

It is recommended the project operator only utilize pesticides approved for use on cannabis by the Humboldt County Agricultural Commissioner's Office, Humboldt County Department of Environmental Health, and the California Department of Pesticide Regulations. Additionally, the application of these substances should be done with care so to not spray if pollinators are present and to prevent drift to plant communities outside of the greenhouses. The project as proposed does not impact any special invertebrate species of special concern.

5.4.8 Invasive Species

No populations of invasive species were identified during the initial site visit. Annual 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

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

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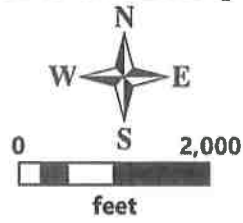
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Appendixes

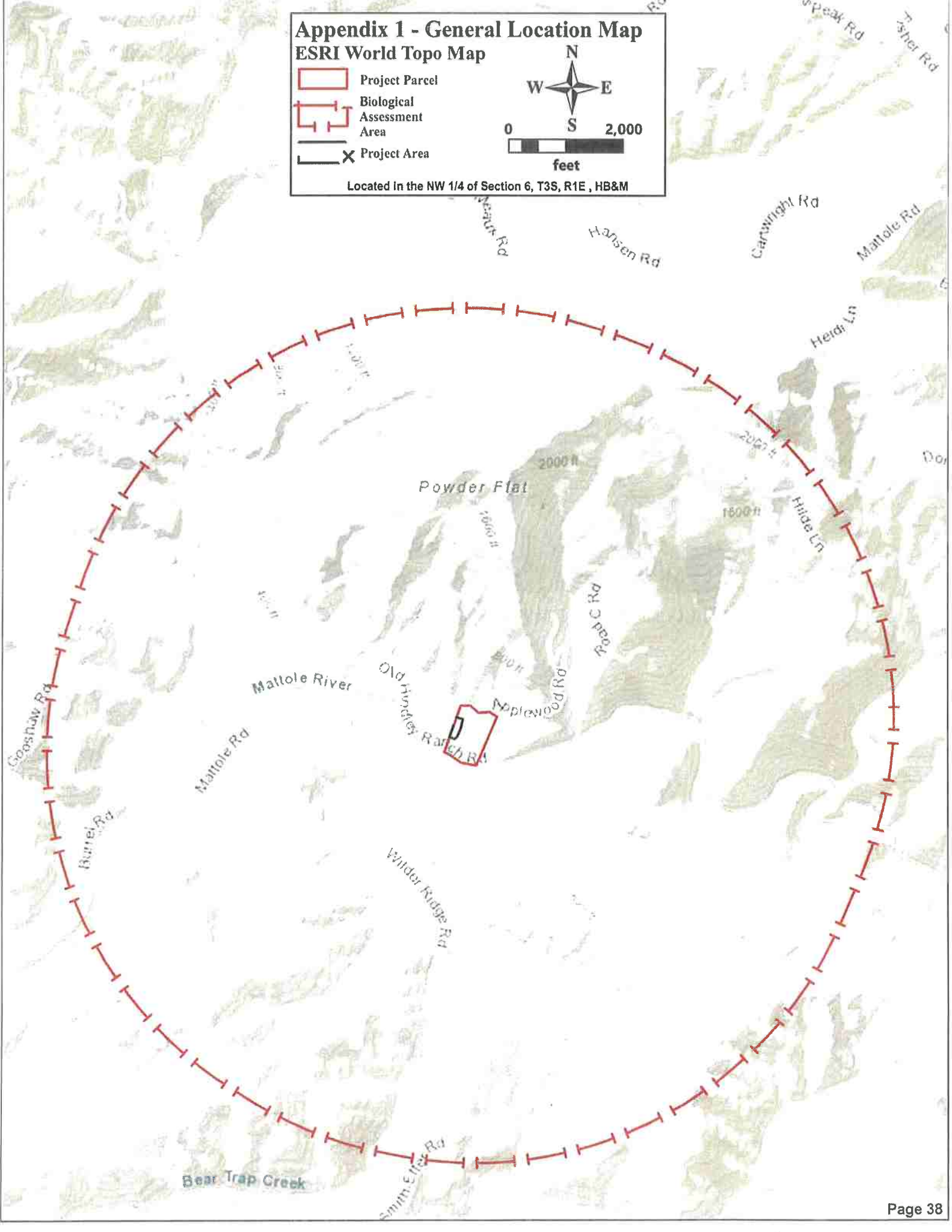
Appendix 1 - General Location Map

ESRI World Topo Map

-  Project Parcel
-  Biological Assessment Area
-  Project Area



Located in the NW 1/4 of Section 6, T3S, R1E, HB&M











Appendix 2 – Site Photographs

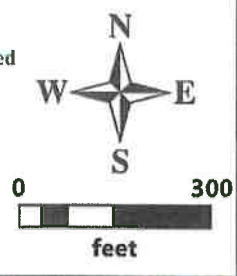


Photo #1: Google Earth Ortho Imagery of the Project Area. Photo date: 04/21/2019.

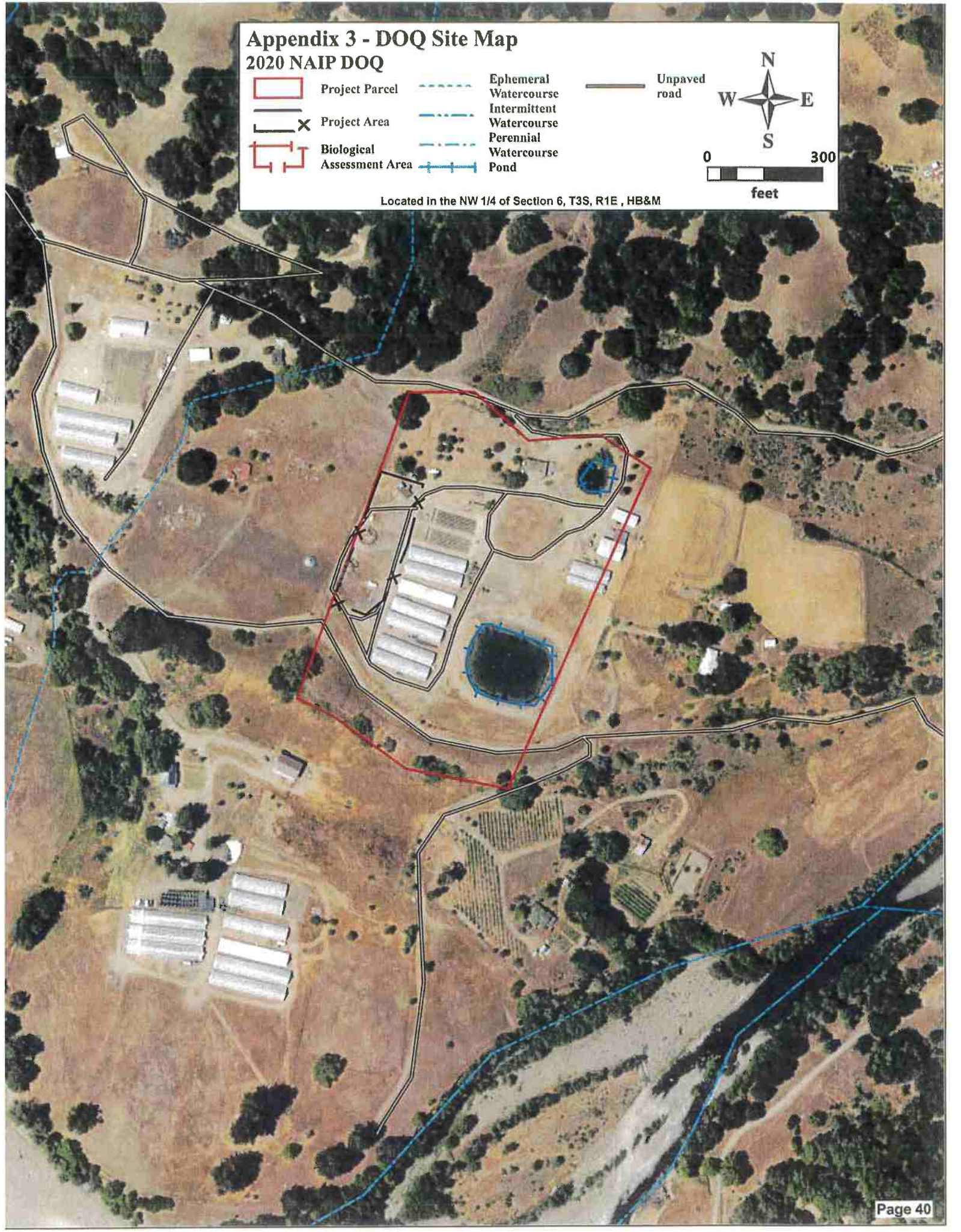
Appendix 3 - DOQ Site Map

2020 NAIP DOQ

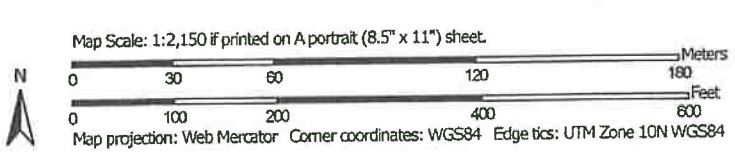
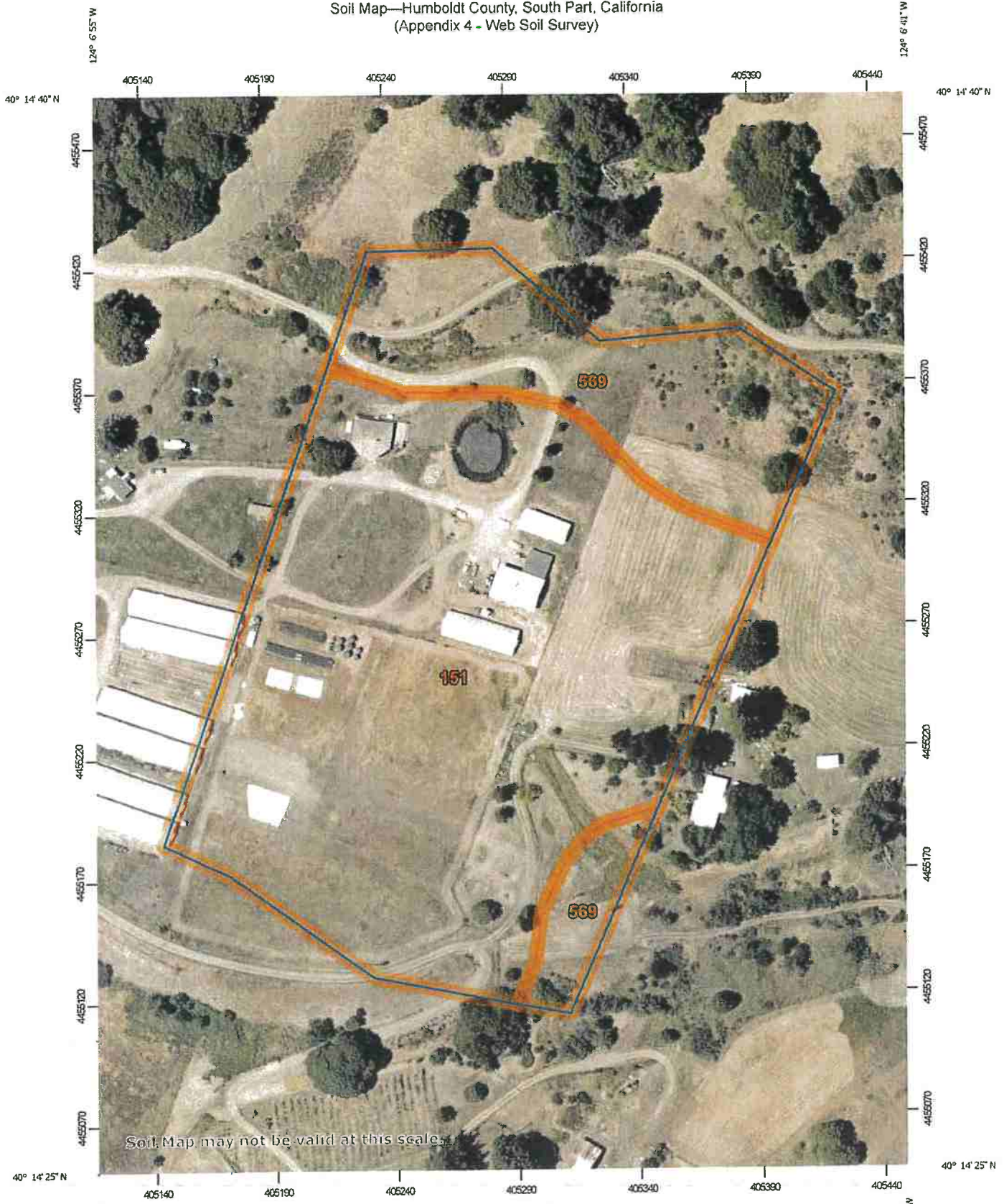
- | | | | | | |
|---|----------------------------|---|--------------------------|--|--------------|
|  | Project Parcel |  | Ephemeral Watercourse |  | Unpaved road |
|  | Project Area |  | Intermittent Watercourse | | |
|  | Biological Assessment Area |  | Perennial Watercourse | | |
| | |  | Pond | | |



Located in the NW 1/4 of Section 6, T3S, R1E, HB&M







































Soil Map—Humboldt County, South Part, California
(Appendix 4 - Web Soil Survey)



Soil Map—Humboldt County, South Part, California
(Appendix 4 - Web Soil Survey)

MAP LEGEND

Area of Interest (AOI)	 Area of Interest (AOI)	 Spoil Area
Soils	 Soil Map Unit Polygons	 Stony Spot
	 Soil Map Unit Lines	 Very Stony Spot
	 Soil Map Unit Points	 Wet Spot
Special Point Features	 Blowout	 Other
	 Borrow Pit	 Special Line Features
	 Clay Spot	Water Features
	 Closed Depression	 Streams and Canals
	 Gravel Pit	Transportation
	 Gravelly Spot	 Rails
	 Landfill	 Interstate Highways
	 Lava Flow	 US Routes
	 Marsh or swamp	 Major Roads
	 Mine or Quarry	 Local Roads
	 Miscellaneous Water	Background
	 Perennial Water	 Aerial Photography
	 Rock Outcrop	
	 Saline Spot	
	 Sandy Spot	
	 Severely Eroded Spot	
	 Sinkhole	
	 Slide or Slip	
	 Sodic Spot	

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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 9, Jun 1, 2020

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

Date(s) aerial images were photographed: May 8, 2019—Jun 21, 2019

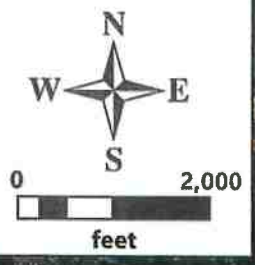
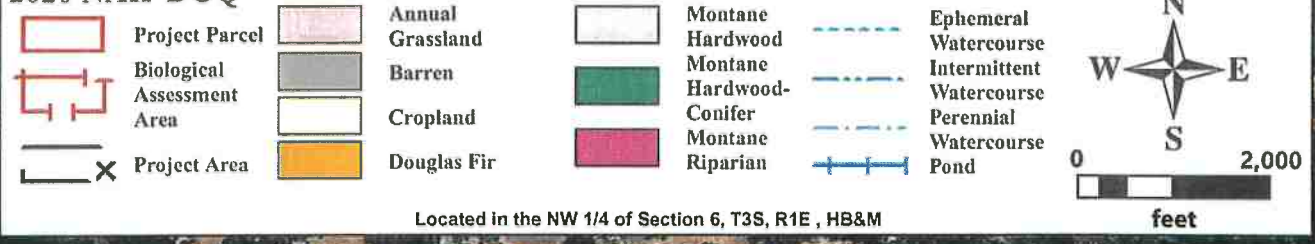
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

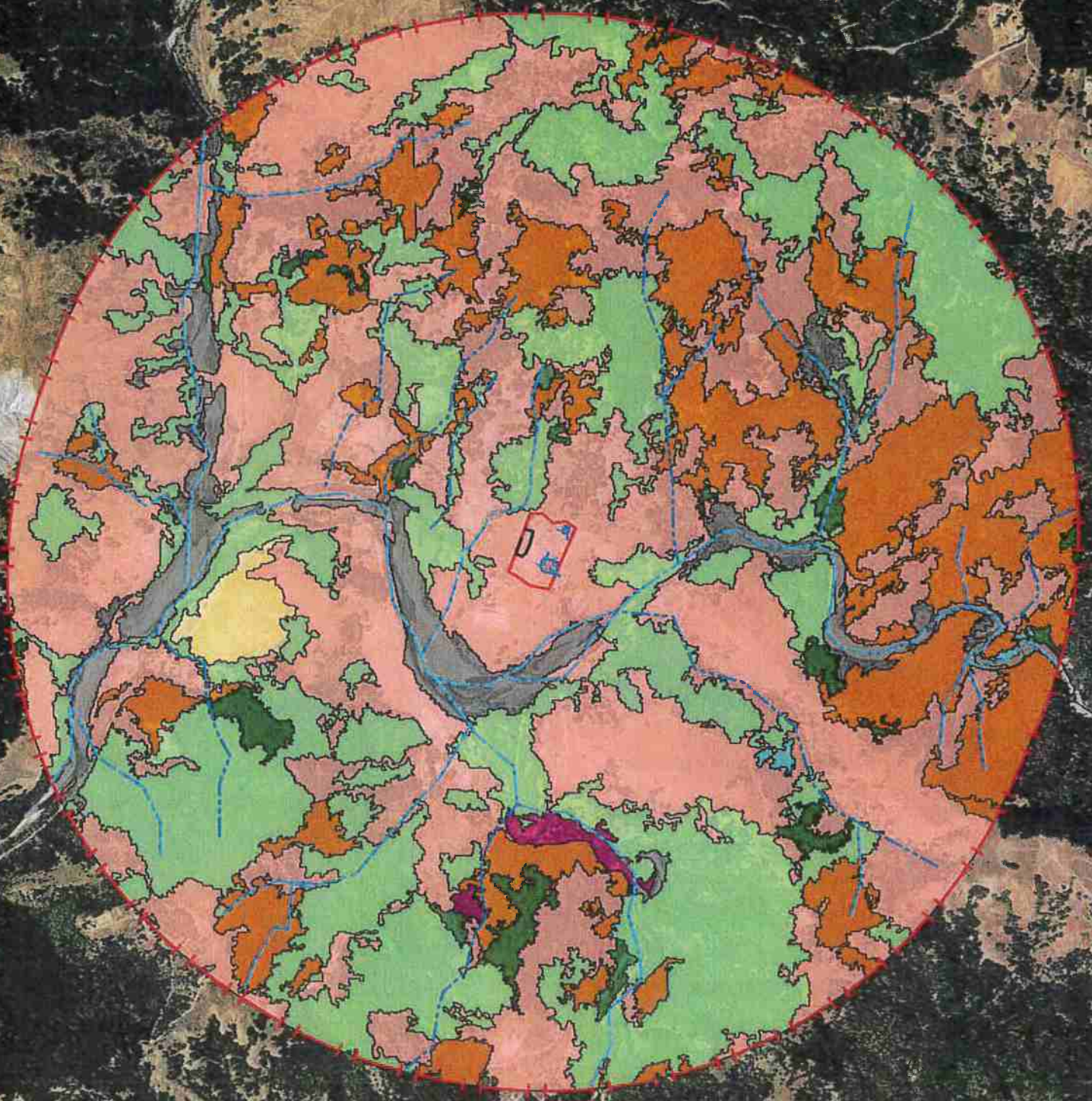
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
151	Parkland-Garberville complex, 2 to 9 percent slopes	9.9	75.1%
569	Crazycoyote-Windynip- Caperidge complex, 15 to 50 percent slopes	3.3	24.9%
Totals for Area of Interest		13.2	100.0%

Appendix 5 - General Habitat Map

2020 NAIP DOQ



Located in the NW 1/4 of Section 6, T3S, R1E, HB&M



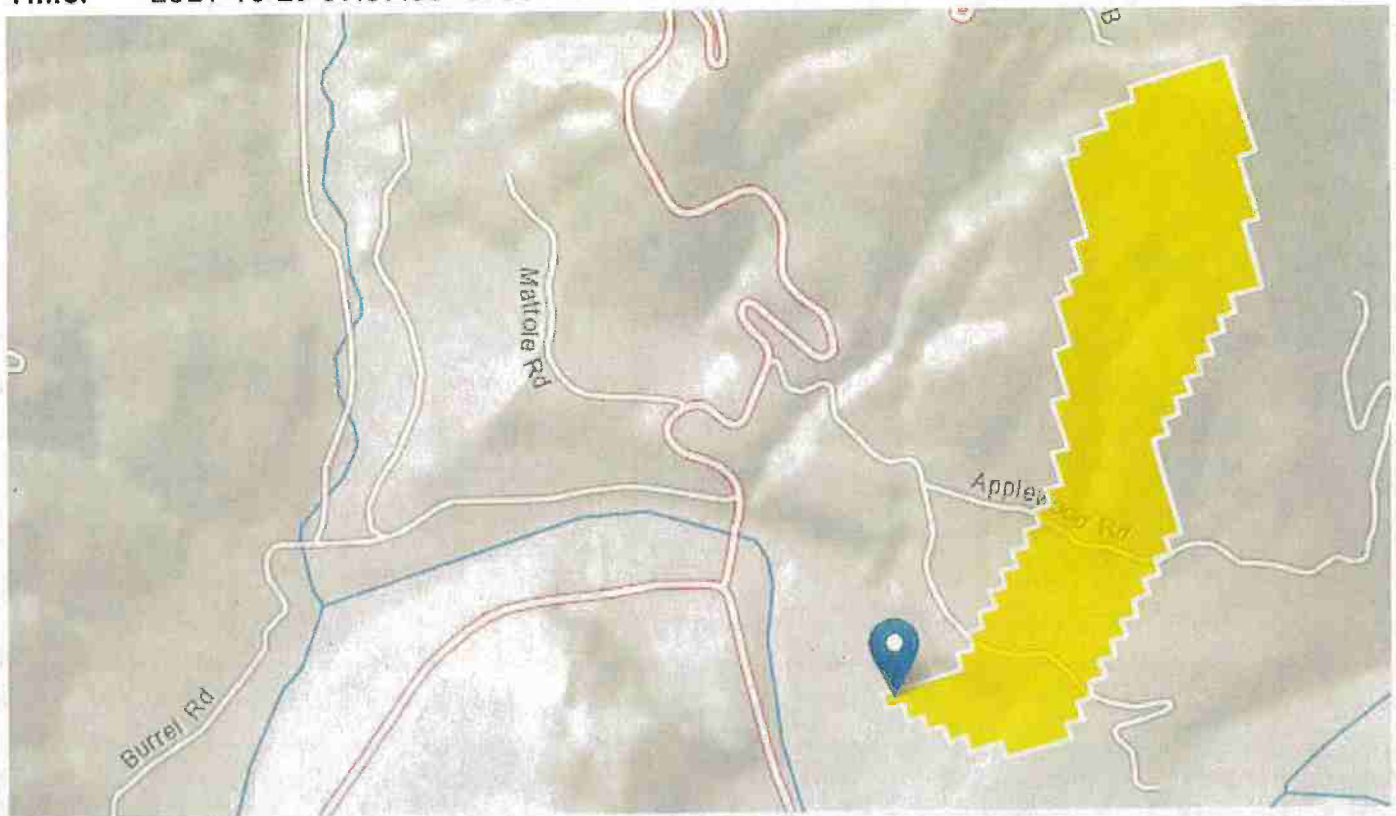
Appendix 6 - StreamStats Report

Region ID: CA

Workspace ID: CA20211029163709437000

Clicked Point (Latitude, Longitude): 40.24134, -124.11967

Time: 2021-10-29 09:37:30 -0700



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	2.54	miles
BSLDEM30M	Mean basin slope computed from 30 m DEM	38.2	percent
DRNAREA	Area that drains to a point on a stream	0.1	square miles
EL6000	Percent of area above 6000 ft	0	percent
ELEV	Mean Basin Elevation	840	feet
ELEVMAX	Maximum basin elevation	1744	feet
FOREST	Percentage of area covered by forest	21.9	percent

Parameter Code	Parameter Description	Value	Unit
JANMAXTMP	Mean Maximum January Temperature	53.34	degrees F
JANMINTMP	Mean Minimum January Temperature	37.74	degrees F
LAKEAREA	Percentage of Lakes and Ponds	0	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	3.3	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0.2	percent
LFPLENGTH	Length of longest flow path	1	miles
MINBELEV	Minimum basin elevation	348	feet
OUTLETELEV	Elevation of the stream outlet in feet above NAVD88	348	feet
PRECIP	Mean Annual Precipitation	76.2	inches
RELIEF	Maximum - minimum elevation	1396	feet
RELRELF	Basin relief divided by basin perimeter	551	feet per mi

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Application Version: 4.6.2

StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

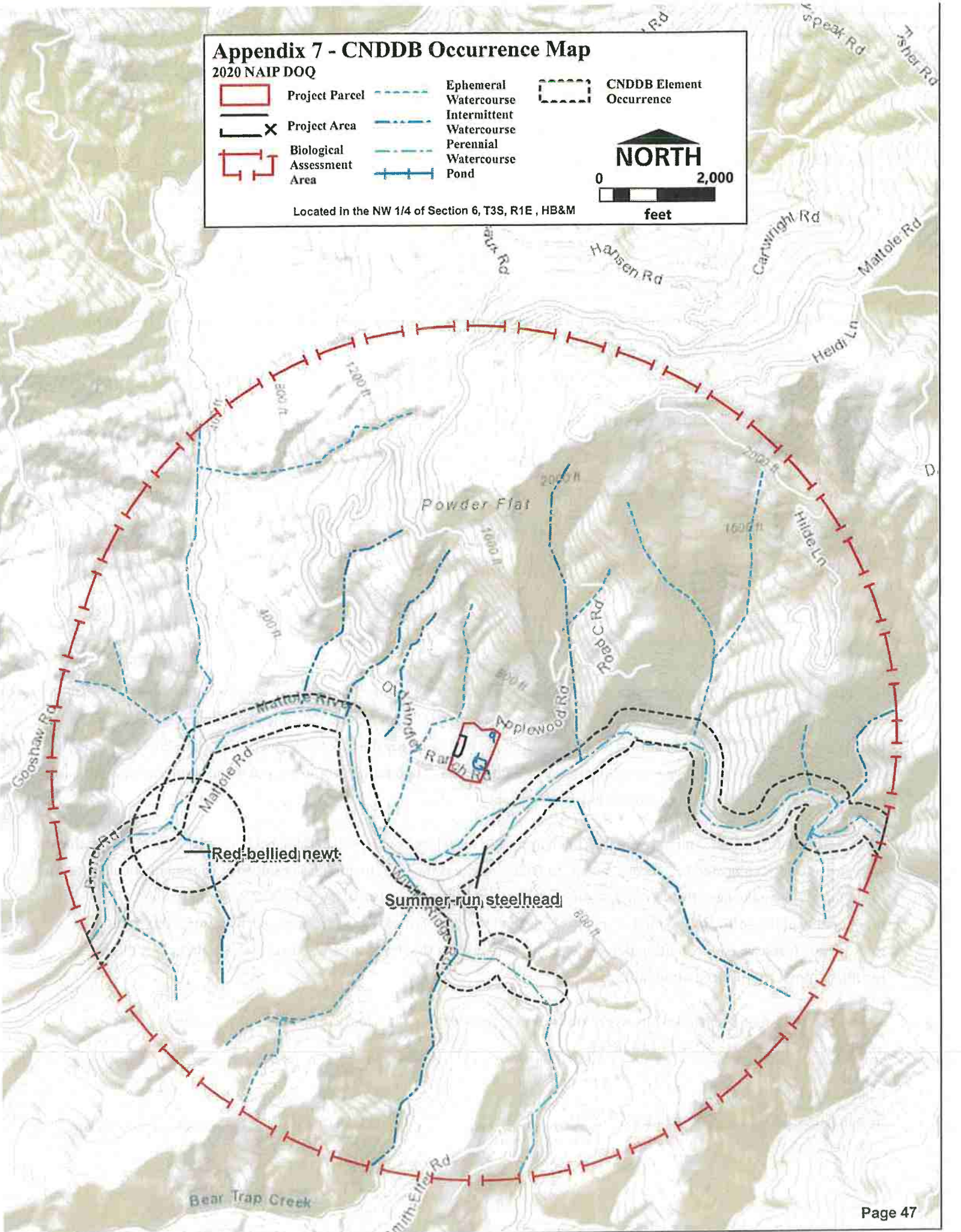
Appendix 7 - CNDDDB Occurrence Map

2020 NAIP DOQ

- | | | | | | |
|---|----------------------------|---|--------------------------|---|---------------------------|
|  | Project Parcel |  | Ephemeral Watercourse |  | CNDDDB Element Occurrence |
|  | Project Area |  | Intermittent Watercourse | | |
|  | Biological Assessment Area |  | Perennial Watercourse | | |
| | |  | Pond | | |



Located in the NW 1/4 of Section 6, T3S, R1E, HB&M





Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Species IS (Taricha rivularis OR Oncorhynchus mykiss irideus pop. 36)
AND Quad IS (Shubrick Peak (4012422))

Map Index Number:	A2371	EO Index:	103981
Key Quad:	Shubrick Peak (4012422)	Element Code:	AAAAF02020
Occurrence Number:	2	Occurrence Last Updated:	2016-10-27

Scientific Name:	<i>Taricha rivularis</i>	Common Name:	red-bellied newt
Listing Status:	Federal: None State: None	Rare Plant Rank:	
CNDDDB Element Ranks:	Global: G2 State: S2	Other Lists:	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern

General Habitat:	Micro Habitat:
COASTAL DRAINAGES FROM HUMBOLDT COUNTY SOUTH TO SONOMA COUNTY, INLAND TO LAKE COUNTY. ISOLATED POPULATION OF UNCERTAIN ORIGIN IN SANTA CLARA COUNTY.	LIVES IN TERRESTRIAL HABITATS, JUVENILES GENERALLY UNDERGROUND, ADULTS ACTIVE AT SURFACE IN MOIST ENVIRONMENTS. WILL MIGRATE OVER 1 KM TO BREED, TYPICALLY IN STREAMS WITH MODERATE FLOW AND CLEAN, ROCKY SUBSTRATE.

Last Date Observed:	1937-11-12	Occurrence Type:	Natural/Native occurrence
Last Survey Date:	1937-11-12	Occurrence Rank:	Unknown
Owner/Manager:	PVT	Trend:	Unknown
Presence:	Presumed Extant		

Location:
MATTOLE RD, ABOUT 0.65 MI WEST OF INTERESECTION WITH WILDER RIDGE RD, WEST OF HONEYDEW.

Detailed Location:
MAPPED TO INTERSECTION OF MATTOLE RD AND UNNAMED TRIBUTARY TO MATTOLE RIVER.

Ecological:
FOUND CRAWLING ON LEAVES.

Threats:
General:
ADULTS COLLECTED ON 12 NOV 1937.

PLSS:	T03S, R01W, Sec. 1, NW (H)	Accuracy:	1/5 mile	Area (acres):	70
UTM:	Zone-10 N4454854 E403670	Latitude/Longitude:	40.23859 / -124.13246	Elevation (feet):	373

County Summary:	Quad Summary:
Humboldt	Shubrick Peak (4012422)

Sources:
SHA37S0056 SHAPOVALOV, L. - CAS-SU #3301, 3302, 3303, 3304, 3305 COLLECTED FROM ALONG PETROLIA-DYERVILLE RD CA 0.5 MI W OF HONEYDEW, SMALL STREAM TRIBUTARY TO MATTOLE RIVER 1937-11-12



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Map Index Number: 44383
 Key Quad: Honeydew (4012421)
 Occurrence Number: 20

EO Index: 44383
 Element Code: AFCHA0213B
 Occurrence Last Updated: 2000-11-28

Scientific Name: *Oncorhynchus mykiss irideus* pop. 36

Common Name: summer-run steelhead trout

Listing Status: Federal: None
 State: Candidate Endangered

Rare Plant Rank:
 Other Lists: CDFW_SSC-Species of Special Concern

CNDDDB Element Ranks: Global: G5T4Q
 State: S2

General Habitat:
 NO. CALIF COASTAL STREAMS SOUTH TO MIDDLE FORK EEL RIVER.
 WITHIN RANGE OF KLAMATH MTNS PROVINCE DPS AND NO. CALIF
 DPS.

Micro Habitat:
 COOL, SWIFT, SHALLOW WATER AND CLEAN LOOSE GRAVEL FOR
 SPAWNING, AND SUITABLY LARGE POOLS IN WHICH TO SPEND THE
 SUMMER.

Last Date Observed: 2000-08-07
 Last Survey Date: 2000-08-07
 Owner/Manager: UNKNOWN
 Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
 Occurrence Rank: Unknown
 Trend: Increasing

Location:
 MATTOLE RIVER, MOUTH TO ABOUT 1 MILE EAST OF FOUR CORNERS, ALSO SOME OF THOMPSON, BEAR, AND HONEYDEW CREEKS.

Detailed Location:
 16 SURVEY SITES ALONG RIVER, MAPPED AS CONTINUOUS SINCE SECTIONS COVER LARGE PORTION OF RIVER. UNABLE TO FIND PARTS OF
 SAMPLE LOCATIONS. OBS YELLOW-LEGGED FROGS. COHO & CHINOOK OBS IN UPPER PART OF DRAINAGE, WESTERN POND TURTLES
 THROUGHOUT.

Ecological:
 COLD WATER REFUGIA APPEARS TO BE VERY IMPORTANT TO BOTH ADULT AND JUVENILE SALMONIDS DURING THE SUMMER. WATER TEMPS
 TAKEN YEARLY.

Threats:
 POACHING, HIGH STREAM TEMPERATURES, RIPARIAN VEGETATION LOSS, FISHING, WATER DIVERSIONS, GARBAGE.

General:
 1982: ONLY 3 ADULTS OBS IN 63 MILES. 1996: 12 ADULTS & 34 HALF-POUNDERS (LBS) OBS. 1997: 16 ADULTS & 19 HALF-(LBS) OBS. 1998: OBS 44
 ADULTS & 85 HALF-LBS. 1999: OBS 16 ADULTS & 88 HALF-LBS. 2000: OBS 17 ADULTS & 126 HALF-LBS.

PLSS: T03S, R01E, Sec. 10 (H) Accuracy: non-specific area Area (acres): 4,689
 UTM: Zone-10 N4453709 E409780 Latitude/Longitude: 40.22896 / -124.06048 Elevation (feet): 550

County Summary: Humboldt, Mendocino Quad Summary:
 Bear Harbor (3912388), Briceland (4012318), Ettersburg (4012328), Shelter Cove (4012411), Honeydew
 (4012421), Shubrick Peak (4012422), Buckeye Mtn. (4012432), Petrolia (4012433)

Sources:
 GER00U0001 GERSTUNG, E. - SUMMARY OF MATTOLE SUMMER STEELHEAD DIVES, 1996 TO 1999, MATTOLE RIVER. 2000-XX-XX
 ROC00R0001 ROCHE, M. (MATTOLE SALMON GROUP) - 1999 MATTOLE RIVER SUMMER STEELHEAD SURVEY SUMMARY 2000-10-03
 WES96R0001 WESELOH, T.J. (CALIFORNIA TROUT, INC.) - 1996 MATTOLE RIVER SUMMER STEELHEAD SURVEY SUMMARY. VARIOUS
 REACHES AND SPOT CHECKS (25.3 MILES TOTAL) [PLUS, FIELD NOTES FROM 1982 SURVEY OF 63 MILES BY B. REAVIS, ET AL.]
 1996-XX-XX
 WES98R0001 WESELOH, T.J. (CALIFORNIA TROUT, INC.) - 1997 MATTOLE RIVER SUMMER STEELHEAD SURVEY SUMMARY 1998-03-07
 WES99R0001 WESELOH, T.J. (CALIFORNIA TROUT, INC.) - 1998 MATTOLE RIVER SUMMER STEELHEAD SURVEY SUMMARY 1999-04-15
 WHE00R0001 WHEELER, D. (MATTOLE SALMON GROUP) - 2000 SUMMER STEELHEAD SURVEY REPORT 2000-XX-XX

Appendix 9 - Spotted Owl Observations [ds704]

2020 NAIP DOQ

-  Project Parcel
-  Biological Assessment Area
-  Project Area
-  NSO Activity Center
-  Negative NSO Detection
-  Positive NSO Detection



Located in the NW 1/4 of Section 6, T3S, R1E, HB&M

